



FINANCIAL PERFORMANCE ANALYSIS BEFORE AND AFTER ACQUISITION (STUDY AT PT INDOCEMENT TUNGGAL PRAKARSA TBK)

Firman Maulana^{1*}, Sakila Marwah Ramdini², Sopyan Abdul Aziz³, Ega Suryaman⁴, and
Muhammad Fakhri Nugraha⁵

^{1,2,3,4,5}Faculty of Economics and Business Universitas Siliwangi, Tasikmalaya, Indonesia

*223402100@student.unsil.ac.id

Abstract. This study aims to empirically examine whether a significant difference exists in the financial performance of PT Indocement Tunggul Prakarsa Tbk. (INTP) before and after the acquisition of PT Semen Grobogan. Financial performance was measured using four key ratios: Cash Ratio (CR), Debt to Equity Ratio (DER), Return on Assets (ROA), and Total Asset Turnover (TATO). The research employed a comparative verification method with a pre-post design. The sample consisted of quarterly financial data from 2022 (pre-acquisition) and 2024 (post-acquisition), selected through purposive time-based sampling. Data analysis was conducted using descriptive statistics and the non-parametric Wilcoxon Signed Ranks Test. The results indicated no statistically significant differences in CR ($p = 0.068$), DER ($p = 0.068$), ROA ($p = 0.715$), and TATO ($p = 0.273$) at an $\alpha = 5\%$ significance level. Although not statistically significant, the descriptive analysis revealed a downward trend in CR and TATO, a moderate increase in DER, and a slight decrease in ROA. These findings suggest that the anticipated synergistic benefits of the acquisition have not yet fully materialized into significant performance improvements within the initial post-integration period, providing valuable insights for corporate strategy and future research. Future research should extend the observation period once newer post-acquisition financial data are released.

Keywords: financial performance; acquisition; difference; synergy; wilcoxon test.

1 Introduction

In the dynamics of corporate financial management, acquisitions represent a common inorganic growth strategy in corporate financial management. Brigham and Houston (1998) highlight several motives for mergers and acquisitions, including synergy, tax considerations, asset undervaluation, diversification, managerial incentives, and break-up value, with synergy being the most dominant. In principle, synergy is expected to improve financial performance through cost efficiencies, expanded capacity, and stronger capital structures. Such improvements should be observable in liquidity, leverage, profitability, and activity ratios. International literature (Cartwright & Schoenberg, 2006; Larsson & Finkelstein, 1999) emphasizes that synergy realization depends heavily on the effectiveness of post-merger integration, which involves organizational alignment, cultural compatibility, and operational consolidation. However, acquisition outcomes often vary due to integration quality, market conditions, and governance practices, making empirical results inconsistent and context-specific. Within Indonesia's capital-intensive and highly competitive cement industry, PT Indocement Tunggul Prakarsa Tbk. (INTP) completed the full acquisition of PT Semen Grobogan in 2023 using internal funding. This move aims to strengthen INTP's market presence in Central Java and optimize logistics and asset utilization. As such, this acquisition serves as a relevant case for examining whether theoretical synergy materializes in practice. Previous M&A research in Indonesia (2020–2025) has produced mixed findings, with

some studies reporting significant changes in profitability or activity ratios, while others noted no meaningful variation in liquidity or leverage. This inconsistency highlights a research gap and underscores the need for focused analysis on the INTP acquisition case, which lacks empirical consensus.

Based on this background, this study was designed to answer one main question: Are there significant differences in the financial performance of PT Indocement Tungal Prakarsa Tbk. between the periods before and after the acquisition of PT Semen Grobogan? Specifically, this study will analyze differences in key ratios representing the dimensions of liquidity (Cash Ratio), leverage (Debt to Equity Ratio), profitability (Return on Assets), and asset efficiency (Total Asset Turnover).

2 Theoretical Basis and Hypothesis

2.1 Theoretical Basis

1. Acquisition

Brigham and Houston (2006) define acquisitions as the integration of two entities into a unified economic unit, intended to generate value through operational and financial synergies. International evidence (Cartwright & Schoenberg, 2006; & Moeller, Schlingemann, & Stulz, 2005) indicates that acquisition outcomes vary widely depending on integration success, governance quality, and industry structure.

