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Working Capital Turnover And Sales Growth In Relation To Profitability With Firm Size And Leverage As Moderating Variables In Food And Beverage Firms Listed On The Indonesia Stock Exchange

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Abstract

This study examines the associations of working capital turnover and sales growth with profitability, measured by return on assets (ROA), and tests whether firm size and leverage moderate these relationships. The study uses a quantitative approach and secondary data from the population of food and beverage firms listed on the Indonesia Stock Exchange. Five firms were purposively selected based on the availability of quarterly consolidated financial statements for 2021–2025. Of the 100 firm-quarter observations, 98 met the study criteria and were included in the analysis. The panel regression includes firm and calendar-quarter fixed effects and four interaction terms. The fixed-effects specification was selected based on the Chow and Hausman test results reported in the EViews analysis summary. Sales growth is positively and significantly associated with ROA at the reference values of both moderators. Working capital turnover is not significantly associated with ROA. The results provide insufficient evidence that firm size or leverage moderates either relationship.

Keywords: working capital turnover, sales growth, profitability, firm size, leverage.

INTRODUCTION

The food and beverage industry accounts for a substantial share of Indonesian manufacturing activity. In the second quarter of 2024, it contributed 38.4% of non-oil and gas manufacturing gross domestic product (Kementerian Perindustrian Republik Indonesia, 2024). This contribution provides the context for examining the performance

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of listed firms in this industry. At the firm level, production and sales require raw material purchases, inventory storage, distribution, and credit extended to customers. Expenditure on these activities may precede cash receipts. A firm's ability to generate profit therefore depends on how it manages the funds required to operate and meet demand.

Profitability in this study is measured by return on assets (ROA), defined as consolidated profit for a single quarter divided by average total assets at the beginning and end of that quarter. This measure indicates profit generated relative to the assets employed. A firm may report higher profit but lower ROA when assets grow faster than profit. Conversely, improved margins or better utilization of existing capacity may increase ROA with only a small increase in assets. This distinction matters for food and beverage firms that expand production capacity or distribution networks as sales grow.

PT Indofood CBP Sukses Makmur Tbk (ICBP) illustrates differences between sales and profit growth. Consolidated net sales increased from IDR72.60 trillion in 2024 to IDR74.85 trillion in 2025, while operating profit rose from IDR16.32 trillion to IDR16.66 trillion. Over the same period, the company's reported core profit declined from IDR10.41 trillion to IDR9.98 trillion, mainly because of higher raw material costs (PT Indofood CBP Sukses Makmur Tbk, 2026). These annual figures illustrate how higher sales can coincide with cost pressures. The ROA examined in this study is calculated separately using consolidated quarterly profit and average quarterly assets.

Working capital turnover measures net sales generated per unit of average net working capital. Faster collection of receivables or better alignment of inventory with demand can accelerate the circulation of funds and reduce short-term financing needs. However, a high ratio may also arise when current assets only slightly exceed current liabilities. Under these conditions, small changes in current balances can produce large changes in the ratio. Excessive inventory reductions may also disrupt order fulfillment. Deloof (2003) demonstrates the relevance of working capital component management to profitability, while Baños-Caballero et al. (2014) show that its benefits may vary with operating needs and financial constraints. Both studies provide a basis for examining whether variation in working capital turnover is associated with ROA among the firms observed.

Sales growth can improve profitability when additional volume spreads fixed costs over more units. The extent of this benefit depends on the margin earned on additional sales and the resources needed to generate them. Discounts, higher raw material costs, or credit sales with longer collection periods may cause profit to grow more slowly than sales. This study therefore compares sales with the same quarter of the previous year to reduce the influence of recurring calendar patterns.

Firm size is considered a moderator because the scale of assets may alter how firms benefit from working capital efficiency and sales growth. Firms with larger

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production facilities and distribution networks may meet additional demand using existing capacity. In such cases, additional sales may increase profit with limited asset additions. If growth requires new facilities, assets and costs may rise before additional revenue is fully realized. Larger scale may also strengthen bargaining power with suppliers, although inventory requirements across more markets may tie up funds for longer. Because these mechanisms can operate in opposite directions, the direction of firm-size moderation requires empirical testing.

