MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT

Vol. 6 No. 1, 2026, 453–471 e-ISSN 2798-0170

THE IMPACT OF WORKING CAPITAL ON FINANCIAL PERFORMANCE MODERATED BY DIVIDEND POLICY AND FINANCIAL RATIOS: A STUDY OF MANUFACTURING COMPANIES IN INDONESIA

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Abstract

This study aims to analyze the impact of working capital on financial performance, moderated by dividend policy and financial ratios at manufacturing companies in Indonesia. This research method uses a panel data regression, utilizing Eviews 9.0 software for data processing. The sample for this study includes 47 technology and manufacturing companies listed on the IDX with consistent data available for the 2020–2024 observation period. This study adopts a hypothesis-testing design to analyze the effects of the Cash Conversion Cycle, Leverage, Sales Growth, and Investment Policy on Financial Performance (ROA). Additionally, the model incorporates Size and Inflation as control variables and Dividend Payout Ratio as the moderating variable.

Keywords: Financial Performance, Return on Asset, Cash Conversion Cycle, Leverage, Sales Growth, Investment Policy, Firm Size, Inflation, Dividend Payout Ratio

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INTRODUCTION

Manufacturing enterprises are characterized by large-scale investment needs, with a primary focus on fixed asset allocation to ensure the optimization of production output (Grozdić, V., Marić, B., Radišić, M., Šebestová, J., & Lis, M. 2020). Technology firms typically require substantial capital for equipment, inventory, and R&D. Consequently, strategic working capital management is essential for these companies to maintain performance, which is ultimately measured by their ability to generate profit (Koroma, S., dan Kamara, S. 2025). The integration of core business formation and development, as reflected in earnings growth and the maintenance of corporate values, is expected to enhance firm performance and serves as a focal point for management (Huynh, Thi Xuan Thuy, Thi Thu Hoan Nguyen, dan Chien Van Nguyen. 2025). Effective working capital management is essential for companies of all sizes to avoid financial distress and ensure long-term operational stability (Huynh, Thi Xuan Thuy, et al. 2025; Ebben dan Johnson. 2011).

The Return on Assets (ROA) ratio serves as a key indicator of operational efficiency within a company's financial performance framework (Stavropoulos, A.-S., & Zounta, S. 2025). Koroma and Kamara (2025) demonstrate that firm performance is influenced by various independent variables, specifically the cash conversion cycle, leverage, and sales growth. According to Koroma and Kamara (2025), the Cash Conversion Cycle (CCC) serves as a conventional metric for Working Capital Management (WCM). According to research by Koroma and Kamara (2025), the Dividend Payout Ratio (DPR) in this sector averages 76.9%, indicating that firms distribute a significant portion of their net income to shareholders as dividends. The findings of Koroma and Kamara (2025) show an average leverage of 0.457, implying that 45.7% of business activities are leveraged through debt, with the balance of 54.3% sourced from equity and company-owned assets. Koroma and Kamara (2025) identify a mean sales growth of 2.12%, reflecting a steady annual expansion in sales volume for firms in this industry.

The study by Koroma and Kamara (2025) demonstrates that an increase in firm size, leverage, and the Dividend Payout Ratio (DPR), including their interaction terms, leads to a decrease in Return on Assets (ROA). The negative relationship between firm size and financial performance implies that larger companies tend to experience lower ROA. Research by Lestari (2017) indicates that the impact of firm size on ROA varies depending on the regression model; while the general results (Model 1) show no significant effect, the specific results (Model 2) reveal a significant positive influence. Koroma and Kamara (2025) identify a negative inflation rate (deflation) of 18.1% in the Japanese technology hardware sector, reflecting a significant contraction in average market prices.

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The novelty of this study is derived from the work of Bashir and Ahmad (2025), titled "Determining the Effect of Working Capital Policies Optimization and Market Power on Firm Value: A Developing Country Perspective." Their research demonstrates a positive impact of Investment Policy (IP) on a firm's ability to enhance financial performance, as measured by Tobin's Q. Based on the observed phenomena and the identified research gaps, this study focuses on examining "The Impact of Working Capital on Financial Performance Moderated by Dividend Policy and Financial Ratios: A Study of Manufacturing Companies in Indonesia".

