IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

A Case Study of Trading Companies Examining the Effect of Working Capital Management on Profitability

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Abstract:
Any business's profitability, liquidity, and solvency are essential to its success. A business's ability to operate successfully depends on its level of liquidity. The relationship between working capital and profitability has been the subject of numerous studies in the past. The findings demonstrated that lower financial performance is related to greater inventories and receivables investment. They discovered a link between Return on Assets, Inventory Turnover, and Cash Conversion Cycle that was negative. By selecting the days of collection, days of payment, days that inventory turns into sales, and finally the cash conversion cycle, the current study is intended to determine the direct influence of working capital on profitability. This study uses data from 15 US trading companies for the First, there is a negative relationship between profitability and average collection period; the lower the average collection period, the higher the profitability; this suggests that a reduction in the number of days a firm must wait before receiving payment from sales has a positive impact on the firm's profitability. Second, the average payment period and profitability have a highly significant positive association. This suggests that a company is more profitable the longer it pays its creditors. Years 2015 to 2019 to examine the relationship between profitability and working capital. Thirdly, as the cash conversion cycle shortens, the company's profitability will rise. Managers can then produce a positive value for the shareholders to show that the firm's profitability has been preserved. According to the results of the regression analysis, the model's R-squared value is 0.584, or 58.4% of the variation in the dependent variable. The independent factors provide an explanation for Net Profitability.

Keywords: Trading, Profitability, Payment, Working Capital, Inventories.

Introduction:

This empirical study aims to determine how working capital management affects profitability, both of which are significant management concerns. If working capital is not properly handled, the company's liquidity will be reduced, which will have an impact on profitability. Depending on the size of the business, the working capital should be kept at a desired level. An excessive amount of working capital encourages an unnecessary buildup of inventory, which results in losses and waste. Large debtors are a sign of poor credit practices that could result in bad debts. However, due to insufficient operating capital, the company won't be able to cover short-term liabilities. The company could not be able to cover its ongoing costs, which would result in inefficiencies and lower profitability. Any business's profitability, liquidity, and solvency are essential to its success. A business's ability to operate successfully depends on its level of liquidity. Financial managers play a critical role in ensuring a company's liquidity since without being able to satisfy short-term obligations, it cannot survive. To investigate its association with profitability, the working capital, which consists of current assets and current liabilities that assess liquidity, has been selected as the primary independent variable. Working capital has been measured using the collection period, payment period, inventory days, and cash conversion cycle.The link between working capital and profitability, as investigated by Azhar [1], has been the subject of numerous past research. Debtor turnover ratio, collection efficiency, and interest coverage all had a considerable impact on the profitability of a few power sectors when liquidity and management effectiveness were included as independent variables. Rathiranee and Sangeetha [2] look at how working capital affects financial performance in a few different trading firms where the results of the regression analysis revealed that a high investment in inventories and receivables is linked to a lower financial performance, measured by Return on Assets (ROA). For the trading companies listed on the Colombo Stock Exchange, they discovered a negative correlation between Return on Assets, Inventory Turnover, and Cash Conversion Cycle. Mansoori and Muhammad [3] examined the identical scenario using data from Singapore and discovered that effective working capital management will enhance management performance. Their findings show that cutting back on the receivable conversion time and inventory conversion period increases a company's profitability. In her research, Saradhadevi discovered a highly significant inverse relationship between profitability and cash conversion cycle, as well as a highly significant inverse relationship between the average payment period and profitability, suggesting that the longer a company pays its creditors, the more profitable it is. The current study is intended to determine the direct effect of working capital on profitability by selecting the days of collection, days of payment, day's inventory converts to sales, and finally the cash conversion cycle. Only a few studies have been specifically focused on trading companies; the majority has been for manufacturing companies, cement and textile companies, oil and gas companies, etc. As a result, the current study's focus is on working capital management and how it affects profitability in the trade sector.

