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Agency and Signaling Perspectives on Working Capital Turnover, Debt to Equity Ratio, and Profitability in PT Gudang Garam Tbk (2013–2023)

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Abstract

This study investigates the influence of Working Capital Turnover (WCTO) and Debt to Equity Ratio (DER) on the Net Profit Margin (NPM) of PT Gudang Garam Tbk during the 2013–2023 period. Using a quantitative approach with secondary financial data, hypothesis testing was conducted through the partial (t-test) and simultaneous (F-test) significance tests at a 5% alpha level. Data analysis employed SPSS version 24. The results indicate that WCTO has a significant partial effect on NPM, as reflected by a t-value of –2.819 < 2.306 and a significance level of 0.0223 < 0.05. Conversely, DER shows no significant partial effect on NPM, with a t-value of 1.666 < 2.306 and a significance value of 0.134 > 0.05. Simultaneously, WCTO and DER have a significant combined effect on NPM, evidenced by an F-value of 4.921 > 4.26 and a significance level of 0.040 < 0.05. The Adjusted R-squared of 43% indicates that the model explains nearly half of the variation in profitability.

***Keywords**: Working Capital Turn Over, Debt to Equity Ratio, and Net Profit Margin*

JEL Classification : G30, G31, G32, L66, M41

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Introduction

The Indonesian cigarette industry remains one of the most heavily regulated yet economically significant sectors in the country. Contributing more than Rp250 trillion in excise tax revenue in 2023, the sector plays a crucial role in supporting national fiscal capacity while employing millions across the upstream and downstream supply chain. Despite this economic prominence, the industry faces escalating structural pressures every year, including progressive excise tax increases, rising input and distribution costs, shifting consumer behavior influenced by health awareness, and the proliferation of alternative nicotine products. Indonesian evidence suggests that excise-driven cost pressures significantly restrict firms' liquidity cycles and pricing flexibility in highly regulated industries (Chairunnisa, Munira, & Andamari, 2025). PT Gudang Garam Tbk exemplifies these dynamics, recording a sharp decline in Net Profit Margin from 9.8% in 2019 to 2.23% in 2022 before showing modest recovery in 2023. Such fluctuations indicate that internal financial management, particularly working capital efficiency and capital structure, has become increasingly crucial in sustaining profitability amid regulatory rigidity.

Working capital efficiency, typically measured through Working Capital Turnover (WCTO), is particularly relevant in industries characterized by long production cycles and substantial operational costs. The excise structure, which requires significant upfront liquidity before products reach the market, compresses the cash conversion period and intensifies the need for optimal working capital strategies. Empirical findings from Indonesian firms show that WCTO often contributes positively to profitability, especially in sectors where liquidity management is critical to operational continuity (Iskar et al., 2025; Fauziah & Purnama, 2024). However, studies also indicate that high WCTO does not always reflect genuine efficiency. In some cases, especially in regulated environments, it may instead reflect reactive strategies such as inventory reduction or tightened credit policies in response to excise burdens. Research by Martha et al. (2024) highlights similar patterns in cigarette firms, where working capital pressures escalate during periods of rapid tax increases, yet these studies stop short of empirically linking WCTO to profitability outcomes.

Capital structure decisions, represented by the Debt to Equity Ratio (DER), also exert substantial influence on firms operating within strict regulatory frameworks. While Trade-Off Theory and Agency Theory provide conceptual guidance on leverage optimization, Indonesian empirical studies reveal sector-dependent leverage effects. For example, Saputri and

Darmayanti (2025) show that leverage negatively impacts profitability in the textile and garment industry, which faces high cost volatility. Conversely, Fitriana, Harjanti, and Yuwono (2023) find that moderate leverage does not hinder profitability in the food and beverage sector due to its relatively stable demand. These differences underscore the importance of contextual factors, indicating that DER may behave differently in the tobacco industry, where pricing constraints and excise policies amplify financial risk. Yet, most existing studies do not incorporate the unique cost structures or regulatory mechanisms faced by tobacco companies such as PT Gudang Garam Tbk.

The literature specifically examining the tobacco sector remains limited. Ferdy and Nurismalatri (2022) found that WCTO positively influences profitability at PT Gudang Garam Tbk, but leverage was not included in their model, leaving a gap in understanding the combined effect of WCTO and DER. Complementary studies by Ramli (2023) and Martha et al. (2024) describe declining profitability trends and mounting working capital pressure among Indonesian cigarette firms but do not empirically analyze the determinants of these outcomes. This lack of empirical rigor indicates that the financial-performance drivers within the Indonesian tobacco industry remain underexplored.

