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## The Effect of Debt to Assets Ratio (DAR) and Cash Ratio on Net Profit Margin (NPM) in Pharmaceutical Sub-Industry Companies Listed on the Indonesia Stock Exchange for the 2021-2025 Period

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### Abstract

*The study was conducted on pharmaceutical sub-industry companies listed on the Indonesia Stock Exchange for the 2021-2025 period with the aim of determining the effect of the Debt to Assets Ratio (DAR) and Cash Ratio on Net Profit Margin (NPM). This study used a quantitative approach and the type of research was descriptive and verification. This study had a population consisting of 15 companies, but only 11 companies met the criteria. Panel data regression was used in data processing with the help of Eviews12. Data analysis methods included panel data model estimation, panel data regression model selection, classical assumption testing, coefficient of determination analysis and hypothesis testing through a t-test with a significance level of 5% (0.05). The data source for this study came from secondary data. The results of this study showed that the Debt to Assets Ratio (DAR) had a significant negative effect on Net Profit Margin (NPM), with a calculated  $t$  (2.743) >  $t$  table (2.006) and a significance value (0.008) < (0.05) and a regression coefficient value of -0.217. Cash Ratio has no significant effect on Net Profit Margin (NPM), with a calculated  $t$  value (1.887) <  $t$  table (2.006) and a significance value (0.065) > (0.05) and a regression coefficient value of 0.069. The results of the determination coefficient (Adjusted  $R^2$ ) indicate that the independent variables in this study can describe the Net Profit Margin (NPM) variable by 48.757% while the rest is influenced by factors outside this study.*

*Keywords: Debt to Assets Ratio, Cash Ratio, Net Profit Margin*

### 1. Background

In the era of globalization and digitalization, the healthcare sector is experiencing increasingly fierce competition as public demand for quality healthcare products and services increases. During the COVID-19 pandemic, the pharmaceutical industry experienced significant growth. This demonstrates the industry's critical role in meeting public health needs. [1] However, the pharmaceutical industry in Indonesia still faces various challenges, such as high dependence on imported raw materials and the need for effective financial management so that companies can maintain business continuity and increase competitiveness. Therefore, capital structure and liquidity must be managed optimally to support company financial performance.

Funding structure and liquidity are factors that can influence a company's ability to generate profits. This study uses Net Profit Margin (NPM) to measure profit levels. NPM is An indicator used to measure the ratio of net profit to net sales, which assesses the company's overall efficiency in generating profits after deducting all operating costs, interest, and taxes (Inrawan, 2024:44). Net Profit Margin provides a comprehensive overview of management's ability to efficiently manage revenue and expenses to achieve optimal profits. A high value Net Profit Margin indicates that the company is able to obtain good profits from a certain level of sales, so the company is considered to have efficient performance. Meanwhile, the Net Profit Margin value low indicates that the company is not yet able to get optimal net profit at sales level [3].

Capital structure is measured by Debt to Assets Ratio (DAR ). According to Kasmir (Sunaryono et al., 2023:51-52) DAR is a solvency ratio to compare the amount of liabilities with the amount of assets owned by the company. This ratio describes how much debt finances the company's assets. The higher the DAR value indicates the greater funding through loans to finance assets. then the greater the funding through loans to finance assets and vice versa

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(Sunaryono et al., 2023:51-52) . If the use of debt is not managed effectively, there will be a decrease in the company's Net Profit Margin value , and conversely, if the DAR value is lower, there will be an increase in the Net Profit Margin . This condition is caused by interest payments reducing the profits obtained [5].

Meanwhile, liquidity measured use Cash Ratio, which provides an overview of the cash and cash equivalents held to meet current liabilities (Nurjamuddin et al., 2025 :146 ). A high Cash Ratio indicates good liquidity conditions, allowing the company to run operations smoothly and generate optimal profits. Thus, the Net Profit Margin can be influenced by the Cash Ratio as an indicator in assessing the company's ability to generate net profit [7].

Kimia Farma Tbk , one of the pharmaceutical companies experiencing problems, particularly in its capital structure and liquidity, underwent financial restructuring through the disposal of 38 assets totaling Rp2.15 trillion, restructuring debt to several banks, and applying for funding support to support working capital and maintain operational continuity. Although the company's revenue decreased to Rp4.36 trillion in the first half of 2025, its losses decreased compared to the previous period. [8]. In addition, Kimia Farma still has current debt of Rp 2.15 trillion and non-current debt of Rp 3.64 trillion. Kimia Farma also restructured debt to 11 banks with a total value of Rp 6.81 trillion by extending the loan term and reducing interest rates to make the company's financial burden lighter. [9]. In addition, Kimia Farma has submitted application loan from shareholders of Rp. 846 billion to PT Bio Farma (Persero) in order to meet operational needs, support capital Work ensure continuity short-term business [10]. This condition shows the importance of effective management of capital structure and liquidity so that the company is able to maintain financial performance and maximize profits.

