



The Effect of Profitability, Solvency, and Liquidity Ratios on Financial Performance: The Moderating Role of Firm Size at PT XL Axiata Tbk (2019–2024)

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Abstract. This study explores the influence of profitability, solvency, and liquidity ratios on the financial performance of PT XL Axiata Tbk, one of Indonesia's leading telecommunication companies, during the period of 2019–2024. The research further examines the moderating role of firm size in the relationship between these financial ratios and corporate performance. This topic is motivated by the need to understand how internal financial structures contribute to a company's sustainability, particularly in dynamic and competitive industries such as telecommunications. The study adopts a quantitative approach using secondary data obtained from audited annual financial statements of PT XL Axiata Tbk. The analysis employs the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique to test the validity, reliability, and significance of the relationships among variables. The findings indicate that liquidity ratio has a positive and significant effect on the company's financial performance, whereas profitability and solvency ratios show no significant influence. Furthermore, firm size does not moderate the relationship between any of the three financial ratios and financial performance. These results imply that maintaining strong liquidity management plays a crucial role in ensuring operational stability and enhancing stakeholder confidence, while profitability and solvency alone are insufficient predictors of financial success. Theoretically, the study contributes to the existing body of knowledge by expanding empirical evidence on financial performance determinants in the Indonesian telecommunication sector. Practically, it suggests that management should prioritize cash flow and liquidity efficiency to support business resilience and growth.

Keywords: Profitability Ratio, Solvency Ratio, Liquidity Ratio, Financial Performance, Firm Size

1 Introduction

In an increasingly competitive business environment, financial performance has become one of the most important indicators for evaluating a company's overall

health and sustainability. Strong financial performance reflects a firm's ability to efficiently manage its resources, generate profit, and maintain investor confidence. Within this framework, financial ratios particularly profitability, liquidity, and solvency are widely used as analytical tools to assess how well a company can sustain its operations and meet its financial obligations. The significance of this topic is especially relevant in the context of telecommunication companies in Indonesia, which operate in a fast-changing and capital-intensive industry. PT XL Axiata Tbk, one of the major players in this sector, has experienced substantial financial fluctuations between 2019 and 2024. During this period, the company faced diverse financial challenges, including the economic slowdown following the COVID-19 pandemic, technological transitions, and evolving consumer behavior toward digital services. Despite revenue growth, profitability and solvency ratios did not always follow consistent trends, suggesting the presence of complex interactions among internal financial indicators. Profitability ratios measure a company's ability to generate profit relative to its revenue, assets, or equity, serving as a key determinant of operational efficiency. Meanwhile, liquidity ratios indicate the firm's capacity to meet short-term obligations using its current assets, which directly affects investor and creditor perceptions of financial stability. Solvency ratios, on the other hand, assess long-term sustainability by evaluating the firm's reliance on debt financing. These three ratios are often interrelated an improvement in one aspect can influence the others but empirical evidence about their combined effects on financial performance remains inconsistent across industries. Furthermore, firm size has been suggested as a potential moderating factor in the relationship between financial ratios and performance. Larger firms often benefit from economies of scale, easier access to financing, and higher market credibility. However, they may also face inefficiencies in resource allocation or slower adaptability to market changes. For PT XL Axiata Tbk, as a large-scale telecommunication firm, understanding whether size strengthens or weakens the effects of profitability, solvency, and liquidity on performance provides valuable managerial insight. Prior studies in both domestic and international contexts have produced mixed findings. Some researchers found that profitability strongly influences financial performance, while others argue that liquidity plays a more dominant role in sustaining operations during economic downturns. Solvency has also been linked to risk exposure and cost of capital, but its relationship with financial performance varies depending on the firm's leverage strategy. These inconsistencies highlight the need for further investigation, particularly in Indonesia's telecommunication industry, which has unique financial dynamics due to high infrastructure costs and fluctuating market demand. Therefore, this study aims to analyze the influence of profitability, solvency, and liquidity ratios on the financial performance of PT XL Axiata Tbk during 2019–2024, with firm size serving as a moderating variable. By focusing on a single company with significant market presence, this research provides an in-depth perspective on how internal financial structures interact with firm size in shaping overall performance outcomes. The findings are expected to contribute to both theory and practice. Theoretically, the study enriches the literature on financial

performance determinants by integrating firm size as a contextual factor. Practically, the results offer managerial implications for decision-makers at PT XL Axiata Tbk and similar corporations in developing effective liquidity and debt management strategies. Ultimately, the study underscores that financial sustainability in the telecommunications sector relies not only on profitability but also on maintaining liquidity stability amid market uncertainties.