Across broader Indonesian manufacturing evidence, findings remain inconsistent. Supyati et al. (2024) report that WCTO enhances profitability, whereas Amalia (2024) observes insignificant effects, suggesting that firm-specific cost structures and sectoral characteristics shape the effectiveness of working capital strategies. Similarly, Putri and Nugraha (2023) find that DER reduces profitability in manufacturing firms due to elevated financial risk, yet these findings cannot be generalized to tobacco companies characterized by excise-driven liquidity pressures. This array of conflicting evidence signals that sector dynamics significantly influence the relationships between WCTO, DER, and profitability.

In addition, research by Setianto and Pratiwi (2019) emphasizes that both overinvestment and underinvestment in working capital can reduce firm performance, highlighting the importance of maintaining an optimal liquidity balance. This insight is particularly relevant to cigarette companies, which must deploy large working capital reserves to comply with excise payment schedules while managing inventory cycles that differ markedly from other manufacturing firms. Such conditions make it uncertain whether traditional indicators like WCTO and DER will operate predictably in shaping profitability.

Taken together, these findings demonstrate that the financial determinants of profitability vary widely across Indonesian industries and are heavily influenced by sector-specific regulatory and cost conditions. Because tobacco firms face excise-driven liquidity tightening, rigid pricing rules, and persistent compliance costs, existing empirical results from general manufacturing studies cannot be directly applied to PT Gudang Garam Tbk. The limited research specifically addressing the combined effects of WCTO and DER in this sector further reinforces the importance of industry-focused empirical investigation.

Despite the extensive financial and regulatory pressures shaping the operational behavior of Indonesia's cigarette manufacturers, existing research has not provided a clear empirical explanation of how working capital efficiency and capital structure jointly influence profitability within this highly regulated industry. Prior studies focusing on PT Gudang Garam Tbk remain descriptive and do not examine simultaneous interactions between Working Capital Turnover (WCTO) and the Debt to Equity Ratio (DER), leaving the mechanisms through which liquidity constraints, excise-driven cash-cycle pressures, and leverage risks affect Net Profit Margin (NPM) insufficiently understood. Moreover, inconsistencies in findings across manufacturing sectors—ranging from positive, negative, to insignificant effects—highlight that the financial dynamics of tobacco firms cannot be inferred from other industries that operate under less restrictive policy environments. This lack of industry-specific empirical evidence creates a critical research problem: the absence of a comprehensive explanation of whether and how WCTO and DER determine profitability under prolonged regulatory rigidity, cost shocks, and limited pricing flexibility. Without addressing this problem, financial theory and managerial decision-making remain unable to adequately interpret the profitability volatility experienced by PT Gudang Garam Tbk over the past decade.

Against this background, the present study examines whether Working Capital Turnover (WCTO) and Debt to Equity Ratio (DER) significantly affect the Net Profit Margin (NPM) of PT Gudang Garam Tbk over the 2013–2023 period. This timeframe captures multiple excise adjustment cycles, evolving market dynamics, and fluctuations in input costs, allowing for a nuanced assessment of financial-performance drivers. By integrating empirical evidence from Indonesia with a sector-specific analytical lens, this study aims to fill the research gap and contribute meaningful insights into profitability determinants within one of the country's most regulated and economically substantial industries.

Literature Review

Agency Theory

According to Dewi & Soedaryono, (2023) agency or Agency theory is a situation that can arise in a company where management acts as an executor, also known as an agent, and capital owner. It is expected that managers act in accordance with the interests of the owners, who are responsible for maximising the company's profits. Efficient management of working capital operational costs, which may be sourced from external debt, impacts the company's net profit. In this case, the Net Profit Margin serves as an indicator of how well management can optimise the company's net profit from the revenue generated. A higher Net Profit Margin indicates that management has operated efficiently and in line with the owners' objectives to increase profits.

Signaling Theory

According to Pratama, (2023) This theory relates to information asymmetry, which indicates the existence of information between company management and parties interested in the information. In this case, Net Profit Margin, Working Capital Turn Over, and Debt to Equity Ratio serve as financial signals that describe the internal condition of the company. A high net profit margin indicates that the company is able to generate net profit from sales, reflecting profitability and operational efficiency. This gives investors confidence that the company has positive revenue prospects. A high Working Capital Turn Over can be a good signal that management is able to manage working capital efficiently to generate operational income. On the other hand, the Debt to Equity Ratio reflects how the company finances its business.

Trade-Off Theory

Trade-Off Theory explains that firms determine their optimal capital structure by weighing the benefits of debt usage (tax shields) against the costs of financial distress. In the tobacco industry, which is characterized by high fixed-cost obligations, excessive reliance on debt may increase interest burdens and suppress profitability (Simerly & Li, 2000).