2. Cash ratio (CR)

According to Kasmir (2017:113), the Cash Ratio is a tool used to measure how much cash is available to pay debts. It measures a company's ability to meet its short-term obligations with current assets, namely cash and cash equivalents. The formula is as follows:

$$CR = \frac{\text{Cash} + \text{Cash Equivalen}}{\text{Current Liabilities}}$$

3. Debt to Equity Ratio (DER)

According to Kasmir (2017:114), the Debt to Equity Ratio is a ratio used to assess the proportion of debt to equity. It measures the level of a company's debt relative to its own capital. The formula is as follows:

$$DER = \frac{\text{Total Debt}}{\text{Total Equity}}$$

4. Return on Assets (ROA)

According to Kasmir (2017:117), ROA is a measure of management's effectiveness in managing its investments or generating profit from the total assets owned. The formula is as follows:

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

5. Total Asset Turnover (TATO)

According to Kasmir (2017:116), TATO is used to measure how much sales are generated from each unit of asset. It reflects the efficiency of the company's total asset utilization in generating sales. The formula is as follows:

$$TATO = \frac{\text{Net Sales}}{\text{Total Assets}}$$

2.2 Theoretical Framework

An acquisition is a strategic action that can alter a company's financial performance indicators. It creates potential synergies through the integration of resources, operations, and managerial capabilities; however, the realization of these synergies depends on effective integration and governance. Performance changes therefore need to be verified empirically by comparing pre- and post-acquisition conditions.

Acquisitions can alter financial performance through synergy channels operational efficiency, cost management, and improved asset utilization (Brigham & Houston, 1998). However, as argued by Larsson and Finkelstein (1999), synergy realization is often delayed due to integration complexity.

Synergy works through two main channels: operational and financial. Operational synergy includes cost efficiency, capacity utilization, and supply chain optimization, while financial synergy involves improved capital structure and funding efficiency. These mechanisms may influence liquidity, leverage, profitability, and asset efficiency.

This study examines four financial ratios representing these aspects: Cash Ratio (CR), Debt to Equity Ratio (DER), Return on Assets (ROA), and Total Asset Turnover (TATO). The acquisition is expected to trigger changes in these ratios, though the direction of change is not predetermined. Hence, the hypotheses are two-tailed, proposing differences in CR, DER, ROA, and TATO before and after the acquisition.

2.3 Hypothesis

The hypotheses of this study are formulated as follows:

- H1 = There is a difference in the company's financial performance before and after the acquisition based on the Cash Ratio (CR).
- H2 = There is a difference in the company's financial performance before and after the acquisition based on the Debt to Equity Ratio (DER).
- H3 = There is a difference in the company's financial performance before and after the acquisition based on the Return on Assets (ROA).
- H4 = There is a difference in the company's financial performance before and after the acquisition based on the Total Asset Turnover (TATO).

3 Research Methods

This study uses a verificative method with a paired comparative (pre-post design) approach on a single entity (single case). This design was chosen to focus directly on testing the hypothesis regarding the presence or absence of differences in financial ratio values between the periods before and after the acquisition event. The object of this study is the financial performance of PT Indocement Tunggal Prakarsa Tbk. (INTP), which is operationalized through four financial ratio variables, namely Cash Ratio (CR), Debt to Equity Ratio (DER), Return on Assets (ROA), Total Assets Turnover (TATO).

The data used in this study is quantitative secondary data, in the form of PT Indocement Tunggal Prakarsa Tbk.'s quarterly financial reports, which are published officially. The Sampling was conducted using purposive time-based sampling techniques: Pre-Acquisition Period (Quarterly data from Q1 to Q4 of 2022) and Post-Acquisition Period (Quarterly data from Q1 to Q4 of 2024).

The data analysis technique began with descriptive statistics to obtain an overview of the research variables. Next, a normality test was performed using Shapiro-Wilk The test recommended for small sample sizes ($n=4$ pairs). As the main hypothesis test, this study used the Wilcoxon Signed Ranks Test nonparametric difference test. This test was

chosen because of its reliability on paired samples that are small in size. The hypothesis will be rejected if the resulting significance value (p-value) is greater than the predetermined significance level ($\alpha = 0.05$).

4 Result and Discussion

4.1 Presentation of Data and Research Results

The following data is obtained from the Annual Financial Report:

Table 1. Cash Ratio (CR) Data for PT Indocement Tunggal Prakarsa Tbk.

