



Cash conversion, cycle drifts on the financial performance of food and personal care product companies listed at Pakistan stock exchange (PSX)

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Abstract

Study is done to imprisonment the impact of cash conversion cycle (CCC) on the financial performance of the sector “Food and Personal Care Product” which is listed on Pakistan Stock Exchange. The effect of lathe 1st five years’ performances are captured from 2011-15. The sector comprises of companies but five-year complete data is available for only 14 companies. Panel data analysis is used to determine the results. Eight hypotheses were redeveloped and tested to examine the liquidity position concerning financial performance. Out of four hypotheses related to the dependent variable ROA, one is accepted. The AAP hypothesis showed the same result as this was modeled while AAR, and AI hypotheses are rejected. Again CCC tested with ROA to reconfirm the results of the regression model but the null hypothesis is accepted. Out of four hypotheses related to the dependent variable, ROE two are accepted. The hypothesis of AAR and AI are rejected. While the other two hypotheses related to AAP and CCC are accepted. It is reconfirmed by comparing CCC with the ROE which accepts the alternative hypothesis. The result gave a clear picture about liquidity (CCC) impact which has a negative relationship with the company’s performances if the dependent variable is ROE.

Keywords: Cash Conversion Cycle (CCC), Financial Performance, Fixed Effect & Random Effect Models, Food and Personal Care Product Sector, Pakistan Stock Exchange (PSX).

Introduction

WCM is one of the key parts of financial management because it is directly related to the liquidity and profitability of the company. It includes planning and control of current assets and liabilities to mitigate the risk of failing to meet short-term commitments and

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avoiding excessive investment in these assets (Maryam Pakdel, 2018). The aim of holding cash for corporates has transactional, speculative, and precautionary motives. The transactional motive is to pay ordinary progression of business activities such as purchases, wages, taxes, etc. The speculative motive of cash is to invest in inputs for finished goods and services at a lower price than usual. The precautionary motive is to create a safety stock of cash to cater to unforeseen cash requirements. The efficient knowledge of cash movements, for inflows and outflows of cash, generates less precautionary needs and ultimately reduced cash balance (James C. Horne J. M., 2008). The fund is blocked during a cycle of cash conversion from paying for inputs from working capital up to the sale of the product and getting back cash into the firm's account. Conversion of Cash is a component of working capital. The period associated with inventory, receivable, and payable gives a combined effect of cash and its flows. CCC is not only helpful in finding liquidity periods but also the overall impact of working capital management. It is a very powerful tool for examining the financial performance of the company. It also gives an idea that how efficiently control CCC. A cycle of cash conversion may be positive or negative, it is depending upon the management of these three variables inventory, receivables, and payables (Eugene F. Brigham, 2007).

A firm meets its current obligations from current assets by effective management of liquidity. An analytical tool CCC is used for prediction, management, and evaluation of an entity's liquidity requirement. A period associated with the conversion of cash from its outflow period to the inflow period. It is taken place from the process of purchase of materials to the sale of the finished product (Sto-Janovic, 2014).

Problem Statement

A firm management strategy is to maintain a balance between liquidity and profitability this has consequences on the growth and survival of the firm. Therefore, there is a need for a thorough investigation of the problem associated with liquidity management (Dr. Arega Seyoum, 2016). The ultimate objective of the firm is to maximize profit. The profit increases at the cost of a shortage of liquidity have serious consequences on firm operations. So, there should be a trade-off between these two objectives of the firm (Ajanthan, 2013). A large portion of cash always decreases profit while the shortness of cash creates problems for the company. Shortness of liquidity can lead to the abundance of firms or losses (Abdul Raheman, Abdul Qayyum, Talat Afza, 2011).

Several research works have been conducted on working capital management (Abbas, 2010; Abdul RTA, 2010; Abdul Raheman, Abdul Qayyum, Talat Afza, 2011; Ali, S., 2011; Habeeb Mohamed Nijam, 2016) but a little number of research works have been associated with cash conversion cycle in Pakistan (Prof. Dr. Abdul Ghafoor Awan, 2014; Mohd Tahir and Melati Binti, 2015). Researchers have studied the majority of sectors of Pakistan that are listed on the Pakistan Stock Exchange (Ahmad Chand, 2019; Dr. Asim Rafiq, 2019). Limited work so far has been done on the sector "Food and Personal Care Product" in connection of conversion of cash cycle which gives the real reflection of the overall requirement of liquidity management. Phong Anh NGUYEN et al. (2019) says that a company's profitability is derived from its internal as well as external variables, the internal variables (related to management decisions like WCM, firm size, capital structure, etc.) and external variables (cover market, industry, and economy-related variables). So there exists an avenue for research work on this topic due to liquidity problems associated with the Food and Personal Care Product companies. The sector "Food and Personal Care Product" has two different types of companies which are engaged in different businesses. The cash conversion cycle of each company in this sector is different because every company has its credit term for payment, various collection periods, and