LITERATURE REVIEW

In Indonesia, publicly listed manufacturing companies are classified into two primary sectors; IDX Sector Consumer Cyclicals (IDXCYC) and IDX Sector Consumer Non-Cyclicals (IDXNONCYC). Meanwhile, technology firms are represented by the IDX Sector Technology (IDXTECH), as defined by the Indonesia Stock Exchange (IDX). IDXTECH comprises firms specializing in software development, internet services, and supporting hardware. In contrast, IDXCYC includes issuers whose goods and services are highly sensitive to macroeconomic conditions and consumer purchasing power, whereas IDXNONCYC consists of companies producing essential goods with relatively stable demand, remaining resilient against economic fluctuations. According to Ahmad, Bashir, and Waqas (2022), financial performance is reflected through Return on Assets (ROA). This metric illustrates a firm's capability to generate profit from its total assets and indicates the extent to which the market appreciates its operational performance and the asset values recorded in financial statements. Furthermore, the study by Koroma and Kamara (2025) aims to explore the effects of the Cash Conversion Cycle (CCC), Leverage, and Sales Growth, alongside control variables such as Size and Inflation, on the dependent variable, Financial Performance (ROA), with the Dividend Payout Ratio (DPR) serving as a moderating variable.

The significance of financial strategy within the industry serves as a catalyst for optimizing the Cash Conversion Cycle (CCC), which subsequently enhances financial performance. In this context, corporate financial performance is measured using Return on Assets (ROA) (Ahmad, M., Bashir, R., & Waqas, H. 2022). Furthermore, technology firms capable of fostering profit growth demonstrate a robust ability to generate earnings, signifying a healthy financial condition (Koroma and Kamara, 2025). When measured through ROA, financial performance provides a comprehensive reflection of a firm's operational efficiency (Stavropoulos and Zounta, 2025). According to the empirical findings of Koroma and Kamara (2025), several independent variables significantly influence corporate performance, including the cash conversion cycle, leverage, and sales growth.

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The Cash Conversion Cycle (CCC) provides a more accurate analysis for managing Working Capital Management (WCM), enabling firms to ensure adequate cash reserves and optimal timing to fulfill their liquidity obligations. The extended duration of the CCC indicates that technology firms in Japan operate with relatively long production and sales cycles, which may reflect the inherent complexity of the industry. In a study conducted by Koroma and Kamara (2025), the CCC was found to have a positive effect on a firm's profitability, as measured by Return on Assets (ROA). This is exemplified by the tendency of manufacturing firms to maintain high days inventory outstanding, food and beverage companies requiring consistent stock availability, and technology firms experiencing seasonal sales cycles. Consistent with these findings, research in Ghana by Amponsah-Kwatiah and Asiamah (2021) also revealed that the CCC positively influences financial performance when proxied by ROA.

Research conducted by Koroma and Kamara (2025) found that the Dividend Payout Ratio (DPR) has a positive effect on a firm's profitability, as measured by Tobin's Q. However, when the DPR moderates the relationship between the Cash Conversion Cycle (CCC) and financial performance (proxied by Tobin's Q), a negative moderating effect is observed. This suggests that an increase in dividend distributions may diminish a firm's capacity for reinvestment in operational activities, thereby reducing the efficiency of the CCC in enhancing corporate value (Koroma and Kamara, 2025). Leverage reflects the extent of debt-financed funding utilized by a firm to fulfill its operational requirements and support corporate expansion; however, higher leverage potentially increases the risk of default, which subsequently leads to a decline in Return on Assets (Koroma and Kamara, 2025).

In a study by Malapa and Ngwakwe (2025), sales growth measured as sales revenue was found to have a negative impact on ROA, based on an analysis utilizing the Generalized Method of Moments (GMM) and Pearson correlation. Conversely, research by Murti, Lestari, and Leon (2026) demonstrates that sales growth has a positive and significant effect on ROA, a result that remains consistent across both Ordinary Least Squares (OLS) and panel data model analyses.

The complex relationship between liquidity and profitability constitutes a fundamental tenet of corporate finance theory. A study by Bolek (2025) analyzed this relationship among non-financial firms listed on the Warsaw Stock Exchange (WSE) in Poland from 1991 to 2021. The research categorized companies based on their Net Working Capital (NWC) strategies into three distinct groups aggressive, moderate, and conservative while also accounting for sales and asset size.