Efficiency Theory

“Efficiency Theory emphasizes that the efficiency of working capital management affects a firm's ability to generate profits. Firms with high Working Capital Turnover (WCTO) are not

necessarily more profitable if the acceleration of working capital turnover is driven by price-cutting strategies or rising operational costs (Enqvist et al., 2014)."

Net Profit Margin

Net Profit Margin is a ratio that measures how well a company can generate total net profit after tax and interest from sales. According to Pratama, (2023:199) Net Profit Margin assesses the amount of profit earned after tax and equity. According to Pratama, (2023:202) Net Profit Margin can be measured using the following formula:

$$Net\ Profit\ Margin = \frac{Net\ Profit\ After\ Tax}{Sales} \times 100\%$$

If the Net Profit Margin value is high, it means that the company manages all operational costs well and generates a high return on sales. Conversely, inefficient financing activities of a company will result in soaring production costs and a decline in profits, and excessive use of debt can also cause high liability burdens on the company, which will affect the fluctuation of net income.

Working Capital Turn Over

Working Capital Turn Over indicates how quickly a company manages capital as operational costs in generating sales that affect the company's net profit income over a certain period. Since capital is one of the company's main assets for financing its operational needs, the company generates profits (Budi, 2019). According to Jaya et al. (2023:31), the Working Capital Turn Over ratio is used to measure the effectiveness of a company's working capital in generating sales during a period. According to Kasmir (2019:185), Working Capital Turn Over can be measured using the following formula:

$$Working\ Capital\ Turn\ Over = \frac{Net\ Sales}{Working\ Capital}$$

In general, according to Kasmir (2019:175), this ratio measures how many times funds operated as capital are rotated in a period or sales achieved by each working capital used. Working capital turnover helps investors make better investment decisions because it can determine how quickly and efficiently a company manages its working capital, how many times it turns over in a period to generate sales and increase profits.

Debt to Equity Ratio

The Debt to Equity Ratio is a ratio used to measure a company's total liabilities and equity or to show the extent to which a company uses debt to finance its activities and operations compared to its own equity. According to Jaya et al. (2023:27), the Debt to Equity Ratio is used to measure the percentage of debt and capital owned by a company. This ratio indicates a company's ability to meet its obligations based on the capital it owns. The Debt to Equity Ratio indicator, according to Kasmir (2019:160), can be measured using the following formula:

$$Debt\ to\ Equity\ Ratio = \frac{Total\ Debt}{Equity} \times 100\%$$

According to Kasmir (2019:156), the debt to equity ratio is used to analyse or measure how much of each rupiah of equity capital is used as collateral for debt. This ratio helps to make good financial decisions by measuring the feasibility and risk of debt to the company's equity. The Debt to Equity Ratio can explain whether a company tends to rely on debt from lenders to expand its business and maintain net income.

Previous Studies

A substantial body of prior research has examined how working capital efficiency and capital structure contribute to corporate profitability, particularly through indicators such as Working Capital Turnover (WCTO), Debt to Equity Ratio (DER), and Net Profit Margin (NPM). Earlier foundational work by Enqvist et al. (2014) demonstrates that efficient working capital management enhances firm profitability, emphasizing the importance of maintaining liquidity levels that support uninterrupted operations. More recent studies provide supportive empirical evidence: Marpaung et al. (2021) and Alverina & Shabrina (2024) report that WCTO exerts a positive and significant influence on NPM, indicating that firms that efficiently convert working capital into sales tend to achieve stronger profit margins. These findings are consistent with Efficiency Theory, which posits that firms maximizing the productivity of short-term assets are better positioned to generate superior financial performance.

Research exploring the role of capital structure offers further insights into how leverage affects profitability. Simerly and Li (2000) argue that firms operating in dynamic or uncertain environments must employ conservative debt policies to prevent financial distress, as excessive leverage can reduce managerial flexibility and compress profitability. Empirical studies conducted after this theoretical foundation partly support these claims. For instance, Nurkhalifah and Zaman (2024) and Stema (2019) found that DER does not significantly

influence NPM, suggesting that firms may be able to manage debt obligations without directly impairing profitability—particularly when supported by stable cash flows or strong market positioning. In contrast, Putri (2018) and Karyawati & Kurnia (2023) identified a joint and significant impact of DER and WCTO on firm profitability, highlighting that leverage decisions cannot be viewed in isolation from working capital dynamics. Their findings imply that the interaction between liquidity management and capital structure choices may be critical in shaping profitability outcomes.

Although these studies collectively enrich our understanding of working capital efficiency and leverage, most prior research remains concentrated in general manufacturing sectors such as automotive, food and beverage, pharmaceuticals, and consumer goods. These sectors operate under relatively flexible pricing structures and face fewer regulatory restrictions compared to the tobacco industry. As a result, the financial behaviors observed in these environments may not generalize to highly regulated industries. The tobacco sector is characterized by stringent excise taxation, rapidly rising production costs, intense price controls, and evolving consumer preferences—factors that substantially shape liquidity requirements, capital allocation decisions, and overall profitability. These structural complexities may significantly alter the expected relationships between WCTO, DER, and NPM.