inventory turnover period. The concluding remarks based on the cash conversion cycle of each company are difficult to compile in a single phrase. This research can find out how financial performance behaves with the fluctuation of the liquidity requirements and it can evaluate through cash conversion cycle period with profitability. The cash conversion cycle is the main determinant to find out the gap between the dealing of companies with suppliers and customers which may contribute towards the financial performance. A low inventory period indicates small stock of finished Products which may be exposed to risk associated with stock out and some time to put Product in the market. The other risk associated with the collection of receivables period could lead to decrease customers due to shorter collection periods. On the other hand, if companies are lengthier their payment period could lead to loss of early payment discounts. So the companies need to maintain a balance between these determinants (Sheffi, Y., 2005). The research will find the gap between the supplier and customer transaction period by considering the cash conversion cycle period of companies. As theory suggested that Profitability varies inversely with liquidity (James C. Horne J. M., 2008). The theory suggested that if liquidity (cash conversion cycle) will increase then the profit will be compromised and if the liquidity (cash conversion cycle) will decrease then the profit will be maximized. This study is based on the testing of the above theoretical statement for Food and Personal Care Product companies.

Literature Review

Cash and cash conversion cycle

According to Pandey (2010), the formula of the cash conversion cycle is to deduct several accounts payable days from the additive of accounts receivable days and inventory conversion period (Muturi, 2015). For paying obligations it is necessary to manage liquidity and it also creates a guaranty of profits (Attari, 2012). Omağ, A. (2009) said in the research that fluctuations may occur at cash conversion cycles depending on various factors of economics like industry, macroeconomic factors, inflation, interest rates, and growth rates (Filiz KONUK, 2014). Three types of policies are related to the cash conversion cycle which are conservative, aggressive, and moderate policies. In conservative policy, maximum investment is made in current assets which sacrifices greater return. Higher returns are achieved by maintaining an aggressive policy of investment. A moderate policy provides a balance or equilibrium between assets and liabilities which are current. CA should be financed through current assets and long-term assets should be financed through non-current assets (Mojtahedzadeh, 2011). This theory is the backbone of managing working capital and the components of the conversion cycle of cash like receivables, payables, and inventory. The payment period to creditors is managed with lengthier payment terms. The receivable credit term managed aggressively to shorten the collection period. The inventory is managed through the technique of minimum safety stock balance by considering precautions for stock-out situations. These all steps help manage the shorter cycle of cash conversion. Listed companies are preferring to hold more cash because it does not want to take risk of shortages of cash. It is helpful not only for consumption activity but also for the investments of finances (Bigelli, 2011). Wilson & Howorth (2000) elaborated that businesses normally have greater liquidity concerning assets. Liquidity management is hard for small firms and always suffers due to cash shortages. It is very hectic for a small firm to manage appropriate cash balances (Asad, 2012). Shin and Soenen (1998) worked on liquidity in which they found cash conversion has a positive relationship with financial performance and a negative relationship to the value of the firm. CCC has a positive correlation with the firm's size (Iftikhar, 2013). Companies having high working capital normally less bother for cash balance than those who have lower working capital (Humera Shahida, 2014). Companies with improved and managed working capital



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components like the cash conversion cycle helps create a competitive advantage over competitors. To create finance from internal sources as well as the external source it is very hard for companies who are operating their businesses in developing countries (Siddiquee, 2009).

Researchers examined that the firm performances are influenced by the cash conversion cycle and size of the firm in Pakistan. Huge size firms are capable to manage their receivable period due to their eminent power. The capital-intensive sector is the automobile sector. The sector performance is based on the size of the firm. The size of the firm has a significant level of influence on its financial performance. The automobile sector has positive like on the performance of the firm (Zubairi, 2010). Every firm behaves differently for its conversion of cash due to its different mechanisms of the supply chain. The sector related to the import of US-based companies has a negative cycle of cash conversion which is 50 days. Due to this shorter period, the industry behaves efficiently. It was concluded that the efficient management of inventory is effective for better results (Banomyong, 2005). Lyroudi and Lazardis (2002) conducted a study on the food industry of Greece and compared the cash conversion cycle with liquidity position. CCC was used as an indicator for liquidity in Greece. ROA and ROE were compared with the same method as they used in finance. The relationship was positive with the CCC, receivable and inventory turnover, assets test, and current ratio. A negative relationship was found between CCC and the average payables period (Prof. Dr. Abdul Ghafoor Awan, 2014) while reducing CCC can increase the company's performance (Rehman, 2007).

Accounts receivables, payables, and inventory days

The slow movement of accounts receivable tends to have low profits. It can improve the company by shortening receivable terms (Amarjit Gill, 2010). Previous studies showed the positive impact of having longer payment periods for better profits of firms. Shorter accounts receivable period has an impact on shortening the cash conversion cycle. An increase in sales and leverage of finance is the main component of profits. Improvement in working capital management is countable towards better operational performance (Abdul RTA, 2010). The policies for creditors, debtors, and inventory administration played a vital role in a firm's performance and the policies for efficient working capital management are being established by the Managers to control the cash conversion period (Vishnani, 2007). Making policies to create equilibrium between return and risk to finance the component of current assets is helpful in the planning for maturity for balance sheet items. It is helpful to manage working capital with short or long-term finance. It can be done through three different separations of assets in current, permanent, and fluctuating assets (Cheatham, C., 1989). CCC negatively affects the profits so by keeping liquidity requirements in control the firm can create more earnings (Hasnain Manzoor, 2013).