Review of literature:

1. Profitability and working capital management [4]: The purpose of this study is to determine how working capital management affects profitability. In this study, which was conducted for electrical

equipment firms listed on the Karachi Stock Exchange for a period of six years, from 2007 to 2012, the variables used included return on assets, current ratio, and debt to equity ratio, operating profit to debt ratio, and inventory turnover ratios of the firms. On the data, regression analysis was used. Additionally, the linearity and normality tests were used. Results were overwhelmingly favorable. The T-test is used to determine the importance of each individual variable, and it reveals that each variable is significant. It has been determined that working capital management significantly improves a company's profitability

2. Profitability and working capital management are related [5]: For ten years (2007–2016), a sample of 67 businesses is examined. Multiple linear regressions and a pooled data set are utilized in a quantitative method of analysis. In non-financial enterprises listed on the Saudi Stock Exchange, the study examines the connection between working capital management and profitability. According to the findings, working capital management and profitability are positively correlated. The findings point to a shaky linear link between WCM and profitability, suggesting that no single continuous practice or approach would be suitable for every company. Instead, managers should choose the ideal quantity of working capital for their particular business. The findings demonstrated a modest linear link between WCM, as evaluated by CR, RCP, APP, and profitability, but a statistically favorable relationship overall.

3. Dynamic panel data analysis of manufacturing businesses [6]: Working capital management and company profitability Using both static models like the ordinary least square (OLS), fixed and random effects as well as dynamic models like the difference generalized method of moments (GMM) and system generalized method of moments (SGMM), this study looks at the effects of working capital management on the profitability performance of manufacturing firms from 2007 to 2018. The findings indicate that while the cash conversion cycle (CCC) has a negative impact on return on assets, the inventory conversion period (ICP) and payment deferral period (PDP) are positively correlated with return on assets.

4. Profitability and working capital management: Empirical evidence [7]: According to empirical data, increasing customer extensions does not reduce profitability. The other variables' results revealed a poor correlation with the companies' profitability, indicating that investing in inventory and securing supply-chain extensions determines additional expenses that have a bad impact on profitability. This study looks at the working capital management practices in 105 manufacturing firms during a five-year period, from 2014 to 2018.

5. A case study of the cement industry in Pakistan's working capital management and profitability [8]: Ikram ul Haqq, Muhammad Sohail, Khalid Zaman, and Zaheer Alam use data from fourteen cement sector companies to analyze the impact of working capital on profitability during a six-year period, from 2004 to 2009. For the study, the capital management-related ratios have been chosen and calculated. The primary goal of the study was to determine whether financial ratios have an impact on a company's success in the unique setting of Pakistan's cement sector. They discovered that the ROI is positively connected with the current ratio, liquid ratio, current assets to total assets ratio, debtor's

turnover ratio, inventory turnover ratio, and credit turnover ratio whereas the ROI is adversely correlated with the current assets to sales ratios and cash turnover ratio.

6. An empirical examination of Indian cement businesses' inventory management and profitability [9]: Over a ten-year period, from 2001 to 2010, Dr. Ashok Kumar Panigrahi discussed the significance of inventory management strategies used by Indian cement companies and their effect on working capital efficiency. In this study, regression analysis is used. The results show that the profitability and inventory conversion period have a substantial negative linear connection. Additionally, it was discovered that profitability rises when the ratio of financial debt falls. Additionally, it demonstrated a strong correlation between profitability and business size, with profitability rising as firm size grows. Last but not least, there was a bad correlation between profitability and the current ratio.

7. Working capital management's effects on profitability: The case of a few selected Istanbul Stock Exchange companies (2005–2008) [10]: Hasan Ajan Karaduman, Halil Emre Akbas, Arzu Ozsozgun, and Salih Durer conducted the study with the goal of presenting some empirical evidence on the effects of working capital management on profitability for a sample of 140 chosen companies listed in the Istanbul Stock Exchange (ISE) for the years 2005 to 2008. The sample companies' return on assets rises as the days inventory, accounts payable, and receivables are outstanding, payable, and receivable, respectively, decline. Additionally, the shorter cash conversion cycle leads to higher returns on assets. Furthermore, while the debt ratio has a negative impact on profitability, the outcomes of control variables like size have a beneficial impact.