Study by Ahmad, Bashir, and Waqas (2022), investment policy was measured using the ratio of current assets to total assets (CATAR). Their findings revealed that

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CATAR has a significant negative impact on ROA, suggesting that firms should implement an aggressive working capital investment policy to enhance profitability. Conversely, the relationship between CATAR and Tobin's Q was found to be significantly positive, leading to the recommendation that firms adopt a conservative working capital investment policy to maximize market value. Supporting this perspective, research by Bashir and Ahmad (2025) indicates that a conservative investment policy can enhance firm value, as evidenced by higher Tobin's Q and Market-to-Book ratios.

A study by Koroma and Kamara (2025) found that firm size has a negative impact on a company's profitability, as measured by Return on Assets (ROA). This suggests that larger firms tend to exhibit lower efficiency regarding operating costs and resource allocation. Conversely, other research indicates that increasing firm size positively influences financial performance (Murti, Lestari, and Leon, 2026; Kayani et al., 2025). On the other hand, when firm size is operationalized through the natural logarithm of sales, it has been shown to exert a negative effect on ROA (Ahmad, Bashir, and Waqas, 2022).

Research by Soukhakian and Khodakarami (2019) found that inflation exerts a downward pressure on financial performance, as evidenced by a decline in Return on Assets (ROA). This occurs because inflationary pressures drive up the costs of raw materials, energy, and general operating expenses, thereby potentially diminishing a firm's profitability (Murti, Lestari, and Leon, 2026; Halik et al., 2024). Conversely, a study conducted by Koroma and Kamara (2025) revealed that inflation has a positive effect on financial performance when measured by ROA. This finding is further supported by Ahmad, Bashir, and Waqas (2022), who also reported a positive relationship between inflation and ROA-based financial performance.

RESEARCH METHOD

This study employs secondary quantitative data obtained from audited financial statements, the Bloomberg Terminal, and Yahoo Finance, with the sample selected through purposive sampling. The research focuses on technology, consumer non-cyclicals, and consumer cyclicals firms listed on the Indonesia Stock Exchange during the 2020–2024 period of which only 41 out of 341 manufacturing and technology firms fulfilled all predefined selection criteria, resulting in 205 observations included in the empirical analysis. Panel data regression analysis is conducted using EViews 9 to examine the effects of Cash Conversion Cycle, Leverage, Sales Growth, and Investment Policy on Return on Assets (ROA), while controlling for Firm Size and Inflation, with Dividend Payout Ratio included as a moderating variable.

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RESULTS AND DISCUSSION

Descriptive Statistical Test

The results of the descriptive statistical test on the independent variables, moderated dependent variables can be seen in the following table:

Table 2.
Descriptive Analysis Results

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs
ROA	0.0715	0.0622	0.3489	-0.0289	0.0577	205
CCC	103.0052	78.73	761.31	-10.49	94.7216	205
SG	0.0814	0.079	0.8584	-0.4048	0.1737	205
LEV	1.092	0.7175	6.4659	0.072	1.0868	205
SIZ	29.5779	29.6293	32.9379	26.9857	1.3252	205
INF	0.0265	0.0187	0.0551	0.0157	0.0148	205
DPR	0.8266	0.3139	89.3617	-6.6667	6.2635	205
IP	0.5684	0.5243	0.9491	0.1664	0.2065	205
DPR_CCC	74.1135	21.5115	5,608.34	-524.869	412.0213	205

Source: E-views 9, Data Processed (2025)

Based on the table above, it can be seen that:

1. Return on Assets (ROA) has a mean of 0.0715 with a standard deviation of 0.0577, a maximum of 0.3489, and a minimum of -0.0289, indicating that firm profitability is relatively concentrated around the mean with limited extreme variation.
2. Cash Conversion Cycle (CCC) records a mean of 103.0052, a standard deviation of 94.7216, a maximum of 761.3100, and a minimum of -10.4900, suggesting generally homogeneous dispersion with the presence of extreme outliers.
3. Sales Growth (SG) shows a mean of 0.0814, a standard deviation of 0.1737, a maximum of 0.8584, and a minimum of -0.4048, reflecting very high variability in firms' growth performance.
4. Leverage (LEV) has an average value of 1.0920 and a standard deviation of 1.0868, with values ranging from 0.0720 to 6.4659, indicating relatively homogeneous leverage levels alongside several firms with very high credit risk.
5. Firm Size (SIZ) records a mean of 29.5779, a standard deviation of 1.3252, a maximum of 32.9379, and a minimum of 26.9857, suggesting a relatively homogeneous distribution despite differences between large and small firms.

