KASBIT Business Journal, 15(1), 22-34, March 2022

Investors' Perception About Cash Conversion Cycle When Valuing Firm (A study of Textile Sector of Pakistan Stock Exchange)

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Abstract

Efficient management of the cash conversion cycle and its impact on firm value in the textile sector of the Pakistan Stock Exchange is the main purpose of this paper. Liquidity management plays a key role in the valuation of a firm as it affects firm performance in the short and long term. In this paper, we collected data on the textile sector of the Pakistan Stock Exchange from 2012 to 2017. In this paper, we empirically tested different performance measurement proxies like return on equity, return on assets, return on capital employed, and market value (Tobin's Q). We also used different proxies of leverage as observed during the study of Pakistani companies like long-term debt to equity, total debt to total assets, and debt to capital. We found that the cash conversion cycle and working capital have an impact on market value compared to all other book values taken as a proxy for performance. Results confirm our understanding that investors consider before valuing any firm's liquidity management.

Keywords:- *Cash conversion cycle, working capital, firm performance*
Jel Classification:- *G12, G33, G320*

Introduction:

The cash conversion cycle refers to how many days the amount spent by investors on the product will be received by a business from a customer. This cycle varies from industry to industry depending on the market situation and competition level. Every business tries to minimize the cash conversion cycle keeping in view the industry and overall outlook of the economy. Quick recovery means cash will again be available for business operations.

The textile sector is the backbone of the Pakistani economy. This is one of the most important manufacturing sectors in Pakistan, in other words, we can say that it is the driver of economic growth in Pakistan due to its linkages with the backward and forward sectors of the economy. Millions of people in Pakistan are attached to this sector either directly or indirectly. It helps the economy to bring foreign exchange to Pakistan. Large parts of Punjab province produce cotton that is used by the local manufacturer to produce finished products for the local market and also export them all over the world. Since Pakistan is mainly an agricultural country, the cotton industry is the main concern of the government as well as the people living in this country. Pakistan Stock Exchange has more than 550 companies registered and the major part of these companies belong to the textile sector. The export growth of Pakistan is mainly related to textile sector growth. The financial performance of any company is important not only to give maximum returns to its stockholders but also the economy as a whole. If the firm cannot show good financial performance then with time cause huge losses for stockholders and reduce their overall wealth and damage the economy.

In the year 2021, exports related to clothing and textile showed a growth of 22.94 percent as reported by the Pakistan Bureau of Statistics. It is significant growth after Covid-19 and also highlights the fact that the textile sector plays a vital role in the Pakistani economy. Total exports of this sector increased from $12.52 billion to $15.4 billion.

The European Union has given support to Pakistan by granting GSP Plus status in 2014 which will expire in 2023 subject to review. This facility allows Pakistani duty-free access to the EU. Pakistani export to the EU increased by 4.3% from 2014 to 2019 in terms of CAGR which was quite low earlier i.e. 3.6% from 2008 to 2013. Exports to the EU from Pakistan increased from $6.8 billion in 2013 to $9.7 billion in 2019. Market share remained unchanged during this alarming period. Pakistan exports many textile products to USA and USA market is a top attraction for Pakistani exporters.

Data analysis of the textile sector revealed that companies' gross profit varies across companies and mainly depends on the sales mix. It is also observed that companies engaged in value-added products have a better profit margin compared to others. High Input costs and increased competition show a negative impact on gross margin and overall companies performance.

To improve and sustain the performance of the textile sector, liquidity plays a vital role in this competitive market where Bangladesh, India, China, and a host of other countries are present in the international market to offer quality products at competitive prices. We are interested in the textile sector of Pakistan to see how this sector manages its liquidity. Debt in terms of capital structure is mixed in Pakistan as companies have both short and long-term debt as a fixed part of their capital structure. The overall liquidity position is strong and does not reflect any issue to settle short and long-term obligations.

Our main contribution is to use various proxies to understand performance and relate it with the cash conversion cycle as well as with the working capital fund of textile companies. For performance indicators, we are taking three common book value-based indicators like return on equity(ROE), return on assets(ROA), and return on capital employed(ROCE). We are also testing market value (Tobin Q) to see how investors in the market consider liquidity issues and whether they consider it when valuing any firm or not. Our understanding is in favor of this proxy that investors always consider the cash conversion cycle or in other words liquidity of the firm when valuing its price.

