

Effects of Working Capital Management of Procter & Gamble on Its Profitability

Dr. Sadaf Mustafa

Assistant Professor, Department of Commerce, UoK, Karachi, Pakistan

Samreen Hena

Department of Commerce, UoK, Karachi, Pakistan

Ammad Zafar

Department of Public Administration, UoK, Karachi, Pakistan

Abstract

The study reveals profitability of a firm is highly associated with the working capital management especially in manufacturing firms where a big portion of assets consist on current assets and debts are considered more significant. It is very important to identify those factors that are responsible for quick conversion of a firm's assets into cash and frequently recycle it. The main purpose of the firms is to maximize the value of shareholders and profitability of firm that rely on the effective planning & control of current assets and current liabilities. To study these relationships, Procter & Gamble has been selected and a twenty-year (1997-2016) scenario has discussed with the help of secondary data i.e. financial statements. Return on Equity (ROE) is taken as proxy of profitability by considering dependent variable whereas some variables of working capital management are included as independent variables to find out the relation between working capital and profitability. The study analyzes the relation between working capital management on profitability. E-views a statistical software has been used and Least Square Regression method has applied to analyze the association of variables. The result shows that ROE is positively affected by debt ratio & cash conversion cycle and adversely influenced by average collection period. Furthermore, profitability has positive relation with current ratio & negative relation with inventory turnover in days and average payment period.

Keywords: Working Capital Management, Profitability, Return on Equity, Average Collection Period, Cash Conversion Cycle, Debts Ratio

1. Introduction

Formation and daily operations of business are required funds and other assets, without assets business activities could not be performed. There is a significant role of both current and fixed assets in the business, when we purchase fixed assets to manufacture or facilitate the business activities a big portion of cash is blocked while the current assets especially the cash is the heartbeat of a firm. To run daily activities, a huge amount of cash is required. Simply put, working capital concerns the share of capital that is required to finance short-term investment or current assets in cash, marketable securities, accounts receivable and inventory. The funds thus invested in short term assets to continue & rapidly turn in more cash and this cash flow again in exchange for other short-term assets. Therefore, it is also called as revolving capital or short-term working capital or capital. Working capital management is important for many reasons. The current assets of a typical manufacturing company are half of their balance sheet total. Working capital requires continuous monitoring (Ukaegbu, 2013). The risk of company, share price and return are affected by working capital (Makori, 2013), there is an unavoidable link between revenue growth and the number of current assets. The inefficiency of the management of working capital can direct to the bankruptcy of the company if it is not able to fulfill its obligation. It is somehow a complex situation where a firm has either sufficient or deficient cash. Mun and Jang (2015) described that a firm has more cash and cash equivalents, it will be their failures as they would have been invested the cash somewhere to earn profits. In other situation if a firm is lacking cash, it will be again a failure as they could not manage the requirement. It seems the cash management or working capital management plays a vital role in the performance of a firm.

The basic purpose of working capital management is to make sure the firm at a position where it fulfills the requirement of cash for its operating expenses and manages the payment of short term liabilities. Negligence in the management of working capital may results in the shape of liquidity crisis and fallen profitability therefore it influences the firm performance to carry on as a going concern as defined by Raheman and Nasr (2007). Three approaches are used by a firm including conservative, aggressive and moderate. In conservative approach a firm typically consumes long term sources of funding for its daily activities and short term sources in uncertainties. In aggressive approach, there is a small number of current assets for example cash, inventories and trade receivable in proportion of total assets are used which may create liquidity as elaborated by Horne and Wachowicz (2008). Where as in moderate approach there is a clear difference between changing current assets and fixed assets

which elaborate that short-term sources of funding might be consumed to invest changing current assets and long term sources of funding might be consumed to invest fixed assets.

Therefore, the nature of business must be considered in the policy making of working capital management as the requirement varies from one business to another. For example, manufacturing business requires huge investment in spare parts and components whereas the food retailer requires huge inventories to resell however receivables business might be low. On the other hand, a firm may offer sale on account to its customer to increase the sales which leads to increased stock turnover while there may be a situation where receivables will not settle for a long time and an abruption in cash flow may seems. But having increased sales a business needs to finance its daily activities by credit transactions which will increase its account payable. A huge inventory let the firm not to run out of stock but this will increase the cost of storage and may be some inventories spoiled or stolen. Except the firm blocked inventories in term of huge stock, a firm pays its debts in long time hence there is a significance of efficient and effective monitoring to maintain account receivable and account payable.

