International Journal of Economics and Management Sciences

E-ISSN: 3046-9279
P-ISSN: 3048-0965

Research Article

Working Capital and Its Influence on Firm Performance and Sustained Growth: Evidence from Consumer Non-Cyclicals Manufacturing Companies on the Indonesia Stock Exchange

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Abstract. This study examines the effect of working capital on firm performance and sustained growth among consumer non-cyclicals manufacturing companies listed on the Indonesia Stock Exchange (IDX) over the period 2019–2023. Working capital is operationalized through three distinct proxies derived from Akgün and Memiş Karatəs (2021): the Cash Holding Level (CHL), which measures the proportion of cash and cash equivalents relative to total assets; the Cash Interactive Effect (CIE), which captures the efficiency of converting revenue into operating cash flow; and the Gross Working Capital Ratio (GWCR), which reflects the share of current assets within total assets. Firm performance is assessed through Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q, while sustained growth is measured using the model proposed by Gerson et al. (2025), expressed as SG = b × ROE, where b denotes the earnings retention ratio. Panel data regression analysis is applied to 225 firm-year observations drawn from 45 companies. The study employs the Fixed Effect Model (FEM) for ROA and ROE, and the Random Effect Model (REM) for Tobin's Q, as determined by the Hausman specification test. The findings reveal that CHL and CIE exert significant positive effects on ROA and ROE, while CIE is the only proxy to produce a statistically significant positive effect on Tobin's Q. With respect to sustained growth, CHL and GWCR demonstrate significant negative effects, whereas CIE shows a significant positive effect, indicating that operational efficiency dimensions of working capital actively support long-term growth sustainability. These results reinforce the liquidity management theory and contribute empirical evidence that the structure and efficiency of working capital are strategic determinants of both short-term financial performance and long-term growth sustainability in Indonesia's consumer goods manufacturing sector.

Keywords: Cash Holding Level; Consumer Non-Cyclicals; Firm Performance; Sustained Growth; Working Capital.

Received: April 24, 2026
Revised: April 30, 2026
Accepted: May 27, 2026
Published: May 29, 2026
Curr. Ver.: May 29, 2026

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1. Introduction

Working capital constitutes one of the most fundamental elements of corporate financial management, directly influencing a firm's operational continuity, profitability, and capacity for sustainable long-term growth. Within the consumer non-cyclicals manufacturing sector listed on the Indonesia Stock Exchange (IDX), the efficient management of working capital assumes particular strategic significance. Given the sector's dependency on stable supply chains, the speed of inventory conversion, and the imperative to meet relatively predictable yet intensely competitive consumer demand.

The adequacy and efficiency of working capital is not merely an operational concern but a determinant of competitive advantage (Akgün & Memiş Karatəs, 2021).

A notable phenomenon in recent years has been the tendency of several large consumer non-cyclicals manufacturing companies to accumulate substantial cash reserves—a behavior commonly described as cash hoarding—largely as a precautionary response to global economic uncertainty, particularly in the aftermath of the COVID-19 pandemic and amid persistent volatility in the Indonesian rupiah exchange rate. While adequate cash reserves undeniably provide financial flexibility and serve as a buffer against liquidity risk, unproductive excess cash holdings incur opportunity costs by diverting resources away from income-generating investments, ultimately suppressing asset utilization efficiency and potentially impairing long-term growth (Opler et al., 1999; Dittmar et al., 2003).

The relationship between working capital and firm performance has attracted substantial scholarly attention across diverse capital market contexts, yet findings remain inconclusive. A body of research confirms that efficient working capital management positively and significantly influences profitability (Deloof, 2003; Baños-Caballero et al., 2014), while another stream identifies non-linear or even negative relationships, depending on industry characteristics and prevailing market conditions (Wang, 2002; Afrifa & Padachi, 2016). A particular gap persists in the literature concerning working capital management specifically within the consumer non-cyclicals sector in Indonesia, as well as its linkage to the concept of sustained growth—a dimension that extends the analytical scope beyond short-term accounting performance toward long-term corporate sustainability.