The following data demonstrates the correlation between Debt to Assets Ratio, Cash Ratio, and Net Profit Margin, which are used as samples and sourced from four companies in the Pharmaceutical sub-industry listed on the Indonesia Stock Exchange (IDX) for the period 2021-2025.

**Table 1of DAR and Cash Ratio to Net Profit Margin**

| Company name                                        | Year | Debt to Assets Ratio (X1) | Cash Ratio (X2) | Net Profit Margin (Y) |
|-----------------------------------------------------|------|---------------------------|-----------------|-----------------------|
| <b>KALBE FARMA Tbk</b>                              | 2021 | 0.171                     | 1,759           | 0.123                 |
|                                                     | 2022 | 0.189                     | 0.891           | 0.119                 |
|                                                     | 2023 | 0.146                     | 0.997           | 0.091                 |
|                                                     | 2024 | 0.164                     | 1,128           | 0.100                 |
|                                                     | 2025 | 0.194                     | 0.812           | 0.106                 |
| <b>KIMIA FARMA Tbk</b>                              | 2021 | 0.593                     | 0.125           | 0.023                 |
|                                                     | 2022 | 0.541                     | 0.268           | -0.011                |
|                                                     | 2023 | 0.713                     | 0.077           | -0.230                |
|                                                     | 2024 | 0.771                     | 0.055           | -0.122                |
|                                                     | 2025 | 0.807                     | 0.053           | -0.048                |
| <b>PT INDUSTRI JAMU DAN FARMASI SIDO MUNCUL Tbk</b> | 2021 | 0.147                     | 1,992           | 0.314                 |
|                                                     | 2022 | 0.141                     | 1,706           | 0.286                 |
|                                                     | 2023 | 0.130                     | 1,797           | 0.267                 |
|                                                     | 2024 | 0.115                     | 2,080           | 0.299                 |
|                                                     | 2025 | 0.152                     | 0.899           | 0.301                 |
| <b>PT PHAPROS Tbk</b>                               | 2021 | 0.597                     | 0.129           | 0.011                 |
|                                                     | 2022 | 0.573                     | 0.208           | 0.023                 |
|                                                     | 2023 | 0.617                     | 0.080           | 0.008                 |
|                                                     | 2024 | 0.725                     | 0.139           | -0.390                |
|                                                     | 2025 | 0.692                     | 0.431           | 0.029                 |

Source: Indonesia Stock Exchange (Data processed by researchers, 2026)

Based on the phenomenon in several pharmaceutical sub-industry companies, changes in the Debt to Assets Ratio (DAR) and Cash Ratio are not always accompanied by corresponding changes in Net Profit Margin (NPM). In some situations, a decrease in the DAR and an increase in the Cash Ratio are actually followed by a decrease in NPM. Meanwhile, in other situations, an increase in the DAR or a decrease in the Cash Ratio is followed by an increase in NPM. This inconsistency was also found in previous research regarding the effect of the Debt to Assets Ratio on Net Profit Margin. Debt to Assets Ratio stated to have a significant negative effect on Net Profit Margin by Amelia & Gulo (2021), while Auliya & Alwi (2022) found a positive and significant influence. In addition, there were differences in the research results as well regarding the influence of Cash Ratio on Net Profit Margin .

The research conducted Singgih (2021), Cash Ratio have a significant impact on Net Profit Margin, while it was found that there was no influence of Cash Ratio on Net Profit Margin In the research of Firdiana & Nugroho (2024). Due to the different results found in previous research, further research was conducted to re-examine the influence between variables.

## 2. Research methods

This research employed a quantitative approach, where data is measured numerically and statistical analysis is used to test hypotheses. In accordance with this approach, descriptive research is used to systematically and accurately describe a phenomenon, situation, or characteristics of research variables based on the data obtained. Furthermore, verification research is also used to test hypotheses or previous research.

Solvency describes a company's capacity to pay off its non-current liabilities, including principal and interest payments ( Hutabarat, 2023:20). The Debt to Assets Ratio (DAR) can be used as a measure of a company's solvency. According to Sunaryono et al., (2023:51), The Debt-to-Assets Ratio (DAR) is a ratio that shows the proportion of funds used from loans compared to a company's total assets, thus indicating the company's level of dependence on debt in its funding structure. The indicator for measuring the Debt-to-Assets Ratio is by comparing total debt to total assets. Total debt consists of all short-term and long-term debt, while total assets consist of total current assets and fixed assets ( Widyo et al., 2024:35).

A company's liquidity level can be measured to determine its ability to pay maturing debts (Supriyadi et al., 2024:11). One liquidity ratio that can be used is the Cash Ratio. According to Febriana et al., (2021:75), The Cash Ratio is a metric used to assess a company's capacity to pay off current liabilities with its cash and cash equivalents. This ratio reflects the company's tightest level of liquidity because it only considers the most liquid assets. The Cash Ratio is measured by comparing cash and cash equivalents to current liabilities. Cash and cash equivalents include cash, checks, demand deposits, and deposits. According to Suryanto (Inrawan, 2024:71), Short-term liabilities consist of trade payables, current liabilities, expenses payable and unearned income.