In this framework working capital management strategy plays a pivotal role to maximize the value of shareholders which basis on the symphony level of current and short-term funding. In uncertain situation, a firm that manages its working capital efficiently will be able to cope up the adverse situation. Ukaegbu (2013) defined that it is only possible when a firm strictly supervises its inventories, account receivable and account payable. However, the purpose of this study is to elaborate the impact of variables ratios of working capital on net profit of the firm. For this research, P & G has been selected and a trend from 1997 to 2016 has studied. P & G is a leading brand throughout the world in 62 countries that deals on 10 product lines with 65 brands in which 21 brands have annual sales of \$1 billion to about \$10 billion and 11 brands have \$500 million to \$1 billion annual sales. It is important to find out the effects of working capital management on the profitability of a leading brands company. We use financial statements as secondary data and calculate some ratios of working capital management to find out relation which will be backed by review of literature of previous research work.

2. Literature Review

Working capital is considered an essential instrument for the growth & profitability of corporations. Insufficient working capital can create trouble for daily activities of the firm (Horne & Wachowicz, 2008). Working capital is known as net working capital which can be elaborate with the deduction of current assets & current liabilities. The main purpose of working capital management relates with the decision of short term loan & investment of corporation (Sharma & Kumar, 2011). Working capital is very important for the company especially for manufacturing, trading and distribution companies as profitability & liquidity are highly influenced by working capital management because they are half of net assets (Raheman & Nasr, 2007). Positive trend of profitability could not help if the working capital is not enough and it can take the firm towards bankruptcy (Kargar & Bluementhal, 1994). Maybe it is possible because high level of current assets can create low average return on investment firm (Raheman & Nasr, 2007).

The best work of working capital management is to remove the risks to be defaulter on short term liability & on other side is to reduce the variation in extreme position of working capital (Eljelly, 2004). Before 1980 and in 1980's the working capital was separated in cash account payables and account receivables, they were directed by different managers in different positions (Sartoris & Hill, 1983). According to Sartoris and Hill (1983) an integrated approach was required and the separation should be merged together, the result of this argue create an integrated management of account receivables, inventories & account payables which is known as Working capital management (WCM) and now they will describe separately. If a firm is providing short term loans to its customers, it is known as account receivables. It is important to provide such credit terms to customers to increase the sales. After the increment in account receivables the cash would not be available hence it is known as opportunity costs. Filbeck and Krueger (2005) elaborated the importance of working capital management in their research. They determine the essential elements of working capital management policies of 32 non- financial companies in US. Their study describes the prominent differences of working capital that currently follows among various companies over time. Furthermore, the practices of working capital considerably vary among companies with the reference of time. Long et al. (1993) and Maxwell et al. (1998) studied the same phenomena and same results in their research.

Net trade cycle or (NTC) or cash conversion cycle (CCC) presented as a percentage of sales is described by Shin and Soenen (1998). They studied 58,985 firms from the period of 1975 to 1994 and used correlation & regression to find out the relation between NTC & profitability. They discover an intensive relation between NTC and profitability and recommended the firms to decrease the NTC to increase value of shareholder.

Gill et al. (2010) elaborated the association between working capital management and profitability in 88 US firms for the period of 2005 to 2007. With the help of operating profit, they calculated the profitability to check the effect of working capital management. They discovered a strong relation between CCC and profitability via generalized least square regression method. They suggested the managers to lessen the credit period provided to their customers to enhance profitability while their sample was not enough. The reason behind it is to make sure

firms that they have enough cash to run their daily activities. The relationship of working capital management and corporate profitability is studied by Mohammad (2011) for the period of 2001 to 2006 in Iranian companies. He took CCC's ratios as independent variables and gross operating profit as dependent variable & discovered a negative association between profitability & average collection period. Similarly, a strong relationship is found between profitability & inventory turnover. He suggested companies to reduce CCC to enhance profitability hence extent the CCC results in better position of companies to run daily activities.

