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The Influence of Current Ratio and Net Profit Margin on Profit Growth in the Automotive Industry: An Empirical Study from 2018 to 2022

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Abstract: To maintain competitiveness and ensure long-term sustainability in the automotive sector, understanding the determinants of profit growth is crucial. This study empirically examines the impact of the Current Ratio (CR) and Net Profit Margin (NPM) on profit growth from 2018 to 2022, focusing on ten automotive companies listed on the Indonesia Stock Exchange. A quantitative methodology, utilizing panel data regression analysis and specifically the Fixed Effects Model (FEM), was employed to uncover significant insights. It was found that the CR positively influences profit growth, whereas the NPM exhibits a negative effect. These empirical findings offer valuable insights into financial management practices within the automotive industry. By understanding the impact of key financial metrics on profitability, investors, managers, and policymakers are better equipped to make informed decisions to optimize financial strategies for profit growth. This study contributes to the existing literature by addressing the relationship between the CR and NPM within the context of the automotive sector, an area where comprehensive analysis has been lacking. These insights are vital for informing strategic financial decisions and supporting the long-term health of the industry in a fiercely competitive global market.

Keywords: Automotive industry; Profit growth; Current Ratio (CR); Net Profit Margin (NPM); Panel data regression analysis

JEL Classification: A10; B26; C23; D53

1. Introduction

As a key player in the global economy, the automotive industry drives progress, innovation, and technological development, contributing to economic growth (Krishnamoorthy & Vijayapriya, 2023). In this evolving landscape, the financial dynamics that shape automotive companies are of paramount importance to a diverse audience, from investors to policymakers. Therefore, it is crucial to delve into the financial characteristics to decipher the intricate relationship between business feasibility and profitability across automotive companies (Ceyhan & Kara, 2023).

The COVID-19 pandemic has raised economic competition, and businesses are scrambling to develop methods for them to survive while also being competitive. The slowdown of the motorcycle and automotive industries, the most critical sector in the Indonesian economy, leads to a significant decrease in domestic market sales of vehicle motorcycles, or reducing export performance (Waljiyanto et al., 2023). The impact is felt not only in the automotive sector but also on providers that cause reduced purchases of raw materials, declining value-added tax (VAT) payments, and production slowdowns; however, this list can be extended (Purwaningsih & Pernamasari, 2023).

The industry has a significant role in the Indonesian economy, and this was acknowledged by 26 companies that operate four-wheel or more vehicle-based. Cumulatively, these entities represent a massive investment of IDR 99.16 trillion and have an annual production capacity capable of amounting to 2.35 million units, with employment potential exceeding 38.39 thousand people (Habibie & Rustiadi, 2023). The sector's performance, particularly in the context of changing consumer preferences towards alternative fuel sources, underscores the need for strategic adaptation amidst evolving market dynamics (Hartono et al., 2023).

The changing trends in the automotive industry, notably the growing interest in alternative fuel sources, particularly electric and hybrid vehicles, have gained prominence since the late 20th and early 21st centuries (Szumska & Jurecki, 2023). Government regulations, such as Presidential Regulation No. 55 of 2019 on the Acceleration of Battery-Based Electric Motor Vehicle Programs in Indonesia, have greatly advanced the development of electric vehicles (Purwojatmiko et al., 2023).

The automotive industry operates within a complex ecosystem characterized by fierce competition, rapid technological evolution, and shifting consumer preferences. As such, automotive companies face multifaceted challenges in maintaining sustainable growth and profitability (Dagtas & Secme, 2023). Financial metrics are crucial indicators of a company's operational efficiency, liquidity, and overall economic well-being (Keil & Steinberger, 2023). Among these metrics, the CR and NPM are particularly noteworthy due to their significant implications for profit growth in the automotive industry (Lempp & Siegfried, 2022).

The CR and NPM are vital financial ratios that mean a lot for profit growth in this sector. The CR, which assesses a firm's capacity for payment of short-term obligations, is positively related to Return on Assets (ROA) while negatively associated with both Return on Equity (ROE) and Economic Value Added (Tudose et al., 2022). This implies that a larger CR can boost asset productivity but not necessarily translate into higher shareholder returns or wealth. Related to the Indonesian automotive sector, the CR was discovered to be able to increase stock prices significantly as well, implying its importance for investor decision-making (Lisawati, 2023). Meanwhile, the NPM has been identified as the most likely to influence profit growth; it is how much profit a company produces from its sales (i.e., revenues). For example, the NPM greatly impacted profit growth in our Consumer Goods sector (Widiasmara et al., 2022). Moreover, the profitability ratio includes the NPM, which is important to profit growth, as shown by a study of automotive companies on the Indonesia Stock Exchange (Ester et al., 2022). Profitability, e.g., the NPM during COVID-19 in Automotive, was one of those key drivers behind profit growth - higher profitability drove more profits (Herlin et al., 2022). In addition, various performance measures' interdependences emphasize that although financial metrics and industry context are essential, the CR and NPM have different strengths (Tudose et al., 2022). As a result, both metrics are crucial for making sense of and driving profit growth in the automotive market, despite their somewhat nuanced impacts depending on whether you consider them to be impacted by general economic factors or industry-specific ones.

Despite the extensive research on financial metrics in various industries, there remains a notable gap in the literature concerning their specific impact on profit growth within the automotive sector. While individual studies have explored the relationship between financial metrics and profitability in isolation, there needs to be more comprehensive analyses that simultaneously investigate the influence of multiple metrics on profit growth in the context of the automotive industry.

Given the importance of profit growth for sustaining competitiveness and fostering long-term viability in the automotive industry, it is imperative to elucidate the factors driving this crucial metric. However, the lack of comprehensive studies examining the joint influence of the CR and NPM on profit growth represents a significant knowledge gap that warrants empirical investigation.

With the gaps and considerations outlined above, the study strives to answer this study's research questions: (1) How does the CR contribute to profit growth in the automobile industry? (2) How does NPM contribute to profit growth in the automobile industry?

Based on the above gaps and considerations, this study intends to answer the following research questions:

This research is poised to provide a comprehensive understanding of the CR and NPM's impact on profit growth in automotive companies. By evaluating these fundamental economic indicators, we aim to draw meaningful conclusions about the operations of auto companies, offering valuable insights that can drive a more informed analysis of profit growth within the auto sector. Ultimately, the authors believe that this research will significantly enhance strategic decision-making among automotive stakeholders (investors, industry players, and policymakers and regulators), paving the way for a more profitable and sustainable automotive industry.