Leverage is considered a moderator because liabilities can finance inventory and credit sales while affecting cash-flow flexibility. For firms with relatively high liabilities, faster working capital turnover may reduce the need for additional operating funds. The relationship between sales growth and ROA may also change when higher sales require more financing or when interest expenses reduce profit for the period. This study uses total liabilities relative to assets, so leverage includes operating liabilities, such as trade payables, as well as interest-bearing debt. The interest-expense mechanism is particularly relevant to interest-bearing debt, whereas trade payables directly support working capital financing.

Dianti and Bawono (2024), studying food and beverage firms listed on the Indonesia Stock Exchange during 2019–2023, find a significant relationship between working capital turnover and ROA. They also report that firm size moderates the relationship between sales growth and ROA, while its interaction with working capital turnover is insignificant. Their study includes the debt-to-equity ratio as an independent variable. The present study asks whether leverage also changes the relationships of working capital turnover and sales growth with ROA when firm size is included as a moderator. Testing four interactions in one equation allows each moderating relationship to be assessed while accounting for the other moderator.

This study uses secondary data from the consolidated financial statements of five candidate firms, ICBP, MYOR, ULTJ, ROTI, and STTP, for 2021Q1–2025Q4. Quarterly data allow changes in sales, profit, and financial position to be observed within each firm. Cumulative sales and profit figures are converted into individual-quarter values. The EViews panel specification includes firm fixed effects to account for relatively stable firm characteristics and calendar-quarter fixed effects to account for changes shared across firms in the same period.

This study aims to examine the relationships of working capital turnover and sales growth with ROA and to assess whether each relationship varies with firm size and leverage. Its contribution lies in testing both moderators simultaneously using quarterly data. The analysis focuses on the conditions under which improved working capital efficiency or sales growth is associated with changes in returns on assets in the five firms studied.

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THEORETICAL BACKGROUND AND HYPOTHESES

Working capital turnover and profitability

Deloof (2003) links working capital component management to profitability. Baños-Caballero et al. (2014) show that the benefits of working capital may change with operating needs and financial constraints. Both studies support efficiency and financing-cost mechanisms, although their working capital measures differ from the WCT measure used here. Given an adequate positive level of net working capital, higher sales per unit of working capital are expected to be associated with higher ROA.

H1. Working capital turnover is positively associated with ROA at the reference values of firm size and leverage.

Sales growth and profitability

If fixed costs can be spread over a larger sales volume, higher sales may increase profit relative to assets. This relationship may weaken when additional sales require substantial marketing expenditure or capacity investment. Dianti and Bawono (2024) report an insignificant sales-growth coefficient in their model. The positive direction proposed here is a theoretical prediction tested using quarterly panel data.

H2. Sales growth is positively associated with ROA at the reference values of firm size and leverage.

Firm size as a moderator

Firms with larger asset bases may have distribution networks and supplier bargaining power that help translate working capital efficiency into profit. A larger asset base may also reduce the increase in ROA associated with a given profit increase, particularly when capacity is underutilized. Similarly, sales growth can increase profit rapidly when capacity is available, whereas expansion requiring new assets can constrain ROA growth. These competing mechanisms provide a basis for empirically testing the direction of moderation.

H3. Firm size moderates the relationship between working capital turnover and ROA.

H4. Firm size moderates the relationship between sales growth and ROA.

Leverage as a moderator

Liabilities can finance inventory and credit sales. In highly leveraged firms, faster working capital turnover may reduce additional funding needs. However, financing costs and limited cash flexibility may reduce the share of additional sales that ultimately becomes profit. Because total liabilities include operating obligations such as trade payables, this proxy captures the broader liability structure. The financial constraints

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discussed by Baños-Caballero et al. (2014) support the financing mechanism but are conceptually distinct from the leverage ratio used in this study.
H5. Leverage moderates the relationship between working capital turnover and ROA.
H6. Leverage moderates the relationship between sales growth and ROA.

RESEARCH METHODS

Research design and firm selection criteria

The unit of observation is the firm-quarter. The target population comprises food and beverage firms listed on the Indonesia Stock Exchange. Five candidate firms were purposively selected based on continuous listing during 2021–2025, primary activities relevant to the food and beverage industry, and the availability of consolidated financial statements and comparative figures for the required accounts. The protocol requires documentation of exchange classifications, each statement examined, and any reasons for replacing candidates that fail to meet the criteria. The official archives in Table 1 provide starting points for data collection. A balanced panel comprises 100 observations if all required data and ratios are valid.