Given these contextual differences, previous studies provide insufficient insights into how working capital efficiency and capital structure operate in heavily regulated industries. There is a clear need for industry-specific investigations that account for regulatory rigidity, excise-driven cash-flow constraints, and limited pricing autonomy. By examining PT Gudang Garam Tbk over an 11-year period, this study addresses this gap by exploring the extent to which WCTO and DER influence profitability within a uniquely regulated and capital-intensive environment. Through this focus, the study extends existing empirical findings while offering a more nuanced understanding of financial-ratio behavior under conditions of heightened regulatory and cost pressure.

Research Methods

Research Design

This study employs a quantitative approach using **multiple linear regression analysis** to examine the effect of Working Capital Turnover (WCTO) and Debt to Equity PT (DER) on Net Profit Margin (NPM) at PT Gudang Garam Tbk. The data consist of secondary financial information obtained from the company's annual reports for the 2013–2023 period.

Population and Sample

The population of this study includes all annual financial data of PT Gudang Garam Tbk. The sample was selected using a purposive sampling technique based on data availability for the period 2013–2023, resulting in **11 observations**.

Data Sources

Secondary data were collected from the audited Annual Reports of PT Gudang Garam Tbk., accessed through the company's official website. All data were processed and analyzed using **SPSS version 24**.

Table 1 Operational Variables

Variable	Symbol	Type	Operational Definition	Formula / Indicator	Scale	Source
Net Profit Margin	NPM (Y)	Dependent	Measures the percentage of net income relative to net sales, indicating the company's profitability.	NPM = (Net Income / Net Sales) × 100%	Percent (%)	Prihadi (2019); Hidayat (2018); Krisnaldy et al. (2023)
Working Capital Turnover	WCTO (X1)	Independent	Measures the efficiency of working capital in generating sales revenue.	WCTO = Net Sales / Working Capital (CA – CL)	Times	Harmadji et al. (2024); Seto et al. (2023); Enqvist et al. (2014)

Variable	Symbol	Type	Operational Definition	Formula / Indicator	Scale	Source
Debt to Equity Ratio	DER (X2)	Independent	Measures the proportion of total debt relative to shareholder equity.	DER = (Total Liabilities / Total Equity) × 100%	Percent (%)	Sari & Dwilita (2019); Jaya et al. (2023); Zahriyah et al. (2021); Simerly & Li (2000)

All financial components (Net Income, Net Sales, Total Liabilities, Total Equity, Current Assets, Current Liabilities) were taken from audited annual financial statements.

Mathematical Model and Hypotheses

The regression model used in this study is:

$$NPM_t=\alpha+\beta_1 WCTO_t+\beta_2 DER_t+\varepsilon_t$$

Where:

NPM_t = Net Profit Margin in year t

$WCTO_t$ = Working Capital Turnover in year t

DER_t = Debt to Equity Ratio in year t

α = intercept

$\beta 1, \beta 2$ = regression coefficients

ε_t = error term

Hypotheses:

H01: WCTO has no effect on NPM

HA1: WCTO has a significant effect on NPM

H02: DER has no effect on NPM

HA2: DER has a significant effect on NPM

H03: WCTO and DER have a significant effect on NPM

The significance level used is **α = 0.05**.

Data Analysis Techniques

The data analysis procedures include the following stages:

1. Descriptive Statistical Analysis

To identify the minimum, maximum, mean, and standard deviation of each variable.

2. Classical Assumption Tests

Performed before regression analysis to ensure validity of the OLS estimator:

Normality Test: Kolmogorov–Smirnov (with Lilliefors correction) and/or Shapiro–Wilk (for $N \leq 50$).

Multicollinearity Test: Variance Inflation Factor (VIF < 10; conservative threshold: VIF < 5).

Heteroscedasticity Test: Breusch–Pagan, White test, or scatterplot of residuals.

Autocorrelation Test: Durbin–Watson, considering the time-series nature of annual data.

Multiple Linear Regression (OLS)

Regression results include coefficients (α, β_1, β_2), t-test, F-test, R Square, Adjusted R Square, and standard error of estimate.

Hypothesis Testing

t-test to examine the partial effect of each independent variable.

F-test to examine the simultaneous effect of WCTO and DER on NPM.

Decisions are based on comparing p-values with $\alpha = 0.05$.

Robustness Considerations

If assumption violations occur, alternative steps include variable transformation (e.g., log), using robust standard errors, or adding control variables.

