Migration Letters

Volume: 21, No: S12 (2024), pp. 242-250

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Working Capital Management In Pakistan's Manufacturing Sector: An Analysis Of Pakistan Stock Exchange Companies

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Abstract

Working capital management (WCM) policies and profitability of manufacturing companies listed on the Pakistan Stock Exchange (PSE) are examined in this study. Business operations depend on effective WCM, especially when financial constraints exist. This study examines how WCM components, such as accounts receivable (AR), inventory (INV), accounts payable (AP), and cash conversion cycle (CCC), affect profitability metrics. Researchers used multiple regression using to analyze data from ten manufacturing companies' annual reports covering 2021–2024. The results indicate that reducing AR collection time significantly [1]enhances OPM by enabling quicker reinvestment and decreasing reliance on external financing. Similarly, a shorter CCC is linked to increased profitability by improving operational efficiency. The study also finds a positive relationship between INV levels and ROA, as adequate inventory enables companies to meet customer demand effectively, enhancing revenues. However, excessive reliance on AP as a funding source has mixed effects, underscoring the need for careful management of creditor relationships. Notably, the findings suggest a less pronounced impact of WCM on ROE, likely due to variability in equity structures among Pakistani firms. Overall, this research highlights the critical role of tailored WCM strategies for enhancing corporate profitability in Pakistan's manufacturing sector, offering insights into optimizing short-term financial policies to drive long-term business success.

Keywords: *ROA, ROE, Working Capital Management, Manufacturing Sector, Account Payables.*

Introduction

Working capital management (WCM) is crucial for companies as it provides a necessary level of liquidity, allowing firms to meet their short-term financial commitments arising from their operational activities, which is essential for sustaining business continuity and enhancing

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profitability. Current assets and liabilities are included in WCM, which represents a sizable portion of the total assets of the organization. Low returns on short-term investments can result from having too many current assets, while operational difficulties and liquidity risks might arise from having too few current assets, which could make it impossible to satisfy short-term obligations (Wu et al., 2024). Therefore, adopting an effective WCM policy helps companies optimize profitability and increase value for stakeholders. WCM helps manage a company's resources, liquidity, and value balancing current asset hazards and earnings and optimize WCM (Wang et al., 2020).

The WCM significance also extends the understanding of current assets financing. It is common practice to use short-term financing for these assets and long-term funding for net working capital, that identify gap among current assets as well as liabilities. Relying on long-term funds for working capital may increase the company's financial burden and impact profitability (Akbar et al., 2022). Recent events, like the COVID-19 pandemic, have highlighted issues of liquidity and restricted credit access, similar to the challenges experienced post financial crisis. WCM has become essential for maintaining performance in industrial companies, as they must secure liquidity for operations through effective WCM strategies and short-term loans.

Effective WCM is vital to a company's operation and sustainability. Managing working capital in well-equipped way is key to achieving corporate objectives (Malokani et al., 2022). Numerous studies examined link among WCM and profitability, yet current study is unique in utilizing a combination of three profitability metrics such as return on equity (ROE) operating profit margin (OPM), and returns on assets (ROA) which limitedly explored via prior studies. This research enhances previous analyses by considering profitability's diverse aspects such as OPM, ROA, and ROE also offering a broader framework for evaluating WCM effectiveness (Nguyen et al., 2020). Additionally, no previous research has specifically analyzed Pakistan Stock Exchange (PSE), despite Pakistani rapid industrial sector growth positioning it as a leading industrial nation in the Asian countries (Qureshi et al., 2021). This study thus examines how WCM components (inventory, accounts receivable, AP and CCC) impact profitability metrics like ROE, OPM, and ROA in Pakistan Stock Exchange manufacturing companies listed.

Literature review

WCM is a strategic method that reaching cash, inventory, and accounts receivable desirable equilibrium, while financing this equilibrium at low price through current liabilities and facilitate company's daily operational requirements (Phuong & Hung, 2020). Effective WCM requires companies to efficiently manage current assets and liabilities, recognizing the distinct strategies needed for each key component, as well as the impact that careful management of each element has on overall profitability (Amponsah-Kwatiah & Asiamah, 2021).

