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RESEARCH PAPER

Impact of Working Capital Management on Firm Performance: A Comparative Analysis between Technology and Communication Sector Versus Power Generation and Distribution Sector Listed in Pakistan Stock Exchange

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ABSTRACT

The study empirically examines the specific measures of working capital management with organizational profitability. The study also compares the results of the technology and communication sector and power generation and distribution sector listed in the Pakistan stock exchange. The empirical data used in this research is secondary data taken from annual reports of companies listed in the Pakistan stock exchange for the period of 2013 to 2019. The study uses return on asset and return on equity as dependent variables, current ratio, cash conversion cycle, accounts payable turnover ratio, accounts receivable turnover ratio, and inventory turnover ratio as independent variables, leverage, and size as control variables. The findings reveal that the technology and communication sector performs better than the power generation and distribution sector. Managers should take critical decisions to run business operations smoothly and to handle their working capital in a more efficient way that will result in value creation of the organization.

KEYWORDS Gross Working Capital, Pakistan Stock Exchange, Profitability, Working Capital Management

Introduction

Working capital is the operating liquidity available to a business that a company can use for its day-to-day operations. Regardless of the company size, it is the difference between short-term assets (cash and cash equivalent) and short-term liabilities (current liabilities). Along with long-term assets, working capital is one of the most important components of financial management. No organization can run without the proper management of working capital because working capital is used to judge the current status of a business. Short-term as well as long-term objectives can be fulfilled by efficient management of working capital.

Organizations that are doing keen focus on working capital management with professional expertise are continuously improving their day-to-day activities and as a result high annual returns. Experts who are engaged in making financial and investment policies play a very important role in the future of an organization because utilizing working capital efficiently is a very professional task. Financing and investment policies regarding risk and return have a substantial impact on profitability and it plays a significant role in advancing profitability (Morshed, 2020).

Working capital policies are of two types. Aggressive working capital policy and conservative working capital policy. Firms can adopt anyone of them. In an aggressive policy, short-term sources are used for financing its requirements and keeps a working capital level low (Afza, 2007) but in conservative policy, the lowest risk is always related to

the lowest return (Kothari, 2005). A firm minimizes its capital held in the current asset when it follows an aggressive approach and may achieve high profitability subject to high risk. Subject to high profitability measurement in the technology and communication sector and power generation and distribution sector, an aggressive approach is followed.

Working capital management policies are similarly significant for all areas. Various approaches to working capital management policies assume an imperative function in the improvement of an organization. Working capital policies are important for the better performance of corporations. (Zimon, & Tarighi, 2021) Policies regarding working capital are significant to micro, small, and medium enterprises (Rajindra, Din, Rasmi, Nasrulhak, & Ahmad, 2020). Technology & communication and Power generation & distribution are some of the growing sectors of the economy. Everything in the universe is going virtually very rapidly. The state is moving very fast into a new culture of innovation and technology-driven enterprise. (Singh, 2020)

Working capital can be of different types: Gross working capital refers to the total investments in the current asset such as inventories, cash in hand, and account receivables, etc. It is also known as total current assets. Net working capital is the net current assets that mean excess of current assets over current liabilities. That is why net working capital is also known as net current assets. (Haralayya, 2021). Negative working capital means the excess of current liabilities over current assets. Negative working capital is also considered as a working capital deficit. It is the indication of crises to the firm. Permanent of fixed working capital is the number of current assets that is required throughout the year to carry out the business operations smoothly. The amount of fixed working capital remains in the business permanently. (Haralayya, 2021). Temporary working capital is a fluctuating capital that changes from time to time with the change in the volume of the business. Temporary working capital is also known as fluctuating or variable capital. (Haralayya, 2021).

For the research purpose, Net working capital is used as a type of working capital. Unlike the previous studies, this attempt has been made to examine the specific measures of working capital with organizational profitability and provides a comparision between technology & communication sector and power generation & distribution sector in Pakistan.

Literature Review

A rich literature of different researchers is available that is showing the relationship between working capital and firm performance and can be helpful to fulfill the objectives of the research. Researchers have used different theories of working capital to support their work but mainly perspective theory, techno financial theory, walker's four-part approach, tradeoff approach, and operating cycle theories were used in their work. In their work, firm performance is the main goal of all the researchers that is why all the stated literature is consistent with the underpinning theory of the work.

Wajo. A.R (2021) analyzes the profitability of manufacturing companies listed in the Indonesia stock exchange by using cash flow, accounts receivable turnover, inventory turnover, and growth opportunity. A total of 137 companies were selected from 2013 through 2016. The results reveal that all the variables, cash flow, accounts receivable turnover, inventory turnover and have a positive significant impact on profitability but growth has a positive but insignificant impact on profitability.