Data sources and panel construction

Table 1. Candidate firms and primary sources

Code	Firm name	Official archive
ICBP	PT Indofood CBP Sukses Makmur Tbk	indofoodcbp.com/menu/financial-statements
MYOR	PT Mayora Indah Tbk	mayoraindah.co.id/content/Laporan-Keuangan-Kuartal-89
ULTJ	PT Ultrajaya Milk Industry & Trading Company Tbk	ultrajaya.co.id/investor-relation/QUARTERLY-REPORT/eng
ROTI	PT Nippon Indosari Corpindo Tbk	sariroti.com/id/informasi-investor/laporan-keuangan
STTP	PT Siantar Top Tbk	siantartop.co.id/hubungan-investor/laporan-triwulan/

The data collection protocol covers net sales, consolidated profit for the period, current assets, current liabilities, total assets, and total liabilities. Profit for the period includes amounts attributable to owners of the parent and non-controlling interests to ensure consistency with consolidated assets. Source links, page numbers, units, and

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restatement status should be recorded. Values should be standardized to millions of rupiah before ratios are calculated. Total assets should be reconciled with total liabilities and equity within the rounding tolerance of the statements.

For cumulative sales and profit figures, Q1 = 3M, Q2 = 6M − 3M, Q3 = 9M − 6M, and Q4 = FY − 9M. Financial-position accounts use balances at the end of March, June, September, and December. Sales data for 2020 provide year-over-year comparators for the four quarters of 2021. December 2020 closing balances provide the opening balances for average assets and working capital in 2021Q1. The 2020 figures serve as inputs to ratio calculations; the estimation period remains 2021Q1–2025Q4.

Table 2. Operational definitions

Variable	Measurement per firm and quarter	Unit
Y ROA	Quarterly profit ÷ average total assets at the beginning and end of the quarter × 100	Percent
X1 WCT	Quarterly net sales ÷ average net working capital at the beginning and end of the quarter. Net working capital = current assets − current liabilities.	Times
X2 SG	(Current-quarter net sales ÷ net sales in the same quarter of the previous year − 1) × 100	Percent
Z1 SIZE	ln(total assets at quarter-end in millions of rupiah)	Natural log
Z2 LEV	Total liabilities ÷ total assets at quarter-end × 100	Percent

WCT observations with a zero denominator are treated as missing. When average net working capital is negative, the protocol requires reporting its frequency and excluding these observations from the main specification because a negative ratio has a different interpretation. Changes in the number of observations should be reported. The effect of small positive denominators should be examined through sensitivity analysis, for example by re-estimating the model after excluding observations with average net working capital below 1% of average assets. This 1% threshold is used only for the sensitivity check.

Moderated regression specification

SIZEC and LEVC are SIZE and LEV minus their respective means in the main estimation sample. These reference points should remain unchanged when comparing specifications with different samples. The model includes both independent variables, both moderators, and four interactions. Firm fixed effects, α_i, absorb time-invariant

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differences between firms. Calendar-quarter fixed effects, λ_t, absorb common changes in each quarter, including seasonal components shared across firms.

$$ROA_{it} = \alpha + \alpha_i + \lambda_t + \beta_1 WCT_{it} + \beta_2 SG_{it} + \beta_3 SIZEC_{it} + \beta_4 LEVC_{it} + \beta_5 (WCT \times SIZEC)_{it} + \beta_6 (SG \times SIZEC)_{it} + \beta_7 (WCT \times LEVC)_{it} + \beta_8 (SG \times LEVC)_{it} + \varepsilon_{it}$$

The marginal relationship between WCT and ROA is $\beta_1 + \beta_5 SIZEC + \beta_7 LEVC$. The marginal relationship for SG is $\beta_2 + \beta_6 SIZEC + \beta_8 LEVC$. The coefficients β_1 and β_2 apply when both moderators are at their reference values. Interaction coefficients measure the change in slope for a one-unit increase in a moderator. Marginal effects should be reported at observed moderator combinations, with intervals based on the coefficient covariance matrix. The 25th, 50th, and 75th percentiles may be considered as evaluation points after examining the observed range of moderator values (Brambor et al., 2006).

Analysis procedures in EViews

1. Import the panel with one row per firm-quarter. Use firm codes as the cross-section ID and quarter-end dates as the date ID. Set up a dated panel with quarterly frequency. Check for duplicates, calendar gaps, and consistency in observation counts between the dataset and regression output.