57 Jordanian companies' profitability and value were examined by Mona (2012) for the period of 2001 to 2009 with the effect of the policies of aggressive & conservative working policies. Level of current asset with the contrast to total assets in conservative policy was 0.49 in the ratio of regression methods of estimation which shows the positive influence on the profitability & value. While the companies that following aggressive policy that focuses on long term investment showed a negative influence on profitability & value. Remember that their sample size was relatively low. The same phenomena were investigated by Afza and Nazir (2008), studied the 17 industrial groups for the period of 1998 to 2003 with a large sample size. They applied cross sectional data of 263 public limited companies that are registered on the Karachi Stock Exchange (KSE) which is now known as Pakistan Stock Exchange. Strong differences of working capital investment & financial policies were discovered among various companies by applying ANOVA & Least Square Deviation (LSD). The irrelevant differentiations were extraordinary constant for the six years' period; it is shown by the rank order correlation. Furthermore, ANOVA showed negative association of profitability that calculated by the aggressive working capital investment and financing policies.

The recommendations of the studies of Mona (2012) & Afza and Nazir (2008) conclude that liquidity position should be strictly monitored by the firms if fail in doing so a firm could not meet its short-term obligations as the cash will not be enough and this may lead to bankruptcy in long run. Efficient cash management is required for the firm to be solvent & avoided troubles.

Uyar (2009) examined the corporate liquidity in the perspective that it should be stagnant or vibrant. Typical ratios of working capital & liquidity can be study for the stagnant approach for a period. While for the vibrant approach, firm's current liquidity position can be studied. Hence the days of CCC are the most prominent result of vibrant approach of cash management. Furthermore, Moss and Stine (1993) elaborated that CCC affected by the size of the firm; the grater the firm, the shorter the CCC.

Mosa et al. (2012) investigated the relationship between working capital management & the profitability of 33 food firms of Tehran for the period 2006 to 2011 by setting size of the firm (log sales as a proxy for the size of the firm) & debt ratios as control variables and used some other variables of working capital. They also included medium term debt payment & concluded that profitability will reduce if the collection cycle, inventory turnover, debt payment period & CCC increase. Therefore, managers are required to reduce these variables so that they can improve value of shareholders.

Effect of working capital management on profitability for duration of seven years (2006-2012) in Pakistani small medium enterprises (SMEs) is examined by Gul, Khan, Rehman, Khan, Khan and Khan (2013) with the help of regression analysis. SMEDA, Karachi Stock Exchange, Bloom burgee, company itself, tax offices, and business week were the sources of data for the study. Independent variables consist on Cash Conversion Cycle (CCC), Inventory turnover, Number of days of Account Receivable, and Number of Days of Account Payable (APP) while Firm Size, Debit Ratio (DR) and Growth were also considered in the research whereas a proxy of profitability Return on Assets was taken as dependent variable. The research reveals that there is an adverse relation of Cash Conversion Cycle (CCC), Inventory turnover, Number of days of Account Receivable and Debt Ratio with profitability whereas Number of Days of Account Payable, Firm's Size and Growth positively respond for profitability.

Akoto, Awunyo-Vitor and Angmor (2013) also investigated the association of working capital management & profitability with the help of panel data methodology and regression analysis by taking the data from annual reports of 13 listed manufacturing firms in Ghana for the duration of 2005-2009. The result showed that Profitability was positively affected by Cash Conversion Cycle, Current Asset Ratio, Size, and Current Asset Turnover while inversely affected by Days of Account Receivable. Furthermore, managers are recommended to lessen their Account Receivable to the extent of 30 days to enhance value of shareholders.

Makori (2013) found the same results when he investigated the impact of working capital & profitability of 5 manufacturing & construction firms listed on the Nairobi Security Exchange (NSE) by using Pearson's Correlation and Ordinary Least Square regression. The result showed adverse association of profitability & number of days of account receivable and cash conversion cycle while a significant positive association between profitability & number of days of account payable and inventory. He further elaborated that financial leverage, sales growth, current ratio and firm's size also influenced the profitability of firm. Increment in firm's inventories & reduction in days of account receivable were recommended to managers to improve the value of shareholders.