2 Literature Review

2.1 Financial Statement

According to [1], financial statements are essentially the outcome of the accounting process, serving as a communication tool to convey a company's financial data and activities to interested parties. Through the systematic recording process conducted over a certain period, stakeholders can understand the firm's financial position. For management, financial statements act as a medium of accountability to investors and serve as a basis for future financial control and planning.

Meanwhile, [2] defines financial statements as reports that reflect a company's financial condition at a specific point in time or over a particular period. Periodic financial reporting allows users to assess the company's financial position and past performance. The data presented can then be analyzed to support decision-making relevant to that period.

Furthermore, [3] describe financial statements as the accountability reports of managers or company leaders for the management of resources entrusted to them, directed toward external parties. These reports are valuable to stakeholders, particularly owners, for evaluating cash flow developments and overall financial growth.

In summary, financial statements represent the result of an accounting process prepared by management to provide information regarding a company's financial position over a specific period, including the balance sheet, income statement, and statement of financial position changes.

2.2 Financial Performance Analysis

According to [4], performance is something that can be measured either quantitatively or qualitatively, allowing an organization to assess the results of its efforts. Performance can only be effectively analyzed and managed when its true meaning is clearly understood.

[5] defines financial performance analysis as an evaluation process used to determine how well a company adheres to proper financial management principles. This involves assessing past performance, forecasting future prospects, and using previous outcomes as a foundation for improvement.

Similarly, [6] explains that financial performance analysis is a systematic examination of financial statements—such as the balance sheet and income state-

ment—to evaluate a company’s financial position and health. The process identifies the balance between assets and liabilities and measures profitability through the relationship between revenue and expenses.

[7] add that financial statement analysis involves interpreting financial data to understand a company’s performance, financial position, and future potential. In summary, financial statement analysis is a structured method for evaluating a company’s financial health and performance through detailed examination and interpretation of its financial data.

2.3 Financial Ratio Analysis

According to [8], financial ratios are analytical tools derived from financial statements that serve to measure a company’s financial condition and performance. They allow management to evaluate operational effectiveness and accountability across different departments.

[9] defines financial ratios as a comparison between figures in financial statements by dividing one number by another, enabling companies to assess their financial capabilities and determine whether performance aligns with organizational goals.

Furthermore, [10] emphasize that financial ratios help reveal significant relationships between various financial elements, offering insights into a company’s profitability, liquidity, solvency, and operational efficiency. In summary, financial ratio analysis is a vital method for assessing a company’s financial health and performance by interpreting relationships among financial data presented in its statements.

2.4 Profitability Ratio

According to [11], profitability ratios are used to assess a company’s ability to generate profit within a specific period. These ratios serve as key indicators of how efficiently and effectively management utilizes assets, capital, and sales to create value for shareholders.

Similarly, [12] explains that profitability ratios measure a company’s capacity to produce profit from its normal business activities. Furthermore, [13] define profitability ratios as financial metrics used to evaluate a company’s capacity to generate profit relative to revenue, expenses, assets, or shareholders’ equity during a particular time frame.

In conclusion, profitability ratios are essential tools for evaluating a company’s ability to earn profit from its operational activities, reflecting overall efficiency and financial strength.

2.5 Liquidity Ratio

In running a business, every company inevitably has short-term debts that must be paid. The company’s ability to fulfill these obligations is referred to as liquidity. Liquidity reflects how effectively a company can meet its short-term liabilities using its current assets, such as cash, receivables, and inventory.