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6. Inflation (INF) has a mean of 0.0265, a standard deviation of 0.0148, a maximum of 0.0551, and a minimum of 0.0157, indicating stable and relatively homogeneous macroeconomic conditions during the study period.
7. Dividend Payout Ratio (DPR) has a mean of 0.8266, a standard deviation of 6.2635, a maximum of 89.3617, and a minimum of -6.6667, demonstrating a highly heterogeneous distribution and substantial volatility in dividend policies.
8. Investment Policy (IP) shows a mean of 0.5684, a standard deviation of 0.2065, a maximum of 0.9491, and a minimum of 0.1664, indicating relatively homogeneous investment behavior with limited extreme values.
9. Moderating Variable (DPR × CCC) records a mean of 74.1135, a standard deviation of 412.0213, a maximum of 5,608.3400, and a minimum of -524.8693, indicating very high dispersion and strong heterogeneity across observations.

Multiple Linear Regression

Table 3.
Results of the t-test

Variable	Model 1		Model 2	
	ROA		ROA	
	Coefficient	Prob.	Coefficient	Prob.
C	-0.2149	0.2282	-0.2128	0.2310
CCC	-0.0001	0.0033*	-0.0001	0.0390*
SG	0.0258	0.0166*	0.0256	0.0177*
LEV	-0.0166	0.0001*	-0.0166	0.0001*
SIZ	0.0085	0.1425	0.0085	0.1434
INF	0.1698	0.0838	0.1687	0.0888
DPR	-0.0005	0.0272*	-0.0007	0.6663
IP	0.1018	0.0015*	0.1022	0.0015*
DPR*CCC	-	-	0.0000	0.8990

*Source: E-views 9, Processed Data (*p-value t <0.05)*

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Based on the data in the table 3, the regression equation is as follows:

Model 1:

ROA_{it}= -0.2149 - 0.0001 CCC_{it} +0.0258 SG_{it} - 0.0166LEV_{it} + 0.0085 $SIZE_{it}$ + 0.1698 INF_{it}- 0.0005DPR_{it} + 0.1018 IP_{it} (1)

Model 2:

ROA_{it} = -0.2128 - 0.0001 CCC_{it} + 0.0256 SG_{it} - 0.0166LEV_{it} + 0.0085 $SIZE_{it}$ + 0.1687 INF_{it}- 0.0007 DPR_{it} + 0.0015 IP_{it} + 0.8990 $(CCC * DPR)_{it}$ (2)

From the results of the equation above, it can be explained as follows:

Model 1 (ROA)

1. The constant value (C) is -0.2149, meaning that if all independent variables Cash Conversion Cycle (CCC), Sales Growth (SG), Leverage (LEV), Firm Size (SIZ), Inflation (INF), Dividend Payout Ratio (DPR), and Investment Policy (IP) are assumed to be 0, then the value of Return on Assets (ROA) is –0.2149.
2. The estimated regression coefficient for the Cash Conversion Cycle (CCC) is –0.0001, indicating that, ceteris paribus, a one-unit increase in the cash conversion cycle is associated with a 0.0001 decrease in Return on Assets (ROA). This result suggests that less efficient working capital management adversely affects firm profitability.
3. The Sales Growth (SG) coefficient is 0.0258, implying that a one-unit increase in sales growth leads to an increase of 0.0258 in ROA, reflecting the positive contribution of revenue expansion to firm performance.
4. The coefficient of Leverage (LEV) is -0.0166, indicating that a one-unit increase in leverage results in a 0.0166 reduction in ROA, suggesting that higher debt levels weaken firms' financial performance.
5. For Firm Size (SIZ), the estimated coefficient is 0.0085, which implies that an increase in firm size is associated with a 0.0085 increase in ROA, although the effect is relatively modest.
6. The Inflation (INF) coefficient is 0.1698, indicating that a one-unit increase in inflation corresponds to a 0.1698 increase in ROA, suggesting a positive association between inflationary conditions and firm profitability.
7. Finally, the coefficient for Investment Policy (IP) is 0.1018, indicating that a one-unit increase in investment policy is associated with a 0.1018 increase in ROA, underscoring the role of investment decisions in enhancing firm profitability.

Model 2 (ROA)

1. The constant value (C) is -0.2128, indicating that if all independent variables, including the interaction term (DPR × CCC), are equal to 0, then the value of Return on Assets (ROA) is -0.2128.