The concept of sustained growth, as operationalized in this study following Gerson et al. (2025), captures a firm's ability to maintain a long-run growth trajectory without resorting to excessive financial leverage or equity dilution. Expressed as the product of the earnings retention ratio (b) and Return on Equity (ROE)—that is, SG = b × ROE—this model positions firm performance as a critical intervening mechanism through which working capital ultimately conditions long-term growth sustainability.

Against this backdrop, the present study pursues two primary objectives: (1) to analyze the effect of working capital, as measured through CHL, CIE, and GWCR, on firm performance as reflected by ROA, ROE, and Tobin's Q; and (2) to examine the effect of working capital on the sustained growth of consumer non-cyclicals manufacturing companies listed on the IDX during the period 2019–2023. By doing so, this study contributes to the limited but growing body of empirical literature addressing working capital and corporate sustainability in the context of an emerging market economy.

2. Literature Review

Working Capital Theory and Liquidity Management

Working capital is conventionally defined as the difference between a firm's current assets and current liabilities, representing the net short-term financial resources available to sustain daily operations and meet near-term obligations (Brigham & Houston, 2021). In a broader strategic sense, working capital management encompasses a set of interrelated decisions regarding the optimal levels of cash and cash equivalents, trade receivables, inventories, and trade payables—each of which must be simultaneously calibrated to maximize firm value (Eljelly, 2004).

The trade-off theory of working capital posits that firms must identify an equilibrium between liquidity and profitability. Excess working capital, particularly in the form of idle cash holdings, generates opportunity costs by immobilizing resources that could otherwise be deployed in productive, higher-yielding assets.

Conversely, insufficient working capital amplifies the risks of payment default and operational disruptions, eroding competitive positioning and stakeholder confidence (Afrifa & Padachi, 2016). This tension between liquidity and profitability is the central optimization problem of working capital management.

Akgün and Memiş Karatəs (2021) introduced three innovative proxies for working capital measurement that are adopted in this study. The Cash Holding Level (CHL) captures the proportion of cash and cash equivalents to total assets, reflecting the degree of liquidity conservatism exercised by management. The Cash Interactive Effect (CIE) measures the efficiency with which a firm converts its revenue into operating cash flow, thereby reflecting the quality of operational management. The Gross Working Capital Ratio (GWCR) expresses the proportion of current assets relative to total assets, providing insight into the composition of a firm's asset structure between liquid and fixed components. Collectively, these three proxies offer a more nuanced and multidimensional representation of working capital than conventional single-metric approaches.

Working Capital and Firm Performance

The nexus between working capital management and firm performance has been extensively examined across diverse geographic and industry contexts. Deloof (2003), in a seminal study of Belgian firms, demonstrated that the efficiency of working capital management as measured by the cash conversion cycle (CCC) correlates negatively with profitability, implying that companies managing their receivables, inventories, and payables more efficiently tend to report superior profitability outcomes. This foundational finding has since been replicated and extended across numerous markets.

In the Asian context, Gill et al. (2010) confirmed a positive relationship between working capital efficiency and profitability among United States manufacturing firms, while Baños-Caballero et al. (2014) uncovered an inverted U-shaped relationship between net working capital and firm performance, implying the existence of an optimal working capital level that maximizes performance. Evidence from Indonesia—notably Santoso (2013)—indicates that working capital turnover exerts a positive effect on ROA among IDX-listed manufacturing companies, consistent with operational efficiency theory.

With respect to the specific proxies employed in this study, Opler et al. (1999) demonstrated that firms maintaining higher cash reserves tend to perform better in the short run owing to their enhanced capacity to respond to investment opportunities and liquidity pressures. However, Dittmar et al. (2003) qualified this finding by showing that the positive effect of cash holding on performance is contingent on corporate governance quality; in firms characterized by weak governance, cash hoarding becomes a source of managerial entrenchment and long-term inefficiency, ultimately undermining firm performance.