Accounts receivables (AR)

Credit policy sets the stage for handling receivables. Company needs a sophisticated system to monitor and enforce lending conditions to optimize adoption. Occasionally, adjustments to the credit policy may be necessary, and a reliable receivables control system is essential to assess the status and effectiveness of these policies (Agegnew, 2019). Empirical studies, such as those done Mittal & Monika (2020) has clearly shown negative association among AR and firm profitability. Therefore, relationship suggests that increasing debtor's collection period can positively impact profitability.

Inventory (INV)

Inventory management process is key production management element, requiring that company leadership allocate the capital needed to maintain sufficient stock levels. Inadequate

inventory can disrupt sales such that is the primary revenue source for manufacturing firms and also potentially reduce profitability. Hence, inventory management's primary goal maintain stock and keep production running smoothly while minimizing holding costs (Mishra et al., 2021). Studies by Zhu et al. (2021) report positive association among INV and profitability, noting ample inventory helps firms avoid missed sales opportunities and reduces incurring costs risk associated with supply-chain disruptions. However, other research also has significant association processes among inventory management and profitability (Lim & Rokhim, 2021).

Accounts payable (AP)

Businesses receive operating capital from AP, mostly include credit and expenses (Tabash et al., 2023). Research has shown significant link between AP and profitability, suggesting that companies can increase profits by delaying payments to creditors, allowing them to use available funds for short-term asset investments (Husnah et al., 2023; Hossin & Begum, 2020). Conversely, studies by (Lim & Rokhim, 2021) and Wang et al. (2020) have identified positive association among AP and profitability.

Cash conversion cycle (CCC)

CCC management tracks time taken to purchase raw materials, produce goods, sell inventory, and collect cash from customers. However, cycle duration varies by company and product type (Chang, 2022; Rey-Ares et al., 2021). The CCC has a negative link with profitability in many researches on working capital management (WCM), showing that a shorter CCC improves profitability (Anton & Afloarei Nucu, 2020). Some research show a favorable association among CCC and profitability (Nguyen et al., 2020; Anton & Afloarei Nucu, 2020). However, Osazevbaru et al. (2021) revealed significant association among CCC and organizational profitability.

In alignment with study's objectives, the following hypotheses have been formulated and established. The study proposes following hypotheses:

H1: There is significant association among WCM indicators i.e. (AP, AR, INV, and CCC) and OPM in manufacturing companies.

H2: There is significant association among WCM indicators (AP, AR, INV, and CCC) and ROA in manufacturing companies.

H3: There is association among WCM indicators (AP, AR, INV and CCC) and ROE.

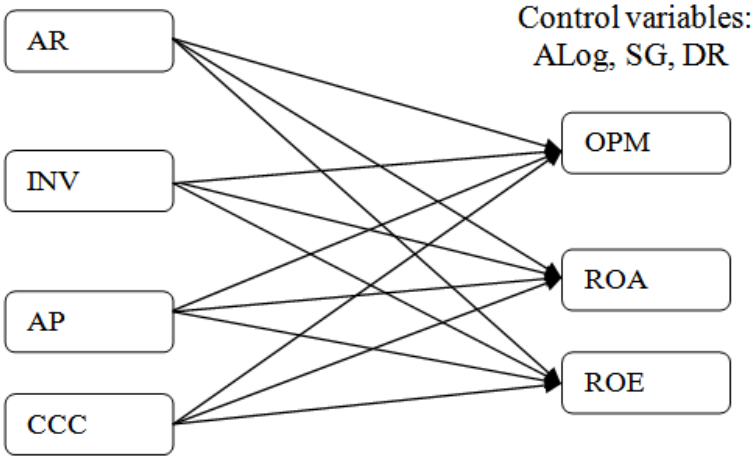

Figure 1 . Proposed Conceptual framework

Research Methodology:

Study Sample

The study sample comprises ten manufacturing companies listed on the Pakistan Stock Exchange (PSE). The data for this study were derived from the annual reports from chosen companies, spanning from 2021 to 2024, accessed through the official Pakistan Stock Exchange website. This study performed empirical analysis to examine impact of WCM on profitability, utilizing SEM AMOS 26 for the research. The study utilized descriptive analysis outline maximum, minimum, mean, and standard deviation for dependent variables (OPM, ROA, and ROE), various independent variables (the AR, INV, AP, and CCC), and control variables (ALog, SG, and DR). Pearson's correlation analysis was conducted to explore associations among independent, dependent, and control variables, while VIF analysis performed and identify any potential multicollinearity. Multiple regression and regression analyses were applied to test hypotheses to discover working capital management components that most affect profitability estimates.

Although the dataset resembles panel data, the focus of this research was not on comparing individual manufacturing companies or temporal changes within the sector. Instead, the study concentrated on the aggregate relationship between the variables across all manufacturing firms in the sample. Thus, multiple regression analysis was chosen over panel data analysis. The regression equations used in the analysis are presented in detail.

Empirical result

Descriptive statistics

The study computed the mean and standard deviation for key profitability metrics: OPM, ROA, and ROE. The average time it took for businesses to collect AR were 78 days, the time it took to turn inventory into sales was 112 days, and the time it took to pay creditors was 50 days. A cash conversion cycle (CCC) that encompassed the entire process, beginning with the acquisition of raw materials and continuing through inventory storage, sales, the collecting of payments from customers, and the settlement of debts, typically lasted for a period of 140 days. Table 1 includes the mean, min, max and S.D. Analysis conducted reveals no potential multicollinearity issue.

Table 1 Descriptive Analysis

	Items	Minimum	Maximum	Mean	S.D.
INV	50	26.24	343.8	112.6	72.2
OPM	50	0.039	1.126	0.308	0.274
ROE	50	-0.028	0.204	0.09	0.054
ROA	50	0.004	0.194	0.115	0.055
AR	50	31.24	168.1	78.02	33.77
AP	50	8.213	159.2	49.95	36.47
CCC	50	31.02	611	140.67	122.4
DR	50	0.009	0.759	0.304	0.216

SG	50	0.645	1.202	0.006	0.2934
ALog	50	20.34	24.34	22.75	1.011

Table 2 displays correlation values for both independent and control variables, as reported by Chang (2022). This data suggests that no multicollinearity exist, as its values range from 0.610 to 0.823. The reason for this may be that these values are below acceptable limit of 0.90, that's is recommended. In accordance with findings presented by Mishra et al. (2021), VIF values for all of independent variables were found to be less than 10, hence supporting multicollinearity absence and indicated that the amount of variance for each independent variable was satisfactory. Using linear regression analysis, the assumptions were put to the test in order to determine working capital aspects had most significant influence on firm profitability. In Table 4, the findings are presented for your perusal.

Table 2 Correlation-Coefficient

	1	2	3	4	5	6	7	8	9	10
OPM	1									
ROA	0.427	1								
ROE	-0.077	-0.158	1							
AR	0.159	0.358	-0.043	1						
INV	0.382	0.307	-0.124	0.365	1					
AP	0.599	0.246	-0.121	0.345	0.048	1				
CCC	0.285	0.85	-0.152	0.609	0.823	-0.054	1			
ALog	0.212	0.052	-0.070	-0.416	0.035	-0.206	-0.035	1		
SG	-0.110	0.013	-0.162	-0.260	-0.175	-0.239	-0.012	-0.099	1	
NR	-0.458	-0.610	-0.070	-0.179	-0.443	-0.168	-0.302	-0.275	0.006	1