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2. Consistent with Model 1, the Cash Conversion Cycle (CCC) retains a coefficient of -0.0001, suggesting that a one-unit increase in CCC reduces ROA by 0.0001, ceteris paribus.
3. The Sales Growth (SG) coefficient remains positive at 0.0256, indicating that higher sales growth continues to improve ROA.
4. The Leverage (LEV) coefficient is unchanged at -0.0166, confirming the negative relationship between leverage and firm profitability.
5. The estimated coefficient for Firm Size (SIZ) is 0.0085, suggesting a positive association between firm size and ROA, although the magnitude remains small.
6. The Inflation (INF) coefficient is 0.1687, indicating that inflation continues to exert a positive influence on ROA.
7. The Investment Policy (IP) coefficient is 0.1022, reaffirming the positive contribution of investment decisions to firm performance.
8. Finally, the coefficient of the interaction term (DPR × CCC) is 0.0000, indicating that the interaction between dividend policy and the cash conversion cycle does not meaningfully alter ROA.

Based on Model 1, the results of the study show that the regression coefficient of Investment Policy (IP), with a value of 0.1018, is greater than those of Sales Growth (0.0258), Leverage (-0.0166), Cash Conversion Cycle (-0.0001), and Dividend Payout Ratio (-0.0005). Therefore, investment policy is the variable that has the most dominant influence on Return on Assets (ROA) among the statistically significant explanatory variables. Similarly, in Model 2, the regression coefficient of Investment Policy (IP) is 0.1022, which is larger than the coefficients of Sales Growth (0.0256), Leverage (-0.0166), Cash Conversion Cycle (-0.0001), and Dividend Payout Ratio (-0.0007). This finding indicates that investment policy remains the most dominant factor affecting ROA.

Hypothesis Testing

t-test

The results of the t-test by comparing the t-table with the calculated t-table can be seen in the following table 3, can be concluded:

Model 1 (ROA)

1. Cash Conversion Cycle (CCC) has a negative and statistically significant effect on ROA, as evidenced by a p-value of 0.0033, which is below the 0.05 significance level. This finding implies that a longer cash conversion cycle reduces firm profitability.
2. Sales Growth (SG) exhibits a positive and statistically significant effect on ROA, with a p-value of 0.0166, suggesting that higher sales growth enhances firms' profitability.

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3. The Leverage (LEV) variable shows a negative and highly significant effect on ROA (p-value = 0.0001), indicating that higher debt levels adversely affect firms' financial performance.
4. Firm Size (SIZ) has a positive but statistically insignificant effect on ROA, as reflected by a p-value of 0.1425, implying that firm size does not play a decisive role in explaining profitability in this model.
5. Inflation (INF) demonstrates a positive yet insignificant effect on ROA (p-value = 0.0838), suggesting that macroeconomic price fluctuations do not significantly influence firm profitability.
6. Investment Policy (IP) exerts a positive and statistically significant effect on ROA (p-value = 0.0015), highlighting the importance of investment decisions in enhancing firm performance.

Model 2 (ROA)

1. Consistent with Model 1, the Cash Conversion Cycle (CCC) continues to exhibit a negative and statistically significant effect on ROA, with a p-value of 0.0390, reinforcing the adverse impact of inefficient working capital management on profitability.
2. Sales Growth (SG) maintains a positive and significant relationship with ROA (p-value = 0.0177), indicating the robustness of its effect across model specifications.
3. The Leverage (LEV) variable remains negatively and significantly associated with ROA, as shown by a p-value of 0.0001, confirming that excessive reliance on debt undermines firm profitability.
4. Conversely, Firm Size (SIZ) continues to show a positive but statistically insignificant effect on ROA (p-value = 0.1434).
5. Inflation (INF) also displays a positive yet insignificant effect (p-value = 0.0888).
6. The Investment Policy (IP) variable consistently demonstrates a positive and statistically significant effect on ROA (p-value = 0.0015), underscoring its pivotal role in driving firm performance.
7. Lastly, the interaction term (DPR × CCC) shows an insignificant effect on ROA (p-value = 0.8990), indicating that dividend policy does not moderate the relationship between the cash conversion cycle and firm profitability.