On the other hand, we use leverage by taking various proxies for it. Our understanding is that in different economies investor and financial manager behave differently in Pakistan short term loan is a regular feature of financing. Secondly, in many firms, it is observed that a supplier credit facility is also used regularly to take advantage of this free lunch. Keeping this in mind we use different proxies for leverage like total debt, only long-term debt, all liabilities in which trade creditors and accruals are also added to see their impact as a control variable when estimating the impact of the cash conversion cycle on firm performance. Market players and managers of the textile corporate sector of companies both can get the benefit from this study to understand how CCC works in this competitive industry and its impact on company valuation.

The rest of the paper is organized as follows. The first chapter is an introduction that mainly covers the background, contribution, and significance of the study. In the second chapter, we cover the literature review. The third chapter covers the research methodology and results from the discussion and the conclusion in the fourth chapter.

Literature review

Chang (2018) explored liquidity issues in the corporate sector by taking global data and found a negative relationship between the cash conversion cycle and firm performance. It is observed that aggressive working capital may work as a tool to manage liquidity issues. For firm performance, they selected both returns on assets as well as Tobin's Q. It is suggested that a firm can reduce cash conversion cycle duration to improve its performance and value. Even when the macroeconomic environment changed, the results were the same. Wang (2019) found that a shorter cash conversion cycle leads to better performance in companies and it is positively correlated with the working capital of the company. It is also observed that after 1980 cash conversion cycle decreases mainly because of less time engaged with inventory and its management.

Pavlis et al. (2018) study relation between supply chain management and cash conversion cycle with firm performance. Comprehensive management of supply chain issues resolves to some extent cash liquidity and addresses the issue of cash conversion cycle in a better way and enhances the performance of SMEs. Selection of suppliers is important not only based on credit facility and duration but also on the quality of material and services considered by businesses. Responses and flexibility provided by suppliers help mitigate the issue of liquidity. Jakpar et al. (2017) study the Malaysian market to investigate the relationship between profitability and working capital management. Their finding shows that the cash conversion cycle has a negative relation to firm performance. On the other than average collection duration has a positive relationship with firm performance. They concluded that a long credit facility gives support to firm profitability. They also observed the impact of debt ratio and found negative relation with firm performance.

Moussa (2018) explore in Egyptian market role of working capital on corporate performance and developed two different models for this purpose. The selected panel data of Egyptian stock and applied the GMM model to address various econometric modeling issues. In the first model, they found positive relation with the length of the cash conversion cycle and in the second model, they concluded that Egyptian investors prefer a long cash conversion cycle. This indicates that less efficient markets pay less attention to the management of working capital and cash conversion cycle maximum utility.

Linh et al. (2018) investigated the cash conversion cycle with firm performance in the food and agriculture sector of Thailand. In the food and agriculture area production time and then selling and collection time are both important, the first duration is not in the hand of the farmer in the case

of the agriculture sector. For this study researchers selected 34 companies and found that there is a negative relation between firm performance and cash conversion cycle. Leverage showed negative relation with firm performance and ROE showed a positive significant relationship with the cash conversion cycle.

Ajanthan and Kumara (2017) explored the impact of firm governance indicators and linked it with the cash conversion cycle. As observed by the researcher, the presence of independent directors can play a role in shortening the cash cycle and found a significant negative relation between governance variables and the cash conversion cycle. Pakdel and Ashrafi (2019) empirically tested working capital management in Tehran Stock Exchange and for this work they collected data from 2002 to 2013. Researchers found a significant negative relation between working capital and firm performance. It is also observed by researchers that different business cycles do not change cash cycles and firm performance.

Hingurala Arachchi et al. (2017) selected Colombo Stock Exchange and used Tobin Q as a proxy for firm value and suggested by their findings that managers can enhance the value of a firm by managing working capital efficiently. Hussain et al. (2020) observed that exchange rate fluctuation in Pakistan significantly impacts the economy. They collected data for cash conversion cycle and exchange rate with many other control variables and found a significant negative relationship between cash conversion cycle and exchange rate. Return on assets showed a positive relationship with the cash conversion cycle.