Profitability is a measure of a company's capacity to generate profits from revenue through sales, assets, or equity (Ompusunggu & Wage, 2021:39). One profitability ratio that can be used is Net Profit Margin (NPM). According to Ompusunggu & Wage (2021:40), Net Profit Margin (NPM) is a profitability ratio that compares net profit to sales. The results of this ratio illustrate the extent to which a company can generate net profits from its revenue. The indicator used is based on a comparison of net profit after tax and sales revenue.

Based on the explanation, the hypothesis in this study can be formulated as follows:

H<sub>1</sub> : Debt to Assets Ratio (DAR) has an effect on Net Profit Margin (NPM)

According to Wati and Lidya (2022), a high Debt-to-Assets Ratio (DAR) indicates a greater obligation to finance assets. High debt usage will lead to increased interest expenses and liabilities, resulting in a decrease in net profit, which in turn leads to a decrease in Net Profit Margin (NPM). Therefore, the Debt-to-Assets Ratio (DAR) is suspected to impact Net Profit Margin (NPM).

Based on the explanation, the hypothesis in this study can be formulated as follows:

H<sub>2</sub> : Cash Ratio has an effect on Net Profit Margin (NPM)

According to Djoddy & Rolanda (2025), a higher Cash Ratio indicates good liquidity, enabling the company to run operations smoothly and generate maximum profits. Therefore, Net Profit Margin (NPM) is influenced by the Cash Ratio, which is an indicator used to measure a company's profitability.

This study applies panel data regression analysis with quantitative methods, while statistical data processing tools use the Eviews 12 application. Data processing is carried out through several testing stages, namely determining the panel data estimation model, classical assumption testing, panel data regression analysis, coefficient of determination, and hypothesis testing. Data processing is carried out through several stages, namely determining the panel data estimation model using the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. Based on the results of model selection, the model used in this study is the Common Effect Model (CEM), so the classical assumption tests used include heteroscedasticity and multicollinearity tests. The heteroscedasticity test is carried

out using the White Test with the provision that a probability value  $> 0.05$  indicates no heteroscedasticity, while multicollinearity testing is carried out through the Variance Inflation Factor (VIF) value, where the regression model is considered free if the VIF value is below 10 ( $VIF < 10$ ). Panel data regression analysis is used to determine the effect of Debt to Assets Ratio (DAR) and Cash Ratio on Net Profit Margin (NPM). In addition, a coefficient of determination ( $R^2$ ) analysis was carried out to determine the magnitude of the independent variable in explaining the dependent variable.

### 3. Results and Discussion

Research results are based on a logical sequence to form a story. The content presents facts/data. Tables and figures may be used, but the same data should not be repeated in figures, tables, or text. Subtitles may be used to further clarify the description.

#### 3.1. Research Sample

Pharmaceutical sub-industry companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2025 period served as the population in this study. The sample was selected using a non-probability sampling method through purposive sampling. Therefore, from 15 companies, 11 met the sample criteria over a five-year period, resulting in 55 ( $11 \times 5$  years) financial reports used as the research objects.

**Table 2. List of Pharmaceutical Sub-Industry Company Population**

| No                     | Code  | Company name                                 | Total Financial Reports for the 2021-2025 Period | IPO Date       |
|------------------------|-------|----------------------------------------------|--------------------------------------------------|----------------|
| 1                      | DVLA  | Darya Varia Laboratoria Tbk                  | 5                                                | 11/11/1994     |
| 2                      | IKPM  | PT Ikapharmindo Putramas Tbk                 | 3                                                | 11/08/2023     |
| 3                      | INAF  | Indofarma Tbk                                | 4                                                | April 17, 2001 |
| 4                      | KAEF  | Kimia Farma Tbk                              | 5                                                | 04/07/2001     |
| 5                      | KLBF  | Kalbe Farma Tbk                              | 5                                                | 30/07/1991     |
| 6                      | MDLA  | PT Medela Potentia Tbk                       | 1                                                | 04/15/2025     |
| 7                      | BRAND | Merck Tbk                                    | 5                                                | 07/23/1981     |
| 8                      | DRUG  | PT Brigit Biofarmaka Teknologi Tbk           | 2                                                | 01/13/2025     |
| 9                      | PEHA  | PT Phapros Tbk                               | 5                                                | 12/26/2018     |
| 10                     | PEVE  | PT Penta Valent Tbk                          | 5                                                | 01/24/2023     |
| 11                     | PYFA  | PT Pyridam Farma Tbk                         | 5                                                | 10/16/2021     |
| 12                     | SCPI  | PT Organon Pharma Indonesia Tbk              | 5                                                | 08/06/1990     |
| 13                     | SIDO  | PT Industri Jamu dan Farmasi Sido Muncul Tbk | 5                                                | 12/18/2013     |
| 14                     | SOHO  | PT Soho Global Health Tbk                    | 5                                                | 08/09/2020     |
| 15                     | TSPC  | Tempo Scan Pacific Tbk                       | 5                                                | June 17, 1994  |
| <b>Population Size</b> |       |                                              | <b>65</b>                                        |                |