2. Literature Review

2.1 CR

The CR is often used to measure a company’s liquidity and its ability to pay off short-term debt with cash or the equivalent (Siahaan & Marpaung, 2023). Theoretically, it evaluates the company's current assets and liabilities (Arbidane & Volkova, 2012). An operating cycle is defined as the period it takes to purchase a product, add value, and sell it. Cash and other assets that will be converted into cash or used up within one calendar year are current transitions (Desshyfa & Purwanto, 2024). Current liabilities represent obligations due in the immediate short term, unlike non-current, long-term obligations (Lessambo, 2018). The CR indicates how much a company can cover short-term obligations with quick assets and reflects solvency for that period (Siahaan & Marpaung, 2023). A CR represents a greater capacity to pay short-term liabilities. In contrast, a lower one indicates slowing down the liquidity state of the organization or losing some ground when facing the payables department in upcoming periods (Sari et al., 2022).

2.2 NPM

In line with Gulo & Sembiring (2024), the theoretical meaning of NPM is a productivity rate that reflects how meaningful, for example, net income is in relation to net sales. It translates the operational cost incurred by any company for a specific period to how effectively it can highlight that (Krystella et al., 2020). A high NPM is desirable because it implies the company can be more profitable in every sale and effectively reduce operating costs (Permata & Purwanto, 2018).

NPM: This is a significant financial indicator of a business's profitability and operational efficiency (Nariswari & Nugraha, 2020). It quantifies the profit earned out of total revenue, providing more accurate financial health representation for a company. NPM tells us the percentage of income converted to profit (free cash) after all expenses have been accounted for, including operating costs, taxes, and interest. As the name suggests, it gives the efficiency of company cost management capability, power to pricing strategy, or general financial health. A higher NPM value indicates more profitability and better operational efficiency, while a lower value signals inefficiencies or difficulties in managing costs relative to revenue generation (Nariswari & Nugraha, 2020).

2.3 Profit Growth

More than a number in profit growth (Sitorus et al., 2020). It indicates the company's strategic choices and good management. This is the difference in a firm's net income during some period (Gulo & Sembiring, 2024), usually annually or quarterly. More profits will be obtained, and the business's bottom line and revenues will continue to rise. There can be multiple reasons for profit growth. However, strategic decisions and good management are significant (Liuspita & Purwanto, 2019). It represents the capacity of a company to produce greater profits compared to its costs and investments, which in turn increases shareholder value and longer-term business growth. An increase in profits provides critical insight into the competitive environment, the position of markets, and the endurance of firms for long-term survival, among other factors (Sitorus et al., 2020).

2.4 The Impact of CR on Profit Growth

Hertina et al. (2020) suggest that the CR can positively and negatively affect profit growth. A CR that enhances profit growth indicates the company's capacity to settle short-term liabilities using its long-term and non-current assets. If the CR is high, the company should have a nice sum of current assets relative to its liabilities. This ensures that disposable funds will be abundant for profitable activities, causing healthy profit growth. However, Hertina et al. (2020) also found that a high CR does not always lead to increased profit growth due to the possible inappropriate utilization of current assets.

According to Zahra & Hanantijo (2022), the relationship is negative, meaning an increase in the CR, other things being equal, leads to a reduction in profit growth. This is because an increase in payables indicates more current debt being valued against current assets, decreasing liquid assets carried by a company for meeting reserve obligations or claims payment, and resulting in a decrease in the return of loss cost air on behalf of a further increased level. Then, Zahra & Hanantijo (2022) found the CR did not significantly influence profit growth.

Amilah & Habibi (2023) argued that CR variables have no significant impact on profit growth. According to Karelina et al. (2022), the CR affects profit growth. Specifically, an increase in the CR will lead to an increase in profit growth. This indicates that a higher CR is associated with higher profit growth (Karelina et al., 2022).

Widjaja et al. (2024) found that the CR negatively influences profit growth. Specifically, a higher experiment ratio means limited liquidity and prevents the company from attracting creditors to provide loans, disrupting the company's activities and hindering profit growth (Widjaja et al., 2024). Additionally, the CR can be high, suggesting an excess of current assets available for the operational cost (which will reduce profit) (Widjaja et al., 2024). However, another study emphasizes that the CR has a negative and insignificant effect on profit growth (Widjaja et al., 2024).

Consequentially, the impact of the CR on profit growth is ambiguous, with a mix of results indicating that it has positive, negative, or non-significance relations. This variation implies the relevance of the effects of CR on profit enhancement, which could be conditional on certain circumstances, such as the working capital management and financial condition associated with each company.

H1: A significant correlation exists between the CR and profit growth.

2.5 The Impact of NPM on Profit Growth

Amilah & Habibi (2023) asserted that the NPM significantly positively impacted profit growth, but Hung &

Viriany (2023) found a positive insignificant effect, meaning that it is not a significant variable in determining profit growth. Ayuningsih & Winarso (2023) also found that the NPM, when considered individually, does not significantly affect profit growth, but according to Handayani & Winarningsih (2020), the variable of NPM has an effect positive enough for increased profits. In other words, NPM would increase the company by earning more through operational profit, which in turn gives investors a positive picture of the company's performance and leads to higher profit growth. Nikmah et al. (2020) also found that the NPM also has a significant positive impact on the growth of profits. Gulo & Sembiring (2024) found that NPM significantly impacts profit growth. Business entities with NPM's high capability to control operational expenses, increase earnings, and provide more cash for investment and expansion. Nariswari & Nugraha (2020) found a significant effect of NPM on profit growth among other industry sector companies, including sub-sector companies in the plastic and packaging industries, from 2014 to 2008.

According to different studies, the relationship between NPM and profit growth has witnessed highly varying results. When NPM does have the most noteworthy effect on profit growth, higher NPM means solid operational administration and, at last, supports investor trust, prompting profit growth. NPM drives profit up and to the right in a big way, which is why controlling costs while increasing top-line revenue remains critical for growth. Nevertheless, the positive and significant impact of NPM on profit growth indicated some support from NPM toward profit growth up to a specific range. Overall, albeit with some caveats and inconsistencies, a higher NPM is causally followed by profit growth.

H2: A significant correlation exists between NPM and profit growth.

3. Methodology

This quantitative research was conducted in automotive sector companies listed on the Stock Exchange (IDX) during 2018-2022. Quantitative research involves the analysis of numerical data. The quantitative data in this study comprises financial reports such as balance sheets, income statements, and financial ratios. Quantitative research will provide mathematical models, theories, or even tentative hypotheses for the profit growth of the automotive industry.

