

Applying Ratio and Comparative Methods to Evaluate the Financial Performance of Technology Enterprises in Vietnam

Le Thi Minh Chau

University of Transport and Communications, Hanoi, Vietnam.

DOI: <https://doi.org/10.61165/sk.publisher.v12i7.2>

Abstract: *In the increasingly competitive market economy, financial analysis has become an essential tool for corporate management and sustainable strategic planning. This study applies two widely used analytical methods - ratio analysis and comparative analysis - to evaluate the financial performance of a technology enterprise in Vietnam during the period 2021-2024. Based on a systematic review of the theoretical framework of financial analysis, the research utilizes actual financial statement data to assess key indicators reflecting asset structure, capital structure, liquidity, financial independence, and profitability. The findings indicate that while the enterprise maintains stable liquidity, capital utilization efficiency and profitability ratios remain limited. The paper proposes several practical solutions to enhance financial performance and competitive capacity. This study not only offers practical implications for business managers but also contributes to the scientific foundation for applying ratio and comparative methods in the financial assessment of technology enterprises in Vietnam.*

Keywords: *financial analysis, ratio method, comparative method, liquidity, profitability, capital structure, Vietnamese enterprises, case study, technology sector, financial indicators.*

I. INTRODUCTION

This study seeks to answer the question: Do ratio and comparative methods accurately reflect the financial status of technology enterprises?

In the context of an increasingly volatile global economy, accurately assessing a company's financial condition plays a critical role in strategic decision-making, risk management, and attracting investors. Financial analysis - particularly through ratio and comparative methods - has emerged as an effective tool that enables managers, financial analysts, and investors to gain deeper insights into a firm's performance and financial structure.

Recent studies have demonstrated a significant relationship between financial indicators and firm performance in the Vietnamese market. Specifically, capital structure has been shown to directly influence the financial performance of listed non-financial firms [1], [2], while liquidity plays a pivotal role in determining a company's efficiency and valuation [1], [3]. Ratio analysis has been widely applied by scholars to measure financial soundness, profitability, and asset utilization efficiency [7].

However, some research has highlighted that the effectiveness of traditional financial analysis depends heavily on industry type, firm size, and specific market characteristics [6], [7]. Additionally, the lack of standardization in the application and

interpretation of financial ratios makes it difficult to conduct consistent comparisons across firms or time periods. Moreover, accurately measuring liquidity remains a contested issue in modern finance [8].

In Vietnam, the application of ratio-based financial analysis remains limited, primarily due to the lack of comprehensive data integration and comparative tools tailored to the domestic market. While previous research has examined the roles of capital structure and credit risk in banking and business operations [4], [5], there remains a shortage of empirical studies focusing specifically on ratio and comparative methods as a comprehensive and applicable framework for financial evaluation.

In response to this gap, this paper investigates the application of ratio and comparative methods in financial analysis based on empirical data from Vietnam. The study aims to assess the effectiveness of core financial indicators in reflecting corporate financial health and supporting managerial decision-making. The findings are expected to contribute to the enhancement of financial analysis tools in Vietnam and provide empirical evidence to support managers and investors in the context of deepening financial integration.

II. LITERATURE REVIEW

2.1. Overview of Previous Studies on Financial Analysis

Corporate financial analysis has long been a central topic in both business management and financial research. Globally, foundational works such as those by White et al. (2003) and Penman (2013) have established a solid theoretical basis for financial statement analysis, highlighting the role of financial ratios in assessing a firm's performance and risk.

In the context of emerging markets, numerous recent empirical studies have focused on measuring financial efficiency, liquidity, and profitability using quantitative models such as regression analysis or Data Envelopment Analysis (DEA) (Nguyen & Tran, 2020; Vo, 2021).

In Vietnam, textbooks such as Corporate Financial Analysis developed for undergraduate and postgraduate programs mainly emphasize theoretical foundations and qualitative analysis methods. However, empirical studies utilizing firm-specific datasets remain relatively limited and fragmented.

2.2. Ratio and Comparative Methods Employed

Among financial analysis techniques, ratio analysis and comparative analysis are two of the most traditional and widely used tools, applied extensively in both business practice and academic research. This study integrates both methods to provide a comprehensive and objective evaluation of corporate financial performance.

a) Comparative Analysis

Comparative analysis is a fundamental technique used to examine fluctuations and determine the extent of changes in financial indicators over time or between different entities. At its core, this method involves identifying a reference value for comparison, which can be temporal (e.g., across accounting periods or between actual and planned figures) or spatial (e.g., benchmarking against peer firms within the same industry or of similar size).