Cash Conversion Cycle and Financial Performance

The CCC negatively affects the firm size and the level of profitability generated by the firms. In the SME sector, firms have different cash conversion lengths by having different ages of credit terms. Aggressive working capital management can deal with this situation effectively. The result can be improved. (Marsap, 2015). A research was conducted on the textile sector of Pakistan, days for CCC, the cycle of operation, and WC have an impact on Performance. The results showed a negative relationship between return on assets, average day receivables, and average day payables. The other way showed a positive relationship between average inventory and ROA. A positive relationship has been shown by the ROA and CCC. A longer cash conversion cycle would be more profitable for the textile sector (Ali, S., 2011). Chowdhury and Amin (2007) proved that a large portion of cash always decreases profit while



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the shortness of cash creates a problem for the company and for generating profits. Short of liquidity is leading towards the abundance of firms or losses (Abdul Raheman, 2011). Smaller the CCC is harmful to the company’s profitability. Both receivables and inventory gave the same results if their collection and turnover period is shorter. The decline in sales is due to the small receivable period and shortening of the turnover period of inventory. If the payment period is longer then it creates a bad image of paying capability of the firm (Nobanee, 2009).

There is a significant difference in industries investment in current assets and financing decisions in Pakistan (Talat Afza, 2008). According to Chiou and Cheng (2006), the factors of businesses behave with the components of working capital in the same way as the liquidity behaves with the business components (Abbas, 2010). Deloof (2003), compared CCC as a component of working capital, a negative relation was found between CCC and components of working capital. (Dong H. P., 2010) has concluded that working capital is affected by liquidity and profitability. Variables used for the study were CCC and profits and also the components of CCC and found the relationship between them. All the components showed a negative relationship with the CCC. It gives us a result that as CCC decreases profits increase. If the period decreases for receivable and inventory then it will increase the profits. The payable period helps generate profits if its period has increased. A study established an impression that the profitability of a firm increases when it improves its working capital requirement. Highly liquid assets are helpful towards the attainment of improved profits. This can be done by increasing highly convertible current assets which can convert into cash and again reinvest able in short-term assets. High debts used in business encountered towards non-success of financial performance otherwise increases in sales enhance firm’s profitability (Chatterjee S, 2010).

Another study by Pais and Gama (2015) on Portuguese SME firms used companies of 6,063 Portuguese SMEs and period from 2002-2009 has decreased in their inventory and holding period of inventory it helped pay its liabilities. A higher profit can be achieved by decreasing the payment collection period. The same result can also be achieved when industry-specific effects are controlled inefficiently manner then it will support the firm towards the strength of the business. With increased working capital a firm can compromise its financial profitability. Saudi Arabian Companies are used in research work to measure liquidity and profitability along with various liquidity ratios. The result concluded a negative relationship exists between profits and liquidity (Eljelly, A., 2004). A study on 2628 listed companies of the Tehran Stock Exchange showed a negative relation between the CCC and profits. Efficient management of working capital can create a difference in terms of profitability (Alipour, M., 2011). In a study on the Textile sector of Pakistan, it was found that efficient management of cash is necessary to counter the cash requirement problem and working capital. Higher profits can be achieved by shortening CCC and saving from interest for finance (Mohd Tahir and Melati Binti, 2015).

Conflicts and issues identified in the literature review

Summary of literature reviews

S. No.	Research conducted by	Issues	Conflicts (Engagement)	Conclusion
1	(Omağ, A., 2009) and (Filiz KONUK, 2014)	Factors affect CCC.	Industry Macroeconomic factors Inflation Interest rates and	Fluctuation occurs due to economic factors.



			Growth rates	
2	(Mojtahedzadeh, 2011)	Behavior of CCC	The maximum investment in current assets (CA). Aggressive investment in CA. A moderate investment in CA.	Maximum investment sacrifices greater return The aggressive approach gives the highest return and Moderate approach-maintained equilibrium between CA and CL
3	(Bigelli, 2011)	CCC period	The length of CCC provides the cash requirements for the firm.	Shorter CCC has the capability of generating frequent cash.
4	(Wilson, & Howorth, 2000) and (Asad, 2012)	Working capital requirement	Efficient management of working capital requirements.	Small companies are not efficient in managing working capital.
5	(Zubairi, 2010)	CCC and firm size in Pakistan.	By efficiently managing the receivable collection period	Firm size has an impact on profits.
6	(Shin and Soenen, 1998) and (Ifikhar, 2013)	CCC relation	Relationship with performance and size of the firm.	CCC has relation positive with profits and firm size. CCC has a negative relationship with the value of the firm.
7	(Ding, 2012) and (Humera Shahida, 2014)	Working capital requirement	The different ownership structures of the firm	Highly sensitive investment of cash in working capital Low sensitive investment in fixed capital.
8	(Siddiquee, 2009)	CCC management	Creating a competitive advantage over competitors.	Cash generation is hard for those operating in developing countries from internal as well as external sources.
9	(Rehman, 2007)	CCC	CA, CL, AR, Inventory, AP and Its relationship with the performance of companies.	Shareholder wealth can increase by reducing the CCC.