Otekunrin et al. (2021) examined the impact of working capital management (WCM) on profitability. A total of eighteen quoted agricultural and agro-allied Nigerian companies were examined for the period from 2012 to 2016 period. Working capital management was measured by using payables, receivables collection period, payment period, inventory turnover, and cash conversion cycle, while profit before interest and tax measured profitability. The result revealed that the receivables collection period and profitability are negatively related to each other while the payables payment period and the cash conversion

cycle are positively related to profitability. They also conclude that in managing the company's working capital if the management takes efficient and effective decisions, then the firm's profitability will be maximized and the value of the firm will automatically increase, and in the end, shareholders' wealth can be guaranteed.

Basyith et al. (2021) analyze the impact of working capital management (WCM) on profitability. They took 135 listed firms on the Indonesia Stock Exchange from the period 2000-2019. The variables in this study are working capital financing strategy (WCFS), working capital investment strategy (WCIS), debt ratio, days payable outstanding (DPO), (DR), cash conversion cycle (CCC), days sales outstanding (DSO), days inventory outstanding (DIO), age, size, and current ratio (CR). The results exposed that the working capital investment approach has a significant positive effect on return on assets (ROA) and the working capital financing approach has an insignificant negative effect on ROA.

Pirttilä, Virolainen, Lind, and Kärri, (2020) studied and examined the operational working capital management in the Russian automotive supply chain. The transaction cost theory perspective was used in the research. Measurements used in the research were cash conversion cycle and return on asset. It was found based on analysis that the long accounts payable payment period is common, inventory levels are high, and the cash conversion cycle is short. It was also noted that make the payments to the suppliers on time is more profitable. It is concluded that must successfully finance their supply chains to keep firms a competitive advantage.

Dr. Asish, Joshi, and Suman (2020) examined the relationship between working capital management and firm financial performance and revealed that there will be a decrease in profitability by the increase in current ratio and collection days.

Mazreku, Morina, and Zeqaj (2020) try to found does working capital management affects the profitability of commercial banks through their study. They took their study in Kosovo and used secondary empirical data of commercial banks from annual reports of commercial banks and reports of the central bank of Kosovo for five years. Econometric model and trend analysis was used for the study found that it is difficult to conclude that the bank size and current ratio have a positive effect on the performance of commercial banks whereas debt ratio had a negative effect.

Dalci, Tanova, Ozyapici, and Bein (2019) examine the moderating impact of firm size on the relationship between working capital management and profitability. The study investigates the moderating role of leverage which is the measure of size which was the first attempt to investigate the moderating role of leverage that is why this study was unique in a sense. The result of the study suggests that as the size of the firm gets bigger, the cash conversion cycle gets longer and vice versa. The study also revealed that the cash conversion cycle has a positive impact on profitability.

Shams, Khursheed, and Amir (2019) attempted to examine the effect of working capital management on the performance of the textile sector listed on the Pakistan stock exchange with the moderating role of managerial ownership and institutional ownership. Multiple regression models are used for data analysis. A sample of 77 firms for the period from 2011 to 2015 was selected and the result revealed a negative relationship of leverage, average collection period, and quick ratio on firm performance. While current ratio account payable and inventory turnover have a positive significant effect on firm performance. The study also revealed that there is a positive effect of institutional ownership and a negative effect of managerial ownership while examining the effect of working capital on firm performance.

Moolchandani and Tripathi, (2019) studied the working capital management and profitability on a micro level that was limited to balaj auto limited from 2008 to 2017. Secondary data was taken from annual reports of balaj auto limited. The study used eight

independent variables study i.e working capital turnover, debtor turnover, inventory turnover, current asset to total asset, current ratio, quick ratio, current asset turnover, and cash turnover to examine the impact on return on assets and found that none of the independent variables statistically significant effect the profitability of balaj auto limited. All variables are negatively correlated related to return on asset.

Ahmed, Sadaf, Hamza, Ayesha, and Luqman (2019) make a comparison of seasonal and non-seasonal businesses to examine the impact of working capital management on firm performance. For this purpose, they took the sugar sector as a seasonal and the textile sector as a non-seasonal business. They took an equal sample of 25 companies each for comparison for the period of 2013 to 2018 and found profitability of the firm negatively related to working capital management.

Gil, Mand, Obradovich and Mathur (2019) examines the impact of working capital management on decisions concerning the distribution of dividends and found a result as cash holdings, current ratio, account payable, Cash conversion cycle, firm size, and firm performance positively and accounts receivable, inventory holding period, capital structure negatively affect the decision about the number of dividends.

Paul and Mitra (2018) also tried to investigate the effect of working capital management on profitability in the steel industry in India. A multistage sampling technique was used and 35 companies are taken as sample size. The result of the study shows that there is a significant relationship between the quick ratio and return on assets and the current ratio does not have a significant impact on profitability.