**Table 3. Sample Criteria**

| No | Information                                                                                                                                              | Number of Companies |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1  | Pharmaceutical sub-industry companies listed on the Indonesia Stock Exchange during the 2021-2025 period                                                 | 15                  |
| 2  | Pharmaceutical sub-industry companies whose financial reports were not published completely and consistently during the research years, namely 2021-2025 | (4)                 |
| 3  | Total Sample Companies                                                                                                                                   | 11                  |

**Table 4. Calculation of Debt to Assets Ratio (DAR), Cash Ratio and Net Profit Margin (NPM)**

| CODE  | YEAR | X1     | X2      | Y       |
|-------|------|--------|---------|---------|
| DVLA  | 2021 | 33.20% | 98.02%  | 7.71%   |
| DVLA  | 2022 | 30.14% | 74.02%  | 7.79%   |
| DVLA  | 2023 | 31.23% | 47.60%  | 7.74%   |
| DVLA  | 2024 | 32.97% | 63.26%  | 7.48%   |
| DVLA  | 2025 | 37.04% | 50.23%  | 7.35%   |
| KAEF  | 2021 | 59.30% | 12.50%  | 2.30%   |
| KAEF  | 2022 | 54.10% | 26.80%  | -1.10%  |
| KAEF  | 2023 | 71.30% | 7.70%   | -23.00% |
| KAEF  | 2024 | 77.10% | 5.50%   | -12.20% |
| KAEF  | 2025 | 80.70% | 5.30%   | -4.80%  |
| KLBF  | 2021 | 17.10% | 175.90% | 12.30%  |
| KLBF  | 2022 | 18.90% | 89.10%  | 11.90%  |
| KLBF  | 2023 | 14.60% | 99.70%  | 9.10%   |
| KLBF  | 2024 | 16.40% | 112.80% | 10.00%  |
| KLBF  | 2025 | 19.40% | 81.20%  | 10.60%  |
| BRAND | 2021 | 33.35% | 69.40%  | 12.37%  |
| BRAND | 2022 | 27.02% | 71.29%  | 15.99%  |
| BRAND | 2023 | 16.91% | 161.11% | 18.54%  |
| BRAND | 2024 | 15.64% | 35.65%  | 14.80%  |
| BRAND | 2025 | 23.31% | 147.93% | 20.31%  |
| PEHA  | 2021 | 59.70% | 12.90%  | 1.10%   |
| PEHA  | 2022 | 57.30% | 20.80%  | 2.30%   |
| PEHA  | 2023 | 61.70% | 8.00%   | 0.80%   |
| PEHA  | 2024 | 72.50% | 13.90%  | -39.00% |
| PEHA  | 2025 | 69.20% | 43.10%  | 2.90%   |
| PEVE  | 2021 | 79.63% | 0.86%   | 1.08%   |
| PEVE  | 2022 | 80.27% | 1.02%   | 1.10%   |
| PEVE  | 2023 | 74.39% | 0.7%    | 1.46%   |
| PEVE  | 2024 | 75.33% | 0.92%   | 1.59%   |
| PEVE  | 2025 | 75.04% | 1.30%   | 1.55%   |
| PYFA  | 2021 | 79.27% | 18.95%  | 0.87%   |
| PYFA  | 2022 | 70.91% | 45.93%  | 36.00%  |
| PYFA  | 2023 | 76.62% | 30.01%  | -12.14% |
| PYFA  | 2024 | 82.11% | 29.27%  | -17.19% |
| PYFA  | 2025 | 85.45% | 6.58%   | -13.75% |
| SCPI  | 2021 | 19.77% | 73.92%  | 5.50%   |
| SCPI  | 2022 | 27.62% | 47.73%  | 7.47%   |
| SCPI  | 2023 | 40.87% | 22.67%  | 6.83%   |

| CODE | YEAR | X1     | X2      | Y      |
|------|------|--------|---------|--------|
| SCPI | 2024 | 36.86% | 20.07%  | 6.44%  |
| SCPI | 2025 | 41.53% | 31.17%  | 7.05%  |
| SIDO | 2021 | 14.70% | 199.20% | 31.40% |
| SIDO | 2022 | 14.10% | 170.60% | 28.60% |
| SIDO | 2023 | 13.00% | 179.70% | 26.70% |
| SIDO | 2024 | 11.50% | 208.00% | 29.90% |
| SIDO | 2025 | 15.20% | 89.90%  | 30.10% |
| SOHO | 2021 | 45.09% | 57.63%  | 7.79%  |
| SOHO | 2022 | 45.75% | 59.34%  | 4.90%  |
| SOHO | 2023 | 49.46% | 31.49%  | 4.53%  |
| SOHO | 2024 | 49.83% | 16.72%  | 4.60%  |
| SOHO | 2025 | 58.05% | 32.70%  | 5.57%  |
| TSPC | 2021 | 28.71% | 141.81% | 7.81%  |
| TSPC | 2022 | 33.35% | 112.59% | 8.47%  |
| TSPC | 2023 | 28.72% | 131.13% | 9.53%  |
| TSPC | 2024 | 26.73% | 156.44% | 11.34% |
| TSPC | 2025 | 26.18% | 161.36% | 10.57% |