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10	(Cheatham, C., 1989)	The policy for a trade-off between risk and return and investment in CA.	Finance the amount at different maturity levels in the balance sheet Short-term and long-term funds to finance.	A firm can divide assets into three different types: 1) Non-current assets, 2) Permanent current assets and 3) Fluctuating current assets.
11	(Lazaridis and Tryfonidis, 2006) and (Hasnain Manzoor, 2013)	CCC relationship with profitability	Athens Stock Exchange Accounts receivables, accounts payables, and inventory at optimum level.	The study had found a negative relationship of CCC with profitability.
12	(Uyar, 2009) and (Marsap, 2015)	CCC period and its impact on various factors	Medium and small-sized companies.	Firm sizes have different CCC length An aggressive working capital policy has an impact on leverage, investment in fixed assets, and return.
13	(Ali, S., 2011)	The efficiency of working capital in the Textile sector of Pakistan	The variables were used CCC, operating cycle, and working capital. ROA, economic value-added, ROE, and profit margin on sales were used.	Longer CCC is profitable for the textile sector.
14	(Chowdhury and Amin, 2007) and (Abdul Raheman, Abdul Qayyum, Talat Afza, 2011)	Performance of firm is dependent on working capital	Inadequate or Excessive working capital.	Inefficient management of working capital leads to reduce profit and leads to the financial crisis.
15	(Nobanee, 2009)	Relationship of CCC in US firms	CCC Operating income Customers	Shorter CCC could harm the company's operations due to decreased number of customers and its profitability.
16	(Chiou and Cheng, 2006) and (Abbas, 2010)	Working capital management and other factors of firms	Industry effect Operating cash flows Firm performance Fixed assets cost Production cost Growth opportunity	Found inverse relation of liquidity with working capital. No conclusion was achieved for other variables of the firms

			Size of firm	with the firm's performance.
17	(Deloof, 2003)	CCC of 1009 large Belgian Non-financial firms	Working capital Profitability	A negative relationship exists between gross operating income and CCC. Shorter CCC has increased profitability.
18	(Chatterjee S, 2010)	Relationship between working capital management and profitability.	Receivable Payables Stocks CCC Firm size	Early conversion of cash is reinvested able in the business and creates more profits. Large firm size has a positive relationship of working capital with profitability. High level of debts encountered towards non-success of financial performance.
19	(Alipour, M., 2011)	Relationship of CCC with the profitability of Iranian companies	Receivable period Payables period Stocks holding period CCC	There was a significant negative relationship between CCC and the profitability of firms.

All the above research work gave a solid background and idea regarding the cash conversion cycle and its components like accounts receivables days, accounts payable days, and inventory holding period. The literature evidence that there is a negative relationship of cash conversion cycle period with the firm's profitability.

Conceptual Framework

Cash Conversion Cycle

Profitability

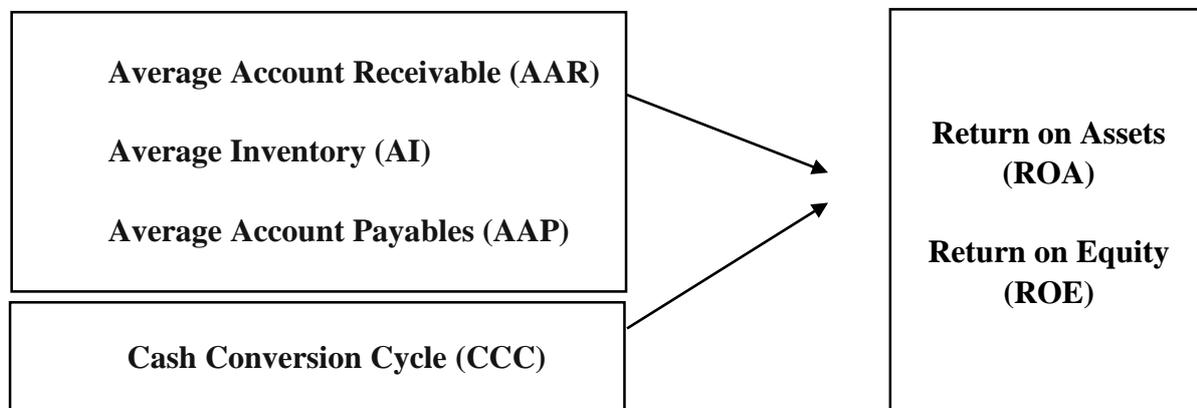


Figure 1: Conceptual Framework of the study

Methodology

Cash conversion cycle drifts on financial performance of food and personal care product companies listed at Pakistan stock exchange (PSX)