8. Working capital management in the Indian oil and gas industry: Reliance Industries Ltd. as a case study [11] For ten years, from 2004 to 2013, Sankar Thappa employed liquidity ratios to evaluate the importance of working capital. It has been done to analyze liquidity ratios, liquidity situation, item-by-item examination of gross working capital components, and liquidity ranking. The findings showed that there is a low degree of positive correlation between the profitability ratio and the current ratio, working capital turnover ratio, and inventory turnover ratio, while there is a low degree of negative correlation between the profitability ratio and the quick ratio (liquid ratio) and absolute liquid ratio. The entire working capital situation is far from ideal.

9. The link between working capital management and business success Pakistan's manufacturing industry [12] With a sample of 100 businesses spanning a decade from 1999 to 2008, Muhammad Safdar Sial and Aqsa Chaudry analyze the relationship between working capital management and company profitability in the manufacturing industry. The coefficient of size was positive, which indicates that larger enterprises are more profitable than smaller ones. Leverage was calculated using the debt ratio, which revealed a strong negative correlation with return on assets, indicating that increasing leverage would have a negative impact on return on assets. The findings indicate that there is a strong inverse link between working capital management variables and business profitability, which suggests that as the cash conversion cycle lengthens, firm profitability will decline.

10. Asif Iqbal and Zhuquan Wang's study [13] on the impact of working capital management on profitability discovered that this impact varied depending on the profitability of Pakistani

manufacturing enterprises. They claim that working capital is significantly impacted by "paying full attention to the cash conversion cycle." Reducing inventory releases capital for other uses.

11. Working capital management and profitability are related, according to Puteri Shahirah Binti Ghazal [14]: The real estate and construction firms from the Abu Dhabi market are the focus of this paper's evidence from the UAE market. The results of this study showed a negative association between profitability and the cash conversion cycle; as the CCC increases, profitability declines. Another finding indicated a poor correlation between profitability and the number of payment days.

12. 12. Working capital management's impact on profitability [15] For a ten-year period (2002–2012), a sample of three manufacturing companies that are listed on the Dar es Salaam Stock Exchange (DSE) is used. They discovered a negative relationship between liquidity and profitability, demonstrating that as liquidity falls, profitability rises. They also discovered a positive relationship between average collection period and profitability, showing that a reduction in the number of days a firm must wait before receiving payment from sales has a positive impact on the firm's profitability.

13. To examine the link between profitability and working capital management [16]: Essentially, this essay examines the connection between working capital and profitability of an Indian IT firm (TCS). This study demonstrates a negative correlation between the inventory turnover ratio and return on assets, both when excluding and considering revaluation, demonstrating that the firm's return on assets should increase as inventory turnover increases. Additionally, the analysis demonstrates a bad correlation between the debtor turnover ratio and return on capital employed.

Research questions:

Any business's primary goal is to generate a profit while managing its resources effectively and efficiently, both of which have a direct bearing on earnings. Working capital is therefore the main factor used to measure liquidity. Using data from 15 US trading companies for the years 2015 to 2019, this study investigates the relationship between profitability and working capital.

Hypotheses development:

When making financial decisions, working capital is a crucial factor. Maintaining working capital's liquidity in day-to-day operations is essential for the smooth functioning of the business and timely fulfillment of its commitments. In order to understand how working capital affects profitability, it is chosen as one of the independent variables.

H1: There is a significant relationship between Working Capital Managementand profitability.

H2: Working capital management has strong impact on profitability.

Keeping in view the above studies the following objectives have been outlinedfor the present study.

Objectives of the study:

1. To examine how profitability and working capital management are related.
2. To investigate the effects on profitability of the typical collection period, typical payment period, typical inventory turnover days, and typical cash conversion cycle.