F test

The results of the F test by comparing the calculated F with the F table and P value can be seen in the following table:

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Table 4.
F Test Table

Model	F-Statistic	Prob (F-Statistic)
Regression (Model 1)	11,4679	0,0000
Regression (Model 2)	9,9170	0,0000

Based on the results of the F-test estimation for Model 1 (ROA), the p-value of the F-statistic is 0.0000, which is lower than the significance level of 0.05. This indicates that the null hypothesis (H_0) is rejected (the alternative hypothesis, H_1, is accepted), implying that at least one independent variable has a statistically significant effect on the dependent variable.

Similarly, the F-test results for Model 2 (ROA) show an F-statistic p-value of 0.0000, which is also below 0.05. Accordingly, the null hypothesis (H_0) is rejected (H_1 is accepted), confirming that at least one independent variable significantly influences the dependent variable.

The Influence of Cash Conversion Cycle (CCC) on Financial Performance

Based on the results presented in Table 5, which analyze the effect of the Cash Conversion Cycle (CCC) on financial performance as measured by Return on Assets (ROA) in Model 1, the estimated coefficient is –0.0001 with a probability value of 0.0033 < 0.05. This indicates that the alternative hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected, leading to the conclusion that CCC has a statistically significant negative effect on ROA. Similarly, the results for Model 2 show an estimated CCC coefficient of –0.0001 with a probability value of 0.0390 < 0.05, indicating that H_1 is accepted and H_0 is rejected. Thus, the findings confirm that CCC consistently exerts a negative and significant effect on ROA across both model specifications.

Based on the results in Table 3, the t-test further confirms a negative relationship between CCC and financial performance, as measured by ROA. This implies that an increase in the CCC of manufacturing and technology firms leads to a decline in ROA. A longer CCC reflects a slower cash conversion process, whereby firms require more time to convert investments in operational activities—such as inventory and accounts receivable—into cash, while tending to settle payments to suppliers relatively quickly.

The findings of this study contrast with those reported by Koroma and Kamara (2025), who document a positive effect of CCC on ROA. However, the results are consistent with prior studies by Ngo and Van Nguyen (2022), which find that a higher CCC negatively affects ROA due to inefficiencies in asset management. These findings are further supported by Hassan, Aysan, Kayani, and Choudhury (2023), who also conclude that CCC has a significant negative impact on ROA.

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The Impact of Cash Conversion Cycle (CCC) on Financial Performance Moderated by the Dividend Payout Ratio (DPR)

Based on the results presented in Table 3, which analyze the effect of the Cash Conversion Cycle (CCC) on financial performance (ROA) in Model 2 with the Dividend Payout Ratio (DPR) as a moderating variable, the estimated coefficient of the interaction term is 0.0000 with a probability value of 0.8990 > 0.05. This indicates that the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. Accordingly, it can be concluded that CCC moderated by DPR does not have a significant effect on ROA. This finding is consistent with the results of Koroma and Kamara (2025), who also find that CCC has no significant impact on firms' financial performance as measured by ROA.

Furthermore, the results in Table 3 confirm that there is no significant relationship between CCC and financial performance (ROA) when moderated by DPR. According to Dividend Smoothing Theory, firms tend to maintain stable dividend payout ratios and do not adjust dividend payments in response to short-term fluctuations in CCC. Firms with higher CCCs or longer cash conversion periods do not necessarily experience changes in financial performance, particularly in manufacturing firms, which typically have longer cash conversion cycles due to the nature of their business processes and operational structures. Manufacturing firms generally maintain safety stock, sell products through distributors or wholesalers, and make relatively prompt payments to suppliers, all of which contribute to higher CCC values without adversely affecting firm performance.

This study is consistent with the findings of Koroma and Kamara (2025), who report that CCC does not significantly influence firms' financial performance, as measured by ROA, when moderated by DPR. Using Model 2 and employing the Panel Fully Modified Ordinary Least Squares (FMOLS) method, Koroma and Kamara (2025) similarly document an insignificant moderating effect of DPR on the relationship between CCC and ROA.

The Influence of Leverage (LEV) on Financial Performance

Based on the results presented in Table 3, which analyze the effect of Leverage (LEV) on financial performance as measured by Return on Assets (ROA) in Model 1, the estimated coefficient is –0.0166 with a probability value of 0.0001 < 0.05. This result indicates that the alternative hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected, leading to the conclusion that leverage has a statistically significant negative effect on ROA. Similarly, the results for Model 2 also report an estimated leverage coefficient of –0.0166 with a probability value of 0.0001 < 0.05, indicating that H_1 is accepted and H_0 is rejected. Thus, leverage consistently demonstrates a negative and significant effect on ROA across both model specifications.