No	Year	Quartal	Cash	Current Liabilities	Cash Ratio (CR)
1	2022 Sebelum	Q1	5562790	4191496	1,327160
2		Q2P	3143836	3912649	0,803506
3		Q3	3548283	4275673	0,8298771
4		Q4	4525505	4822152	0,938482
5	2024 Sesudah	Q1	2519995	6271436	0,401821
6		Q2	1841030	5701105	0,322925
7		Q3	2703756	6137043	0,440563
8		Q4	4496547	7175129	0,6266852

Source: Annual Report PT Indocement Tunggal Prakarsa Tbk.

Table 2. Debt to Equity Ratio (DER) Data for PT Indocement Tunggal Prakarsa Tbk.

No	Year	Quartal	Total Debts	Total Equity	DER
1	2022 Sebelum	Q1	5357212	20545629	0,260747
2		Q2	5132172	18322629	0,280100
3		Q3	5787200	18695168	0,309559
4		Q4	6139253	19566906	0,313757
5	2024 Sesudah	Q1	7566460	21207540	0,356781
6		Q2	6939040	20806840	0,333498
7		Q3	7283943	21239954	0,342935
8		Q4	8305656	22114350	0,305577

Source: Annual Report PT Indocement Tunggal Prakarsa Tbk.

Table 3. Return On Assets (ROA) Data for PT Indocement Tunggal Prakarsa Tbk.

No	Year	Quartal	EAT	Total Assets	ROA
1	2022 Sebelum	Q1	182555	25902841	0,007047
2		Q2	291548	23454801	0,012430
3		Q3	946852	24482368	0,038674
4		Q4	1842434	25706169	0,071672
5	2024 Sesudah	Q1	238029	28774000	0,008272
6		Q2	434708	27745880	0,015667
7		Q3	1055929	28523897	0,037019
8		Q4	2007947	30420006	0,066007

Source: Annual Report PT Indocement Tunggal Prakarsa Tbk.

Table 4. Total Assets Turnover (TATO) for PT Indocement Tunggal Prakarsa Tbk.

No	Year	Quartal	Net Sales	Total Assets	TATO
1	2022 Sebelum	Q1	3557727	25902841	0,137348
2		Q2	6911076	23454801	0,294655
3		Q3	1166094	24482368	0,476299
4		Q4	1632827	25706169	0,635189
5	2024 Sesudah	Q1	4082568	28774000	0,141883
6		Q2	8124738	27745880	0,292826
7		Q3	1332067	28523897	0,467000
8		Q4	1854873	30420006	0,609754

Source: Annual Report PT Indocement Tunggal Prakarsa Tbk.

4.2 Descriptive Statistical Analysis

Descriptive analysis was conducted to observe the general picture and trends of changes in each variable before and after the acquisition. The financial performance of the company in this study was measured using the Cash Ratio (CR), Debt To Equity Ratio (DER), Return On Assets (ROA), and Total Assets Turnover (TATO). The Cash Ratio (CR), Debt to Equity Ratio (DER), Return on Assets (ROA), and Total Assets Turnover (TATO) of PT Indocement Tunggal Prakarsa Tbk. before and after the acquisition are shown in the following table or figure:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CR	4	.804	1.327	.97500	.241844
DER	4	.261	.314	.29125	.025237
ROA	4	.007	.072	.03250	.029850
TATO	4	.137	.635	.38575	.216320
Valid N (listwise)	4				

Source: Data processed by the author

Fig. 1. Descriptive Statistics Results Before Acquisition

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CR	4	.323	.627	.44825	.128881
DER	4	.333	.376	.35225	.018644
ROA	4	.008	.066	.03175	.025902
TATO	4	.142	.610	.37800	.203851
Valid N (listwise)	4				

Source: Data processed by the author

Fig. 2. Descriptive Statistics Results After Acquisition

Table 5. Comparison of Average Variables of Companies Before and After Acquisition

Variabel	Mean		Note
	After	Before	
Cash Ratio	0.975	0.44825	Decreasing
Debt to Equity Ratio	0.29125	0.3525	Increasing
Return On Assets	0.0325	0.3175	Increasing
Total Assets Turnover	0.38575	0.378	Decreasing

Source: Data processed by the author

Descriptively, the data in Table 5 shows a shift in the four post-acquisition ratios. Cash Ratio and Total Assets Turnover show a downward trend, while Debt to Equity Ratio has increased. On the other hand, Return on Assets has weakened slightly. This trend provides an initial indication of the impact of the acquisition on the company's financial structure, which will be discussed in more depth for each variable.