Furthermore, Ukaegbu (2013) also discussed the role of working capital to enhance profitability for the

duration of 2005-2009 by applying multiple regression analysis. Manufacturing firms of Egypt, Kenya, Nigeria and South Africa were selected and the financial statements were taken from the Orbis database. He found an adverse association of profitability & Cash conversion cycle that explained the increment of cash conversion cycle leads reduction in profitability. He recommended managers to reduce days of account receivables, make late payments to suppliers & sale inventories as soon as possible to increase the value of shareholders.

Glaxo Smith Kline pharmaceutical company that listed in Karachi Stock Exchange was selected by Agha (2014) to analyze the association between working capital & profitability for the duration of 1996-2011. Variables of account receivable turnover, credit turnover, inventory turnover, current ratio and return on assets have been chosen to check the relationship. The result suggested managers to decrease inventory turnover, ratio of account receivables and credit turnover ratio to increase the profitability of firm, furthermore the study could not find any impact of current ratio on profitability.

The relation of working capital management & profitability in recession period of 2007-2008 was discussed by Enqvist, Graham and Nikkinen (2014) for the duration of 18 years (1990-2008). They conducted a sample of 1136 firms that are registered on Nasdaq OMX Helsinki Stock Exchange by taking financial statements from ETLA (A Research Institute of Finnish Economy) and applied regression model. The result shows the significant impact of recession on working capital & profitability rather in boom economy & inventories turnover in days and account receivables conversion period are enhanced in slow economy. They recommended that working capital management has vital role that's why it should be considered in financial planning.

Mun and Jang (2015) examined the association of restaurant firm's working capital and profitability by using 298 firms' panel data for the period of 1963-2012. They also study the effects of cash levels in restaurant firms on profitability, the result reveals a U shape association of working capital & profitability which means there is a prominent presence of working capital and cash level influences the firms' working capital management. Furthermore, the strategy of working capital management should be effective & efficient for the profitability.

Umobong (2015) studied the relationship between liquidity & profitability ratios on growth of profits in pharmaceutical firms in Nigeria by fixed model method. Eight ratios including current ratio, net working capital, acid test ratio, return on assets, return on capital, return on equity, gross profit ratio and net profit ratio were set as independent variables whereas growth of profit was considered dependent variable and they are regressed to find the result. The study reveals that there is a strong relationship & effects of all these variables on the growth of profits, the lower the liquidity the lower the profitability and due to low profitability, the firms may be lacking cash which can create trouble for firms to manage daily activities.

3. Research Methodology

The purpose of this study is to elaborate the effects of working capital management of Procter & Gamble on its profitability. Therefore, secondary data has been used in terms of financial statements, presented in the annual reports by P & G. Twenty years (1997-2016) of duration has covered in this study however two main events must be considered because of significant effects; In 2005 P & G acquired Gillette and emerged as largest consumer goods manufacturer with industry leading top & bottom line growth, the change influenced its financial performance & improved its balance sheet in preceding year. The second consideration point is the economy slowdown of 2007- 2008 however it did not affect overall performance of P & G.

3.1. Variables

Profitability of P & G has been taken as dependent variable whereas average collection period (ACP), cash conversion cycle (CCC) and debts ratio (DR) have selected as independent variables and average payment period (APP) & inventory turnover in days (ITID) have computed for the calculation of cash conversion cycle whereas current ratio (CR) is also computed to know its relation. Return on Equity (ROE) has taken as proxy of profitability because it shows a performance of firm in better way.

3.2. Research Hypotheses

H₁: There is a negative significant relation between ROE and ACP.

H₂: There is a positive significant relation between ROE and CCC.

H₃: There is a positive significant relation between ROE and DR.

3.3. Model

Based on theoretical framework, following fitted model has been driven to describe the association of ROE and other variables.

$$ROE = \beta_0 + \beta_1 ACP + \beta_2 CCC + \beta_3 DR + \varepsilon$$

Where ROE is return on equity, β_0 is the constant value in the model, β_1 ACP is average collection period, β_2 CCC is cash conversion cycle, β_3 DR is debt ratio and ε is the error term in the model. All variables of

working capital management have not included in the model as they are symmetrical in nature and their presence can lead to repetition of variables. However, their association is defined through correlation of variables (Table-II).

4. Statistical Analysis

Least Square Regression method has been applied with the help of E-views statistics software to find the relation between profitability of P & G and variables of its working capital management. Before regression a descriptive analysis has been evaluated to know the behavior of variables however correlation of variables has been checked through E-views.