3.1 Study Subjects

The object of this study is the automotive company that went public on the Indonesia Stock Exchange for 2018 to 2022. The study population includes all automotive companies listed on the IDX, totaling 16 companies. The research sample consists of 10 automotive companies selected (refer to Table 1) using probability sampling methods, specifically simple random sampling. The selection criteria ensure access to complete and accessible financial reports. The other six automotive companies were excluded from the study due to the unavailability of their complete financial reports.

Table 1. Automotive subsector companies observed

No.	Company Code	Company Name
1.	ASII	PT Astra International Tbk
2.	AUTO	PT Astra Otoparts Tbk
3.	BRAM	PT Indo Kordsa Tbk
4.	GDYR	PT Goodyear Indonesia Tbk
5.	GJTL	PT Gajah Tunggal Tbk
6.	IMAS	PT Indomobil Sukses Internasional Tbk
7.	INDS	PT Indospring Tbk
8.	MASA	PT Multistrada Arah Sarana Tbk
9.	PRAS	PT Prima Alloy Steel Universal Tbk
10.	SMSM	PT Selamat Sempurna Tbk

3.2 Data Analysis Techniques

Descriptive statistics, classical assumption tests (such as normality, autocorrelation, and heteroscedasticity), and panel data regression analysis are employed. Three tests were conducted to choose the appropriate panel data regression model: the Chow test, the Hausman test, and the Lagrange Multiplier (LM) test. The analysis includes three-panel data regression models: the Common Effects Model (CEM), the Fixed Effects Model (FEM), and the Random Effects Model (REM).

This study used panel data regression, and while competing methodologies have limitations, several key advantages of this method are outlined as follows: First, specific variables can be added to the model to allow panel data regressions to account for individual heterogeneity. The model takes firm fixed effects into account for firm heterogeneity and time-invariant, unobservable variables that could influence the dependent variable. Second, when cross-sectional and time-series data are combined, an increased number of sample observations will help produce more accurate statistical estimates. This leads to a greater number of observations, which in turn would make more efficient and precise estimates. Third, panel data regression can also capture the dynamic response over time, showing how changes in explanatory variables affect the dependent variable at different moments. It is essential for increased studies and other time-dependent investigations. Fourth, unlike pure cross-section, time series regression and panel data regression can control for unobservable factors that alter over time only but not across entities (fixed effects) or are changed by the entity and do not change through the period of study, called a random effect. Fifth, an advantage in terms of multicollinearity is that panel data, by incorporating both cross-sectional and time-series dimensions, often reduces multicollinearity among the independent variables, leading to more reliable coefficient estimates.

3.3 Hypothesis Testing

There are many steps in hypothesis testing, which involve using the F-test to assess the simultaneous significance of the equation and T-tests to evaluate the partial significance of regression coefficients. The R^2 measures how well the model can explain profit growth variation. In this regard, the hypotheses tested are Hypothesis 1: CR influences auto manufacturer profit growth, and Hypothesis 2: NPM influences auto manufacturer profit growth.

4. Results

4.1 Descriptive Statistic Analysis

Table 2 shows the research data involves 10 companies with a total of 5 years of observation (2018-2022), so the total N is 50.

Table 2. Descriptive statistic analysis

	Profit Growth (Y)	CR (X1)	NPM (X2)
Mean	1.667000	2.043900	0.032400
Maximum	126.6100	6.170000	0.210000
Minimum	-19.31000	0.600000	-0.990000
Std. Dev.	18.35139	1.471825	0.166434

Source: Eviews 12 data processing

Table 2 shows that the minimum value of earnings growth is -19.31000, occurring in PT Indomobil Sukses Internasional Tbk (IMAS) during the 2018-2022 period, indicating a decrease in profit growth or loss. The maximum value of earnings growth is 126.6100, which occurred at PT Prima Alloy Steel Universal Tbk (PRAS), indicating an increase in profit growth. The average profit growth is 1.667000, with a standard deviation of 18.35139.

The minimum value of the CR is 0.600000, observed in PT Prima Alloy Steel Universal Tbk (PRAS), indicating that the company is not able to meet its current asset needs or is experiencing losses. The highest CR is 6.170000, recorded at PT Indospring Tbk (INDS), suggesting that the company has performed well in managing its working capital or earning potential. The average CR is 2.043900, with a standard deviation of 1.471825.

The lowest NPM value of -0.990000 occurred at PT Prima Alloy Steel Universal Tbk (PRAS), indicating a significant decrease in net income from sales or a loss. The highest NPM is 0.210000, achieved by PT Indospring Tbk (INDS), reflecting an increase in sales or profit to net income, surpassing previous predictions. The mean NPM is 0.032400, with a standard deviation of 0.166434.

4.2 Model Selection Test

4.2.1 The normality test

A normality test assesses whether a regression model's independent and dependent variables conform to a normal distribution. The study employs the Jarque-Bera test for normality (refer to Figure 1). A Jarque-Bera probability value > 0.05 indicates that the data are normally distributed. Conversely, a Jarque-Bera probability value < 0.05 suggests a non-normal distribution. In Figure 1, the p-value is 0.789587, a probability > 0.05, indicating that the data follow a normal distribution. Therefore, this regression model can be utilized to forecast future profit growth, the dependent variable.

This normal distribution of our data confirms that the assumption of normality underlying classical regression modeling is present. Figure 1 illustrates the regression validation and proves this study is reliable enough to solve problems accurately. It should be accurate to predict profit growth based on some observations. These outputs are valid only if the assumption of a normal distribution is correct for the data. Hence, the regression model is suitable for predicting or understanding profit growth determinants.