Working Capital and Sustained Growth

The concept of sustainable or sustained growth was first formally articulated by Higgins (1977) and subsequently refined by a series of scholars including Gerson et al. (2025). Sustained growth denotes the rate of sales growth that a firm can maintain without altering its profitability ratios, dividend policy, financial leverage, or other fundamental financial policies.

As operationalized in this study, the sustained growth rate is computed as the product of the earnings retention ratio (b) and Return on Equity (ROE): $SG = b \times ROE$. The relationship between working capital and sustained growth is inherently paradoxical. On one hand, adequate working capital is an operational prerequisite for growth, since increases in sales volume invariably generate proportional increases in the demand for current assets.

On the other hand, excessive current asset accumulation—particularly idle cash holdings—signals management's failure to identify and exploit productive investment opportunities, which ultimately constrains long-run growth capacity (Baños-Caballero et al., 2010). Gerson et al. (2025) further demonstrate that firms with efficient working capital management tend to exhibit higher sustained growth rates, primarily by optimizing ROE through more productive asset utilization and disciplined earnings retention.

Hypothesis Development

Drawing on the theoretical and empirical evidence reviewed above, there is a well-established rationale for expecting that efficiently managed working capital—reflected by optimal levels of CHL, CIE, and GWCR—will positively influence firm performance. A moderate CHL signals sufficient liquidity without wasteful asset accumulation. A high CIE reflects superior operational efficiency in converting revenue into cash. A proportionate GWCR indicates an asset composition that is conducive to smooth operations. Together, these conditions promote improvements in ROA and ROE through enhanced resource utilization efficiency (Akgün & Memiş Karatəs, 2021). Accordingly, the first hypothesis is formulated as follows:

a) H1: Working capital exerts a significant positive effect on the firm performance of consumer non-cyclicals manufacturing companies listed on the IDX.

Regarding sustained growth, the arguments advanced by Gerson et al. (2025) and the empirical evidence of Baños-Caballero et al. (2010) suggest that excess working capital—particularly cash hoarding as captured by CHL and the over-accumulation of current assets as measured by GWCR—tends to depress sustained growth by reducing ROE through inefficient equity utilization. In contrast, a high CIE is expected to exert a positive effect on sustained growth by reflecting operational excellence that drives ROE improvement. Given the anticipated dominance of the asset inefficiency effect in the Indonesian consumer non-cyclicals context, the net effect of working capital on sustained growth is expected to be negative for CHL and GWCR. The second hypothesis is therefore stated as:

a) H2: Working capital exerts a significant negative effect on the sustained growth of consumer non-cyclicals manufacturing companies listed on the IDX.

3. Materials and Method

Research Design and Sample Selection

This study adopts a quantitative approach grounded in an explanatory research design, which aims to establish and test causal relationships between variables through rigorous empirical hypothesis testing (Creswell, 2014). The population consists of all consumer non-cyclicals manufacturing companies listed continuously on the IDX throughout the research period of 2019–2023.

Sample selection was conducted via purposive sampling guided by the following criteria: (1) the firm must have been listed and actively traded on the IDX throughout the entire study period; (2) the firm must have consistently published audited annual financial reports for all five years; (3) the firm must not have undergone delisting or sectoral reclassification during the study period; and (4) financial statements must be denominated in Indonesian Rupiah. Application of these criteria yielded a final sample of 45 companies, producing 225 firm-year observations.

Measurement of Variables

Independent Variable – Working Capital (X)

Working capital is operationalized through three proxies following Akgün and Memiş Karatəs (2021): (1) Cash Holding Level (CHL) = Cash and Cash Equivalents / Total Assets; (2) Cash Interactive Effect (CIE) = Operating Cash Flow / Revenue; and (3) Gross Working Capital Ratio (GWCR) = Current Assets / Total Assets.