Research Design

The research objective is to find out whether the cash conversion cycle has any significant impact on the financial performance of the companies or not from the perspective of the Food and Personal Care Product industry in Pakistan. The research is centric towards quantitative analysis of financial data of companies related to this sector. The target population of this research is all the companies associated with the sector from the period covering from 2011 to 2015. There are 21 listed companies in Food and Personal Care Product sector listed on Pakistan Stock Exchange. The data is secondary data and it has been collected from the companies' official publication of annual statements. Descriptive analysis, Pearson correlation analysis, and regression in this research. In the analysis, two methods are used. First is correlation which has compared data of cash conversion cycle days with the dependent variable financial profitability. The variables like receivables, payables, and inventory holding days are also compared with the profitability of the company. Second, multivariate linear regression is applied for the testing of hypotheses.

Operationalization of Variables

Table 1: Summary of Operationalization of Variables

Variables	Formula	Abbreviation
Average Collection Period	Account Receivables/Net Sales \times 365 days	(ACP)
Inventory Turnover Period	Inventory/Cost of Goods Sold \times 365 days	(ITP)
Average Payment Period	Account Payables/Purchases \times 365 days	(APP)
Cash Conversion Cycle	ACP + ITP – APP	(CCC)
Return on Assets	Net profit after taxes / Total Assets	(ROA)
Return on Equity	Net profit after taxes / Shareholders' equity	(ROE)

Regression Equations (Models)

Model – 1: ROA

$$ROA = f(AR, AI, AP)$$

$$ROA = f(CCC)$$

$$ROA_{it} = \alpha_0 + \alpha_1 AAR_{it} + \alpha_2 AI_{it} + \alpha_3 AAP_{it} + e_{it} \text{----- (1)}$$

$$ROA_{it} = \alpha_0 + \alpha_1 CCC_{it} + \varepsilon_{it} \text{----- (2)}$$

Model – 2: ROE

$$ROE = f(AR, AI, AP)$$

$$ROE = f(CCC)$$

$$ROE_{it} = \beta_0 + \beta_1 AAR_{it} + \beta_2 AI_{it} + \beta_3 AAP_{it} + \Theta_{it} \text{----- (3)}$$

$$ROE_{it} = \beta_0 + \beta_1 CCC_{it} + \epsilon_{it} \text{----- (4)}$$

The above four equations are used to find out the relationship between cash conversion cycle variables with profitability.

Research Hypothesis

For Model – 1:

Hypothesis 1 = Company with a lower AAR could have a higher ROA.

Hypothesis 2 = Companies with lower AI could have higher ROA.

Hypothesis 3 = Companies with higher AAP could have higher ROA.

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Hypothesis 4 = Companies with lower CCC could have higher ROA.

For Model – 2:

Hypothesis 5 = Companies with lesser AAR could have higher ROE.

Hypothesis 6 = Companies with lesser AI could have higher ROE.

Hypothesis 7 = Companies with greater AAP could have higher ROE.

Hypothesis 8 = Companies with lesser CCC could have higher ROE.

Data Analysis and Results**Information about collected Data**

The secondary data is used in this research work. Five years of data from 2011-15 for 14 companies out of 21 were available for Food and Personal Care Products sector. Two companies are reflecting their financial results in the group financial statements which are Fauji Foods Limited Non-Voting and Treet Corporation Limited (Pref Term Certificates). The financial statements of one company are not available which is Nirala MSR Foods Limited. Two companies have only two years of latest financial statements while another two companies have only three years latest financial statements so these are not considered in the study. So a total of seven (07) companies have been excluded and retained only 14 companies in this research work.

Descriptive Statistics**Table 2: Descriptive Statistics**

Descripti on	AAR (Rs.) (billi ons)	AI (Rs.) (billi ons)	AAP (Rs.) (billi ons)	ACP (Days)	ITP (Days)	APP (Days)	CCC (Days)	ROA (%)	ROE (%)
Mean	0.213	1.6	1.4	26.83	93.06	70.47	49.42	0.08	0.21
Median	0.143	0.71	0.584	13.85	88.19	64.83	38.83	0.07	0.16
Maximum	0.973	9.6	15.5	225.73	213.69	218.27	299.25	0.43	2.23
Minimum	0.027	0.00	0.001	0.78	18.46	5.05	-108.56	-0.22	-1.04
Std. Dev.	0.211	2.2	2.7	47.48	46.82	41.71	83.82	0.11	0.45
Jarque- Bera	39.74	93.8	605.1	381.44	6.22	28.63	14.48	22.30	133.7
Probabilit y	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00

Table 3: Panel Unit Root Test

Variables	Method	Statistics	Probability	Conclusion
AAR	Levin, Lin & Chu t*	-8.82095	0.0000	Data is stationary at level or I(0).
AI	Levin, Lin & Chu t*	-21.8294	0.0000	Data is stationary at level or I(0).
AAP	Levin, Lin & Chu t*	-4.03757	0.0000	Data is stationary at 1 st Difference or I(1)



Variable	Method	Statistic	P-value	Notes
CCC	Levin, Lin & Chu t*	-6.17542	0.0000	and D(AAP) series need to be created. Data is stationary at level or I(0).
ROA	Levin, Lin & Chu t*	-6.88637	0.0000	Data is stationary at level or I(0).
ROE	Levin, Lin & Chu t*	-16.8588	0.0000	Data is stationary at level or I(0).