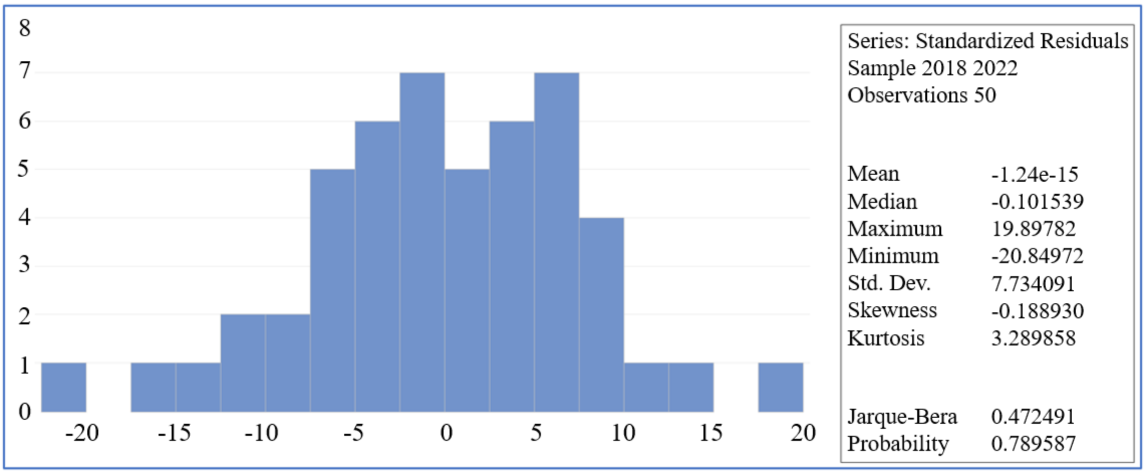

Figure 1. Normality test
Source: Eviews 12 data processing

4.2.2 The autocorrelation test

The autocorrelation test is performed to determine whether disturbances in periods t and t-1 exhibit correlation within the linear regression model. The Durbin-Watson (D-W) test examines autocorrelation, and its results are shown in Table 3. The D-W statistic, a key indicator in our analysis, provides valuable insights. If the D-W statistic is less than -2, it suggests positive autocorrelation, while values between -2 and +2 indicate no autocorrelation. A D-W statistic greater than 2 points to negative autocorrelation. Table 3 shows this study's D-W value of 1.344377. Since $-2 < \text{D-W} \leq +2$, the study can confidently conclude that this study has no autocorrelation issue.

Table 3. Autocorrelation test

Mean dependent var	1.667000
S.D. dependent var	18.35139
Akaike info criterion	7.028950
Schwarz criterion	7.143672
Hannan-Quinn criter.	7.072637
D-W stat	1.344377

Source: Eviews 12 data processing

4.2.3 The multicollinearity test

A collinearity test is an essential first step in quantitative analysis to check whether some independent variables are related to each other. The test results, presented in Table 4, play a significant role in our study. According to the criteria, if the correlation value is less than 0.80, multicollinearity is not an issue. However, if it is greater than 0.80, it is considered problematic. Table 4 shows the correlation coefficient between the CR (X1) and itself, which is 1.000000, as expected since it represents the correlation of a variable with itself. Similarly, the correlation coefficient of the NPM (X2) with itself is also 1.000000, indicating a perfect relationship. The correlation coefficient between CR (X1) and NPM (X2) is 0.303084, showing a mild positive correlation. This value is well below the 0.80 threshold, indicating no significant multicollinearity issue between these two variables.

Table 4. Multicollinearity test

	CR (X1)	**NPM (X2)**
CR (X1)	1.000000	0.303084
NPM (X2)	0.303084	1.000000

Source: Eviews 12 data processing

4.2.4 Heteroscedasticity test

Table 5 presents the results of the heteroscedasticity test conducted using Eviews Version 12. Heteroscedasticity refers to the situation where the variance of errors (residuals) in a regression model varies across different levels of the independent variables. This inconsistency can lead to biased standard errors and undermine the reliability of statistical findings.

Table 5 reveals that the intercept term, C, is of utmost significance, with a t-statistic of -2.089043 and a p-value of 0.0421. This indicates that the mean numbers are significantly different from zero. Moving on to Table 6, the coefficient of variable CR (X1) is equal to 0.677937, with a standard error of 0.340767. The t-stat for the regression coefficient is 1.989448, leading to a marginally significant result with a two-tailed test of 0.0525. The coefficient for NPM (X2) is -10.03939, with a standard error of 6.043016. The t-stat for the relationship coefficient is -1.661321, with a p-value of 0.1033, indicating no statistically significant effect at standard alpha= 0.05 levels.

Table 5. Heteroscedasticity test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.451399	0.694767	-2.089043	0.0421
CR (X1)	0.677937	0.340767	1.989448	0.0525
NPM (X2)	-10.03939	6.043016	-1.661321	0.1033

Source: Eviews 12 data processing

The heteroscedasticity testing result is essential to judging the constant error variance assumption in the regression model (1). Significantly positive small p-value=0.0421 of intercept term C suggests suspicion of heteroscedasticity, meaning that errors vary across levels of independent variables; (2) p-values for CR (X1) and NPM (X2), 0.0525 and 0.1033, respectively, are higher, indicating that these variables do not add a significant component to the heteroscedasticity in the model. Finally, although the intercept term C has a small correlation between size and residuals centered in the variable (in variables CR (X1) and NPM (X2)), this does not contribute significantly to population heteroscedasticity, as evidenced by the respective shadow standard errors t-statistics of both models.

4.3 Panel Data Regression Estimation

4.3.1 CEM

Table 6 presents the estimation of the CEM by Panel Least Squares (PLS) in Eviews 12. The model is built to examine the profit growth (the dependent variable) of the CR (X1) and NPM over time, which spans across cross-section categories.

Table 6. CEM

Dependent Variable: Profit Growth
Method: PLS
Date: 06/13/24 Time: 14:16
Sample: 2018 2022
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Eror	t-Statistic	Prob.
C	-1.703721	1.942484	-0.877084	0.3849
CR	3.311952	0.804318	4.117716	0.0002
NPM	-104.8944	7.112824	-14.74721	0.0000
R-squared	0.822385	Mean dependent var	1.667000	
Adjusted R-squared	0.814827	S.D. dependent var	18.35139	
S.E. of regression	7.896932	Akaike info criterion	7.028950	
Sum squared resid	2930.992	Schwarz criterion	7.143672	
Log likelihood	-172.7238	Hannan-Quinn criter.	7.072637	
F-statistic	108.8084	D-W stat	1.344377	
Prob(F-statistic)	0.000000			

Source: Eviews 12 data processing

The intercept term, C, has a coefficient of -1.703721, and the standard error is 1.942484. t-statistic = -0.877084, p-value = 0.3849. Although our interpretation is largely driven by differences in significant spatial scales, the p-value presented below (which does not reject H0 at α = 0.05) remains an important element of this discussion.