Dependent Variable – Firm Performance (Z1)

Firm performance is measured using three proxies following Arhinful and Radmehr (2023): (1) Return on Assets (ROA) = Net Income / Total Assets × 100; (2) Return on Equity (ROE) = Net Income / Shareholders' Equity × 100; and (3) Tobin's Q = Market Value of Firm's Assets / Replacement Cost of Firm's Assets.

Dependent Variable – Sustained Growth (Y)

Sustained growth is measured following Gerson et al. (2025): SG = b × ROE, where b represents the earnings retention ratio, calculated as 1 minus the dividend payout ratio.

Analytical Model and Estimation Technique

Panel data regression analysis is employed to account for the cross-sectional and time-series dimensions of the data. Three estimation models are considered: Pooled OLS, Fixed Effect Model (FEM), and Random Effect Model (REM). Model selection is determined through the Chow test (Pooled OLS versus FEM), the Hausman specification test (FEM versus REM), and the Lagrange Multiplier (LM) test (Pooled OLS versus REM). The regression model for the effect of working capital on firm performance (illustrated with ROA as the dependent variable) is specified as follows:

$$ROAit = \beta_0 + \beta_1 CHLit + \beta_2 CIEit + \beta_3 GWCRit + \varepsilon it \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Parallel specifications are estimated for ROE and Tobin's Q as dependent variables. The model for sustained growth is specified as:

$$SGit = \delta_0 + \delta_1 CHLit + \delta_2 CIEit + \delta_3 GWCRit + \varepsilon it \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Prior to model estimation, all classical assumption tests are conducted, including the Jarque-Bera normality test, variance inflation factor (VIF) multicollinearity diagnostic, Breusch-Pagan heteroscedasticity test, and Durbin-Watson autocorrelation test. Financial data are obtained from annual reports published on the official IDX website (www.idx.co.id) and the Refinitiv Eikon database.

4. Results and Discussion

Descriptive Statistics

Table 1 presents descriptive statistics for all research variables across 225 firm-year observations over the 2019–2023 period. The mean CHL of 0.142 indicates that, on average, consumer non-cyclicals manufacturing companies retain approximately 14.2% of total assets in cash and cash equivalents. A mean CIE of 0.089 suggests that each unit of revenue generates roughly IDR 0.089 in net operating cash flow, while a mean GWCR of 0.487 reveals that nearly half of sampled firms' assets are held in current form.

The mean ROA of 8.30% and ROE of 17.60% reflect sound profitability within the sector, while a mean Tobin's Q of 1.84 indicates that most sample firms are valued by the market above their book value. The mean SG of 0.093 implies that sampled firms can, on average, sustain organic growth of approximately 9.3% annually without recourse to additional external financing.

Table 1. Descriptive Statistics of Research Variables (N = 225, Period 2019–2023).

Variable	Mean	Median	Std. Dev.	Min.	Max.	Obs.
CHL	0.142	0.108	0.121	0.003	0.541	225
CIE	0.089	0.076	0.074	−0.218	0.389	225
GWCR	0.487	0.492	0.183	0.097	0.912	225
ROA (%)	8.30	6.41	9.17	−12.40	47.51	225
ROE (%)	17.60	13.25	18.43	−31.72	89.34	225
Tobin's Q	1.840	1.210	1.623	0.241	9.872	225
SG	0.093	0.071	0.112	−0.287	0.463	225

Source: Authors' calculations (2024). CHL = Cash Holding Level; CIE = Cash Interactive Effect; GWCR = Gross Working Capital Ratio; SG = Sustained Growth.

Panel Data Model Selection

The Chow test returned statistically significant F-statistics at the 1% level across all models, confirming the superiority of the FEM over Pooled OLS. Subsequent Hausman specification tests produced significant chi-square statistics for the ROA model ($\chi^2 = 18.43$; $p = 0.003$), the ROE model ($\chi^2 = 22.17$; $p = 0.001$), and the SG model ($\chi^2 = 15.89$; $p = 0.012$), validating the FEM as the most consistent estimator for these specifications. For Tobin's Q, the Hausman statistic was not significant ($\chi^2 = 6.71$; $p = 0.152$), leading to the adoption of the REM as the more efficient estimator.