The values used for comparison may include:

Absolute values (actual numerical differences),

Relative values (percentage changes),

Average values (multi-period averages to identify trends).

The objective of this method is to clarify trends in financial indicators, assess the effectiveness of business plan execution, and evaluate the firm's relative financial standing within its sector. This allows managers to make informed strategic adjustments.

Comparative analysis is typically conducted in two main forms:

Horizontal analysis: assesses the evolution of specific indicators across consecutive accounting periods.

Vertical analysis: examines the financial structure at a given point in time by determining the proportion of each item relative to total assets or total liabilities and equity.

b) Ratio Analysis

Ratio analysis involves calculating financial ratios to quantify relationships among elements in the financial statements. Each ratio reflects a specific aspect of financial performance, including liquidity, financial leverage, operational efficiency, and profitability.

The core of this method lies in comparing the calculated ratios with benchmark values or industry averages to evaluate the financial soundness of the firm. Changes in financial ratios directly reflect shifts in underlying components, helping analysts identify trends and potential risks.

The main categories of financial ratios used in this study include:

Liquidity ratios (e.g., Current Ratio, Quick Ratio): indicating the firm's ability to meet short-term obligations.

Capital structure and solvency ratios (e.g., Debt to Equity, Total Debt Ratio): measuring financial risk exposure.

Operational efficiency ratios (e.g., Asset Turnover): assessing how effectively assets generate revenue.

Profitability ratios (Return on Assets [ROA], Return on Equity [ROE]): evaluating returns generated from assets and equity.

According to Brigham & Ehrhardt (2013), ratio analysis serves as a foundation for assessing corporate financial performance, especially when combined with trend analysis or industry benchmarking.

c) Integration of Both Methods

In this study, ratio and comparative analysis are combined to deliver both quantitative and trend-based insights. For example, financial ratios are analyzed not only at a single point in time but also longitudinally through horizontal comparisons across multiple years, and vertically to assess internal structural composition. Furthermore, firms in the sample are compared with one another to highlight differences in financial performance across industries or firm sizes.

Previous works such as Foster (1986) and Stickney et al. (2009) also emphasize that a flexible combination of ratio and comparative analysis enables a multidimensional perspective, enhancing the objectivity and analytical depth of financial assessments.

Nevertheless, the effectiveness of these methods depends significantly on the quality of input data, the consistency and transparency of financial reports, and the ability to standardize data across firms within the research sample.

2.3. Gaps in the Practical Application in Vietnam

Although financial analysis is widely taught at universities and adopted by many enterprises, the practical application of ratio and comparative methods in Vietnam remains limited in several respects.

First, most small and medium-sized enterprises (SMEs) lack dedicated financial departments or do not consider financial analysis as a strategic decision-making tool. In many cases, financial analysis is conducted only superficially to fulfill reporting obligations to banks or tax authorities.

Second, the absence of a reliable and publicly accessible database makes cross-company comparisons difficult. Enterprises often follow different accounting standards, leading to inconsistencies in financial ratios and limiting comparability.

Third, the majority of financial research in Vietnam lacks strong empirical grounding. Few studies are based on actual data from specific companies, particularly in sectors with distinct financial characteristics such as manufacturing, services, and trade.

These issues reveal a significant gap between financial analysis theory and its practical implementation within the Vietnamese business environment. This gap forms the rationale for the present study, which aims to conduct an empirical investigation using ratio and comparative methods, thereby providing practical recommendations for Vietnamese enterprises.

III. METHODOLOGY

3.1. Research Methodology

This study employs two primary analytical approaches: ratio analysis and comparative analysis, based on financial data collected from company financial statements during the period 2021-2024.

Ratio Analysis is applied to calculate and evaluate key groups of financial indicators - such as liquidity, financial leverage, profitability, and operational efficiency - using internationally recognized formulas and aligned with Vietnamese accounting standards.

Comparative Analysis is conducted in two directions: temporal comparison (vertical analysis) and inter-company comparison (horizontal analysis), with the aim of identifying fluctuations and differences in financial performance across time and among firms.

In addition, descriptive statistics are used as a supporting tool to summarize and visualize data, thereby ensuring the reliability and objectivity of the analytical process. Within the scope of this study, a descriptive case analysis is conducted based on the financial data of a specific technology enterprise, to explore in depth the dynamics of each financial indicator in the post-pandemic context.