### 3.2. Descriptive Statistics Results

Figure 1 Descriptive Test Results

Date: 05/13/26 Time: 11:39  
Sample: 2021 2025

|              | X1       | X2       | Y         |
|--------------|----------|----------|-----------|
| Mean         | 0.442909 | 0.665127 | 0.065273  |
| Median       | 0.370000 | 0.477000 | 0.073000  |
| Maximum      | 0.855000 | 2.080000 | 0.360000  |
| Minimum      | 0.115000 | 0.007000 | -0.390000 |
| Std. Dev.    | 0.239384 | 0.597204 | 0.130965  |
| Skewness     | 0.277835 | 0.810127 | -0.547162 |
| Kurtosis     | 1.620235 | 2.496578 | 5.152042  |
| Jarque-Bera  | 5.070359 | 6.596915 | 13.35773  |
| Probability  | 0.079247 | 0.036940 | 0.001257  |
| Sum          | 24.36000 | 36.58200 | 3.590000  |
| Sum Sq. Dev. | 3.094449 | 19.25925 | 0.926205  |
| Observations | 55       | 55       | 55        |

Based on the image above, it can be concluded that the results of the descriptive statistical test are explained as follows:

- In the Debt to Assets Ratio (DAR) variable, the average value (mean) is 0.443 with a median of 0.370. The lowest value is 0.115 or 11.5 % owned by PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO) in 2024. Meanwhile, the highest value is 0.855 or 85.5% owned by PT Pyrida Farma Tbk (PYFA) in 2025.
- In the Cash Ratio variable, the average value (mean) is 0.665 with a median of 0.477. The lowest value is 0.007 or 0.7% owned by PT Penta Valent Tbk (PEVE) in 2023. Meanwhile, the highest value is 2.080 or 208% owned by PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO) in 2024.

- c. Net Profit Margin (NPM) variable obtained an average value of 0.065 with a median of 0.073. The minimum value is owned by PT Phapros Tbk (PEHA) which is -0.390 or -39% in 2024. Meanwhile, the maximum value is owned by PT Pyrida Farma Tbk (PYFA) which is 0.360 or 36% in 2022.

### 3.3. Results of Panel Data Regression Model Selection

#### 1) Chow Test

Figure 2 Chow Test Results

| Redundant Fixed Effects Tests    |           |         |        |
|----------------------------------|-----------|---------|--------|
| Equation: MODEL_FEM              |           |         |        |
| Test cross-section fixed effects |           |         |        |
| Effects Test                     | Statistic | d.f.    | Prob.  |
| Cross-section F                  | 2.011565  | (10,42) | 0.0564 |
| Cross-section Chi-square         | 21.523056 | 10      | 0.0177 |

The Chow test results in Figure 2 show a cross-section probability value of  $f 0.0564 > 0.05$ . This indicates that the Common Effect Model (CEM) is superior to the Fixed Effect Model (FEM).

#### 2) Hausman test

Figure 3 Hausman Test Results

| Correlated Random Effects - Hausman Test |                  |             |        |
|------------------------------------------|------------------|-------------|--------|
| Equation: MODEL_REM                      |                  |             |        |
| Test cross-section random effects        |                  |             |        |
| Test Summary                             | Chi-Sq Statistic | Chi-Sq d.f. | Prob.  |
| Cross-section random                     | 3.207295         | 2           | 0.2012 |

The Hausman test produces a random cross section probability of  $0.2012 > 0.05$ . In line with the criteria, the more suitable model namely Random Effect Model (REM) rather than Fixed Effect Random (FEM).

#### 3) Lagrange Multiplier (LM) Test

Figure 4 Lagrange Multiplier Test Results

| Lagrange Multiplier 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                                                                             | 1.014449<br>(0.3138) | 0.155011<br>(0.6938) | 1.169460<br>(0.2795)  |
| Honda                                                                                     | 1.007198<br>(0.1569) | 0.393715<br>(0.3469) | 0.990595<br>(0.1609)  |
| King-Wu                                                                                   | 1.007198<br>(0.1569) | 0.393715<br>(0.3469) | 0.871120<br>(0.1918)  |
| Standardized Honda                                                                        | 1.641755<br>(0.0503) | 0.709840<br>(0.2389) | -1.745551<br>(0.9596) |
| Standardized King-Wu                                                                      | 1.641755<br>(0.0503) | 0.709840<br>(0.2389) | -1.661364<br>(0.9517) |
| Gourieroux et al.                                                                         | --                   | --                   | 1.169460<br>(0.2791)  |

Based on Figure 4 above, it shows that the results of the Lagrange Multiplier (LM) test show a Breusch-Pagan probability value of 0.3138 is greater than 0.05. Therefore, it can be concluded that the Common Effect Model is more appropriate to use compared to the Random Effect Model. In this case, the results

obtained indicate that no significant differences were found, so no special effects treatment between individuals is necessary. Thus, the selection of the Common Effect Model (CEM) is said to be relevant as an analytical approach.