Table 1. ***Showing the key research variables.***

Variables	Type	Measured	Abbreviations used
Net income	Dependent variable	Net Income/Net sales*100	NI
Average collection period	Independent variable	Account receivable/net sales*365	ACP
Average payment period	Independent variable	Account payable/Cost of goods sold*365	APP
Inventory turnover days	Independent variable	Inventory/Cost of goods sold* 365	ITD
Cash conversion cycle	Independent variable	ACP+ITD-APP	CCC

Methods:

The prior studies on working capital management had an impact on the variables used for the current study. Dependant, independent, and a few control variables are among them. In earlier research, the profitability as measured by Return on Assets, Gross Profit Ratio, Operating Profit, and Net Income is considered as a dependent variable. The dependent variable, or the one that is changed by the experiment, is chosen to be profitability in terms of Net Income for the current study. The factor that affects the dependent variable is the independent factor. Average payment times, cash conversion cycles, inventory turnover rates, current ratios, liquid ratios, etc. were utilized as independent factors in earlier research. The average collection period, average payment period, inventory turnover days, and cash conversion cycle are the independent variables for this study. Through various statistical analyses, the study seeks to determine how the variables are related to one another (Table 1). To calculate the effect of working capital on profitability, apply the equation below.

$$NI\ (it) = \hat{a}0 + \hat{a}1\left(ACP\ it\right) + \hat{a}2\left(APP\ it\right) + \hat{a}3\left(ITD\ it\right) + \hat{a}4\left(CCC\ it\right)$$

NI (it) = profitability of the firms at time 5 years, i = 15 firms.

β0 = the intercept of an equation.

β = coefficients of independent variables.T = time 5 years

2015–2019.

Average collection period ACP.Average

payment period APP. Inventory turnover

days ITD. Cash conversion cycle CCC.

In the above general equation, the Profitability is the dependent variable, and itis influenced by the independent variables i.e., ACP, APP, ITD and CCC.

Sample and data collection:

The S&P Capital IQ website is the primary source of information. The relationship between financial

success and working capital management has been the subject of numerous researches. Cement businesses, trading firms, manufacturing companies, pharmaceutical companies, and only a small number of trading companies have been the subject of this research. As a result, trading companies served as the source of the study's sample. For a sample of 15 trading organizations over a five-year period from 2015 to 2019, the current study seeks to give some empirical evidence of the impact of working capital management on profitability. These businesses are chosen at random from among all those that are listed on the New York Stock Exchange (NYSE). Applied Industrial Technologies Inc. (AIT), DXP Enterprises Inc., Eco Shift Power Corp. (ECOP), EVI Industries Corp., and General Finance Corp. are some of the model businesses. (GFN), Gypsum Management and Supply Corporation (GMS), W.W. Grainger (GWW), H&E Equipment Inc. (HEES), and HD Supply Inc. are the following companies (HDS) 10), Huttig Building Products Inc., and 11), Houston Wire and Cable Company (HWCC) (HBP) Kaman Corporation (12) (KAMN), ProShares Ultra Health Care, MSC Industrial Direct Co. Inc. (MSM), MRC Global Inc., and No. 13 (RXL). The average collection period (ACP), average payment period (APP), inventory days converted to sales (ITD), and cash conversion cycle (CCC) are used as independent variables, while the net profitability is taken as the dependent variable.

Table 2.*Descriptive statistics of 15 companies for the years from 2014 to 2019.*

Variable	Mean	Standard deviation	Minimum	Maximum
Net profitability	3.637	5.859	−7.308	31.895
ACP	51.38	16.886	18.576	133.28
APP	36.766	14.617	9.61	79.698
ITD	71.24	26.05	30.62	139.53
CCC	85.85	36.63	18.024	193.18

Result:

Descriptive statistics, a correlation matrix, and regression analysis are used to analyze the data. From Table 2 above, which includes data collected over a five-year period for 15 trading companies, the following conclusions are drawn:

1. The Net profitability for these companies ranges from −7.308 to 31.895 with a mean of 3.637 and standard deviation 5.85 which shows high variance.

2. ACP ranges between 18.57 and 133.28 days with an average of 51 days and stan-dard deviation of 16.88 signifying very high variability across the companies.

3. The APP ranges between 9.6 and 79.69 with an average of 36.76 and standarddeviation of 14.62. The minimum time taken to make the payment is 9 days which is unusual.