Khalid, Saif, Gondal and Sarfaraz (2018) choose the electrical machinery and apparatus sector of KSE listed companies of Pakistan to evaluate the relationship between working capital and profitability. They took the Current ratio, debt to equity ratio, operating profit to debt ratio, and inventory turnover ratio as independent variables and return on asset as a dependent variable. Secondary data was chosen for six-year and OLS regression was applied. . After the linearity and normality test, the result of the study showed that the current ratio, debt to equity ratio, operation profit to debt ratio, and inventory turnover ratio have a positive significant impact on return on asset. It also showed that working capital management has a significant impact on the profitability of the firms.

Based on the literature review, the following hypothesis is developed for the examination:

H1: There is a relationship between Working Capital Management and ROA

H_{1a}: There is a positive relationship between the Current Ratio and ROA

H_{1b}: There is a negative relationship between Cash Conversion Cycle and ROA.

H_{1c}: There is a negative relationship between A/R Turnover Ratio and ROA.

H_{1d}: There is a positive relationship between A/P Turnover Ratio and ROA.

H_{1e}: There is a positive relationship between Inventory Turnover Ratio and ROA.

H2: There is a relationship between Working Capital Management and ROE.

H_{2a}: There is a positive relationship between the Current Ratio and ROE.

H_{2b}: There is a negative relationship between Cash Conversion Cycle and ROE.

H_{2c}: There is a negative relationship between A/R Turnover Ratio and ROE.

H_{2d}: There is a positive relationship between A/P Turnover Ratio and ROE.

H_{2e}: There is a positive relationship between Inventory Turnover Ratio and ROE

Material and Methods

The purpose of this study is to empirically examine the organizational profitability with specific measures of working capital in the technology & communication and power generation & distribution sector of Pakistan. For the fulfillment of the purpose of the research, Secondary data is collected from the Pakistan stock exchange and the official websites of the selected companies. A 7 years sampled data from 2013-2019 of technology and communication companies and power generation and distribution companies listed in Pakistan stock exchange is used. Panel data is taken from the financial statements of the companies and is tested through ratio analysis. The data is quantitative and is collected from annual reports of the listed companies of the technology & communication sector and power generation & distribution sector of Pakistan. Quantified data helps fulfill the objectives of the research that are to check the influence of working capital management on return on asset and return on equity and will be best examined. All data is quantitative, therefore not any questionnaire is filled by any respondent. The study estimates multiple regression equations and results are evaluated by using EViews software.

The study uses firm performance as a dependent variable and working capital as an independent variable. Leverage and firm size are used as control variables. Firm performance is measured by return on asset which is the ratio of net profit after tax to total asset and return on equity which is the ratio of net profit after tax to capital. Working capital is measured by current ratio which is current assets to current liabilities, cash conversion cycle (CCC) which is Days inventory outstanding + Days Sales outstanding – Days payable outstanding where, DIO = (Inventory / Cost of goods sold) x Days, DSO = (Accounts Receivable / Revenue) x Days and DPO = (Accounts Payable / Cost of goods sold) x Days, Accounts receivable turnover which is net credit sales to avg. accounts receivable, Accounts payable turnover which is credit purchases to average accounts payable and inventory turnover which is cost of goods sold to avg. inventory. Leverage is calculated by total debt to total asset and firm size is the natural log of total asset.

To analyze the impact of working capital management on firm performance multivariate regression model is used. The appended equations are estimated separately for technology & communication sector and power generation & distribution sector of Pakistan:

$$ROAit = \beta o + \beta 1\ CRit + \beta 2\ CCCit + \beta 3\ ARTit + \beta 4\ APTit + \beta 5\ INVTit + \beta 6\ LEVit + \beta 7\ SIZEit + \varepsilon it \quad (1)$$

$$ROEit = \beta o + \beta 1\ CRit + \beta 2\ CCCit + \beta 3\ ARTit + \beta 4\ APTit + \beta 5\ INVTit + \beta 6\ LEVit + \beta 7\ SIZEit + \varepsilon it \quad (2)$$

Results and Conclusion

This chapter includes the discussion and conclusion of results regarding working capital management and firm performance. From the result of the analysis, we justified that how the hypothesized variables affect each other actually and which variables have a significant and insignificant impact on firm performance. It has been cleared in this chapter that which sector is more profitable according to the investment, and how to utilize working capital more efficiently to maximize shareholder's wealth.