Based on the test results determination of the panel data regression model, the Chow Test shows Common Effect Model (CEM) selected. Then, in the Hausman Random Effect Model (REM) test, it is more suitable used instead of Fixed Effect Model (FEM). Then, the test results Lagrange Multiplier (LM ) shows Common Effect Model (CEM) is more appropriate to use. So, after all the tests were carried out, the regression model chosen was Common Effect Model (CEM) because there are no significant differences in characteristics in every company.

### 3.4. Results of the Classical Assumption Test

Lagrange Multiplier (LM) analysis, it can be concluded that the more appropriate model in this study is the Common Effect Model (CEM ). Therefore, to test the classical assumptions used are the heteroscedasticity test and the multicollinearity test.

#### 1) Heteroscedasticity Test

Tests are carried out to determine The presence of differences in residual variance from one observation to another is a heteroscedasticity test. The heteroscedasticity test uses the White Test method . The following are the results of the heteroscedasticity test:

**Figure 5Results of Heteroscedasticity Test**

|                                   |          |                     |        |
|-----------------------------------|----------|---------------------|--------|
| HeteroskedasticityTest: White     |          |                     |        |
| Null hypothesis: Homoskedasticity |          |                     |        |
| F-statistic                       | 1.458861 | Prob. F(5,49)       | 0.2204 |
| Obs*R-squared                     | 7.126597 | Prob. Chi-Square(5) | 0.2114 |
| Scaled explained SS               | 27.98203 | Prob. Chi-Square(5) | 0.0000 |

The model is declared not to experience heteroscedasticity if the probability value is  $> 0.05$ . Based on the results of the heteroscedasticity test, the probability of Obs\*R-squared is  $0.2114 > 0.05$ , so the model does not experience heteroscedasticity or has homoscedastic properties.

#### 2) Multicollinearity Test

The test that aims to determine the relationship between independent variables is the multicollinearity test. A model experiences multicollinearity problems when there is a strong correlation. The following are the results of the multicollinearity test:

**Figure 6Multicollinearity Test Results**

| Variance Inflation Factors |                         |                   |                 |
|----------------------------|-------------------------|-------------------|-----------------|
| Date: 05/13/26 Time: 12:03 |                         |                   |                 |
| Sample: 1 55               |                         |                   |                 |
| Included observations: 55  |                         |                   |                 |
| Variable                   | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
| C                          | 0.003984                | 24.94827          | NA              |
| X1                         | 0.008331                | 13.17137          | 2.934829        |
| X2                         | 0.001338                | 6.642392          | 2.934829        |

A if the VIF value for each independent variable is  $VIF < 10$  then it does not experience multicollinearity. Conversely, if the VIF value is  $> 10$  then the regression model is declared to experience multicollinearity. Therefore, based on the results of the multicollinearity test, the VIF value is  $2.935 > 10$ , therefore indicating that the data does not experience multicollinearity.



### 3.5. Results of Panel Data Regression Analysis

Figure 7 Data Regression Analysis

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 0.123992    | 0.063118   | 1.964436    | 0.0548 |
| X1       | -0.236289   | 0.091278   | -2.588661   | 0.0125 |
| X2       | 0.069062    | 0.036588   | 1.887559    | 0.0647 |

Based on the results of the analysis in the image above, the following regression equation is obtained

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + e_{it}$$

$$\text{Net Profit Margin} = 0,124 - 0,236 \text{ DAR} + 0,069 \text{ Cash Ratio}$$

The regression equation above can be explained as follows:

- 1) In this study, the constant value is 0.124 which means that if the Debt to Asset Ratio ( DAR) and Cash Ratio are in a constant condition or considered equal to zero, then the Net Profit Margin (NPM) is estimated at 0.124 . This constant describes the level of company profitability that can be achieved without being affected by changes in the DAR and Cash Ratio variables. In other words, this constant is the basic value of the Net Profit Margin before the influence of the variables independent.
- 2) The regression coefficient of Debt to Asset Ratio ( DAR) was obtained at -0.2 36 This means there is a negative relationship between DAR and Net Profit Margin (NPM). This indicates that every one-unit increase in DAR will cause NPM to decrease by 0.236, assuming other variables remain constant. Conversely, if DAR decreases by one unit, NPM will increase by 0.236.
- 3) The regression coefficient value of Cash Ratio is 0.069 then it can be concluded There is a positive relationship between the Cash Ratio and Net Profit Margin (NPM). This means that for every one- unit increase in the Cash Ratio, the NPM will increase by 0.069 , assuming other variables remain constant. Conversely, if the Cash Ratio decreases by one unit, the NPM is expected to decrease by 0.069.