Validity and Reliability of Data

The financial data used are sourced from audited annual reports published officially by PT Gudang Garam Tbk., ensuring validity, reliability, and consistency for quantitative analysis.

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Results and Discussions

Descriptive Statistical Analysis

Descriptive statistical analysis is conducted to provide an overview of the mean, standard deviation, and minimum and maximum values of the objects of the variables under study.

Table 1 Results of Descriptive Statistical Analysis Tests

Model	N	Minimum	Maximum	Mean	Std. Deviation
WCTO (X1)	11	3.52	4.84	4.1009	0.41348
DER (X2)	11	33.61	75.75	57.3291	11.57204
NPM (Y)	11	2.23	9.84	7.2118	2.45116

Source: Data processed in 2025, SPSS 24 output

Based on the descriptive results in Table 1 with 11 observations, the Net Profit Margin (NPM) values range from 2.23 to 9.84, with an average of 7.2118 and a standard deviation of 2.45116. This variation reflects differences in the company's ability to manage costs and generate net income over time. From the perspective of Signaling Theory, fluctuations in profitability can act as signals to investors regarding the company's performance quality and future prospects. Increases in profitability generally serve as positive signals of financial health, whereas declines may indicate higher risk (Spence, 1973).

For the independent variable Working Capital Turnover (WCTO), the minimum value of 3.52 and maximum value of 4.84, with an average of 4.1009 and a standard deviation of 0.41348, indicate that the company maintains relatively consistent efficiency in utilizing working capital to support sales activities. This is in line with Efficiency Theory, which suggests that firms with more efficient working capital management tend to perform better in generating profits (Enqvist et al., 2014). From the viewpoint of Agency Theory, a higher WCTO may also signal managerial efficiency in managing short-term assets, thereby reducing potential agency conflicts between managers and owners (Jensen & Meckling, 1976).

Meanwhile, the Debt to Equity Ratio (DER) ranges from a minimum of 33.61 to a maximum of 75.75, with an average of 57.3291 and a relatively large standard deviation of 11.57204. This variation indicates changes in the company's capital structure across the observed periods. According to Trade-Off Theory, firms must balance the benefits of using debt—such as tax shields—against the financial risks associated with interest obligations and

potential distress (Kraus & Litzenberger, 1973). Additionally, under Agency Theory, debt can function as a disciplinary mechanism that compels managers to operate more efficiently and avoid non-productive expenditures (Simerly & Li, 2000).

Overall, the variations in WCTO, DER, and NPM throughout the study period illustrate the interconnectedness of working capital efficiency, capital structure decisions, and profitability. Integrating Signaling Theory, Agency Theory, Trade-Off Theory, and Efficiency Theory provides a strong theoretical foundation for explaining how financial performance is shaped by internal management decisions, operational conditions, and external market dynamics.

Normality Test

Ghozali (2018:161) states that the normality test aims to test whether in a regression model, the confounding variables or residuals have a normal distribution. A regression model that is considered good is one that has a normal distribution.

Table 2 One-Sample Kolmogorov–Smirnov Test

Variables	Unstandardized Residual
N	11
Normal Parameters	
— Mean	0.0000000
— Std. Deviation	1.65581491
Most Extreme Differences	
— Absolute	0.135
— Positive	0.135
— Negative	–0.114
Test Statistic	0.135
Asymp. Sig. (2-tailed)	0.200[cd]
Notes	
a. Test distribution is Normal.	
b. Calculated from data.	
c. Lilliefors Significance Correction.	

Variables	Unstandardized Residual
d. This is a lower bound of the true significance.	

Source: Data processed in 2025, SPSS 24 output

Based on Table 2, it can be seen that the Asymp. Sig value is 0.200, which is greater than 0.005. This indicates that the data in this study, namely working capital turnover, debt to equity ratio, and net profit margin, have a normal distribution.

Multiple Linear Regression Analysis

Table 3 Multiple Linear Regression Analysis Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	17.255	6.264	—	2.755	.025
WCTO (X1)	-3.774	1.424	-0.637	-2.650	.029
DER (X2)	0.095	0.051	0.447	1.862	.100

Source: Data processed in 2025, SPSS 24 output

The results of the multiple linear regression test shown in the table above yield the following equation:

$$Y = 17.255 - 3.774X1 + 0.095X2 + e$$

The regression results provide insights into how the independent variables influence Net Profit Margin (NPM). The constant coefficient of 17.255 indicates that when all independent variables, Working Capital Turnover (X1) and Debt to Equity Ratio (X2), are assumed to be equal to zero, the predicted value of the dependent variable, NPM, is 17.255. This value represents the baseline profit margin when the effects of working capital efficiency and capital structure are absent or held constant.