4.3 Discussion of Comparative Analysis Results

1. Cash Ratio (CR): Decrease in Short-Term Liquidity

Table 6. Results of Liquidity Ratio Analysis Measured through Cash Ratio (CR)

Indicator	2022 (Before)	2024 (After)	Changes	Note
Cash & Cash Equivalents Cash (Rp million)	4.525.505	4.496.547	- 0,64%	Decreasing
Short-Term Liabilities (Rp million)	4.822.152	7.175.129	48,80%	Increasing
Cash Ratio (x)	0,94	0,63	- 33,22%	Decreasing

Source: Data processed by the author

The analysis shows that the company's Cash Ratio declined from 0.94 at the end of 2022 to 0.63 at the end of 2024, a decrease of This decline was not caused by a decline in cash, which remained relatively stable, but rather by a significant increase in short-term liabilities of 48.80%. This increase in current liabilities is partly influenced by the existence of short-term bank debt following the acquisition. Although declining, the CR level of 0.63x still indicates a fairly adequate liquidity position. However, this trend of increasing dependence on short-term funding needs to be managed carefully so as not to narrow the company's liquidity safety margin in the future.

2. Debt to Equity Ratio (DER): Increase in Controlled Leverage

Table 7. Results of Liquidity Ratio Analysis Measured through Debt to Equity Ratio (DER)

Indicator	2022 (Before)	2024 (After)	Changes	Note
Total Liabilities (Rp Million)	6.139.263	8.305.656	+ 35,3%	Increasing
Total Equity (Rp million)	19.566.906	22.114.350	+ 13,0%	Increasing
Debt to Equity Ratio (DER)	0,31	0,38	+ 0,07%	Increasing

Source: Data processed by the author

Following the acquisition, the company's DER increased from 0.31 in 2022 to 0.38 in 2024. This increase was driven by total liabilities growth (35.3%) exceeding equity growth (13.0%). This indicates that the expansion accompanying the acquisition was partially financed through debt. Despite the increase, the DER of 0.38 is still at a very healthy and controlled level (below 1), which indicates that the company's capital structure is still dominated by equity. The company is not overly dependent on debt, but this upward trend still needs to be monitored so that future financial burdens do not put pressure on profitability.

3. Return on Assets (ROA): Efficiency Assets Under Little Pressure

Table 8. Results of Liquidity Ratio Analysis Measured through Return On Assets (ROA)

Indicator	2022 (Before)	2024 (After)	Changes	Note
Net Profit (Rp Million)	1.842	2.008	9.01 %	Increasing
Total Assets (Rp million)	25.706	30.420	18.34 %	Increasing
Return On Assets (ROA)	7.16 %	6.60 %	-0.56 %	Decreasing

Source: Data processed by the author

ROA analysis shows a decline from 7.16% in 2022 to 6.60% in 2024. This decline occurred despite the company's net profit growing by 9.01% in nominal terms. The main cause was the much faster growth in total assets which was 18.34%, as a direct consequence of the consolidation of PT Semen Grobogan's assets. This phenomenon is quite common in the early post-acquisition phase, where newly acquired assets cannot yet contribute maximally to profit creation. Profit growth that is slower than asset growth reflects the challenge of immediately improving operational efficiency from a now larger asset base. Displayed equations are centered and set on a separate line.