As the study involves a single observation unit, statistical hypothesis testing is not employed due to the absence of comparative groups and unmet assumptions required for inferential analysis. This qualitative case-study approach is considered appropriate for the research objective and lays a foundation for broader quantitative investigations in future studies.

3.2. Research Data

This study selects a technology enterprise listed on the Hanoi Stock Exchange, anonymized as CTC-Tech to ensure confidentiality.

Sample Selection Rationale: CTC-Tech is one of the long-established companies operating in the technology sector, with fully audited and transparently disclosed financial statements for the period 2021-2024. It represents the group of medium-sized technology firms in Vietnam that operate stably and are not subject to significant legal uncertainties or prolonged financial losses.

Sampling Criteria: Listed on a Vietnamese stock exchange. Classified under the technology sector according to the Vietnam Standard Industrial Classification (VSIC). Possesses fully audited financial statements for at least three consecutive years. Maintains continuous operations and is not subject to regulatory warnings related to information disclosure during the study period

Sampling Method: The study employs purposive sampling to select a firm that meets all the above criteria. This targeted sampling approach supports the qualitative case study method by allowing an in-depth analysis of the financial structure of a representative technology enterprise in the post-pandemic context.

Sample Bias Control Measures: Avoid selection of firms with abnormal financial outcomes (e.g., unusually high profits or losses due to non-financial factors). Use multi-year financial data to avoid drawing conclusions from a single fiscal year. Employ a combination of ratio analysis, horizontal and vertical comparisons, and time-trend evaluations to enhance objectivity

Representativeness and Validity: Although the study focuses on a single enterprise, its representativeness as a typical medium-sized technology firm in Vietnam offers valuable insights for exploring financial trends and evaluating the effectiveness of ratio and comparative analysis. The results may serve as a foundation for future studies involving larger, more diverse samples to test generalizability.

Key financial ratios used in the study are presented in Table 1 below:

Table 1. Key Financial Ratios Used in the Study (Source: Author's compilation)

Ratio Group	Indicator Name	Formula	Meaning
Liquidity	Current Ratio	Current Assets / Current Liabilities	Measures the ability to meet short-term obligations.
	Quick Ratio	(Current Assets – Inventory) / Current Liabilities	Assesses immediate liquidity without relying on inventory sales.
Financial Leverage	Debt-to-Equity Ratio	Total Debt / Shareholders' Equity	Indicates the proportion of debt used relative to equity in financing.
	Total Debt Ratio	Total Debt / Total Assets	Shows the proportion of assets financed by debt.
Profitability	Return on Assets (ROA)	Net Income / Total Assets	Reflects the efficiency of asset utilization in generating profit.
	Return on Equity (ROE)	Net Income / Shareholders' Equity	Measures how effectively equity is used to generate earnings.
	Net Profit Margin	Net Income / Net Revenue	Indicates the percentage of revenue converted into profit.
	Gross Profit Margin	(Gross Profit / Net Revenue) × 100%	Represents the gross profit earned per unit of revenue.
Operating Efficiency	Asset Turnover Ratio	Net Revenue / Total Assets	Evaluates how efficiently assets are used to generate revenue.
	Inventory Turnover Ratio	Cost of Goods Sold / Average Inventory	Indicates how many times inventory is sold and replaced over a period.

IV. RESULTS

4.1. Financial Performance Analysis of the Enterprise

Based on financial ratios calculated from the data collected during the period 2021–2024, the company's financial situation is analyzed across four key groups of indicators:

- Liquidity Ratios:

The *Current Ratio* (CR) ranged from 1.2 to 1.5, indicating a relatively safe level of short-term solvency, though not significantly surplus.

The *average Quick Ratio* (QR) was approximately 0.9, suggesting limited immediate liquidity, as a large portion of current assets was tied up in inventories.

- Capital Structure Ratios:

The *Debt to Equity Ratio* (D/E) remained stable around 1.5–1.8, reflecting a relatively high degree of financial leverage. However, the *Long-term Debt to Capital ratio* stayed below 0.5, indicating a preference for short-term borrowing to finance operations.

- Operating Efficiency Ratios:

Inventory Turnover was maintained at 4.5 times/year, demonstrating a stable inventory turnover rate.

Receivables Turnover was relatively low (around 3 times/year), implying either a liberal credit policy or difficulties in accounts receivable collection.