2. Generate WCT_SIZE, SG_SIZE, WCT_LEV, and SG_LEV by multiplying the independent variables by the centered moderators. In Estimate Equation, select LS and enter the following specification.

ROA C WCT SG SIZEC LEVC WCT_SIZE SG_SIZE WCT_LEV SG_LEV

3. The main model specifies firm and quarter fixed effects. A model without interactions is used for comparison on the same sample (EViews, n.d.-a).

Specification selection is evaluated using the Chow test (Redundant Fixed Effects) and the Hausman test for the ROA equation. At the 5% level, the Chow test evaluates fixed effects against the pooled model, while the Hausman test evaluates the assumptions of the random-effects model. Quarter effects are retained as specified to account for common calendar shocks.

4. Inference is evaluated through covariance matrix corrections to obtain standard errors robust to heteroskedasticity under the specified clustering structure. The appendix reports White Cross-section. In EViews 12, White Cross-section clusters errors by period, whereas White period clusters errors by firm (EViews, n.d.-b). The settings used require confirmation against the original output. Inference based on firm clusters should be interpreted in light of the five firms in the sample (Cameron & Miller, 2015).

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RESULTS AND DISCUSSION

Table 3, the Model 2 columns in Table 5, and Table 6 are aligned with the supplied Discussion and Empirical Findings summary. Medians, Model 1, and firm-level marginal effects are taken from the Chapter IV summary. The appendix provides summary estimation tables; model settings and differences in test results therefore still require examination against the original output.

Estimation sample and descriptive statistics

The initial panel contains 100 firm-quarter observations. Two ROTI observations, 2024Q2 and 2024Q3, were excluded because average net working capital was negative. The effective sample comprises 98 observations from five firms. As specified in the methods, 2020 data provide opening balances and year-over-year sales comparators.

Table 3. Descriptive statistics for the effective sample

Variable	N	Mean	SD	Minimum	Median	Maximum
ROA	98	2.878	1.497	-0.447	2.816	8.808
WCT	98	1.080	1.348	0.258	0.717	9.965
SG	98	7.797	9.768	-16.276	8.238	36.357
SIZE	98	16.467	1.262	15.055	15.908	18.725
LEV	98	32.472	15.224	7.062	38.539	53.446

Mean quarterly ROA is 2.878%, and mean year-over-year sales growth is 7.797%. Mean WCT of 1.080 times exceeds its median of 0.717 times. The maximum of 9.965 times indicates observations with substantially higher turnover than the typical observation. Interpretation of WCT therefore requires attention to net working capital as its denominator.

Panel model selection and fixed-effects tests

Table 4. Fixed-effects F-tests from the comparative estimation

Effects tested	Degrees of freedom	F-statistic	Prob.
Firm, conditional on quarter effects	4 and 66	4.8129	0.0018
Quarter, conditional on firm effects	19 and 66	1.6927	0.0602
Firm and quarter jointly	23 and 66	2.2313	0.0060

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For the main equation with ROA as the dependent variable, the appendix reports a Chow test with Prob. Cross-section F = 0.0041 and a Hausman test with Prob. Cross-section Random = 0.0182. Both are below 0.05. In the reported comparisons, the null hypothesis of the pooled model is rejected by the Chow test, while the null hypothesis of the random-effects model is rejected by the Hausman test. Based on these tests, the fixed-effects model (FEM) is selected. The Chow p-value in the appendix differs from p = 0.0018 for the firm-effects F-test conditional on quarter effects in Table 4. The original output is required to reconcile the specifications of these two tests.

Panel regression and moderation estimates

Table 5. Two-way fixed-effects regression with ROA as the dependent variable

Variable	Model 1 β	SE CR1	t	p	Model 2 β	SE CR1	t	p
C	-0.4330	1.3668	-0.317	0.7672	-1.013800	1.906459	-0.531771	0.6230
WCT	0.1588	0.0690	2.299	0.0830	0.593077	0.379106	1.564411	0.1928
SG	0.0330	0.0174	1.901	0.1301	0.024164	0.007921	3.050582	0.0380
SIZEC	1.1072	0.7123	1.555	0.1950	1.324960	0.873260	1.517257	0.2038
LEVC	-0.0107	0.0136	-0.792	0.4727	-0.003640	0.015345	-0.237228	0.8241
WCT × SIZEC	—	—	—	—	0.116067	0.197476	0.587751	0.5883
SG × SIZEC	—	—	—	—	-0.021692	0.017407	-1.246194	0.2807
WCT × LEVC	—	—	—	—	-0.017831	0.023308	-0.765019	0.4869
SG × LEVC	—	—	—	—	0.001688	0.000716	2.356962	0.0779

Source: Model 1 is taken from Chapter IV and Model 2 from the Discussion and Empirical Findings summary. Both models include 98 observations. Model 1 has an R^2 of 0.6495. The Model 2 summary reports an R^2 of 0.669472, an adjusted R^2 of 0.514224, and a Durbin–Watson statistic of 2.190241.