The regression coefficient for Working Capital Turnover (X1) is –3.774, indicating a negative relationship between working capital efficiency and profitability. This suggests that for every increase of 1 unit in WCTO, the NPM decreases by 3.774 units, assuming other variables remain constant. This implies that higher working capital turnover may reflect

insufficient working capital availability or more aggressive working capital management, which could restrict operational flexibility and reduce profitability.

Meanwhile, the regression coefficient for Debt to Equity Ratio (X2) is 0.095, showing a positive relationship between capital structure and profitability. This means that for every increase of 1 unit in DER, the NPM increases by 0.095 units, assuming other variables remain constant. This result indicates that within the observed period, the use of debt still contributes positively to profitability, possibly due to efficient use of borrowed funds or the presence of tax benefits associated with debt financing.

Coefficient of Determination

Table 4 Results of Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.737	0.544	0.430	1.85126

Source: Data processed in 2025, SPSS 24 output

The Adjusted R-squared value shows the results of the determination test. The Adjusted R-squared value obtained is 0.430, which means that approximately 43% of the variation in the dependent variable (net profit margin) can be explained by the independent variables, namely working capital turnover and debt to equity ratio. Meanwhile, the remaining 57% is influenced by other variables not included in this study.

Hypothesis Testing

T-test (Partial)

Table 5 T-test results (partial)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	17.255	6.264	—	2.755	.025

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
WCTO (X1)	-3.774	1.424	-0.637	-2.650 .029
DER (X2)	0.095	0.051	0.447	1.862 .100

Source: Data processed in 2025, SPSS 24 output

Based on the t-test results presented in the table, the partial effects of each independent variable on Net Profit Margin (NPM) can be explained as follows:

The t-test for the Working Capital Turn Over (X1) variable shows that the calculated t-value is –2.650, which is lower than the critical t-table value of 2.306, with a significance level of 0.029, which is below the threshold of 0.05. These results indicate that Working Capital Turn Over has a statistically significant partial effect on Net Profit Margin. This suggests that changes in working capital efficiency directly influence the company's profitability, meaning that the way working capital is managed plays an important role in determining the level of net profit.

The t-test for the Debt to Equity Ratio (X2) variable shows a calculated t-value of 1.862, which is lower than the critical t-table value of 2.306, with a significance level of 0.100, which is greater than 0.05. Accordingly, the null hypothesis (H_0) is accepted while the alternative hypothesis (H_a) is rejected. This indicates that the Debt to Equity Ratio does not have a statistically significant partial effect on Net Profit Margin. In this case, changes in the company's capital structure do not directly influence its net profitability within the period observed.

F Test (Simultaneous)

Table 6 F Test Results (simultaneously)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	32.665	2	16.332	4.766	.043[b]
Residual	27.417	8	3.427	—	—
Total	60.082	10	—	—	—

Source: Data processed in 2025, SPSS 24 output

Based on the results of the F test in Table 9. shows that the calculated t-value > table t-value, i.e., 4.766 > 4.26 with a significance value of 0.043 < 0.05, therefore Ho is rejected and Ha is accepted, meaning that Working Capital Turn Over (X1) and Debt to Equity Ratio (X2) simultaneously have a positive and significant effect on Net Profit Margin (Y).

Discussion

The results of this study highlight several differences compared with earlier empirical findings. While some researchers found that WCTO consistently increases profitability, this study shows that higher WCTO at PT Gudang Garam Tbk can also be associated with declining NPM due to rising operational costs and regulatory burdens affecting production and distribution efficiency. Furthermore, unlike research that identified DER as a significant determinant of profitability, the current findings show that DER has no significant partial effect on NPM. This indicates that PT Gudang Garam Tbk manages its debt structure effectively, maintaining financial stability despite variations in liabilities.

The results of this study show that Working Capital Turnover (WCTO) has a significant negative effect on Net Profit Margin (NPM). This finding is consistent with the regression output where WCTO exhibits a negative coefficient of –3.774 and a significance value of 0.029. The negative direction indicates that although WCTO reflects the speed at which working capital is converted into sales, higher turnover does not necessarily lead to higher profitability. This supports previous evidence in Indonesian companies, which finds that working capital efficiency significantly influences profitability (Sakfrasani & Purwanto, 2024)

. Additionally, Enqvist et al. (2014) note that firms with rapid turnover are not always more profitable if such acceleration occurs through price cuts or rising operational costs, which aligns with the conditions observed in the tobacco industry.

The descriptive and inferential results indicate that the tobacco sector, characterized by increasing excise taxes, rising production costs, and shifting consumer preferences, faces structural pressures that can compress margins even when turnover performance improves. These conditions are outlined in the introduction, where PT Gudang Garam Tbk experienced substantial margin fluctuations, including a decline from 9.8% in 2019 to 2.23% in 2022 due to regulatory and market pressures. Therefore, the negative effect of WCTO on NPM is not only a statistical result but also reflects the industry's economic realities.