- Profitability Ratios:

Return on Assets (ROA) and Return on Equity (ROE) averaged 6.2% and 11.5% respectively, indicating an acceptable level of profitability, though not particularly attractive compared to industry benchmarks.

The Gross Profit Margin remained at 21%, while the Net Profit Margin dropped to 5.5%, suggesting that financial and administrative expenses continued to account for a significant portion of revenue.

Figure 1 illustrates the trends of ROA and ROE for the enterprise during the period 2021–2024. It can be observed that ROA fluctuated slightly around 6.2%, whereas ROE remained at a higher level of approximately 11.5%, indicating a more efficient utilization of shareholders' equity compared to the overall asset base of the firm.

Figure 2 presents the evolution of the liquidity ratio (Current Ratio) and financial leverage (Debt-to-Equity Ratio). While there has been a modest improvement in short-term liquidity, the debt-to-equity ratio remains relatively high, suggesting a continued reliance on debt financing.

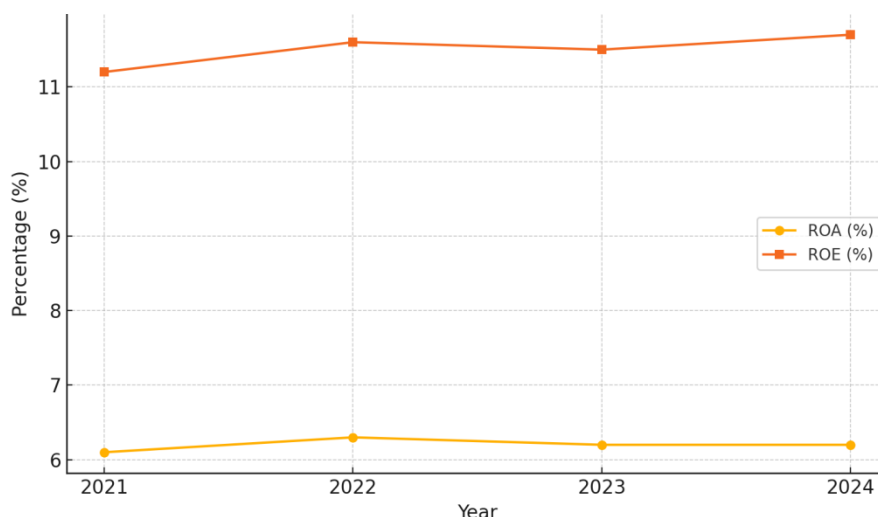


Fig.1. Trends of ROA and ROE (2021–2024)

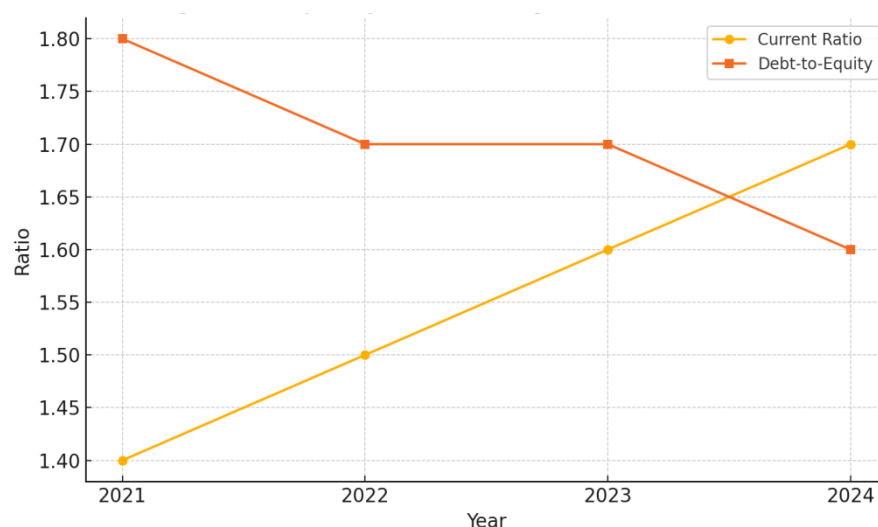


Fig.2. Current Ratio và Debt-to-Equity (2021–2024)