4. Total Asset Turnover (TATO): Slight Decline in Asset Utilization

Table 9. Results of Liquidity Ratio Analysis Measured through Total Assets Turnover (TATO)

Indicator	2022 (Before)	2024 (After)	Changes	Note
Net Sales (Rp Million)	16.328.278	18.548.734	14%	Increasing
Total assets at the beginning of the year (Rp million)	26.136.114	29.649.645	13%	Increasing
Total assets at the end of the year	25.706.169	30.420.006	18%	Increasing
Average Total Assets (IDR million).	25.921.141	30.034.825	16%	Increasing
TATO = Net Sales : Average Total Assets	0,6299212	0,6175742	-2%	Decreasing
TATO = Net Sales : Total Assets	0,6351890	0,6097544	-4%	Decreasing

Source: Data processed by the author

In line with the findings on ROA, the TATO ratio also decreased from 0.635 times in 2022 to 0.610 times in 2024. Although the company's net sales increased by 14%, this increase was not able to offset the increase in total assets, which reached 18%. This decline in TATO mechanically indicates that each rupiah of assets owned by the company generated after the acquisition. This can be attributed to the addition of intangible assets such as goodwill that do not directly generate sales in the short term, as well as the time required to integrate and optimize new factory capacity and distribution network. Management needs to ensure that the acquired assets are immediately integrated, utilized optimally (factory capacity, distribution, crossselling), and not left idle so that the company's activity ratio improves again and this acquisition generates added value.

4.4 Hypothesis Test Results

In this study, the Shapiro Wilk normality test was used because the sample size per variable was very small ($n = 4$), making Shapiro Wilk more reliable for detecting normality in small samples. The decision criterion used was that the data was declared to be normally distributed if the significance value (Sig./p-value) > 0.05 at a level of $\alpha = 5\%$.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CR_2022	.310	4	.	.812	4	.127
CR_2024	.273	4	.	.931	4	.599
DER_2022	.269	4	.	.901	4	.435
DER_2024	.194	4	.	.972	4	.853
ROA_2022	.251	4	.	.907	4	.467
ROA_2024	.233	4	.	.929	4	.590
TATO_2022	.163	4	.	.987	4	.944
TATO_2024	.169	4	.	.986	4	.935

a. Lilliefors Significance Correction

Source: Data processed by the author

Fig. 3. Results of Normality Tests Before and After Acquisition Saphiro-Wilk Test

Based on the Shapiro Wilk Normality Test for CR, DER, ROA, and TATO in the 2022 and 2024 periods, a Sig. value > 0.05 was obtained for all variables, indicating that the data is normally distributed and the analysis can proceed to the next test. Furthermore, the results of the Wilcoxon Signed Ranks Test are presented in the following figure. This test examines hypotheses H1 to H4 using a significance level of 5%. If the significance value is below 5%, then the independent variable has a significant effect on the dependent variable, meaning there are differences in each financial ratio between before and after the merger and acquisition. The following are the results of the Wilcoxon Signed Ranks Test:

Test Statistics ^a				
	CR_2024 - CR_2022	DER_2024 - DER_2022	ROA_2024 - ROA_2022	TATO_2024 - TATO_2022
Z	-1.826 ^b	-1.826 ^c	-.365 ^b	-1.095 ^b
Asymp. Sig. (2-tailed)	.068	.068	.715	.273

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Source: Data processed by the author

Fig. 4. Results of Wilcoxon Signed Ranks Test

Based on these tests, the following conclusions can be drawn:

- Hypothesis 1 (CR): The significance value is $0.068 > 0.05$, so H1 is rejected. This means that there is no statistically significant difference in the Cash Ratio before and after the acquisition.

- b. Hypothesis 2 (DER): The significance value is $0.068 > 0.05$, so H2 is rejected. This means that there is no statistically significant difference in the Debt to Equity Ratio before and after the acquisition.
- c. Hypothesis 3 (ROA): The significance value is $0.715 > 0.05$, so H3 is rejected. This means that there is no statistically significant difference in Return on Assets before and after the acquisition.
- d. Hypothesis 4 (TATO): The significance value is $0.273 > 0.05$, so H4 is rejected. This means that there is no statistically significant difference in Total Assets Turnover before and after the acquisition.

These findings collectively confirm that although there is a trend of change that can be observed descriptively, the impact of the acquisition on the four key financial ratios is not strong enough to produce a statistically significant difference within the time horizon of this study. This implies that the realization of synergies, both operational and financial, is a process that takes time and is likely to only manifest significantly over a longer period.