Al-Abass (2017) explored Karachi Stock Exchange for the period 2012 to 2016 and found many negative cash conversion cycles which is good for companies. They have taken many industries like textile, paper, and tobacco industry and found different results when working with sales and profitability of the firm. They also found a negative but insignificant relationship between the cash conversion cycle and the profitability of the firm. Shubita (2019) observed that liquidity paly a very important role in business and in this respect working capital plays a significant role in the smooth running of the business. Shubita (2019) selected eleven years of data from 2006 to 2016 from Jordanian industrial firms. Results show that cash holding is a significant predictor of profitability. They also found different results when working separately on small and large firms while cash holding remains significant in both cases.

Boisjoly et al. (2020) observed in the USA market that practitioners are using different financial measures to understand the behavior of working capital and investment process. It is observed that larger firms are engaged regularly to monitor working capital for improvement while similar results did not appear in other cases. This improvement of large firms is reflected through the Tobin Q ratio which is a good proxy to understand firm performance. Some industries are more focusing on working capital where they need working capital continuously.

Oseifuah and Gyekye (2017) argued that efficient management of working capital enhances shareholders' wealth. They selected the South African Johannesburg Stock Exchange and collected data from 2003 to 2012 for 75 firms to determine the relationship between profitability and working capital. Results show a positive but insignificant relationship between the cash conversion cycle and the value of the firm. They found a positive relation between A/c Payable and profitability and negative relation between firm value and leverage. Firm size has a significant positive relationship with profitability.

Chowdhury et al. (2018) selected pharmaceutical companies in Bangladesh from Dhaka Stock Exchange. They collected data from 2001 to 2015 and used three different proxies for performance

indicators namely return on equity, return on assets, and earning per share. They found negative relations in observed variables like return on assets and average collection period. They also found a positive relationship between return on assets and payment duration. It is highlighted that efficient management of working capital is important to improve firm performance.

Marisetty (2020) observed that in any company routine operations required a short-term fund to maintain liquidity irrespective of the nature of business. Nature of business of course changes the magnitude of short-term fund requirements. Researchers collected data from the Bombay Stock Exchange from 2006 to 2020. The study found significant results between cash conversion cycle and firm performance irrespective of size or nature of the business that of course support this argument that quick cash conversion is important in all kinds of business. Wang (2002) examined operating performance and liquidity management in the region of Taiwan and Japan. The researcher used return on assets and return on equity to measure firm performance and for liquidity, the researcher selected the cash conversion cycle and found that aggressive management of liquidity enhances performance irrespective of the dynamic nature of firm characteristics in both countries.

Laik and Mirchandani (2021) argue that a lower level of cash conversion cycle shows better management of liquidity and improves firm performance. This also indicates a firm ability to manage its supplier and creditor relationship. They argue that sales growth, seasonality, and fiscal year impact on cash conversion cycle. They applied a random and fixed effect model on 12-year data and found significant results. Hutchison et al. (2007) focuses on a case study and observed significant results in terms of management of cash in case of receiving cash from customers and using it to settle obligations. This is considered a supply of cash management.

Jose et al. (1996) used nonparametric and regression analysis to develop an understanding of liquidity on corporate performance and suggested that aggressive working capital improves firm performance. Yazdanfar and Ohman (2014) reported similar findings and suggested that the cash conversion cycle significantly improves firm profitability. Zakari and Saidu (2016) reported a positive relationship between the cash conversion cycle and firm profitability. Ebben and Johnson (2011) investigated firm performance, invested capital, and liquidity in the USA market by taking 879 small firms. They found that better liquidity management companies are those which are maintaining the cash conversion cycle efficiently. These firms have needless debt, hence less cost to pay and getting higher returns. Based on the above discussion we developed the following Hypothesis:

Research Methodology

For this study, we collected data from the Textile Sector of the Pakistan Stock Exchange from 2012 to 2017. Data was collected from the State Bank of Pakistan Balance Sheet Analysis which is available on the website of the State Bank of Pakistan. Few companies' data were missing and removed from the entire set of data collection. In a few companies, some variables were available and a few missing were also removed before empirical testing. Finally, after adjusting for missing values 334 observations were used for statistical analysis.