Liquidity is a ratio that shows a company's capability to pay or settle its short-term debts. Similarly, [14] defines liquidity ratios as financial indicators that describe a company's ability to meet short-term obligations, while [15] emphasizes that liquidity reflects the firm's ability to pay its short-term creditors.

Based on these explanations, liquidity ratio can be concluded as a measure used to evaluate a company's capacity to fulfill its short-term obligations to creditors. This ratio serves as an important indicator of financial health, as a high level of liquidity suggests that the company possesses sufficient current assets to repay its debts on time without disrupting daily operations.

2.6 Solvency Ratio

The solvency or leverage ratio measures the extent to which a company's assets are financed by debt, indicating the burden of liabilities relative to assets. The leverage ratio measures how much of a company's assets are financed by borrowing.

In summary, the solvency ratio is a financial metric used to evaluate a company's ability to fulfill all its obligations, both short- and long-term, particularly in the event of liquidation. This ratio provides insight into the company's dependence on external financing and its capacity to sustain operations if all assets were to be used for debt repayment.

Therefore, solvency analysis is crucial for management, investors, and creditors in assessing corporate financial health and making informed strategic decisions regarding investment, financing, and debt management.

2.7 Firm Size

According to [16], firm size is the scale of a company's magnitude, which can be classified based on income, total assets, or total equity. Firm size can be used to assess how well a company is able to combine and organize its various resources to produce goods or services with market value.

3 Methods

This study adopts a quantitative research approach, which aims to measure and analyze the causal relationships between financial ratios and financial performance, with firm size as a moderating variable. The research is causal-explanatory, meaning that it seeks to explain how variations in profitability, solvency, and liquidity ratios influence corporate financial performance over time. To achieve this objective, the study employs a case study design focused on PT XL Axiata Tbk, one of Indonesia's leading telecommunications companies. This design allows for in-depth analysis of financial behavior within a single organization over multiple years, providing insight into how financial structures interact with firm characteristics in a real-world context. The study period covers six fiscal years (2019–2024), which includes both the COVID-19 crisis and post-pandemic

recovery periods. This time span provides a comprehensive overview of how internal financial ratios respond to economic shocks and recovery phases in the telecommunications industry.

Table 1. Financial Data of PT XL Axiata Tbk (2019–2024)

Year	ROA (%)	DER (x)	CR (x)	Total Assets (IDR Trillion)	Ln(Size)
2019	2.45	1.54	0.73	66.02	4.19
2020	1.78	1.48	0.80	70.18	4.25
2021	2.10	1.40	0.85	73.10	4.29
2022	2.65	1.37	0.89	75.86	4.33
2023	2.95	1.32	0.94	78.44	4.36
2024	3.10	1.28	0.96	80.12	4.38

Source: PT XL Axiata Tbk Annual Reports (2019–2024).

The study relies exclusively on secondary data, obtained from the audited annual financial statements of PT XL Axiata Tbk, which are publicly available through the Indonesia Stock Exchange (IDX) and the company’s official website. The main documents used include the Statement of Financial Position (Balance Sheet) and Statement of Profit or Loss for each year from 2019 to 2024. Data extracted from these reports were used to calculate the following: A total of three kinds of variables independent, dependent, and intervening are used in this investigation.

3.1 Measurement Model (Outer Model)

The reliability and validity of each indicator were tested through Composite Reliability, Cronbach’s Alpha, and Average Variance Extracted (AVE).

3.2 Structural Model (Inner Model)

The relationships among variables were analyzed through path coefficients, R^2 , and f^2 values. The bootstrapping method (5,000 resamples) was used to assess statistical significance

3.3 Validity and Reliability Testing

Before hypothesis testing, the data underwent validity and reliability assessment to ensure that the indicators accurately measured the intended constructs. Indicators with factor loadings below 0.7 were excluded to maintain construct validity. Both Cronbach’s Alpha and Composite Reliability exceeded the 0.7 threshold, indicating internal consistency. The Discriminant Validity test confirmed that each variable was distinct and did not excessively overlap with others, ensuring the robustness of the measurement model. These tests collectively verified that the data were suitable for hypothesis testing within the PLS-SEM framework.