4. The ITD ranges between 30.62 and 139.53 with an average of 71.24 and standard deviation of 26.05. The maximum time taken to convert inventory into sales is 139 days which is a very large time period to convert inventory into sales.

5. The CCC ranges between 18.02 and 193.18 with an average of 85.85 and stan- dard deviation of 36.63. The maximum time taken for cash conversion cycle is 193 days which is a large time taken to convert cash.

Table 3. ***Correlation matrix of 15 companies for the year 2015 and 2019.***

	NP	ACP	APP	ITD	CCC
NP	1				
ACP	−0.353391495	1			
APP	0.127879206	0.25544055	1		
ITD	0.225071917	0.20822956	−0.140703	1	
CCC	−0.271955653	0.50715839	−0.381359	0.8633495	1

Table 4.Regression results of 15 companies for the year 2015 to 2019.

Regression statistics	
Multiple R	**0.782**
R square	0.584
Adjusted R square	0.425
Standard error	0.515
Observations	75

Correlation analysis:

The degree of relationship between the various variables under study is measured using correlation analysis. Table 3 presents the correlation matrix for all the variables used in the investigation, which created using information from 15 was trading companies between the years 2015 and 2019. In an effort to determine the relationship between profitability and WC, Pearson's coefficient of correlation analysis has been carried out. The profitability and collection period have a negative relationship, as shown in the research mentioned above; the profitability will increase when the average collection period decreases. Average payment term and profitability are positively correlated, with a 0.127 correlation showing that as payment period lengthens, profitability rises as well. The cash conversion cycle and profitability have a connection of 0.271, meaning that a longer collection period will result in a longer CCC and vice versa, which will affect profitability. Unexpectedly, there is a positive association between inventory conversion days and profitability. The average payment time and the cash conversion cycle are negatively correlated. It is recommended that the companies should avoid an increasing cash conver- sion cycle because it means that the business is becoming more operating inef- ficient, locking more and more cash into its processes.

They ought to keep their cash conversion cycle lower than that of their competitors, or at least to be decreasing. A decreasing CCC indicates a more efficient business that converts inventories more quickly, receives payments more quickly and likely pays suppliers later, holding onto cash for longer (Table 4).

Regression analysis:

The working capital independent variables of the model, which are represented by CCC, APP, ACP, and ITD, account for 58.4% of the variation in the dependent variable (NI), according to the regression analysis, while other factors account for 42% of the variation.

Summary and conclusions:

The research is conducted for a sample of 15 trading organizations over a five-year period, from 2015 to 2019. These businesses are chosen at random from among all those that are listed on the New York Stock Exchange (NYSE). In this study, the working capital management variables average collection time, average inventory turnover in days, average payment time, and average cash conversion cycle were compared to net profitability. The findings indicated a negative association between profitability and average collection period, with the profitability increasing as average collection duration decreases. Average payment term and profitability are positively correlated, with a 0.127 correlation showing that as payment period lengthens, profitability rises as well. It has been discovered that when the cash conversion cycle shortens, the firm's profitability rises. Managers can continue this trend by creating a positive value for the shareholders. The findings of this study demonstrate a significant correlation between corporate profitability and working capital. It implies that profitability will result if financial managers keep a watch on the liquidity. In order to produce value for their shareholders, managers should reduce the number of days' accounts receivable, increase the number of days' accounts payable, and keep inventory to an acceptable minimum. Companies should constantly have a strong collection program. It is generally agreed that working capital management has a significant impact on profitability. Profitability and working capital management have a significant relationship. The study looked at the effect of inventory turnover days, average collection and payment periods, cash conversion cycle, and profitability. Additionally, if the businesses manage their working capital more effectively, the results based on the aforementioned research can be strengthened even further. The management of current assets and current liabilities is referred to as working capital management. The profitability of these businesses will ultimately rise if they handle their cash, receivables, payables, and inventories effectively.

Limitations of the study:

1. The study is only conducted from 2015 to 2019—a five-year timeframe.

2. The analysis is based on secondary data that was gathered from the S&P Capital IQ website.

3. A study on 15 Trading businesses is conducted.

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