The above table shows Unit Root Test results. The unit root test has conducted before the regression analysis. This test is conducted to check either the data is stationary or not. If stationary nature is present in data then it will produce inappropriate results. To avoid this situation, the Panel Unit Root Test has been conducted for the variables. Data of AAR, AI, CCC, ROA, and ROE are stationary at levels while AAP is stationary at first difference or D(AAP). So, D(AAP) series need to be generated.

Fixed Effect and Random Effects of Model

Fixed Effects

Table 4: Dependent Variable ROA compute for Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.077385	0.055807	1.386639	0.1734
AAR	-9.13E-11	1.01E-10	-0.904741	0.3712
AI	1.47E-11	3.82E-11	0.384821	0.7025
DAAP	1.05E-11	3.57E-11	0.294185	0.7702

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.815257	Mean dependent var	0.083929
Adjusted R-squared	0.739465	S.D. dependent var	0.110990
S.E. of regression	0.056652	Akaike info criterion	-2.658414
Sum squared resid	0.125170	Schwarz criterion	-2.043575
Log-likelihood	91.43559	Hannan-Quinn criteria.	-2.420042
F-statistic	10.75650	Durbin-Watson stat	2.193573
Prob(F-statistic)	0.000000		

Table No. 5: Dependent Variable ROE compute for Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.231681	0.256867	0.901947	0.3726
AAR	-2.77E-10	4.64E-10	-0.596313	0.5544
AI	1.59E-11	1.76E-10	0.090259	0.9285



DAAP	6.83E-11	1.64E-10	0.415885	0.6798
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Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.785532	Mean dependent var	0.212321
Adjusted R-squared	0.697546	S.D. dependent var	0.474138
S.E. of regression	0.260756	Akaike info criterion	0.394893
Sum squared resid	2.651764	Schwarz criterion	1.009732
Log-likelihood	5.942990	Hannan-Quinn criteria.	0.633265
F-statistic	8.927849	Durbin-Watson stat	1.964545
Prob(F-statistic)	0.000000		

4.4.2 Random Effect

Table 6: Dependent Variable ROA compute for Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.080797	0.035507	2.275519	0.0270
AAR	-3.26E-11	8.44E-11	-0.386440	0.7007
AI	2.26E-12	1.53E-11	0.147186	0.8836
DAAP	2.68E-11	3.10E-11	0.865087	0.3910

Effects Specification

	S.D.	Rho
Cross-section random	0.099101	0.7537
Idiosyncratic random	0.056652	0.2463

Weighted Statistics

R-squared	0.031705	Mean dependent var	0.023066
Adjusted R-squared	-0.024158	S.D. dependent var	0.055757
S.E. of regression	0.056426	Sum squared resid	0.165564
F-statistic	0.567545	Durbin-Watson stat	1.694246
Prob(F-statistic)	0.638872		

Unweighted Statistics

R-squared	0.050585	Mean dependent var	0.083929
Sum squared resid	0.643262	Durbin-Watson stat	0.436069

Table 7. Dependent variable ROA - Hausman Test



Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.585870	3	0.4600

Table 8: Dependent Variable ROE compute for Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.173143	0.149132	1.161002	0.2509
AAR	-8.09E-11	3.77E-10	-0.214761	0.8308
AI	1.54E-11	6.58E-11	0.233251	0.8165
DAAP	1.25E-10	1.40E-10	0.892539	0.3762
Effects Specification				
Cross-section random			0.406934	0.7089
Idiosyncratic random			0.260756	0.2911
Weighted Statistics				
R-squared	0.036466	Mean dependent var		0.064782
Adjusted R-squared	-0.019122	S.D. dependent var		0.256050
S.E. of regression	0.258487	Sum squared resid		3.474400
F-statistic	0.655999	Durbin-Watson stat		1.530062
Prob(F-statistic)	0.582841			
Unweighted Statistics				
R-squared	0.089865	Mean dependent var		0.212321
Sum squared resid	11.25327	Durbin-Watson stat		0.472400

Table No. 9: Dependent Variable ROE - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.098676	3	0.5522

The fixed effect and random effect of models have been tabulated above. To confirm the fixed or random effect of the model the Hausman Test has been conducted for the dependent variable ROA and ROE. The probability value of chi-square statistics is 46% in the case of the dependent variable ROA as an outcome of the Hausman Test. The probability value of the chi-square statistic is 55% in the case of the dependent variable ROE as an outcome of the Hausman Test. The probability value is much higher than the significant level of 5%. The null hypothesis in both cases is accepted. The fixed effect model is not appropriate. Therefore, the random effect model is appropriate.