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The findings in Table 3 further confirm a negative relationship between leverage and financial performance, as measured by ROA. This implies that an increase in leverage among manufacturing and technology firms leads to a decline in ROA. Higher leverage indicates a greater reliance on debt financing to support asset acquisition, which increases interest expenses and overall financial costs. Given that manufacturing and technology firms are typically capital-intensive, excessive debt usage elevates financial risk and constrains operational flexibility, thereby reducing firms' ability to manage assets efficiently to generate profits.

These results are consistent with prior empirical studies. Koroma and Kamara (2025) report that higher leverage increases the likelihood of financial distress, which in turn negatively affects ROA. Similarly, Pham, Nguyen, and Nguyen (2020) find that rising leverage leads to a decline in ROA. Moreover, Oon and Chia (2025) document a significant negative correlation between leverage and firm performance indicators, including ROA.

The Impact of Sales Growth (SG) on Financial Performance

Based on the results in Table 3, which analyze the effect of the Sales Growth (SG) variable on financial performance (ROA) in Model 1, the estimated coefficient is 0.0258 with a probability value of $0.0166 < 0.05$, indicating that H_a is accepted (H_0 is rejected). Thus, it can be concluded that SG has a positive and significant effect on ROA. Further analysis using ROA in Model 2 shows that the estimated coefficient of SG is 0.0256 with a probability value of $0.0177 < 0.05$, which also indicates that H_a is accepted (H_0 is rejected). Accordingly, SG is proven to have a positive and significant effect on ROA.

Based on the results presented in Table 3, the test results indicate a positive relationship between SG and financial performance as measured by ROA. This implies that an increase in sales growth among manufacturing and technology firms leads to an improvement in ROA. Higher SG reflects the firm's ability to continuously increase revenue, which signals business sustainability as evidenced by rising revenue across periods and is ultimately reflected in higher returns on assets.

The findings of this study are consistent with those of Koroma and Kamara (2025), who report that sales growth has a positive effect on ROA in both Model 1 and Model 2. Similar results are also documented by Ahmad, Bashir, and Waqas (2022), who find that sales growth positively affects ROA. Furthermore, this result is supported by Murti, Lestari, and Leon (2026), who show that sales growth has a positive and significant impact on ROA.

The Influence of Investment Policy (IP) on Financial Performance

Based on the results presented in Table 3, which analyze the effect of the Investment Policy (IP) variable on financial performance (ROA) in Model 1, the estimated coefficient is 0.1018 with a probability value of $0.0015 < 0.05$, indicating that

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H_a is accepted (H_0 is rejected). Therefore, it can be concluded that IP has a positive and significant effect on ROA. Further analysis in Model 2 shows that the estimated coefficient of IP is 0.1022 with a probability value of 0.0015 < 0.05, which also indicates that H_a is accepted (H_0 is rejected). Accordingly, IP is proven to have a positive and significant effect on ROA.

Based on the results in Table 3, the test results indicate a positive relationship between Investment Policy and financial performance as measured by ROA. Investment policy reflects management decisions to allocate company funds to productive assets, such as machinery, technology, research and development, or other strategic investments. An appropriate investment policy enhances asset productivity, improves operational efficiency, strengthens competitiveness, and increases corporate revenues, which in turn directly improves ROA.

These findings are supported by Ahmad, Bashir, and Waqas (2022), who report that investment policy has a positive effect on corporate financial performance as measured by ROA. The results are also consistent with the study by Ho and Hoang (2024), which finds that investment policy has a positive and significant impact on ROA.

The Impact of Firm Size (SIZ) on Financial Performance

Based on the results presented in Table 3, which analyze the effect of the firm size (SIZ) variable on financial performance (ROA) in Model 1, the estimated coefficient is 0.0085 with a probability value of 0.1425 > 0.05, indicating that H_0 is accepted (H_a is rejected). Therefore, it can be concluded that SIZ does not have a significant effect on ROA. Similarly, further analysis in Model 2 using ROA as the dependent variable shows an estimated coefficient of 0.0085 with a probability value of 0.1434 > 0.05, which also indicates that H_0 is accepted (H_a is rejected). Thus, SIZ is not proven to have a significant effect on ROA.