Table 3 VIF

Items	**VIF**
INV	5.00
AR	3.84
AP	1.53
CCC	7.21
ALog	180

DR	1.63
SG	1.32
Mean VIF	3.20

Table 4 Multiple Regression

	Model-1(OPM)	Model-2 (ROA)	Model-3 (ROE)
Intercept	-1.244 (0.222)	0.614 (0.543)	0.769 (0.446)
AR	-0.373 (0.038)	0.271 (0.225)	0.249 (0.388)
INV	-0.075 (0.707)	0.554 (0.032)	0.121 (0.711)
AP	0.782 (0.000)	0.026 (0.855)	-0.252 (0.169)
CCC	-0.569 (0.021)	0.679 (0.029)	-0.457
ALog	0.190 (0.118)	-0.006 (0.970)	-0.075 (0.704)
SG	0.059 (0.566)	0.103 (0.427)	0.123 (0.466)
DR	-0.203 (0.080)	-0.519 (0.001)	-0.173 (0.357)
R2	0.670	0.473	0.112
Adj. R2	0.615	3.385	-0.036
F-Value	12.18	5.386	0.756
P-value	0.000	0.000	0.627

A multiple regression analysis is presented in Table 4 for model 1, which investigates the link between the WCM, the variables of control, and OPM. For manufacturing companies listed on Pakistan Stock Exchange, modified R^2 value of 0.615 suggests that the variance in OPM can be explained by WCM and control variables to the extent of 61.5%. With the significance F value, this result supported hypothesis, confirmed strong connection between WCM (AR, AP, INV, and CCC) and OPM. Agegnew (2019) and Sharma (2022) have both found similar results, which are compatible with our findings. As an additional point of interest, Model 1 found a strong negative correlation ($p < 0.05$) between AR and OPM, showing that reducing the time necessary to recover receivables improves profitability. By reducing the amount of AR, collection efficiency is improved, which in turn enables quicker reinvestment and reduces dependency on external finance, ultimately leading to an increase in profitability. A correlation exists between this and the Ombui et al. (2024) and Kamlesh et al. (2023) findings. AP and OPM were shown to have significant positive connection ($p < 0.01$), which suggests that more AP levels enable businesses to make use of available cash for operational investments, which might potentially lead to an increase in profits. However, it is essential to retain solid relationships with suppliers. In light of this, Kamlesh et al. (2023) are supported. A substantial negative association ($p < 0.05$) was also established by the model between CCC and OPM. This suggests that reducing the CCC within appropriate limits can lead to an increase in profitability (OPM). There is a correlation between this discovery and Aldubhani et al. (2022), Akbar et al. (2022), and Chang (2022) as per their findings.

At an p-significance level of 0.000, the described WCM has a substantial impact on return on assets (ROA), as demonstrated in Table 4 (Model 2), with 0.385 adjusted R^2 value. This indicates that null hypothesis ought to be rejected in alternative hypothesis's favor. Moreover, Tarek and Rafik (2020) and Bhuyan et al. (2021), also supported this finding. A strong positive link ($p < 0.05$) was also found between inventory (INV) and ROA in Model 2. Also, higher inventory levels help businesses to meet customers demand, which in turn leads to an increase in revenues. Nonetheless, maintaining optimal inventory levels is critical to avoiding storage

and obsolescence expenses. According to Hasanudin et al. (2022), this outcome is in agreement with their findings. As per the findings of Aldubhani et al. (2022) and Mitaliani et al. (2023), it was revealed that there exists a noteworthy and negative correlation between CCC and ROA, as well as between DR and ROA ($p < 0.01$).

With an adjusted R^2 value of -0.036, Table 4 (Model 3) demonstrates that there is a substantial link between WCM and return on equity (ROE). This indicates that the WCM and control variables are responsible for explaining volatility in ROE. It was determined that hypothesis was accepted because the F-significance was 0.627, which was higher than the 5% criterion. Some Pakistani corporations have huge retained losses, while others preserve big reserves and retained earnings. This result may be ascribed to the variety of equity that exists across Pakistani enterprises. Maeenuddina et al. (2020), Yusrini et al. (2022), and Gayen et al. (2023) all confirm current conclusion, which is consistent with their findings.