Panel Regression Model results

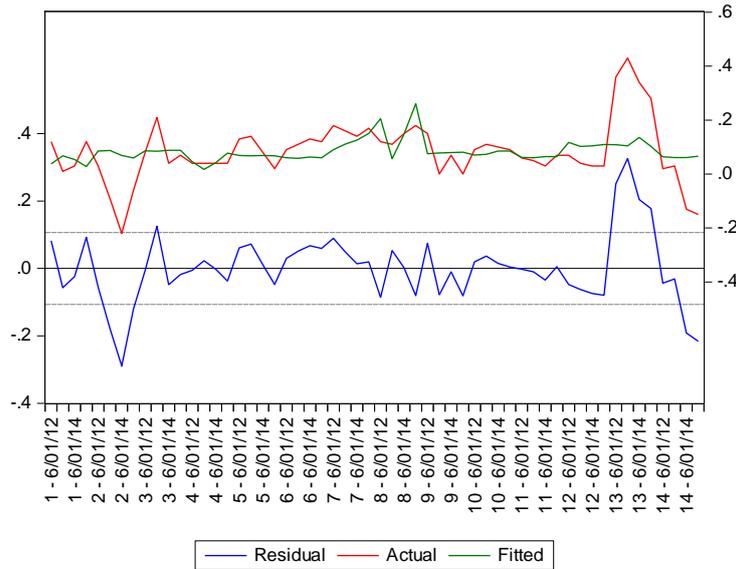


Figure 2: Plot representing the actual, fitted, and residual (Dependent variable is ROA)

Table 10: Panel Regression Model for Dependent Variable ROA for CCC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.097639	0.014441	6.761034	0.0000
CCC	-0.000296	0.000149	-1.986001	0.0511
R-squared	0.054823	Mean dependent var		0.083000
Adjusted R-squared	0.040923	S.D. dependent var		0.106095
S.E. of regression	0.103901	Akaike info criterion		-1.662598
Sum squared resid	0.734091	Schwarz criterion		-1.598355
Log-likelihood	60.19094	Hannan-Quinn criteria.		-1.637080
F-statistic	3.944201	Durbin-Watson stat		0.451530
Prob(F-statistic)	0.051066			

The result is reconfirmed by comparing ROA with the CCC. The value of independent variable CCC is a little bit higher from the significant level and it is 5.1% which is 0.1% higher than the set significant level of 5%. In this case, the null hypothesis can be accepted and it gives us the result that as the cash conversion cycle is decreasing then the return on assets is also decreasing. The overall significance Prob (F-Statistic) or ANOVA is 5.1% which is greater than the significant level so accepting the null hypothesis. The value of R-squared is 5.4% that is explaining the fitness of the regression line. Regression results give us the result of 5.4% of the variance of the independent variable in explaining the dependent variable ROA.