Based on the results in Table 3, the test findings indicate that firm size does not significantly influence financial performance as measured by ROA. According to the economies of scale theory, large or mature firms are expected to achieve higher efficiency; however, larger firms often face diseconomies of scale, such as increased managerial complexity and operational inefficiencies. An increase in firm size in manufacturing and technology companies reflects their ability to grow and expand operations, yet this growth is not necessarily accompanied by efficient asset utilization. As a result, the effect of firm size on financial performance, as measured by ROA, becomes insignificant.

These findings are consistent with the study by Koroma and Kamara (2025), which, using Model 1, reports that firm size does not have a significant effect on financial performance as measured by ROA. The results are also in line with Pham

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(2016), who finds that firm size does not significantly affect ROA. Furthermore, Abugamea (2021) supports this conclusion by reporting a negative and insignificant relationship between firm size and ROA.

The Influence of Investment Policy (IP) on Financial Performance

Based on the results presented in Table 3, which analyze the effect of the inflation (INF) variable on financial performance (ROA) in Model 1, the estimated coefficient is 0.1698 with a probability value of 0.0838 > 0.05, indicating that H_0 is accepted (H_a is rejected). Therefore, it can be concluded that inflation does not have a significant effect on ROA. Similarly, further analysis in Model 2 shows that the estimated coefficient of INF is 0.1687 with a probability value of 0.0888 > 0.05, which also indicates that H_0 is accepted (H_a is rejected). Thus, inflation is not proven to have a significant effect on ROA.

Based on the results in Table 3, the test findings indicate that inflation does not significantly influence financial performance as measured by ROA. According to Price Adjustment Theory, manufacturing firms are generally able to pass increases in costs caused by inflation on to consumers by raising the selling prices of their products. Inflation is a macroeconomic variable that affects all firms broadly; therefore, its impact on financial performance, particularly for manufacturing and technology firms, tends to be indirect, thereby reducing the observable effect of inflation on ROA.

These findings are consistent with Koroma and Kamara (2025), who, using both Model 1 and Model 2 and applying the Panel FMOLS (Fully Modified Ordinary Least Squares) approach, find that inflation does not affect financial performance as measured by ROA. The results also align with Pham (2016), who reports that inflation does not influence firms' profitability as measured by ROA. Furthermore, Abaidoo and Anyigba (2020) support this conclusion by showing that inflation does not have a significant effect on ROA during the study period.

CONCLUSION

Based on the results of research, this study examines the effects of the Cash Conversion Cycle, Leverage, Sales Growth, and Investment Policy, along with the control variables Firm Size and Inflation, on Financial Performance measured by Return on Assets (ROA), with the Dividend Payout Ratio (DPR) serving as a moderating variable, the following conclusions can be drawn:

1. Investment policy positively affects the ability of manufacturing and technology firms to enhance financial performance. Investment policy reflects management's decisions to allocate company funds into productive assets (such as machinery, technology, R&D, or other strategic investments). An appropriate investment

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policy enhances asset productivity, which in turn improves operational efficiency, strengthens competitiveness, and increases corporate revenue, thereby directly leading to an improvement in Return on Assets (ROA).

2. Sales growth has a positive effect on the ability of manufacturing and technology firms to improve financial performance. This implies that when Sales Growth (SG) in manufacturing and technology firms increases, ROA also tends to increase. Higher SG indicates that manufacturing and technology firms possess the capability to continuously enhance revenue generation, which reflects the firm's sustainability. This sustainability is evidenced by increasing revenue in each period and is further manifested through an improvement in Return on Assets (ROA).
3. Leverage negatively affects the ability of manufacturing and technology firms to improve financial performance. An increase in leverage leads to a decline in a firm's financial performance due to higher financing costs and an elevated risk of default. Therefore, firms are advised to reduce leverage by increasing equity through rights issues or private placements, strengthening retained earnings, and refraining from additional debt accumulation.
4. The Cash Conversion Cycle has a negative effect on the ability of manufacturing and technology firms to improve financial performance. Firms with a longer cash conversion cycle also experience a negative impact on financial performance, as funds are tied up in working capital for a longer period, thereby reducing efficiency and profitability. Companies should shorten the cash conversion cycle by accelerating the Inventory Collection Period (ICP) through lean manufacturing practices, reducing the Average Collection Period (ACP) by improving the efficiency of receivables collection, and extending the Payables Deferral Period (PDP) by synchronizing payment systems and making payments closer to their due dates.

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