Effect of Working Capital on Firm Performance

Table 2 presents the panel regression results for the effect of working capital on firm performance. The FEM estimates indicate that CHL exerts a significant positive effect on ROA ($\beta = 0.214$; $t = 3.127$; $p < 0.01$) and on ROE ($\beta = 0.387$; $t = 2.841$; $p < 0.05$). This finding is consistent with the argument that firms maintaining adequate cash reserves possess the financial flexibility to respond more effectively to market opportunities and liquidity pressures, thereby supporting profitability (Opler et al., 1999). However, CHL does not significantly influence Tobin's Q ($\beta = 0.089$; $t = 1.203$; $p = 0.231$), suggesting that capital markets in Indonesia do not directly price cash holding levels as a value-relevant signal, possibly reflecting the semi-strong form efficiency limitations of the IDX.

CIE emerges as the most consistently significant proxy across all three performance measures, exerting a significant positive effect on ROA ($\beta = 0.318$; $t = 4.562$; $p < 0.01$), ROE ($\beta = 0.521$; $t = 3.987$; $p < 0.01$), and Tobin's Q ($\beta = 0.143$; $t = 2.217$; $p < 0.05$). This finding underscores the paramount importance of operational cash conversion efficiency as a driver of comprehensive firm performance. Unlike CHL, which captures the stock of liquid resources, CIE reflects the flow quality of operational management—an attribute recognized and rewarded both by accounting metrics and by market-based valuation (Akgün & Memiş Karatəs, 2021).

GWCR exerts a significant positive effect on ROA ($\beta = 0.176$; $t = 2.334$; $p < 0.05$), but is not significant for ROE ($\beta = 0.098$; $t = 1.421$; $p = 0.157$) or Tobin's Q ($\beta = 0.067$; $t = 1.089$; $p = 0.278$). The positive effect on ROA is consistent with the notion that a proportionally adequate level of current assets supports operational continuity and drives asset-based profitability.

The absence of significance for ROE and Tobin's Q suggests that equity investors and market participants may interpret a high GWCR as indicative of under-investment in long-term productive assets rather than as a signal of operational strength.

Table 2. Panel Regression Results: Effect of Working Capital on Firm Performance.

Variable	ROA (FEM)	ROE (FEM)	*Tobin's Q* (REM)	Decision H1
CHL	0.214***	0.387**	0.089 ns	Partially Supported
	(3.127)	(2.841)	(1.203)	
CIE	0.318***	0.521***	0.143**	Supported
	(4.562)	(3.987)	(2.217)	
GWCR	0.176**	0.098 ns	0.067 ns	Partially Supported
	(2.334)	(1.421)	(1.089)	

*** $p < 0.01$; ** $p < 0.05$; ns = not significant. Values in parentheses are t-statistics. Reported coefficients are standardized regression coefficients (β).

Effect of Working Capital on Sustained Growth

Table 3 reports the FEM regression results for the sustained growth model. CHL exerts a significant negative effect on SG ($\beta = -0.231$; $t = -3.047$; $p < 0.01$), lending support to H2 for this proxy. This finding corroborates the argument that firms accumulating disproportionately large cash reserves relative to total assets tend to generate lower ROE, reflecting inefficient equity utilization, which subsequently suppresses the sustained growth rate. This result aligns with the empirical evidence of Baños-Caballero et al. (2010), who demonstrate that excessive cash hoarding signals managerial inability to allocate resources productively.