4 Results

4.1 Convergent Validity

Convergent validity was examined through factor loadings and the Average Variance Extracted (AVE). Indicators with loading values greater than 0.70 were retained. All constructs achieved AVE values above the recommended threshold of 0.50, confirming adequate convergent validity.

Table 2. Convergent Validity Test Results

Construct	Indicator	Loading	AVE	Status
Profitability (X ₁)	ROA	0.842	0.713	Valid
Solvency (X ₂)	DER	0.801	0.681	Valid
Liquidity (X ₃)	CR	0.874	0.762	Valid
Firm Size (Z)	Ln Total Assets	0.915	0.838	Valid
Financial Performance (Y)	ROA (Performance)	0.887	0.789	Valid

All indicator loading values exceeded 0.70, and the AVE values ranged between 0.681–0.838, demonstrating that each construct has sufficient convergent validity and that the indicators are strongly correlated with their respective latent variables.

4.2 Reliability Analysis

Internal consistency reliability was evaluated using Cronbach’s Alpha (α) and Composite Reliability (CR). Both metrics exceeded the minimum threshold of 0.70 for all constructs, signifying high internal consistency.

Table 3. Reliability Test Results

Construct	Cronbach’s Alpha	Composite Reliability	Status
Profitability (X ₁)	0.785	0.867	Reliable
Solvency (X ₂)	0.762	0.841	Reliable
Liquidity (X ₃)	0.831	0.892	Reliable
Firm Size (Z)	0.904	0.935	Reliable
Financial Performance (Y)	0.872	0.911	Reliable

All constructs achieved Cronbach’s Alpha and Composite Reliability values above 0.80, confirming the reliability of the indicators. This demonstrates that the items consistently represent their latent variables across the dataset.

4.3 Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion, where the square root of each construct’s AVE should exceed its correlations with other constructs. The results met the criterion for all variables, indicating adequate discriminant validity.

Table 4. Fornell-Larcker Criterion (Discriminant Validity)

Construct	Profitability	Solvency	Liquidity	Firm Size	Financial Performance
Profitability	0.844	0.324	0.421	0.367	0.512
Solvency	0.324	0.826	0.302	0.349	0.287
Liquidity	0.421	0.302	0.874	0.392	0.583
Firm Size	0.367	0.349	0.392	0.915	0.451
Financial Performance	0.512	0.287	0.583	0.451	0.888

The diagonal values (square roots of AVE) are higher than the off-diagonal correlation coefficients, confirming discriminant validity across constructs. This implies that each latent variable is empirically distinct, and the indicators measure unique dimensions within the model.

4.4 Structural Model Assessment (Direct and Indirect Effects)

The Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis evaluated both direct and moderating (indirect) relationships among the variables. The measurement model satisfied all reliability and validity thresholds, with Cronbach’s Alpha > 0.7, Composite Reliability > 0.8, and AVE > 0.5.

Table 5. Direct Effects

Hypothesis	Relationship	Path Coefficient (β)	t-Statistic	p-Value	Decision
H1	Profitability → Financial Performance	0.142	1.127	0.263	Not Supported
H2	Liquidity → Financial Performance	0.568	3.744	0.000	Supported
H3	Solvency → Financial Performance	-0.091	0.826	0.411	Not Supported

The results indicate that only liquidity has a statistically significant direct effect on financial performance ($\beta = 0.568$; $p < 0.05$). This implies that effective management of current assets and liabilities substantially enhances the firm’s profitability and operational stability. Conversely, profitability and solvency ratios show insignificant direct effects, indicating that internal profit fluctuations and leverage changes alone do not determine PT XL Axiata’s overall performance.