We developed various models keeping in mind that different markets and their investors behave differently when considering factors depending on the short and long-term socio-economic behavior of investors. A similar situation applies in Pakistan where the majority of funds are borrowed from banks rather than offering bonds in the market, on the other hand, a short term loan is a major source of financing in the market compared to running a finance facility or other means

that may be used in countries other than Pakistan. For this purpose, we use four different proxies to measure firm performance i.e. return on equity (ROE) which is calculated by taking net profit divided by stockholders' equity, second, we make a return on assets (ROA) that is calculated with the help of operating profit and divided by total assets. Third, we are taking the performance variable return on capital employed in which net profit is divided by capital employed including long-term debt and stockholders' equity. Finally, and the fourth one which is very popular all over the world to check firm performance is Tobin's Q based on the market value of a firm divided by total assets. We conclude that these four dependent variables comprehensively cover the performance of any firm whether small, old or large firm taken in data.

On the other side, we are taking debt as a control variable because that also impacts the performance of any firm when we consider the cash conversion cycle with working capital. Here again, we considered three proxies to measure the debt ratio in companies. First, we are selecting the debt to equity ratio, second debt to assets ratio, and finally debt to capital employed ratio. The objective is to check not only the cash conversion cycle role in the textile sector but simultaneously we have to check the role of proxy that plays a significant role in the Pakistani market. Based on earlier empirical findings we developed the following hypothesis:

H1: There is a positive relationship between Cash Conversion Cycle and firm Performance
H2: There is a positive relationship between leverage policy and firm Performance
H3: There is a positive relationship between working capital and firm Performance
H4: There is a positive relationship between sales and firm Performance

To check the above hypothesis, we also keep control variables like sales and debt ratio and as discussed earlier three different proxies were developed for debt capacity keeping in mind the common trend of Pakistani financial managers' decisions regarding capital structure. Descriptive statistics are given in Table No.1. Total observations are 331 that we used in the analysis. Mean, standard deviation, and other relevant information are provided here.

Statistical Models

Model 1

$$ROA_{it} = \alpha = ccc_{it}\beta_1 + D/E_{it}\beta_2 + D/A_{it}\beta_3 + D/C_{it}\beta_4 + WC_{it}\beta_5 + Sales_{it}\beta_6 + €$$

Model 2

$$ROE_{it} = \alpha = ccc_{it}\beta_1 + D/E_{it}\beta_2 + D/A_{it}\beta_3 + D/C_{it}\beta_4 + WC_{it}\beta_5 + Sales_{it}\beta_6 + €$$

Model 3

$$ROCE_{it} = \alpha = ccc_{it}\beta_1 + D/E_{it}\beta_2 + D/A_{it}\beta_3 + D/C_{it}\beta_4 + WC_{it}\beta_5 + Sales_{it}\beta_6 + €$$

Model 4

$$Tobin'si_t = \alpha = ccc_{it}\beta_1 + D/E_{it}\beta_2 + D/A_{it}\beta_3 + D/C_{it}\beta_4 + WC_{it}\beta_5 + Sales_{it}\beta_6 + €$$

Table No.1
Descriptive Statistics

	CCC	DEBT EQUITY	DEBT TO ASSETS	DEBT TO CAPITAL	ROA	ROCE	ROE	SIZE	TOBIN'S Q	WORKING CAPITAL
Mean	8111.217	4.271	0.706	0.911	-0.470	-10.200	-13.123	14.611	213000000	-3548991
Median	50.900	1.210	0.642	0.957	0.405	6.820	3.114	14.816	4051444	-1147731
Maximum	1275645.000	337.808	6.840	27.518	319.527	88.827	6434.699	18.970	28800000000	-15954
Minimum	-2512.617	-98.243	0.045	-46.952	-62.306	-3424.161	-10941	5.288	0	-82895181
Std. Dev.	98895.560	33.351	0.570	4.197	20.072	194.666	705.899	1.965	1950000000	8184833
Skewness	12.693	7.806	7.001	-4.019	12.053	-16.511	-8.927	-1.553	12	-7
Kurtosis	162.533	74.739	70.633	62.204	197.068	287.970	195.770	7.771	161	59
Jarque-Bera	359896.400	74339.340	65789.390	49231.620	527442	1135034	516900	446.974	350822	45493
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0
Sum	2684813.000	1413.816	233.813	301.689	-155.697	-3376.146	-4343.865	4836.157	70500000000	-1170000000
Sum Sq. Dev.	3.23E+12	3.67E+05	1.07E+02	5.81E+03	1.33E+05	1.25E+07	1.64E+08	1.27E+03	1.26E+21	2.21E+16
Observations	331	331	331	331	331	331	331	331	331	331