Our model explains at least 82.24% of the variation in profit growth, indicating a good fit to the data. The AIC and Schlwarz Criterion & Hannan-Quinn Criterion suggest model selection of the BAYWAVE modulations, with lower values indicating a better fitting point in simplicity. The D-W statistic of 1.344377 indicates that there is a very slight positive autocorrelation in the residuals.

The common effect model in Table 6 demonstrates that the CR (X1) and NPM (X2) are significant predictors of profit growth. While the intercept (C) is not statistically significant, the model explains the variation in the dependent variable. The diagnostic tests suggest that the model has a good fit, although slight autocorrelation in residuals should be noted for further consideration.

4.3.2 FEM

Table 7 presents the results of the FEM estimated using Panel EGLS (Cross-section weights) in Eviews 12. This model indicates the association of the dependent variable, profit growth, with the independent variables, CR (X1), and NPM (X2) for various periods and cross sections, while accounting for individual specific effects.

Table 7. FEM

Dependent Variable: Profit Growth				
Method: Panel EGLS (Cross-section weights)				
Date: 06/13/24 Time: 14:18				
Sample: 2018 2022				
Periods included: 5				
Cross-sections included: 10				
Total panel (balanced) observations: 50				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	4.382168	2.713312	1.615062	0.1146
CR	0.302653	1.295062	0.233697	0.8165
NPM	-102.8938	10.71058	-9.606741	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.759296	Mean dependent var	0.351125	
Adjusted R-squared	0.689618	S.D. dependent var	12.32274	
S.E. of regression	6.861772	Sum squared resid	1789.189	
F-statistic	10.89727	D-W stat	1.906333	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.866830	Mean dependent var	1.667000	
Sum squared resid	2197.558	D-W stat	1.740805	

Source: Eviews 12 data processing

The coefficient for C is 4.382168, with a standard error of 2.713312. The t-statistic is 1.615062, and the associated p-value is 0.1146. This indicates that C is not statistically significant at conventional levels ($\alpha = 0.05$), underscoring the lack of a significant relationship. The interaction term CR coefficient is 0.302653, with a standard error of 1.295062. The t-statistic is 0.233697, and the p-value is 0.8165, indicating that the CR is not statistically significant. The coefficient for NPM is -102.8938, with a standard error of 10.71058. The t-statistic is -9.606741, and the p-value is 0.0000, indicating strong statistical significance. NPM has a highly significant negative effect on profit growth.

These statistics evaluate how well the model fits when cross-sectional weights are applied. The R-squared and Adjusted R-squared values indicate that the model explains around 75.93% of the variance in profit growth with cross-sectional weights included. Without using these weights, the R-squared value increases to 86.68%, indicating a better fit of the model.

The FEM in Table 7 reveals that NPM significantly influences profit growth, demonstrating a robust negative relationship. However, the CR and the intercept term C do not exhibit statistically significant effects on profit growth based on their respective coefficients, standard errors, t-statistics, and p-values presented.

As indicated by R-squared and other diagnostic measures, the model's performance suggests that while the NPM is a significant predictor, further investigation may be needed to understand the full dynamics affecting profit growth, particularly concerning the CR and intercept variables. Including cross-section fixed effects enhances the model's robustness by accounting for individual-specific characteristics across different entities.

4.3.3 REM

Table 8 shows the results of the REM using panel EGLS (cross-section random effects) in Eviews 12. To check such a hypothesis, we set the short-term panel model, in which the affective factor is profit growth, and the deterministic factors are the CR as the leading standardized indicator of liquidity position, NPM, across multiple periods and cross-sections while accommodating both cross-section and idiosyncratic random effects.

The intercept term C, with a coefficient of -1.639232 and a standard error of 2.008853, is a key focus. The t-statistic is -0.816004, and the p-value, a crucial indicator of statistical significance, is 0.4186. This value suggests that the intercept is not statistically significant at conventional levels (α = 0.05), a significant finding in our analysis. The Variable CR has a coefficient of 3.317857 and a standard error of 0.819086. The t-statistic is 4.050683, and the p-value is 0.0002, indicating that the CR is statistically significant in explaining profit growth. Variable NPM shows a coefficient of -107.2573 with a standard error of 6.749402. The t-statistic is -15.89138, and the p-value is 0.0000, indicating strong statistical significance. NPM has a highly significant negative effect on profit growth.

Table 8. REM

Dependent Variable: Profit Growth
Method: Panel EGLS (Cross-section random effects)
Date: 06/13/24 Time: 14:20
Sample: 2018 2022
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.639232	2.008853	-0.816004	0.4186
CR	3.317857	0.819086	4.050683	0.0002
NPM	-107.2573	6.749402	-15.89138	0.0000
Effects Specification				
			S. D.	Rho
Cross-section random			1.873359	0.0634
Idiosyncratic random			7.197393	0.9366
Weighted Statistics				
R-squared	0.827668	Mean dependent var		1.440748
Adjusted R-squared	0.820334	S.D. dependent var		17.96448
S.E. of regression	7.614598	Sum squared resid		2725.159
F-statistic	112.8645	D-W stat		1.433081
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.821931	Mean dependent var		1.667000
Sum squared resid	2938.473	D-W stat		1.329048

Source: Eviews 12 data processing

These statistics evaluate the model's fit with cross-section random effects included. The R-squared and Adjusted R-squared indicate that approximately 82.77% of the variation in profit growth is explained by the model. These statistics provide a comparison without applying cross-section weights. The R-squared value here is 82.19%, indicating a strong fit of the model even without weights.

The REM in Table 8 highlights significant findings regarding the predictors of profit growth. CR and NPM emerge as crucial variables influencing profit growth, with NPM notably demonstrating a strong negative effect. The model's inclusion of random effects (both cross-section and idiosyncratic) enhances its robustness in accounting for unobserved heterogeneity across entities. While the intercept (C) is not statistically significant, the overall model fit is strong, as indicated by high R-squared values and significant F-statistics. The random effect specifications provide insights into the variability of profit growth across different cross-sections and individual-specific characteristics.

4.4 Model Selection Test

4.4.1 Chow test

Table 9 presents the results of the Chow test conducted in Eviews 12. This test evaluates the presence of cross-section fixed effects in the regression model and is essential for determining whether including fixed effects significantly improves the model's explanatory power.

The Cross-section F-test statistic is 2.064463 with degrees of freedom (9, 38). The corresponding p-value is 0.0582, indicating that including cross-section fixed effects may not reach statistical significance at the conventional level of 0.05. However, the result shows a marginal significance level, suggesting the need for further investigation.