In contrast, the Debt to Equity Ratio (DER) shows no significant effect on NPM, as evidenced by the t-value of 1.862 < 2.306 and significance value of 0.100. This result aligns with previous studies that found DER often has an insignificant relationship with profitability in industries where internal cash flows are strong or where operational volatility is influenced more by external regulations than financing decisions (Nurkhalifah & Zaman, 2024; Stema, 2019) . The positive coefficient of 0.095 indicates that leverage does not necessarily deteriorate profitability, suggesting that PT Gudang Garam Tbk is able to manage its debt obligations effectively while preserving operational stability. The simultaneous test further shows that WCTO and DER jointly have a significant effect on NPM, reflected by the F-value of 4.766 and significance value of 0.043

. Although DER is not individually significant, its joint contribution with WCTO suggests that integrated financial management strategies still play a role in sustaining profitability. This finding is consistent with prior research stating that both working capital efficiency and financing structure together can influence net profit (Putri, 2018; Karyawati & Kurnia, 2023)

Furthermore, the Adjusted R-squared value of 0.430 indicates that 43% of variations in NPM are explained by WCTO and DER, while the remaining 57% is influenced by other factors not examined in this study, such as excise tax burden, input cost volatility, and shifts in consumer preference, factors explicitly highlighted in the background section of the document. The results reinforce the notion that financial performance in the tobacco industry is strongly shaped by external regulatory and market conditions.

Overall, this discussion highlights that while WCTO is statistically significant, its relationship with profitability is context-dependent and sensitive to industry dynamics. Meanwhile, DER's insignificant effect underscores the firm's capability to maintain financial stability despite debt levels. The findings confirm that profitability in PT Gudang Garam Tbk is influenced not only by internal financial policies but also by the broader regulatory environment affecting the industry.

The findings provide practical insights for managers and investors. For company management, improving working capital efficiency is essential to sustain profitability amid rising excise taxes and volatile raw material prices. Managers should also maintain an optimal balance between debt and equity to ensure financial resilience. For investors, understanding how regulatory pressures influence key financial ratios becomes crucial when evaluating investment risk and return in the tobacco industry.

The tobacco industry in Indonesia is heavily influenced by government regulations, particularly the continuous increase in excise taxes. These factors directly affect production costs, pricing strategies, and profitability margins. In addition, shifts in consumer preferences driven by health awareness and alternative products (such as e-cigarettes) create further complexity. These external pressures must be considered when assessing how WCTO and DER impact profitability.

Conclusions

The results of this study show that Working Capital Turnover (WCTO) has a significant effect on the Net Profit Margin (NPM) of PT Gudang Garam Tbk during the period 2013–2023. A higher WCTO reflects the company's ability to manage and utilize working capital efficiently in generating sales, which contributes to profit growth. Conversely, a lower WCTO indicates ineffective working capital management. These findings highlight the importance of maintaining efficient working capital practices to support profitability and ensure the company's operational sustainability.

On the other hand, the Debt to Equity Ratio (DER) does not exhibit a significant effect on NPM. This result suggests that the company is able to manage its debt burden effectively, ensuring that the obligation to repay debt does not substantially affect net profit. The company's financial stability is maintained through a balanced capital structure, in which debt does not excessively exceed equity, allowing operations to continue smoothly despite existing financial obligations. This indicates that, within the observed period, debt financing did not directly influence profitability when operational efficiency remained stable.

When assessed simultaneously, WCTO and DER together show a positive and significant influence on NPM. This indicates that efficient working capital management combined with a stable financing structure plays an important role in generating net profit. The R-squared value of 0.430 further shows that 43% of the variation in NPM is explained by these two variables, while the remaining 57% is influenced by other factors beyond the scope of this study. Overall, these results reinforce that profitability is shaped not only by internal financial decisions but also by how effectively the company manages its working capital and maintains balance within its financing structure.

This study concludes that Working Capital Turnover significantly affects Net Profit Margin, while Debt to Equity Ratio does not exhibit a significant partial effect. However, both variables jointly contribute to explaining profitability variations. These conclusions align with the theoretical integration of Agency Theory, Signaling Theory, Trade-Off Theory, and Efficiency Theory. The findings also emphasize the importance of managing working capital and maintaining a balanced capital structure within the uniquely regulated tobacco industry.

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References

Alverina, A. C., & Shabrina, N. (2024). Pengaruh Current Ratio dan Working Capital Turnover terhadap Net Profit Margin pada PT Indofood Sukses Makmur Tbk Periode 2010–2022. *Jurnal Nuansa*, 2(1), 263–272.