Where:
CCC = Cash Conversion Cycle
Debt Equity = Debt equity ratio
Debt to Assets = Debt to Assets ratio
Debt to Capital = Debt to Capital ratio
ROA = Return on Assets
ROE = Return on Equity
ROCE = Return on Capital Employed
Size = log of sales
Tobin's Q = Market value of firm
Working Capital = Current Assets – Current Liabilities

Table 2 shows the results of correlation where we observe that some variables are correlated with dependent variables and some are not at 1%, 5%, and 10% as mentioned in table details.

Table No.2
Correlation Matrix

Probability	CCC	DEBT EQUITY	DEBT ASSETS	DEBT CAPITAL	ROA	ROCE	ROE	SIZE	TOBIN'S Q	WORKING CAPITAL
CCC	1.000									
DEBT EQUITY	-0.001	1.000								
	0.989									
DEBT ASSETS	0.013	0.027	1.000							
	0.808	0.628								
DEBT CAPITAL	0.021	0.025	-0.118	1.000						
	0.699	0.655	0.031							
ROA	-0.014	-0.029	0.287	0.039	1.000					
	0.793	0.601	0.000	0.483						
ROCE	0.000	0.011	-0.111	0.107	0.101	1.000				
	0.995	0.844	0.043	0.053	0.066					
ROE	-0.008	0.039	0.015	-0.125	0.001	-0.033	1.000			
	0.891	0.477	0.780	0.023	0.990	0.550				
SIZE	-0.361	-0.015	-0.275	0.056	0.054	0.046	0.110	1.000		
	0.000	0.781	0.000	0.311	0.327	0.403	0.046			
TOBIN'S Q	-0.009	-0.008	-0.008	0.005	0.018	0.013	0.003	0.220	1.000	
	0.872	0.882	0.878	0.923	0.744	0.817	0.955	0.000		
WORKING CAPITAL	0.021	0.008	-0.002	-0.037	-0.016	0.032	-0.019	-0.434	-0.791	1.000
	0.708	0.885	0.974	0.504	0.768	0.563	0.728	0.000	0.000	

Table No.3
Measuring the ROE

ROE			
Coefficient	**Model I**	**Model II**	**Model III**
CCC	0.000312	0.000365	0.000354
Working capital	3.66E-06	4.53E-06	3.55E-06

Log of sales	51.843	60.2601***	54.97552***
Debt ratio	0.869	75.365	-22.416***
C	-763.6019	-933.6785	-786.1958
F-test	1.363	1.490	2.722
F-test (Prob)	0.246	0.205	0.030
Adj R square	0.004	0.006	0.020449***

In Table No. 3 we present our first model in which we are taking Return on Equity as dependent variables and selected three different proxies of debt ratios. In Model 1 debt ratio is taken as Total debt/total assets, in Model II we took the debt to capital ratio, and in Model III we selected the debt to equity ratio. The first model is insignificant as indicated by the F test result through the cash conversion cycle (CCC) is positive which is according to general understanding and supporting previous literature (Laik & Mirchandani, 2021; Hutchison et al., 2007; Wang, 2002). Model II is also not significant means book values of equity are not supporting CCC. Model III is significant, though CCC is not significant but pointing the fact with the help of positive signs that CCC has a positive role in the explanation of ROE. Working capital is not significant even at 10% while sales and the debt ratio are significant. Sales are positively related to ROE while the debt ratio is negatively impacting on ROE. Al-Abass (2017) found similar findings. Previous numerous literatures support the understanding that leverage hurts firm performance (Jakpar et al., 2017).