Conclusion

This study investigated working capital management (WCM) policies effects on profitability of Pakistan Stock Exchange (PSE) enterprises listed . PSE's annual reports from manufacturing companies listed from 2021 to 2023 were used to gather data. The researchers utilized descriptive statistics, Pearson's correlation, VIF analysis, and multiple regression methods analysis.. The conclusions of the study showed several important findings, including the following:

(1) Accounts receivable (AR) has negative effect on OPM, suggesting that decreasing time required collecting customer payments might enhance profitability.

(2) Inventory (INV) positively affects return on assets (ROA), suggesting that maintaining higher inventory could enhance profitability;

(3) AP has a significant influence on OPM (indicating that delaying payments to creditors can increase profits, with creditors payment period having significant effect on profitability.

(4) CCC negatively impacts OPM and ROA, suggesting that shortening could improve profits.

WCM was also having considerable influence on ROE, according to other findings of the study. Because it ensures sufficient liquidity to support day-to-day operations, effective WCM is critical for boosting business profitability and performance. This is a factor that has become increasingly significant as a result of the struggles with liquidity and the limited availability of credit. In future, investigation might be conducted to explore the function that spontaneous financing plays, as well as its influence on businesses performance in distinct industries.

References:

1. Agegnew, A. (2019). The effect of working capital management on profitability: The case of selected manufacturing and merchandising companies in Hawassa city administration. Research Journal of Finance and Accounting, 10(1), 51-85.
2. Akbar, A., Jiang, X., & Akbar, M. (2022). Do working capital management practices influence investment and financing patterns of firms?. Journal of Economic and Administrative Sciences, 38(1), 91-109.
3. Aldubhani, M. A., Wang, J., Gong, T., & Maudhah, R. A. (2022). Impact of working capital management on profitability: evidence from listed companies in Qatar. Journal of Money and Business, 2(1), 70-81.
4. Aldubhani, M. A., Wang, J., Gong, T., & Maudhah, R. A. (2022). Impact of working capital management on profitability: evidence from listed companies in Qatar. Journal of Money and Business, 2(1), 70-81.
5. Amponsah-Kwatiah, K., & Asiamah, M. (2021). Working capital management and profitability of listed manufacturing firms in Ghana. International journal of productivity and performance management, 70(7), 1751-1771.