4.1 Table-II: Correlation of Variables

1.1. Statistics	1.2. ROE	1.3. ACP	1.4. APP	1.5. CCC	1.6. CR	1.7. DR	1.8. ITID
1.9. Mean	1.10. 0.344376	1.11. 27.66127	1.12. 57.39019	1.13. 31.92749	1.14. 0.938497	1.15. 0.581718	1.16. 61.65641
1.17. Median	1.18. 0.249854	1.19. 27.90200	1.20. 55.25887	1.21. 41.44003	1.22. 0.920164	1.23. 0.553296	1.24. 60.05319
1.25. Maximum	1.26. 0.599016	1.27. 31.63849	1.28. 103.4254	1.29. 52.07078	1.30. 1.231591	1.31. 0.699725	1.32. 78.24151
1.33. Minimum	1.34. 0.186994	1.35. 23.26020	1.36. 34.26726	1.37. -26.67566	1.38. 0.708877	1.39. 0.506624	1.40. 51.20666
1.41. Std. dev.	1.42. 0.144198	1.43. 2.140159	1.44. 18.13248	1.45. 21.17240	1.46. 0.160862	1.47. 0.069028	1.48. 6.273697
1.49. Skewness	1.50. 0.396113	1.51. -0.042184	1.52. 0.676283	1.53. -1.288136	1.54. 0.398835	1.55. 0.380379	1.56. 0.689781
1.57. Kurtosis	1.58. 1.440339	1.59. 2.739991	1.60. 3.031838	1.61. 3.956187	1.62. 1.914418	1.63. 1.582850	1.64. 3.713110
1.65. Jarque-Bera	1.66. 2.550138	1.67. 0.062269	1.68. 1.525372	1.69. 6.292889	1.70. 1.512304	1.71. 2.155890	1.72. 2.009764
1.73. Prob	1.74. 0.279412	1.75. 0.969345	1.76. 0.466412	1.77. 0.043005	1.78. 0.469470	1.79. 0.340294	1.80. 0.366088
1.81.	1.82.	1.83.	1.84.	1.85.	1.86.	1.87.	1.88.
1.89. Observation	1.90. 20	1.91. 20	1.92. 20	1.93. 20	1.94. 20	1.95. 20	1.96. 20

Descriptive statistics shows that 20 observations are analysed and found positive mean of all variables which are return on equity 0.344376, average collection period 27.66127 days, average payable period 57.39019 days, cash conversion cycle 31.92749 days, current ratio 0.938497, debt ratio 0.581718 and inventory turnover in days 61.65641. The average payable period has highest maximum value 103.4254 & return on equity has lowest maximum value 0.599016 and inventory turnover in days has highest minimum value 51.2066 & cash conversion cycle has lowest minimum value -26.67566. The highest standard deviation is of CCC; 21.17 % and ACP has lowest standard deviation that is 2.14% whereas S.D of other variables are ROE 14.4%, APP 18.13%, CR 16%, DR 6.9% and ITID 6.27%; most variables have positive value in analysis of descriptive statistics. However, Cash conversion cycle, inventory turnover in days and average payment period have Kurtosis more than 3 whereas p-value of Jarque-Bera shows the normal distribution of all variables except cash conversion cycle that is less than 5% i.e. 4.3%.

4.2 Table-II: Correlation of Variables

Variables	ROE	ACP	APP	CCC	CR	DR	ITID
ROE	1.00000	-0.019394	0.722979	0.593782	0.200847	0.822880	-0.079076
ACP	-0.019394	1.00000	-0.322760	0.603098	-0.256788	-0.057371	0.761341
APP	-0.722979	-0.322760	1.00000	-0.928182	-0.243379	-0.572235	-0.132075
CCC	0.593782	0.603098	-0.928182	1.00000	0.052346	0.427222	0.486385
CR	0.200847	-0.256788	-0.243379	0.052346	1.00000	0.239218	-0.4391169
DR	0.822880	-0.057371	-0.572235	0.427222	0.239218	1.00000	-0.192542
ITID	-0.079076	0.761341	-0.132075	0.486385	-0.4391169	-0.192542	1.00000