Table No.4
Measuring the ROA

ROA			
Coefficient	**Model I**	**Model II**	**Model III**
CCC	1.48E-06	1.01E-05	1.16E-06
Working capital	3.25E-08	1.67E-07	2.55E-08
Log of sales	0.626	1.992923***	0.599
Debt ratio	-0.017	11.98853***	0.171
C	-9.438	-37.548	-9.299
F-test	0.315	9.725	0.352
F-test (Prob)	0.868	0***	0.842
Adj R square	-0.008	0.096	-0.008

In the second case as presented in Table No.4 we selected Return on Assets as a dependent variable keeping the same independent variables. The model I is not significant though all signs of selected variables are as per our theoretical understanding. Model II is significant though CCC and working capital are not significant. Now in this model debt ratio is positive which indicates that leverage positively impacts ROA. Sales show a positive impact on ROA which is as per theoretical

understanding that revenue will have a positive impact on firm performance. Model III is not significant at all.

Table No.5
Measuring the ROCE

ROCE			
Coefficient	**Model I**	**Model II**	**Model III**
CCC	5.81E-05	3.39E-05	4.85E-05
Working capital	8.592	4.750	7.861
Log of sales	1.65E-06	1.24E-06	1.66E-06
Debt ratio	0.068	-33.528	4.838
C	-130.573	-51.781	-123.975
F-test	0.526	1.224	1.410
F-test (Prob)	0.717	0.301	0.230
Adj R square	-0.006	0.003	0.005

In the third case as presented in Table No.5 we selected Return on Capital Employed as the dependent variable. In this case, all three models are insignificant indicating that book values are not reflecting the impact on returns whether we are taking ROE, ROA, or ROCE.

Table No.6
Measuring the Tobin's Q

Tobin's Q			
Coefficient	**Model I**	**Model II**	**Model III**
CCC	-1062.066	-1225.283	-1052.562
Working capital	-206.119	-209.376	-206.810
Log of sales	-1.73E+08	-1.99E+08	-1.72E+08
Debt ratio	-2.54E+05	-2.20E+08	-7.35E+06
C	2.02E+09	2.54E+09	2.01E+09
F-test	149.532	151.987	149.726
F-test (Prob)	0	0	0
Adj R square	0.641	0.647	0.643

In the fourth case as presented in Table No.6 we selected the market value of companies by taking market capitalization and divided by total assets book value. We have this understanding on the theoretical ground as well as based on past literature (Chang, 2018; Hingurala Arachchi et al.,

2017; Boisjoly et al., 2020) that market investors considered the liquidity of a firm when valuing a firm. Based on this understanding we applied all three models on market value as the dependent variable and all models' results are significant. CCC sign is negative which is again as per previous empirical findings that as CCC increases firm performance will be sensitive and reduce its market value. CCC shows that firms are not managing their liquidity issues efficiently and put a negative impression on investors in the market. The working capital sign is also negative and significant means if a firm invests more amount in working capital and is unable to improve CCC then it hurts the market value of the firm. Sales are negative and significant which points out that investors in the market not only consider sales, they also observe whether firm improvement in sales is translating into net residual or not. In case of sales increase but profit reduces that shows an agency issue and in this case firm market value will not improve. The debt ratio is also showing a negative impact on market value (Laik & Mirchandani, 2021).

Conclusion

The cash conversion cycle is very important for companies. It shows liquidity management and directly impacts company performance. Shareholders are interested to see how their company or potential company which they are valuing is managing its liquidity issue which will impact on company's earnings and its value. To see how the textile sector of Pakistan is managing it, we selected all textile sector companies listed on the Pakistan Stock Exchange from 2012 to 2017 subject to the availability of data. Some companies were removed due to the unavailability of data. We developed an understanding with the help of previous empirical findings around the world that various proxies are used to analyze and observe CCC with corporate performance and found mixed results. We selected not only book values of various variables but also took the market value of the firm to see whether investors considered CCC when deciding about the value of a potential company or book value and market value both are giving the same result. Results confirm that investors keep CCC under consideration when valuing firms. In the future researchers can classify the textile sector into separate segments like weaving, spinning, and composite and then analyze CCC in separate segments.

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