The cross-sectional chi-square test statistic is 19.903620 with 9 degrees of freedom. The p-value is 0.0185, indicating statistical significance at the 0.05 level. This suggests that there is evidence to reject the null hypothesis that cross-section fixed effects do not contribute significantly to the model.

The results of the Chow test in Table 9 provide mixed evidence regarding the inclusion of cross-section fixed effects in the regression model. While the cross-section F-test indicates marginal significance, the cross-section Chi-square test shows statistically significant evidence supporting the inclusion of cross-section fixed effects.

Table 9. Chow test

Redundant Fixed Effects Tests Equation: Untitled Tests cross-section fixed effects			
Effects Test	**Statistic**	**d.f.**	**Prob.**
Cross-section F	2.064463	(9,38)	0.0582
Cross-section Chi-square	19.903620	9	0.0185

Source: Eviews 12 data processing

4.4.2 Hausman test

Table 10 displays the outcomes of the Hausman test performed using Eviews 12, assessing whether the fixed or REM is more suitable for the regression analysis. This test is critical for determining whether to utilize random effects, assuming no correlation between the random effects and explanatory variables, or fixed effects, which permit such correlation.

Table 10. Hausman test

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	7.606746	2	0.0223

Source: Eviews 12 data processing

The Hausman test contrasts the estimates from the REM model against those from the FEM. The null hypothesis posits that the REM is consistent and efficient relative to the FEM. This could be more suitable for this analysis due to potential correlations between unobservable variables linked to specific units and the control variable.

The Chi-Square statistic is 7.606746 with 2 degrees of freedom. The probability (p-value) associated with the test statistic is 0.0223, less than the conventional significance level of 0.05.

Hausman test: With a p-value < 0.05, we confidently reject the null and accept the alternative hypothesis, a strong indication of the strength of our result. This means that the FEM is the appropriate choice for regression analysis instead of using the REM. The statistically significant p-value confirms the presence of an association between the random effects and explanatory variables, providing strong support for the inclusion of the fixed part to adjust it.

4.4.3 LM test

Table 11. LM test

LM Tests for Random Effects Null hypotheses: No effects Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.730593	1.914897	2.645490
	(0.3927)	(0.1664)	(0.1038)
Honda	0.854748	1.383798	1.582891
	(0.1963)	(0.0832)	(0.0567)
King-Wu	0.854748	1.383798	1.625518
	(0.1963)	(0.0832)	(0.0520)
Standardized Honda	1.380719	1.790191	-1. 027258
	(0.0837)	(0.0367)	(0.8479)
Standardized King-Wu	1.380719	1.790191	-0.803446
	(0.0837)	(0.0367)	(0.7891)
Gourieroux et al.	--	--	2.645490
			(0.1185)

Source: Eviews 12 data processing

Table 11 displays the outcomes of the LM test conducted for random effects using Eviews 12. This test examines the validity of random effects assumptions in panel data models, testing against the null hypothesis of no effects.

The LM test assesses various forms of tests, including those for cross-section effects, time effects, or both simultaneously. The p-values associated with these tests play a key role in determining the significance level against the null hypothesis of no random effects. Lower p-values (below 0.05) indicate the presence of random effects.

Based on the results, there is suggestive evidence in favor of random effects in the panel data model, particularly highlighted by the Breusch-Pagan, Honda, King-Wu, and Gourieroux tests. These findings imply that including random effects in the model specification improves its ability to account for unobserved heterogeneity across cross-sections and periods.

4.4.4 Model selection test result

Table 12 summarizes the results of several model selection tests conducted using Eviews 12. These tests are crucial for determining the appropriate regression model specification based on statistical significance levels and critical values.

Table 12. Model selection test result

No.	Model Selection Test	Probability Value	Critical Value	Model Selection Decision
1.	Chow Test	0.0185	0.05	FEM
2.	Hausman Test	0.0223	0.05	FEM
3.	LM Test	0.3927	0.05	CEM

Source: Eviews 12 data processing

The Chow test resulted in a probability value of 0.0185, below the critical value of 0.05. Therefore, the test suggests that the FEM is preferred over other models tested. The Hauman test gave a probability of 0.0223, also below the critical value (i.e., < 0.05)—the FEM, like the Chow test over alternative model specifications. The associated probability value of 0.3927 from the LM test exceeds the critical significance level of 0.05. So, from the perspective of this test, we can say it's a CEM. The Chow test and Hausman test both indicate that the FEM is the best based on their p-values, which are below the 0.05 significant level. Conversely, the LM test suggests that the CEM is suitable, as indicated by its probability being below 0.05.

The outcomes of model selection tests revealed how the choice of appropriate model specifications is significant, along with your statistical significance and critical values. The Chow and Hausman tests concur in selecting the FEM, which shows how strongly it captures panel data properties. However, the LM test indicates that the CEM is valid, thus clarifying ambiguities over test outcomes and highlighting key factors necessary for empirical model specification.

4.5 Panel Data Regression Test

Panel data regression analysis by the FEM gives some perception about the relationship between profit growth, which is a related variable, and CR along with NPM, which is a dependent variable.

The final regression equation of the analysis was:

$$Y = -1.70 + 3.31*X1 - 104.89*X2$$

Table 13 shows that the Coef X: Y intercept is -1.703721, with a standard error of 1.942484 and t-statistic of -0.877084. The precision of these coefficients underscores the robustness of our analysis.

The coefficient for NPM is -104.8944, suggesting that for every unit increase in NPM, profit growth is expected to decrease by 104.8944 units. This coefficient is highly statistically significant, with a t-statistic of -14.74721 and a p-value of 0.0000.

The p-value for the intercept is 0.3849, indicating that the constant is not significant at conventional levels (α = 0.05). However, the CR's influence on profit growth is highly significant, with a coefficient of 3.311952. The Expected Effect of the CR on profit growth is 4.117716, with a highly significant estimate and an incredibly small p-value (0.0002). The coefficient for NPM is -104.8944, suggesting that for every unit increase in NPM, profit growth is expected to decrease by 104.8944 units. This coefficient is highly statistically significant, with a t-statistic of -14.74721 and a p-value of 0.0000.

R-squared: 0.822385. This means that about 82.24% of the variation in profit growth can be explained by the independent variables, CR and NPM, used in the model. The Adjusted R-squared, which accounts for the number of independent variables in the model, is 0.814827. Lower values for the AIC, Schwarz Criterion, and Hannan-Quinn Criterion indicate a better model, suggesting that the current model strikes a good balance between fit and complexity.