Hypotheses Results

Hypotheses	Accepted/ Not Accepted	
	Technology and Communication	Power Generation and Distribution

H_{1a}: There is a positive relationship between the Current Ratio and ROA	Accepted	Accepted
H_{1b}: There is a negative relationship between Cash Conversion Cycle and ROA	Accepted	Accepted
H_{1c}: There is a negative relationship between A/R Turnover Ratio and ROA	Not Accepted	Not Accepted
H_{1d}: There is a positive relationship between A/P Turnover Ratio and ROA	Accepted	Accepted
H_{1e}: There is a positive relationship between Inventory Turnover Ratio and ROA	Accepted	Not Accepted
H_{2a}: There is a positive relationship between the Current Ratio and ROE	Accepted	Accepted
H_{2b}: There is a negative relationship between Cash Conversion Cycle and ROE	Not Accepted	Not Accepted
H_{2c}: There is a negative relationship between A/R Turnover Ratio and ROE	Not Accepted	Not Accepted
H_{2d}: There is a positive relationship between A/P Turnover Ratio and ROE	Not Accepted	Not Accepted
H_{2e}: There is a positive relationship between Inventory Turnover Ratio and ROE	Accepted	Not Accepted

The study investigated the impact of working capital management and firm performance. It also compared the results of regression analysis of the technology & communication sector and power generation & distribution sector. For the sector technology and communication, all the variables have a positive relationship with return on asset and return on equity but cash conversion cycle and leverage has a negative relationship with return on asset having 74% impact and for return on equity accounts payable turnover and leverage has a negative relationship having 59% impact. On the other hand, for the sector power generation and distribution, only the current ratio and accounts receivable turnover has a positive and all the other variables has a negative relationship with return on asset having 78% impact and for return on equity accounts payable turnover, and inventory turnover has a negative and other all variables has a positive relationship with 77% impact. The results are in line with (Alvarez, Sensini and Vazquez, 2021) while inconsistent with (Yousaf, Bris & Haider, 2021).

It is to be concluded based on the study that results of panel data regression analysis are analyzing the influence of working capital management on return on asset and return on equity variation, determine the working capital management measures with profitability, and comparing the results of technology and communication sector versus power generation and distribution sector through which objectives of the study are fulfilling. The findings of the results reveal that the relationship of variables with firm performance is negative but there is a positive relationship of current ratio and accounts payable turnover with firm performance for both of the sectors. The results are consistent with (Khalid, Saif, Rehman & Sarfaraz, 2018) but inconsistent with (Pakdel & Ashrafi (2019). It means as the current ratio and accounts receivable turnover increase by 1 unit, returns on assets and return on equity also increases keeping other factors remain constant. CR explains the ROA and ROE in a good way. From the results of the analysis, it is examined and concluded based on panel data analysis that the technology & communication sector performs better than the power generation & distribution sector. If a company increases its current ratio, it will help maximize the wealth of the company.

For the power generation & distribution sector, the current ratio and accounts receivable turnover have a positive relationship with ROA and ROE. For return on asset, all other variables have a negative relationship with CR, ART and LEV having significant and other variables with an insignificant relationship. For return on equity only accounts payable and inventory turnover has a negative relationship with CR and ART having

significant but all other variables with the insignificant relationship. There is a consistency of results with (Alvarez, Sensini and Vazquez, 2021). It means as long as the duration of taking back cash from receivables and paying to payable exceeds the return is decreasing of profit for the company. But the return on equity increased by the increase in inventory turnover period for the power generation and distribution sector. There is 78% influence of IV's on return on asset and 77% influence on return on equity.

For Technology & communication sector, all the variables have a positive relationship with ROA and ROE but for return on asset CCC and leverage have a negative relationship and for return on equity accounts payable turnover and leverage have a negative relationship. The results are inconsistent with (Yousaf, Bris & Haider, 2021) but consistent with (Khalid, Saif, Gondal & Sarfaraz, 2018). Return on asset and return on equity increase by the increase in measures of working capital. There is 75% and 59% dependence of independent variables on return on asset and return on equity. Increasing in all positive variables has a positive impact on profitability but results indicate that increase in debt produces a negative effect on profitability.

Recommendations

The recommendation of the study based on the above findings is that there is a need to properly maintain, effectively utilize, and efficiently manage the components of working capital on an optimal level to manage the business as it affects the profitability. Companies can extend the accounts payable to reduce the cash conversion cycle and lead the company liquidity higher. Highly liquid firms will be able to smooth fixed investment and saves cost. Accounts receivable should be collected soon for a better liquidity position.

It is suggested that financial managers generate a value for shareholders by deducting the number of days earned, as well as, a positive relationship between receivables and profitability of firms recommend low-profit firms to practice accounts receivable reductions in an attempt to reduce the cash conversion cycle. It is also suggested to policymakers to increase the stock of professionally managed firms and appreciate the management of time constraints.

It is recommended that companies arrange training courses, sessions, programs, and seminars for their financial managers as it benefits employees and companies that have benefited from new financial management strategies.

Further, the study also suggests that companies should properly maintain working capital components such as marketable securities, assets, payables, receivables as well as management should continuously assess their relationship to other means of profitability.

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