### 3.6 Results of the Coefficient of Determination

Figure 8- Squared Results

|                    |          |                       |           |
|--------------------|----------|-----------------------|-----------|
| R-squared          | 0.506562 | Mean dependent var    | 0.065273  |
| Adjusted R-squared | 0.487584 | S.D. dependent var    | 0.130965  |
| S.E. of regression | 0.093749 | Akaike info criterion | -1.843384 |
| Sum squared resid  | 0.457024 | Schwarz criterion     | -1.733893 |
| Log likelihood     | 53.69305 | Hannan-Quinn criter.  | -1.801043 |
| F-statistic        | 26.69156 | Durbin-Watson stat    | 1.843493  |
| Prob(F-statistic)  | 0.000000 |                       |           |

Based on the image above, the R-Squared value is 0.506, so the variation in Net Profit Margin (NPM) can be explained by the Debt to Assets Ratio (DAR) and Cash Ratio variables. together amounted to 50.6 % , while 49.4 % influenced by other factors. Adjusted R-squared value become 0.487 After adjusting for the sample size and the number of variables, the model was able to explain Net Profit Margin by 48.7%. The research model demonstrated quite good performance based on the results.

### 3.7. Partial Determination Coefficient Results

Eviews software, the partial coefficient of determination can be calculated using the standardized coefficient. The result of this calculation is the magnitude of the influence of an independent variable on the dependent variable.

**Figure 9. Standardized Coefficient Test Results**

| Dependent Variable: Z_Y                 |             |                       |             |        |
|-----------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Panel Least Squares             |             |                       |             |        |
| Date: 05/13/26 Time: 12:39              |             |                       |             |        |
| Sample: 2021 2025                       |             |                       |             |        |
| Periods included: 5                     |             |                       |             |        |
| Cross-sections included: 11             |             |                       |             |        |
| Total panel (balanced) observations: 55 |             |                       |             |        |
| Variable                                | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                       | -1.23E-17   | 0.096523              | -1.28E-16   | 1.0000 |
| Z_X1                                    | -0.431898   | 0.166842              | -2.588661   | 0.0125 |
| Z_X2                                    | 0.314924    | 0.166842              | 1.887559    | 0.0647 |
| R-squared                               | 0.506562    | Mean dependent var    | -2.22E-17   |        |
| Adjusted R-squared                      | 0.487584    | S.D. dependent var    | 1.000000    |        |
| S.E. of regression                      | 0.715832    | Akaike info criterion | 2.222260    |        |
| Sum squared resid                       | 26.64564    | Schwarz criterion     | 2.331751    |        |
| Log likelihood                          | -58.11215   | Hannan-Quinn criter.  | 2.264601    |        |
| F-statistic                             | 26.69156    | Durbin-Watson stat    | 1.843493    |        |
| Prob(F-statistic)                       | 0.000000    |                       |             |        |

The standardized coefficient is used to measure the magnitude of each variable's influence on the dependent variable. This can be determined by calculating. Therefore, the explanation based on the table above is as follows:

1) Debt to Assets Ratio to Net Profit Margin

Based on the results of the regression calculation with the standardized coefficient, it can be seen that DAR has an influence of 0.432 or 43.2 % on Net Profit Margin. which means that if the DAR value increases by 1 standard deviation, it will increase the Net Profit Margin by 0.432 or 43.2 % standard deviation, assuming other variables remain constant. The remaining 56.8 % is influenced by other variables outside the value.

2) Cash Ratio to Net Profit Margin

In the Cash Ratio variable, the results of the regression calculation using the standardized coefficient above can be explained that the Cash Ratio has an influence of 0.3 15 or 3 1.5 % on the Net Profit Margin . This shows that every increase in the Cash Ratio value by 1 standard deviation will increase the Net Profit Margin by 0.3 15 or 3 1.5 % standard deviation, assuming other variables remain constant. The remaining 6 8.5 % is influenced by other variables outside the value.

So it can be concluded that based on the results of the standardized coefficient calculation, DAR has a relatively greater influence on Net Profit Margin compared to Cash Ratio.

### 3.8. t-Test Results

**Figure 10. t - Test Results**

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 0.123992    | 0.063118   | 1.964436    | 0.0548 |
| X1       | -0.236289   | 0.091278   | -2.588661   | 0.0125 |
| X2       | 0.069062    | 0.036588   | 1.887559    | 0.0647 |

Based on Figure 11 above, the calculated t for X1, namely the Debt to Assets Ratio, is obtained at -2.589 with a probability of 0.012, while for X2, namely the Cash Ratio, it is 1.887 with a probability of 0.065. These results will be compared with the t<sub>table</sub> and  $\alpha = 0.05$ . For the t<sub>table</sub> value will be calculated using the following formula:

$$t = (\alpha/2; nk-1) = (0.05/2; 55-2-1) = (0.025; 52)$$

Therefore, the t<sub>table</sub> value is 2.006. Therefore, the following conclusions are drawn:

- 1) T - value for the Debt to Assets Ratio variable of 2.589 which means ( $2.589 > 2.006$ ) with a probability value of the Debt to Assets Ratio variable of  $0.012 < 0.05$ . From these results, the Debt to Assets Ratio has a significant influence on Net Profit Margin. The regression coefficient value is obtained -0.236, indicating that there is a negative influence on the Debt to Assets Ratio Net Profit Margin.
- 2) T - value For the Cash Ratio variable, the value is  $1.887 > 2.006$  with a probability value of  $0.065 > 0.05$ . These results indicate that there is no significant effect of the Cash Ratio on Net Profit Margin. Based on the regression coefficient value of 0.069, it shows that the Cash Ratio has a positive influence . to Net Profit Margin.

### 3.9. Discussion

Based on the results of the t-test or also called the partial test that has been conducted in this study, the calculated t value is 2.589 and the t-table result is 2.006, which means the t-count result is  $> t_{\text{table}}$ . And the probability value of the Debt to Assets Ratio variable is  $0.012 < 0.05$  with a regression coefficient value of -0.236 . So from these results, the Debt to Assets Ratio has a significant negative effect on Net Profit Margin .

This aligns with the research findings of Ratih Amelia and Nitema Gulo (2021), which found that the Debt-to-Assets Ratio has a negative and significant effect on Net Profit Margin. This is because if the Debt-to-Assets Ratio is high, then the company shows that most of its assets are financed by loans . The value High Debt to Assets Ratio shows the level of debt used by the company High interest rates can increase interest expenses and financial risks. This situation can depress the company's net profit and impact the net profit margin, which can decrease or result in poor profitability.

Based on the results of research conducted on 11 pharmaceutical sub-industry companies, the results showed that Cash Ratio had no significant effect on Net Profit Margin . The results of the t-test or partial test showed a t-count of 1.887 and a t-table of 2.006, which means that t-count was smaller than the t-table . In addition, the probability value was  $0.065 < 0.05$ . The regression coefficient value was 0.069 , these results indicate that Cash Ratio has a positive influence on Net Profit Margin .

This is consistent with research conducted by Firdiana & Nugroho (2024) , which found that the Cash Ratio had no significant effect on Net Profit Margin . This suggests that a company's high cash flow is not always a key factor in increasing profits, as unproductive cash can hinder profitability.

### 4. Conclusion

Based on research findings on the effect of the Debt-to-Assets Ratio (DAR) and Cash Ratio on Net Profit Margin (NPM) in pharmaceutical sub-industry companies listed on the Indonesia Stock Exchange for the 2021–2025 period, it was found that the Debt-to-Assets Ratio (DAR) had a negative and significant effect on Net Profit Margin (NPM). This finding indicates that any increase in the proportion of debt in a company's asset financing structure will be followed by a significant decrease in net profit margin. In the context of the pharmaceutical industry, this condition can be explained by the fixed interest expense arising from loans, which directly reduces profit before tax, thereby suppressing NPM even though sales revenue remains unchanged. Furthermore, pharmaceutical companies generally require significant investments in research and development, clinical trials, and high-standard production facilities. If these investment funds rely too heavily on debt, financial risks increase because the company must meet principal and interest payments regardless of revenue fluctuations. In the 2021–2025 period, which encompasses the post-pandemic recovery period and potential uncertainty regarding drug pricing regulations, reliance on debt can actually weaken profitability because the increase in financial burdens is not always offset by increases in sales volume or operational efficiency. Furthermore, this significant negative relationship may also reflect concerns from creditors and investors, as an aggressive capital structure is perceived to increase the probability of financial distress, ultimately driving up the cost of capital and depressing net income. Therefore, the managerial implications of this finding emphasize the need for pharmaceutical companies to maintain an optimal debt composition and prioritize internal or equity funding for strategic activities, ensuring stable NPM and sustainable growth amidst the dynamics of a competitive industry. Furthermore, the Cash Ratio was found to have no significant effect on Net Profit Margin (NPM). This finding suggests that an increase in a company's ability to meet short-term obligations with cash is not always accompanied by a convincing increase in net profit margin. In the context of the pharmaceutical industry, this situation can be explained by the fact that company cash is not only used for profit-generating activities but is also allocated for operational needs, product research and development, and company reserves. Pharmaceutical companies generally require substantial

investments and a relatively long timeframe before generating profits. In the 2021–2025 period, which encompasses the post-pandemic recovery period and the uncertainty of industry conditions, companies tend to maintain a certain level of cash to maintain operational stability. This condition causes liquidity levels to play a more important role in maintaining company sustainability than as a factor that directly increases profitability. Furthermore, this insignificant relationship indicates that company profitability is influenced not only by liquidity levels but also by other factors such as operational efficiency, cost management, and sales levels. Thus, the managerial implications of this finding emphasize the need for pharmaceutical companies to maintain optimal cash levels and manage them effectively to support sustainable profitability increases.

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