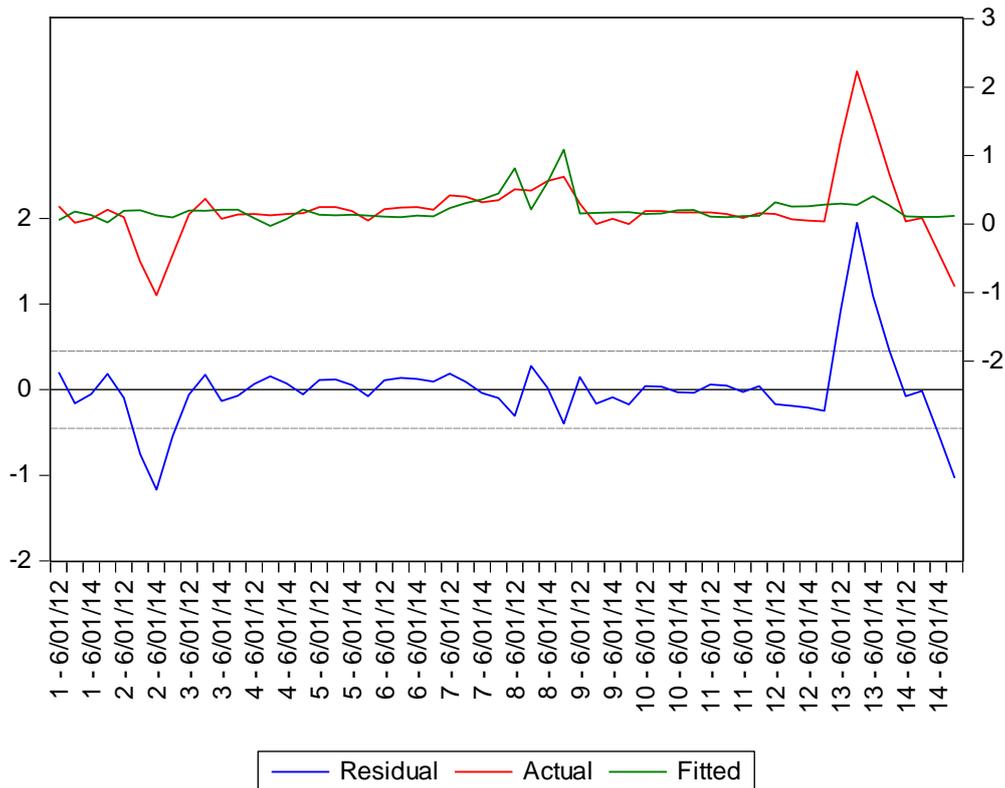


Figure 3: Plot representing the actual, fitted, and residual (Dependent variable is ROE)

Table 11: Panel Regression Model for Dependent Variable ROE for CCC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.282435	0.061404	4.599606	0.0000
CCC	-0.001400	0.000635	-2.206267	0.0307
R-squared	0.066801	Mean dependent var		0.213286
Adjusted R-squared	0.053077	S.D. dependent var		0.453993
S.E. of regression	0.441780	Akaike info criterion		1.232146
Sum squared resid	13.27153	Schwarz criterion		1.296389
Log-likelihood	-41.12511	Hannan-Quinn criteria.		1.257664
F-statistic	4.867612	Durbin-Watson stat		0.482119
Prob(F-statistic)	0.030747			

The result has been reconfirmed by comparing the CCC with ROE. The probability value of independent variable CCC is under the range of significant level and it is 3.1% which is lesser than the 5% set significance level. The hypothesis is accepted and gives us the result that if the cash conversion cycle will be shorter then the return on equity will be increased. The overall significance prob(F-Statistic) is 3.1% which is accepting the alternative hypothesis. The result indicating that as the cash conversion cycle is shortening the return on equity will be increased.

Conclusion



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As theory suggest “Profitability varies inversely with liquidity” (James C. Horne J. W., 2008). This study encompasses to test that either the outcome is the same as the theory suggested or different for the Food and Personal Care sector of PSX. The study has been designed to capture the impact of the cash conversion cycle on profitability for the period of five years from 2011 to 2015. Fourteen (14) have been finalized out of 21 companies based on their available data to perform a panel data analysis. The study has also tested the period of the cash conversion cycle concerning financial performance. The research hypothesis is based on the relationship between cash conversion cycle variables like average receivables, average inventory and average accounts payables along with the average collection period, inventory turnover period, and average payment period. The total cash conversion cycle is then compared with the return on assets and return on shareholder’s equity for evaluating the financial performance.

The result concluded that out of four hypotheses of dependent variable ROA one is accepted. The average payables have shown the same relationship as these were designed while the average receivable, average inventory, and cash conversion cycle hypothesis have been rejected. The study proved that if AAP will decrease then the ROA will increase and supports the is theory. If the AAR, AI, and CCC will decrease then the ROA will also decrease and that is why the hypothesis related to these independent variables are rejected. The developed models have reconfirmed been by comparing CCC as independent an variable with ROA and ROE. The result revealed that conversion of cash cycle (CCC) has a positive real relationship with ROA which is aligned with the result of Habeeb Mohamed Nijam (2016) but negative relnegativelyh company’s performances if measured by return on shareholder’s equity (ROE) aligned with the results of Dr. Asim Rafiq (2019), Ahmad Chand (2019) and Maryam Pakdel (2018). Out of four hypothesis rypothesesROE, two are rejected related with AAR and to While the other two hypotheses are accepted related to average accounts payables (AAP) and cash conversion cycle (CCC). The study finally concluded on the basis based oned that CCC has a negative relationship with the return of shareholders’ equity. Hence the test concluded the same as theory suggests “Prosuggestssity varies inversely with liquidity” (James C. Horne J. W., 2008).

Recommendations and Future Research Directions

Effective management of cash (liquidity) is played important role in the strategic planning of the company. An efficientEfficiented to be maintained to cater the current to assets and liabilities requirement. Through efficient planning of liquidity, the cash conversion cycle can be managed at optimum level and it will not only produce liquidity but also it will count towards the improved of improved performance. As this sector is the manufacturing sector and it requires rapid cash flows for operating activities. If a company can deal with its area withiciently then it will be contributing to the economy and will be helpful help generator the economy.

This study proves that the accounts payables period is very helpful for the companies associated with this sector to manage a good cash coa version cycle. The companies are required to manage more efficiently their area of accounts receivable and inventory to en. This effort will also be helpful help the shortennversion cycle and it will be count towards more liquidity. A limited number of research has been done on this sector related to liquidity or cash conversion cycle. More intense research work is required to evaluate this sector by considering other proxies of liquidity. There are some other factors associated with the accounts receivable and inventory that have then been considered in this research, researcher researchers evaluate this area in their research by adding those variables.



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