The appendix refers to Panel Least Squares in the narrative and Panel EGLS in the table. Its White Cross-section covariance label also differs from the White period

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setting planned for firm-level clustering. Because the estimation details remain unverified, Table 5 presents coefficients, standard errors, and p-values as reported. The global F-statistic in the appendix is not used as a cluster-robust joint test.

Summary of hypothesis tests

Table 6. Direct and moderating relationship tests

Hypothesis	Relationship	Coefficient	Prob.	Test result at 5%
H1	WCT → ROA	0.5931	0.1928	Not significant
H2	SG → ROA	0.0242	0.0380	Significant
H3	WCT × SIZE → ROA	0.1161	0.5883	Not significant
H4	SG × SIZE → ROA	-0.0217	0.2807	Not significant
H5	WCT × LEV → ROA	-0.0178	0.4869	Not significant
H6	SG × LEV → ROA	0.0017	0.0779	Not significant

Discussion of direct and moderating relationships

Working capital turnover and profitability

In Model 1, working capital turnover (WCT) has a coefficient of 0.1588 (p = 0.0830). In Model 2, after the four interactions are added, its coefficient is 0.5931 (p = 0.1928) at the reference values of firm size and leverage. Both estimates are positive. In the main model, the WCT–ROA relationship proposed in H1 is not significant at the 5% level. Model 1 assumes the same WCT slope across moderator profiles, whereas Model 2 estimates the slope at the moderator reference values. Changes in coefficients and p-values should therefore be interpreted alongside changes in specification.

Working capital management can influence ROA through two channels. More efficient inventory and receivables management can reduce funds tied up in operations. Conversely, excessive inventory reductions may impair the ability to meet demand, while overly strict credit terms may constrain sales (Brealey et al., 2023). Deloof (2003), García-Teruel and Martínez-Solano (2007), and Wang (2002) link working capital component management to firm performance. These studies mainly use measures expressed in days or the cash conversion cycle. WCT in this study measures sales per unit of net working capital, so its coefficient reflects changes in both sales and the denominator.

Aktas et al. (2015) and Baños-Caballero et al. (2014) provide a basis for expecting the benefits of working capital management to vary with firms' initial positions and financing constraints. Enqvist et al. (2014) show that the working capital–profitability

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relationship may differ across business-cycle conditions. Differences from the significant findings of Dianti and Bawono (2024) should therefore be considered in light of working capital measures, data frequency, and model specification. In this sample, WCT has a median of 0.717 times and a maximum of 9.965 times. This gap highlights the importance of examining the net working capital denominator and the influence of high-ratio observations.

Sales growth and profitability

In Model 1, sales growth (SG) has a coefficient of 0.0330 (p = 0.1301). In Model 2, the SG coefficient is 0.0242 (p = 0.0380), indicating a positive and significant relationship with ROA at the 5% level for the reference profile of SIZE = 16.467 and LEV = 32.472%, consistent with the direction proposed in H2. At this profile, a 10-percentage-point increase in sales growth is associated with an approximately 0.242-percentage-point increase in ROA. A comparative estimate excluding ROTI yields a coefficient of 0.0030. This difference indicates that the magnitude of the association is sensitive to sample composition.

Sales growth can improve ROA when additional volume uses available capacity and contribution margins are sufficient to cover fixed costs. This association may weaken when growth requires discounts, capacity expansion, or additional inventory and receivables. Conceptually, higher sales may increase asset turnover, but the ultimate relationship with ROA also depends on margins and growth in the asset base (Damodaran, 2015). Cowling (2004) and Jang and Park (2011) provide a basis for viewing the growth–profit relationship as context-dependent and potentially bidirectional. Because sales and ROA are observed in the same quarter, more profitable firms may also be better able to finance sales expansion.