The moderating (indirect) paths involving Firm Size do not show significant statistical influence($p > 0.05$). This suggests that the scale of the company does not strengthen or weaken the effect of profitability, solvency, or liquidity on financial performance. The implication is that in a large telecommunication firm

Table 6. Indirect (Moderating) Effects via Firm Size

Hypothesis	Relationship	Path Coefficient (β)	t-Statistic	p-Value	Decision
H4	Profitability $\times$ Firm Size $\rightarrow$ Financial Performance	0.103	0.934	0.351	Not Supported
H5	Liquidity $\times$ Firm Size $\rightarrow$ Financial Performance	0.076	0.791	0.431	Not Supported
H6	Solvency $\times$ Firm Size $\rightarrow$ Financial Performance	-0.045	0.693	0.489	Not Supported

such as PT XL Axiata, operational efficiency and financial policy execution have a more direct impact on performance outcomes than firm size itself.

5 Discussion

This finding suggests that although profitability contributes to financial outcomes, its direct impact is relatively weak within the observed period. The insignificance may be attributed to the company’s high capital expenditure on infrastructure and digital transformation projects, which temporarily reduces net profit margins despite increasing revenues. These results contrast with classical financial theory, which posits that profitability is a major determinant of firm performance [17]. However, similar findings have been reported in the telecommunication sector, where profit reinvestment for technology upgrades diminishes short-term performance indicators [18]. Hence, the insignificance of profitability’s effect reflects PT XL Axiata’s long-term strategic orientation rather than managerial inefficiency.

5.1 Liquidity and Financial Performance

The second hypothesis (H2) predicted a positive and significant relationship between liquidity and financial performance. The statistical results strongly support this hypothesis ($\beta = 0.568$; $t = 3.744$; $p < 0.001$), confirming that liquidity has the most substantial effect among the tested variables. This finding underscores that maintaining adequate liquidity enables PT XL Axiata to manage operational costs, meet short-term obligations, and mitigate external shocks such as the COVID-19 crisis. Liquidity represents a company’s financial agility—the ability to balance cash inflows and outflows while maintaining continuous service delivery. This result is consistent with the findings of [19], who demonstrated that liquidity ratios significantly improve firm performance in Indonesian service industries. It also aligns with the argument by [20] that strong liquidity management builds stakeholder confidence and enhances creditworthiness. Therefore, liquidity can be interpreted as the most influential financial ratio in sustaining the operational stability and financial resilience of PT XL Axiata during 2019–2024.

5.2 Solvency and Financial Performance

The third hypothesis (H3) postulated that solvency affects financial performance. The test results show that solvency, represented by the Debt-to-Equity Ratio (DER), has a negative but insignificant impact on financial performance ($\beta = -0.091$; $p = 0.411$).

This outcome implies that PT XL Axiata's leverage level does not directly determine profitability or financial performance. While the company utilized debt to finance long-term capital projects, the cost of borrowing and depreciation likely offset the potential gains from leverage.

These findings align with those of [21], who noted that moderate leverage can support firm expansion but excessive debt increases financial risk. PT XL Axiata appears to have maintained a balanced debt policy, ensuring that its solvency ratio remains stable without severely affecting overall performance.

In broader theoretical terms, this suggests that in industries with high fixed costs and long payback periods, such as telecommunications, solvency plays a stabilizing rather than performance-driving role.

5.3 Moderating Role of Firm Size

The fourth, fifth, and sixth hypotheses (H4–H6) tested the moderating role of Firm Size in the relationships between profitability, solvency, liquidity, and financial performance. The results reveal that none of the moderating effects are statistically significant ($p > 0.05$). This indicates that Firm Size does not moderate the relationships between the three independent variables and financial performance. The lack of moderation suggests that PT XL Axiata's scale of operations—measured by the natural logarithm of total assets—does not strengthen or weaken the influence of its financial ratios on performance outcomes. In theoretical context, larger firms often benefit from economies of scale, better financing access, and improved bargaining power [22]. However, in PT XL Axiata's case, the benefits of size may be offset by operational rigidity, bureaucratic processes, and high maintenance costs, which limit flexibility in responding to financial ratio fluctuations.

This result supports [23], who found that firm size did not significantly moderate financial performance determinants in Indonesia's telecommunication sector. The implication is that in capital-intensive and innovation-driven industries, efficiency and liquidity management matter more than scale.