Correlation of variables shows the degree to which they are associated with each other. Above table shows that return on equity (ROE) is positively highly correlated with debts ratio (DR) 0.822880 and negatively highly with average collection period (ACP) -0.019394. ACP is highly positively related with inventory turnover in days (ITID) 0.761341 and highly negatively with ROE -0.019394. Average payment period (APP) is negatively correlated with all variables, highly negative with ITID -0.132075 with CCC -0.928182 minimum negatively. CCC is related highly positively with ACP 0.603098 and negatively with APP -0.928182. Current ratio(CR) is associated positively at maximum level with DR 0.239218 and on negatively maximum level with APP -0.243379. DR is positively highly related with ROE and negatively highly with ACP -0.057371. ITID is associated on positive maximum level with ACP and on negative maximum level with ROE -0.079076. However, the correlation shows that variables are interrelated with each other either positively and negatively that can create the autocorrelation in regression analysis that's why some interrelated variables of working capital

management have been dropped from the model.

4.3 Table-III: Least Square Regression Analysis

1.97. Variable	1.98. Coefficient	1.99. Std. Error	1.100. t-Statistics	1.101. Prob
1.102. Constant	1.103. 0.098861	1.104. 0.368220	1.105. 0.268484	1.106. 0.7918
1.107. Debt Ratio	1.108. 1.207261	1.109. 0.288959	1.110. 4.177972	1.111. 0.0007
1.112. Cash Conversion Cycle	1.113. 0.003624	1.114. 0.001179	1.115. 3.073693	1.116. 0.0073
1.117. Average Collection Period	1.118. -0.020696	1.119. 0.010564	1.120. -1.959114	1.121. 0.0678
1.122. R- Squared	1.123. 0.797486	1.124.	1.125.	1.126.
1.127. Adjusted R- Squared	1.128. 0.759515	1.129.	1.130.	1.131.
1.132. F-statistic	1.133. 21.00235	1.134.	1.135.	1.136. 0.000009
1.137.	1.138.	1.139.	1.140.	1.141.

The regression result shows that all the explanatory variables comprise of debt ratio, cash conversion cycle and average collection period are significant and affected return on equity. DR has a positive effect on ROE with the p-value of 0.0007 which is less than traditional level of significance 10%. CCC has also positively influences ROE with p-value of 0.0073 whereas ACP has negative relation with ROE having p-value of 0.0678. R-square is the coefficient of variance that shows the portion of reliability of dependent variable due to independent variables and the adjusted R-square justifies the size of observations. The result reveals that profitability of P & G is relates and changes 76% due to variables of working capital management. p-value of F-statistics is also significant.

5. Conclusion & Recommendation

Based on statistical analysis study reveals significant relationship between variables as below;

1. Debt ratio of P&G positively effects its profitability.
2. Cash conversion cycle positively influences profitability of P&G.
3. Average collection period of P&G negatively associated with profitability.
4. Average payment period and inventory turnover in days have inverse whereas current ratio has positive relation with the profitability of P&G during 1997 to 2016.

The main purpose of this study was to know the relation of Profitability of P & G and its working capital management. However, working capital management of P & G significantly effects profitability, therefore it is important to reduce the influence of the variables that are inversely associated so that an increasing profit trend can be obtained & the value of firm could be maximized with improved ROE. P & G is also required to improve its variables that are positively associated so that their effectiveness can be enhanced. There are some important phenomena that relates to cash conversion cycles. As from the table of correlation of variables it can be observed that cash conversion cycle is positively related to return of equity but all three elements of cash conversion cycle including average collection period, average payment period and inventory turnover in days are negatively associated with return on equity. Hence the relation shows the sensitivity and importance of these variables. Therefore, P & G must focus on the viability and mechanism on such variables so that their daily operating activities can be more effective. By imposing these implications & re-establishing the policies, the firm could create a strong market position & a better credibility that will really provide benefit to shareholders.

6. Suggestion for further research

The current study investigated only P&G by considering DR, ACP and CCC as independent variables. Study will be useful and can be based for further detailed studies. Future research could enhance the scope by taking some other variables that effect profitability in either positive or negative way and by studying a long period than this. A comparative research could be examined among other manufacturing firms to know their effectiveness of working capital management and its effect on profitability. The determinants of working capital management that are significant in the study, can be described separately and in-depth view for effective understanding of whole mechanism.

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