Firm size as a moderator

The WCT × SIZEC interaction has a coefficient of 0.1161 (p = 0.5883), while SG × SIZEC has a coefficient of −0.0217 (p = 0.2807). Both interaction coefficients tested in H3 and H4 are not significant at the 5% level. The point estimates suggest a more positive WCT slope and a lower SG slope at larger firm sizes, with uncertainty intervals that include zero. The SG result differs from Dianti and Bawono (2024), who report that firm size moderates the relationship between sales growth and profitability.

Penrose (2009) explains firm growth through the use of resources and managerial capacity. Larger scale may strengthen bargaining power with suppliers, expand distribution, and improve capacity utilization. At the same time, expansion may increase coordination requirements, assets, and working capital needs. Evidence from Goddard et al. (2005) that firm characteristics are associated with profitability variation supports

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testing these differences empirically. Here, SIZE is measured as the logarithm of assets, and the model includes firm fixed effects. The information remaining after controlling for stable firm characteristics and calendar shocks may be more limited than in a direct comparison of firm sizes across companies (Wooldridge, 2010).

Leverage as a moderator

The WCT × LEVC interaction has a coefficient of −0.0178 (p = 0.4869), while SG × LEVC has a coefficient of 0.0017 (p = 0.0779). Both interaction coefficients tested in H5 and H6 are not significant at the primary 5% level. The SG × LEVC interaction meets the exploratory 10% threshold. Its positive sign suggests that the SG–ROA slope tends to be higher at greater leverage after accounting for firm size. With only five firm clusters, this 10% result should be treated as an indication requiring confirmation.

Financing decisions may depend on internal fund generation, investment needs, and the costs of external capital (Frank & Goyal, 2009; Myers & Majluf, 1984). Leverage here is total liabilities divided by total assets. It includes operating obligations, such as trade payables, as well as interest-bearing debt. Sales growth supported by supplier credit may have different implications for profit from growth financed through interest-bearing borrowing. Distinguishing these financing sources may help explain the mechanisms underlying the interaction estimate in future research.

Marginal effects at firm-average profiles

Table 7. Marginal effects of working capital turnover and sales growth on ROA

Firm	SIZE	LEV (%)	WCT effect	SG effect
ICBP	18.605	48.896	+0.5484	+0.0055
MYOR	17.021	42.419	+0.4799	+0.0290
ULTJ	15.916	20.979	+0.7340	+0.0167
ROTI	15.200	37.896	+0.3493	+0.0608
STTP	15.468	12.714	+0.8294	+0.0125

Source: Chapter IV, Table 4.4. Profiles use each firm's average SIZE and LEV.

At firm-average profiles, the highest WCT marginal-effect point estimate is found for STTP (0.8294), while the highest SG marginal-effect estimate is found for ROTI (0.0608). The 95% intervals from the comparative estimation include zero for both effects at all five profiles. These rankings describe point estimates and do not establish differences between firms. Effects at particular profiles may differ from the main coefficients evaluated at the pooled moderator means. Interaction interpretation should

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therefore consider observed moderator combinations and uncertainty at each profile (Brambor et al., 2006; Hainmueller et al., 2019).

Implications and interpretive limitations

For managers, the findings at the reference profile provide a reason to evaluate the quality of sales growth alongside margins, working capital needs, and additional assets. A high WCT should be assessed in terms of whether it reflects higher sales or a reduction in net working capital. The sensitivity check using net working capital equal to 1% of average assets as the threshold excludes no additional observations. The estimates excluding ROTI indicate the extent to which one firm influences the SG coefficient.

The estimation sample includes 98 observations from five firms. Clustered standard errors accommodate within-firm error dependence, but the small number of clusters limits inferential accuracy (Cameron & Miller, 2015; MacKinnon et al., 2023). Two-way fixed effects help control for stable firm differences and shared calendar shocks. Time-varying firm-specific factors and possible bidirectional relationships nevertheless limit causal interpretation (Wooldridge, 2010). The findings apply to the firms and period analyzed. The provenance of the software output still requires verification, as explained at the beginning of the results section.

CONCLUSION

In the moderation model, sales growth is positively associated with ROA at the reference values of firm size and leverage ($\beta = 0.024164$, $p = 0.0380$). The magnitude of the association is sensitive to sample composition. The working capital turnover coefficient and all four interaction coefficients are not significant at the 5% level. The sales growth–leverage interaction meets the exploratory 10% threshold ($p = 0.0779$). The estimator, covariance settings, and model-selection tests require examination against the original EViews output.

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