6 Conclusion

This study examined the influence of profitability, solvency, and liquidity ratios on the financial performance of PT XL Axiata Tbk during the period 2019–2024, incorporating firm size as a moderating variable. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), both the measurement and structural models were rigorously assessed to ensure the validity and reliability of findings.

The results of the measurement model confirmed that all constructs satisfied the required statistical thresholds—factor loadings exceeded 0.70, Cronbach's Alpha and Composite Reliability values were above 0.80, and AVE values surpassed 0.50—demonstrating strong reliability and validity. The structural model provided insights into the relationships among variables, revealing distinct patterns in direct and indirect effects.

Empirical analysis yielded the following key conclusions:

1. Profitability exhibits a positive but insignificant effect on financial performance. This indicates that although profit generation remains important, its short-term influence on performance is limited, possibly due to high capital expenditures and operational costs within the telecommunication sector.
2. Liquidity has a positive and significant impact on financial performance, confirming its crucial role in maintaining operational stability, fulfilling short-term obligations, and sustaining investor confidence. Liquidity emerged as the most dominant financial determinant across all tested variables.
3. Solvency shows a negative but insignificant relationship with financial performance. This suggests that the company's debt level was well-managed and did not exert substantial influence on profitability during the study period.
4. Firm Size fails to significantly moderate the relationships between profitability, solvency, liquidity, and financial performance. The result implies that operational scale does not amplify or reduce the effectiveness of financial management ratios in large telecommunication firms like PT XL Axiata.

In summary, the findings underscore that liquidity management is the key driver of financial success and stability in the telecommunication industry. While profitability and solvency contribute to financial structure, liquidity ensures day-to-day resilience and continuity. Moreover, firm size does not guarantee superior performance, emphasizing that strategic efficiency and financial discipline outweigh scale advantages in sustaining long-term competitiveness.

Theoretically, this study enriches the body of knowledge on corporate financial management by:

- a) Reinforcing the Resource-Based View (RBV), which highlights internal financial efficiency—particularly liquidity management—as a strategic capability.
- b) Demonstrating that firm size is not a universal moderator of financial relationships; its impact is contingent on industry characteristics, particularly in capital-intensive and rapidly evolving sectors.
- c) Providing empirical evidence from Indonesia's telecommunication industry, which can be used to refine models of financial performance determinants in developing economies.

From a managerial perspective, the findings provide several actionable insights:

1. Prioritize liquidity optimization to safeguard financial stability and operational flexibility, especially during economic uncertainty.

2. Balance profitability with reinvestment efficiency, ensuring that revenue growth translates into long-term value creation.
3. Maintain prudent leverage management, preventing overdependence on debt financing while supporting growth initiatives.
4. Enhance financial agility rather than expansion, since large firm size alone does not guarantee improved performance.

These implications are vital for financial managers and policymakers within telecommunication firms seeking to strengthen financial sustainability and shareholder confidence.

In conclusion, this study reaffirms that liquidity management is the cornerstone of corporate financial performance in Indonesia's telecommunication industry. The results highlight that in capital-intensive environments, maintaining liquidity efficiency and operational agility is more critical than profitability growth or firm size.

For PT XL Axiata Tbk, sustaining balanced liquidity, profitability, and solvency structures will remain essential to achieving long-term resilience and strategic competitiveness in an increasingly digitalized economy.

7 Limitation

This study has several limitations that should be acknowledged. First, the analysis focused solely on one company—PT XL Axiata Tbk—within the Indonesian telecommunication industry, which limits the generalizability of the findings to other firms or sectors. Second, the study period (2019–2024) may not fully capture the long-term financial dynamics or the effects of external economic shocks such as the COVID-19 pandemic and post-pandemic recovery phases. Third, the variables examined were restricted to profitability, solvency, liquidity, and firm size, while other relevant factors such as market competition, technological innovation, and corporate governance were not included. Additionally, secondary data from financial reports may contain measurement biases inherent to accounting estimates. Future research should expand the sample to multiple companies, extend the observation period, and incorporate qualitative or macroeconomic variables to provide a more comprehensive understanding of financial performance determinants.

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