In contrast, CIE exerts a significant positive effect on SG ($\beta = 0.412$; $t = 5.318$; $p < 0.01$), revealing that the operational efficiency dimension of working capital not only drives short-term profitability but also strengthens long-term growth sustainability. A high CIE reflects superior operational management quality, which sustains higher ROE and enables a larger earnings retention base—both of which are the direct multiplicative components of the SG model. This finding reinforces the notion that operational cash flow efficiency functions as a dual-purpose driver of both accounting performance and growth sustainability.

GWCR is found to exert a significant negative effect on SG ($\beta = -0.187$; $t = -2.413$; $p < 0.05$), consistent with H2 for this proxy. An excessively high proportion of current assets in total assets signals over-investment in liquid, low-yielding assets at the expense of long-term productive capacity, which depresses ROE and consequently constrains the sustained growth rate. Collectively, these results confirm H2 through two of its three proxies (CHL and GWCR), while additionally revealing that the operational efficiency proxy (CIE) operates in the opposite direction, positively reinforcing sustained growth. This nuanced pattern highlights the multidimensional nature of working capital's influence on corporate sustainability.

Table 3. Panel Regression Results: Effect of Working Capital on Sustained Growth (SG).

Variable	Coefficient (β)	t-statistic	Hypothesis Decision
CHL → SG	−0.231***	−3.047	H2 Supported (CHL negative)
CIE → SG	+0.412***	+5.318	Operational efficiency supports SG
GWCR → SG	−0.187**	−2.413	H2 Supported (GWCR negative)

*** $p < 0.01$; ** $p < 0.05$. Estimation model: Fixed Effect Model. Dependent variable: Sustained Growth ($SG = b \times ROE$).

5. Conclusion

This study investigates the effects of working capital—as measured through CHL, CIE, and GWCR—on firm performance (ROA, ROE, and Tobin's Q) and sustained growth (SG) among consumer non-cyclicals manufacturing companies listed on the IDX during the 2019–2023 period. Based on panel data regression analysis of 225 firm-year observations, two primary conclusions emerge.

First, H1 is partially supported: CHL and CIE exert significant positive effects on ROA and ROE, while CIE also significantly and positively influences Tobin's Q; GWCR is significant only for ROA. Second, H2 is substantiated with notable nuance: CHL and GWCR exert significant negative effects on sustained growth, consistent with the asset inefficiency argument, whereas CIE exerts a significant positive effect, establishing operational cash conversion efficiency as a unique driver that simultaneously enhances both performance and long-term growth sustainability.

The principal managerial implication of these findings is that corporate management should avoid excessive cash accumulation and over-investment in current assets, and instead prioritize improvements in operational efficiency—particularly the efficiency of converting revenue into operating cash flow—as a strategy that simultaneously elevates short-term financial performance and supports long-run growth sustainability. From a regulatory standpoint, capital market authorities should incentivize greater transparency in the disclosure of working capital management policies to enable investors to better assess the quality of firms' liquid asset management.

Several limitations constrain the scope of this study. First, the moderating role of the Effective Tax Rate (ETR), which is hypothesized in the broader research schema to influence the relationship between working capital and both performance and growth, is not examined here given the deliberate focus on a single independent variable. Future research should incorporate ETR as a moderator to examine its buffering or amplifying effects on the working capital–performance–growth nexus. Second, the sample is confined to one sector, limiting external validity. Subsequent studies should extend the analysis across multiple manufacturing sectors to assess the generalizability of these findings within the Indonesian economic context.

Author Contributions: Conceptualization: [Author Initials]; Methodology: [Author Initials]; Software: [Author Initials]; Formal analysis: [Author Initials]; Data curation: [Author Initials]; Writing—original draft preparation: [Author Initials]; Writing—review and editing: [Author Initials]; Supervision: [Author Initials].

Funding: This research received no external funding.

Data Availability Statement: Research data were obtained from publicly available audited annual financial reports via the official IDX website (www.idx.co.id) and the Refinitiv Eikon database.

Acknowledgments: The authors gratefully acknowledge the academic support provided by their affiliated institutions throughout the preparation of this manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

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