The F-stat, a measure of a model's effectiveness, is 108.8084, and the p-value, an indicator of statistical significance, is 0.000. This means that at least one independent variable statistically explains sales better than some baseline models.

Table 13. Panel data regression analysis using the FEM

Dependent Variable: Profit Growth				
Method: PLS				
Date: 06/13/24 Time: 12:30				
Sample: 2018 2022				
Periods included: 5				
Cross-sections included: 10				
Total panel (balanced) observations: 50				
Variable	**Coefficient**	**Std. Eror**	**t-Statistic**	**Prob.**
C	-1.703721	1.942484	-0.877084	0.3849
CR	3.311952	0.804318	4.117716	0.0002
NPM	-104.8944	7.112824	-14.74721	0.0000
R-squared	0.822385	Mean dependent var	1.667000	
Adjusted R-squared	0.814827	S.D. dependent var	18.35139	
S.E. of regression	7.896932	Akaike info criterion	7.028950	
Sum squared resid	2930.992	Schwarz criterion	7.143672	
Log likelihood	-172.7238	Hannan-Quinn criter.	7.072637	
F-statistic	108.8084	D-W stat	1.344377	
Prob(F-statistic)	0.000000			

Source: Eviews 12 data processing

The D-W statistic of 1.344377 suggests a mild positive autocorrelation in the residuals, which may warrant further investigation or adjustment in future analyses.

Thus, the FEM would be pertinent for prosecuting profit growth and independent variables, CR, & NPM. It is consistent with this very measure of the fit that, although relatively low, it explains a positive amount as above. Indeed, its value is 0.342 (34%) considering all coefficients, which highlights how essential coefficients for CR and NPM are in explaining changes if we consider our reference period. However, the non-significant intercept suggests that other variables not accounted for by this model affect baseline profit growth.

Table 14 provides the coefficient of determination (R^2) and associated statistics for the regression model used. The R-squared coefficient is a powerful indicator of the model's predictive ability, explaining that approximately 82.24% of profit growth can be accurately predicted by the independent variables, CR and NPM. This high percentage instills confidence in the model's capacity to explain profit growth. The adjusted R-squared, which accounts for the number of independent variables in the model, offers a more conservative estimate of the model's explanatory power. The adjusted R-squared is 0.814827, slightly below the R-squared value, reflecting the adjustment for model complexity.

Table 14. Coefficient of determination (R^2)

R-squared	0.822385
Adjusted R-squared	0.814827
S.E. of regression	7.896932
Sum squared resid	2930.992
Log likelihood	-172.7238
F-statistic	108.8084
Prob(F-statistic)	0.000000

Source: Eviews 12 data processing

The Sum Squared Residual value, 2930.992, is a measure of the total spread that the regression model does not account for. It represents the average distance of observed values from the regression line, or, in other words, the average error or standard deviation of residuals. This value provides insight into the model's limitations and the extent to which it accurately predicts profit growth.

Log-likelihood is a measure used in statistical modeling to compare different models; a greater log-likelihood indicates a better fit to the data. In this case, the log-likelihood is -172.7238.

The F-statistic tests the overall significance of the regression model. With an F-statistic value of 108.8084 and a p-value (Prob. F-statistic) of 0.000000, we can reject the null hypothesis, indicating statistically significant predictions from the regression model. This means at least one of the independent variables (CR and NPM) significantly affects the dependent variable, profit growth.

With an R-squared value of 0.822385 and an adjusted R-squared of 0.814827, the FEM explains a significant amount of variability in profit growth using CR and NPM as independent variables. Model diagnostics indicate a low standard error of regression (7.896932), meaning the observed values are closely grouped around the fitted values, suggesting a good fit.

The significant F-statistic (108.8084) further supports the model's overall validity, implying that the regression equation is statistically significant and not due to random chance. This strengthens confidence in the identified relationships between the variables.

From these aspects, the FEM is suitable for modeling profit growth with CR and NPM. These findings show how changes in CR and NPM impact profit growth. However, the assumptions of this model and potential causal relationships should also be acknowledged.

Table 15 presents the F-test of the regression model, showing the critical values that assess both significance and goodness-of-fit. The R-squared value of 0.822385 indicates that approximately 82.24% of the variance in the dependent variable, profit growth, is explained by the independent variables, CR and NPM. This demonstrates the model's strong explanatory power.

Table 15. F test

R-squared	0.822385
Adjusted R-squared	0.814827
S.E. of regression	7.896932
Sum squared resid	2930.992
Log likelihood	-172.7238
F-statistic	108.8084
Prob(F-statistic)	0.000000

Source: Eviews 12 data processing

The adjusted R-squared is 0.814827, corrected for the degrees of freedom available to estimate/data. This provides a slightly more conservative estimate of the model's ability to explain variations in profit growth, considering both complexity and goodness-of-fit.

The regression standard error (S.E.) is 7.896932, representing the average distance between observed values and the fitted regression line. A smaller S.E. indicates a better fit, showing the average of the Total Sum of Squares, which quantifies the total variance not accounted for by the regression model. The log-likelihood of -172.7238 is used to compare different models, with a higher log-likelihood suggesting a better fit.

The F-test of overall significance yields an F-statistic of 108.8084 with a very low p-value (Prob(F-statistic) = 0.000000), indicating that the regression model is statistically significant. This means that at least one independent variable (such as the CR or NPM) significantly correlates with the dependent variable, causing a variation in profit growth.

The high R-squared and adjusted R-squared values (0.822385 and 0.814827, respectively) indicate that the model, using the CR and NPM as predictors, explains a substantial proportion of the variability in profit growth. The low standard error of regression (7.896932) indicates a good fit, with observed values closely matching the predicted values. The significant F-statistic (108.8084) further supports the model's validity, showing that the relationships between independent variables and profit growth are not due to chance.

Given these results, the F-test supports the significance of this regression model. This model, with its ability to determine how changes in the CR and NPM impact profit growth, offers valuable insights for analysts. However, it is essential to consider the model's assumptions and potential issues in interpreting causal relationships.

Table 16 presents the results of the T-test conducted on the regression coefficients of the PLS model, evaluating the significance of each independent variable (CR and NPM) in explaining the variation in the dependent variable (Profit Growth).