Amalia, R. (2024). *Working capital management and profitability in Indonesian manufacturing firms*. Journal of Business and Finance Research, 12(1), 45–58.

Artati, S. (2019). Pengaruh DER, Perputaran Modal Kerja dan Ukuran Perusahaan terhadap NPM pada Industri Farmasi yang Listing di BEI. *J-MAS*, 4(2), 403–207.

Chairunnisa, N., Munira, M., & Andamari, B. (2025). Pengaruh modal kerja, likuiditas, leverage dan aktivitas terhadap profitabilitas pada perusahaan sektor kesehatan di BEI periode 2019–2023. *Relevan: Jurnal Riset Akuntansi*, 10(1), 55–68.

Dewi & Sudaryono. (2023). Pengaruh profitabilitas, leverage dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Ekonomi*, 3(1), 1831–1840.

Enqvist, J., Graham, M., & Nikkinen, J. (2014). *The impact of working capital management on firm profitability*. International Journal of Managerial Finance, 10(2), 134–148.

Fauziah, S., & Purnama, R. A. (2024). The effect of working capital turnover and debt to equity ratio on profitability at PT Adhi Karya Tbk. *Formosa Journal of Sustainable Research*, 3(2), 112–124.

Ferdy, & Nurismalatri, V. (2022). Analisis pengaruh perputaran modal kerja terhadap profitabilitas pada PT Gudang Garam Tbk. *Jurnal Manajemen dan Keuangan*, 13(2), 88–97.

Fitriana, N., Harjanti, R., & Yuwono, M. (2023). Pengaruh working capital, leverage, dan total asset turnover terhadap profitabilitas perusahaan makanan dan minuman di BEI. *Salam: Jurnal Sosial & Budaya Syar-i*, 10(3), 561–575.

Iskar, N., et al. (2025). Pengaruh perputaran modal kerja terhadap profitabilitas pada perusahaan LQ45 periode 2019–2023. *Journal of Accounting & Economic Management*, 12(1), 21–33.

Jensen, M. C., & Meckling, W. H. (1976). *Theory of the firm: Managerial behavior, agency costs and ownership structure*. Journal of Financial Economics, 3(4), 305–360.

Karyawati, L., & Kurnia, E. (2023). Pengaruh Working Capital Turnover, Structure Assets, dan Debt to Equity Ratio terhadap Net Profit Margin. *Indonesian Journal of Thousand Literacies*, 1(2), 121–240.

Kraus, A., & Litzenberger, R. H. (1973). *A state-preference model of optimal financial leverage*. Journal of Finance, 28(4), 911–922.

Martha, L., Santoso, D., & Wijaya, Y. (2024). Kinerja modal kerja dan profitabilitas perusahaan rokok di Indonesia. *Jurnal Akuntansi dan Bisnis Indonesia*, 9(1), 55–70.

Nurkhalifah, R., & Zaman, M. B. (2024). Pengaruh Current Ratio dan Debt to Equity Ratio terhadap Net Profit Margin pada PT Perkebunan Nusantara III. *Jurnal Konsisten*, 1(4), 57–64.

Putri, A., & Nugraha, F. (2023). Capital structure, liquidity, and profitability: Evidence from the Indonesian manufacturing sector. *Journal of Applied Accounting Research*, 24(2), 140–152.

Putri, O. G. (2018). Pengaruh Working Capital Turnover, Debt to Equity Ratio, dan Current Ratio terhadap Net Profit Margin pada Perusahaan Sub Sektor Otomotif. *Finance Accounting*, 2(11), 1678–1688.

Ramli, H. (2023). Analisis perkembangan profitabilitas dan modal kerja pada industri rokok nasional. *Jurnal Ekonomi dan Industri*, 15(4), 233–247.

Saputri, W. D., & Darmayanti, N. P. A. (2025). Pengaruh likuiditas, perputaran modal kerja, leverage dan ukuran perusahaan terhadap profitabilitas pada perusahaan tekstil dan garmen di BEI. *E-Jurnal Manajemen Universitas Udayana*, 14(1), 1–20.

Setianto, R. H., & Pratiwi, A. (2019). Working capital management in Indonesia: An analysis of over-investment and under-investment firms. *Gadjah Mada International Journal of Business*, 21(1), 71–94.

Simerly, R. L., & Li, M. (2000). *Environmental dynamism, capital structure and firm performance*. Journal of Business Research, 49(3), 225–232.

Spence, M. (1973). *Job market signaling*. Quarterly Journal of Economics, 87(3), 355–374.

Stema, S. M. (2019). Pengaruh CR, DER dan TATO terhadap Net Profit Margin pada Perusahaan Kosmetik di BEI. *Science of Management and Students Research Journal*, 1(3), 81–90.