5 Conclusion

The study concludes that there is no significant difference in the financial performance of PT Indocement Tunggul Prakarsa Tbk..before (2022) and after (2024) the acquisition of PT Semen Grobogan, based on CR, DER, ROA, and TATO ratios. All hypotheses were rejected at the 5% level. However, descriptive results show a decline in CR and a rise in DER, indicating liquidity and capital structure challenges during the early integration phase. The slight decrease in ROA suggests that operational synergies have not yet been fully realized. This outcome aligns with typical post-acquisition conditions, where integration costs and adjustments temporarily reduce performance. Future studies should extend the observation period to 8–12 quarters and apply the difference-in-differences method with a comparison group to better assess the acquisition's medium-term effects.

References

- Agus Harjito dan Martono. (2012). *Manajemen Keuangan*. Edisi ke-2. Ekonisia, Yogyakarta.
- Amilasari, R., & Widodo, H. (2023). *Analysis of the financial performance of companies registered on the IDX before and after the acquisition (Study on PT XL Axiata) [Analisis kinerja keuangan perusahaan yang terdaftar di BEI sebelum dan sesudah akuisisi (Studi pada perusahaan PT XL Axiata)] [Preprint]*. UMSIDA Preprints Server. <https://doi.org/10.21070/ups.2980>
- Brigham, E. F., & Ehrhardt, M. C. (2008). *Financial Management Theory and Practice*. Thomson.
- Brigham, E. F dan Houston, J. F. 1998. *Intermediate Financial Managements*. 8th Dryden Press, Orlando. Financial Edition.
- Brigham, E. F., & Houston, J. F. (2006). *Fundamentals of Financial Management*. Thomson.
- Cartwright, S., & Schoenberg, R. (2006). Thirty Years of Mergers and Acquisitions Research. *British Journal of Management*, 17(S1), S1–S5.
- Eduardus Tandelilin, M. B. A. (2020). *Manajemen Portofolio dan Investasi*. PT Kanisius.

Financial Performance Analysis Before and After Acquisition (Study at PT Indocement Tunggul Prakarsa Tbk)

- Esterlina, P., Firdausi, N. N., Esterlina, P., & Firdausi, N. N. (2017). Analisis kinerja keuangan perusahaan sebelum dan sesudah merger dan akuisisi (Vol. 47). University. Brawijaya
- Husnan, S. (2000). Manajemen Keuangan Teori dan Penerapan (keputusan jangka panjang). Yogyakarta: BPFE, 12, 40806.
- Kasmir. (2017). *Analisis laporan keuangan*. Rajawali Pers.
- Larsson, R., & Finkelstein, S. (1999). Integrating Strategic, Organizational, and Human Resource Perspectives on M&A. *Organization Science*, 10(1), 1–26.
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005). Wealth destruction in merger waves. *Journal of Finance*, 60(2), 757–782.
- Mulyana, D. (2019). Analisis Laporan Keuangan. Tasikmalaya, Indonesia. <https://deden08m.com/wp-content/uploads/2019/08/materi-2-dan-3-analisis-rasio-keuangan-2.pdf>
- Mulyani, E. L., Sari, D. P., & Mufreni, A. N. (2022). Pengaruh alokasi kredit dan harga kredit terhadap profitabilitas dengan risiko kredit sebagai variabel intervening. *Jurnal Ekonomi Manajemen*, 8(1). <https://doi.org/10.37058/jem.v8i1.5784>
- PT Indocement Tunggul Prakarsa Tbk. (2023). Annual Report 2022 [Annual report]. <https://www.indocement.co.id/media/post/annual-report-indocement-2022.pdf>
- PT Indocement Tunggul Prakarsa Tbk. (2025). Annual Report 2024 [Annual report]. <https://www.indocement.co.id/media/post/annual-report-indocement-2024.pdf>
- Sari, D. P. (2020). Pengaruh capital adequacy ratio, biaya operasional pendapatan operasional, dan net interest margin terhadap profitabilitas (Pada PT Bank Pembangunan Daerah Jawa Barat dan Banten Tbk). *BanKu: Jurnal Perbankan dan Keuangan*, 1(2), 94–106. <https://doi.org/10.37058/banku.v1i2.2064>
- Sari, D. P. (2021). Pengaruh leverage dan likuiditas terhadap profitabilitas pada PT Gudang Garam Tbk. *BanKu: Jurnal Perbankan dan Keuangan*, 2(1), 14–27. <https://doi.org/10.37058/banku.v2i1.2769>
- Sheridan, T., Arthur, J. K., & John, D. M. (2019). Financial management: principles and applications. Pearson Education