Table 16. T-test

Dependent Variable: Profit Growth
Method: PLS
Date: 06/13/24 Time: 12:30
Sample: 2018 2022
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Eror	t-Statistic	Prob.
C	-1.703721	1.942484	-0.877084	0.3849
CR	3.311952	0.804318	4.117716	0.0002
NPM	-104.8944	7.112824	-14.74721	0.0000

Source: Eviews 12 data processing

The coefficient of the intercept is -1.703721, with a T-statistic of -0.877084 (Prob: >t = 0,3849). This suggests that the intercept is not significantly different from zero at a 5% significance level, indicating that we do not have enough evidence to conclude that the intercept is anything but zero.

The CR has a coefficient of 3.311952, a T-statistic of 4.117716, and a p-value of 0.0002. This implies that the

CR is significant at a 5% level. The positive coefficient suggests that an increase in the CR positively affects profit growth.

The NPM has a coefficient of -104.8944 and a T-statistic of 14.74721. This significant result indicates that a higher NPM negatively affects profit growth. The model suggests that increasing the NPM will decrease profit growth.

The T-test results provide insights into the specific contributions of the CR and NPM to the variability in profit growth. The analysis shows that the CR positively influences profit growth, while the NPM has a negative effect. Consequently, the PLS model effectively captures the variation in profit growth over time within the auto industry from 2018 to 2022 across all ten cross-sections used in the study.

5. Discussion

Table 16 presents the PLS model results, showing the interrelationships between the independent variables (CR and NPM) and the dependent variable (Profit Growth) for the automotive industry from 2018 to 2022.

This finding suggests the excellent positive impact of the CR on profit growth. Thus, companies operating in the autosphere have higher CRs compared to decreased profit growth. There is a significant negative association between NPM and profitability growth. This means the more a clinic can charge and earn on every dollar of revenue, an inverse relationship that is consistent with lower profit growth as a percent of sales during this period and context.

Yet, the limitations of using these ratios across different economic scenarios are worth noting. The value of some fairly conventional ratios, like the CR and NPM, can be powerfully effective or extremely feeble, depending on whether you consider them in a complete cycle framework. For example, in times of economic recession or financial instability, the CR may not represent an organization's true liquidity. As a result, market conditions can change extremely quickly. Conversely, specific sectors with high levels of competition or those subject to regulatory change suggest that the NPM is not a valuable measure for evaluating growth in profitability. These differences serve as a reminder of the importance of avoiding single-dimension analysis and, instead, that financial ratios, when interpreted, need to be seen within the context of a broader economic backdrop, including some industry-level characteristics.

The study concludes that automobile companies should focus on retaining CRs at a healthy level, which leads to profit growth. The best policies are those designed to enhance liquidity with the lowest possible costs in terms of profitability. Always be extremely cautious with any strategies targeted at improving NPMs to ensure they do not deflate and reduce the scale of profit growth. This could mean cutting costs, changing prices, and driving out more waste from your operations. Since NPM loses the positive effect on profit growth, companies have to develop robust risk management strategies for managing potential profitability deterioration as cost increases, market volatility, and competitive pressures increase.

These findings can inform leadership regarding placement, investment, and operational decisions that are supported by better CRs while addressing NPMs responsibly. To predict the effects of different KPIs on profit growth, we can closely monitor key performance indicators associated with CR and NPM. Given the lag in financial data, such real-time trends can be critical to refining strategic planning and the allocation of resources. Benchmarks, industry peers, and standards to gain perspective on competitive positioning as well as the calibration of operational efficiencies or financial strategy opportunities.

This is an exciting contrast to the broader collectivist and relations-based CSR by investigating what other financial ratios impact profitability. The CR has long been established by research to be positively associated with a company's profit, indicating that companies that are more liquid could achieve their profits. This is also supported by a study on the profitability and liquidity position of various sectors, including the auto sector (Rameshbhai, 2023). Furthermore, other research shows that the CR significantly positively affects the NPM, increasing profitability (Gusrina & Fitria, 2023).

Generally, studies discuss the cause-and-effect relationship with dividend payout ratios as well as financial performance (Hatul et al., 2023) and have shown that a higher NPM signifies robustness of profit generation ability, which represents stable finances on one side and high profitability on the other. There may be exceptional market dynamics or competitive pressures during the periods and industry you have chosen; that is one reason why this study's results are contradictory. For example, although the necessity of the CR was argued in various settings, including the financial sector, for explaining profitability (Khoirina et al., 2021), this study showed an inverse influence on growth and that higher margins do not always drive profit growth. One of these reasons is the necessity to always align financial metrics with the economic environments they operate in, as market conditions and competitive landscapes or industry-specific factors can significantly influence outcomes (Putri & Ramadhan, 2023). Hence, though some parts of existing scholarship might confirm this study's results, they also suggest the need to evaluate financial indicators in context.

6. Conclusions

The PLS model can be used to analyze the data for 2018 through 2022 in one industry, such as automotive. An analysis of profit growth will allow us to understand economic factors and company financial performance indicators that work to influence profitability. Based on the findings, it is clear that the CR and NPM are the primary factors influencing profit growth. The CR has a significant positive impact on the profit growth of automotive firms. Conversely, the NPM is negatively correlated with profit growth, indicating that higher levels of NPM are associated with lower rates of return during the period considered. These results highlight the crucial role of financial metrics in understanding profitability dynamics within the automotive industry.

The strengths of this study include robust findings within the specified context; however, several limitations are noteworthy. According to the study, it was limited only to car manufacturing and could miss some changes in other industries or at a more comprehensive economic level. (2) Data limitations. The analysis uses historical data from 2018 to 2022, and these results are not probative for other periods or economic cycles. (3) Model Assumptions. PLS allows for fixed or random effects, which may not be sufficient to control all unobserved heterogeneity / time-varying inputs.

Future research in this area could: (1) Use a more extended study period to investigate how the trends of CR and NPM impacted profit growth depending upon different economic cycles. (2) Intercompany comparison across various industries to identify the sector-specific business dynamics determining the economy of scale. Investigation of other econometric methods / structural models for better panel data analysis.

Based on the findings, automotive firms should prioritize maintaining robust CR to foster profit growth while managing liquidity effectively. Strategies aimed at optimizing NPM should be balanced to sustain or enhance profit growth through cost-efficiency measures and pricing strategies. Implementing rigorous risk management strategies is crucial to mitigating the adverse effects of fluctuating NPM on profit growth. Executives and managers can leverage these insights to inform strategic decisions, monitor key performance indicators related to financial health, and benchmark against industry standards for competitive advantage and operational excellence.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest.

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