6. Anton, S. G., & Afloarei Nucu, A. E. (2020). The impact of working capital management on firm profitability: Empirical evidence from the Polish listed firms. Journal of risk and financial management, 14(1), 9.
7. Bhuyan, R., Khandoker, M. S. H., Tasneem, N., & Taznin, M. (2021). Working Capital Management (WCM) and Firm Performance in Emerging Markets: A Case of Bangladesh. Accounting and Finance Research, 10(1), 1-36.
8. Chang, C. C. (2022). Cash conversion cycle and corporate performance: Global evidence. In Encyclopedia of Finance (pp. 2597-2626). Cham: Springer International Publishing.
9. Gayen, S., Mahalle, J., Harish, V., & Malik, T. (2023). Beyond the Balance Sheet: Dissecting the Impact of WCM on Profitability in India's Business Arena. CECCAR Business Review, 4(11), 66-76.
10. Hasanudin, H., Awaloedin, D. T., & Arviany, D. D. (2022). The impact of cash turnover, accounts receivable turnover, and inventory turnover on return on assets (ROA) for agribusiness companies listed on the Indonesia stock exchange (IDX) during the period 2016-2020. Jurnal Info Sains: Informatika dan Sains, 12(02), 37-44.
11. Högerle, B., Charifzadeh, M., Ferencz, M., & Kostin, K. B. (2020). The development of working capital management and its impact on profitability and shareholder value: evidence from Germany. Strategic Management-International Journal of Strategic Management and Decision Support Systems in Strategic Management, 25(2).
12. Hossin, M. S., & Begum, S. (2020). Effects of working capital management on firm's profitability: a study on the firms listed under DSE in Bangladesh. International Journal of Economics and Financial Research, 6(7), 130-138.
13. Husnah, H., Suparman, S., & Rauf, R. A. (2023). The Role of Business Credit on SME Performance, Regional Economic Output, and Unemployment. Research Horizon, 3(3), 151-163.
14. Kamlesh, K., Sivasankaran, N., Prasenjit, C., & Giridhar, R. (2023). Working Capital Management Efficiency, Cash Holdings, and Market Value of Indian Listed Firms. International Journal of Business & Economics, 22(1).
15. Lazarus, R., Lazarus, S., & Gupta, S. (2021). Influence on Corporate Performance by Determinants of Working Capital. Universal Journal of Accounting and Finance, 9(3), 411-423.
16. Lim, H., & Rokhim, R. (2021). Factors affecting profitability of pharmaceutical company: an Indonesian evidence. Journal of Economic Studies, 48(5), 981-995.
17. Maeenuddina, R. B., Hussain, A., Hafeez, M., Khan, M., & Wahi, N. (2020). Economic value added momentum & traditional profitability measures (ROA, ROE & ROCE): A comparative study. Test Engineering and Management, 83(April), 13762-13774.
18. Malokani, D. K. A. K., Nawaz, M. A., & Shah, S. S. A. (2022). Corporate Social Responsibility and Employee Engagement: Evidence from Textile Industry. Annals of Human and Social Sciences, 3(2), 340-347.
19. Mishra, U., Wu, J. Z., & Sarkar, B. (2021). Optimum sustainable inventory management with backorder and deterioration under controllable carbon emissions. Journal of Cleaner Production, 279, 123699.
20. Mitaliani, R., & Rasyid, R. (2023, June). The Impact of Working Capital Management on Profitability with Leverage as an Moderating Variable in Basic Industrial and Chemical Sectors. In Ninth Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2022) (pp. 586-594). Atlantis Press.
21. Mittal, S., & Monika. (2020). Accounts receivable: payable impact on each other with special reference to financial performance—a study of small cap companies. SEDME (Small Enterprises Development, Management & Extension Journal), 47(4), 362-373.
22. Nguyen, A. H., Pham, H. T., & Nguyen, H. T. (2020). Impact of working capital management on firm's profitability: Empirical evidence from Vietnam. Journal of Asian Finance, Economics and Business, 7(3), 115-125.
23. Ombui, J., Monari, D., Kamau, C., Kibiti, C., & Muhoro, G. (2024). Working Capital Management and its Effect on Financial Performance of Public Universities in Coastal Region Kenya. International Journal of Religion, 5(9), 977-994.
24. Osazevbaru, H. O., Aruoren, E. E., & Okunima, P. (2021). Measuring the effect of working capital management on firms'profitability: evidence from quoted Nigerian companies. International Journal of Management (IJM), 12(3), 736-743.

25. Phuong, N., & Hung, D. (2020). Impact of working capital management on firm profitability: Empirical study in Vietnam. Accounting, 6(3), 259-266.
26. Qureshi, M. S. Q., Vivake, A., Malokani, D. K. A. K., & Inayat, A. (2021). Inflation, Exchange Rate and Economic Growth A CASE STUDY of Pakistan: 1988-2018. Indian Journal of Economics and Business, 20(1).
27. Rey-Ares, L., Fernández-López, S., & Rodeiro-Pazos, D. (2021). Impact of working capital management on profitability for Spanish fish canning companies. Marine Policy, 130, 104583.
28. Sharma, A. (2022). Impact of Working Capital Management on the Profitability of Small Healthcare Operators in the UAE (Doctoral dissertation, SP Jain School of Global Management (India)).
29. Tabash, M. I., Farooq, U., Hamouri, B., Kumar, A., & Al-Faryan, M. A. S. (2023). Effect of country governance on trade credit activities: Empirical evidence from Pakistan. Cogent Economics & Finance, 11(2), 2233315.
30. Tarek, Y., & Rafik, M. (2020). The impact of working capital management on corporate's performance: Evidence from Egypt. International Journal of Business and Management, 15(6), 151-162.
31. Wang, Z., Akbar, M., & Akbar, A. (2020). The interplay between working capital management and a firm's financial performance across the corporate life cycle. Sustainability, 12(4), 1661.