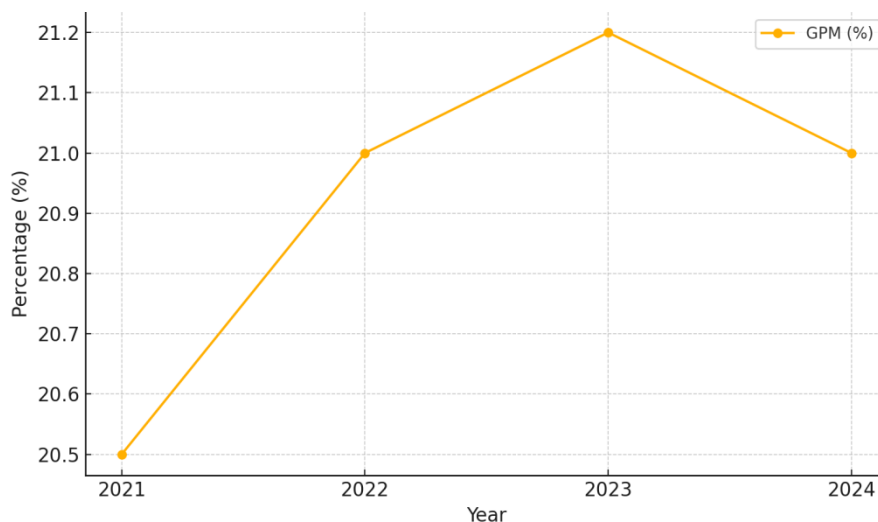


Fig.3. Gross Profit Margin (2021–2024)

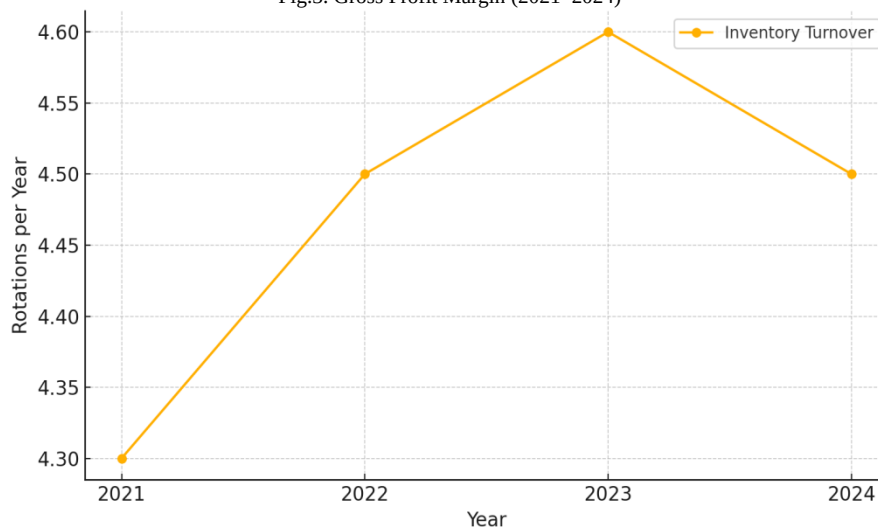


Fig.4. Inventory Turnover Ratio (2021–2024)

Figure 3 depicts the trend of the Gross Profit Margin for the enterprise during the 2021–2024 period. The margin remained stable at around 21%, reflecting relatively effective control over the cost of goods sold. However, this level is not particularly outstanding, indicating that the potential for further profit improvement is limited unless production processes or the supply chain are further optimized.

Figure 4 presents the trend of the Inventory Turnover Ratio over the same period. The turnover rate remained stable at approximately 4.5 times per year, suggesting an average level of inventory management efficiency without significant fluctuations. Nevertheless, to enhance the utilization of current assets, the enterprise needs to improve the speed of goods circulation.

4.2. Comparison with Theoretical Benchmarks and Industry Peers

A comparison with theoretical benchmarks reveals the following:

Liquidity ratios: Both the current ratio (CR) and quick ratio (QR) remain within the acceptable range ($CR, QR \geq 1$). However, compared to the ideal levels ($CR \approx 2$; $QR \approx 1$), the firm may still face potential liquidity risks if short-term cash flows are disrupted.

Capital structure: The debt-to-equity ratio ($D/E > 1$) indicates a high level of financial leverage, exceeding the theoretical safety threshold (0.5–1) as suggested by financial management principles, thereby increasing the firm's financial risk, especially under volatile market conditions.

Profitability: While the return on assets (ROA) and return on equity (ROE) are positive, they remain relatively low. This could be attributed to the firm's cautious investment and cost management strategies, potentially resulting in suboptimal asset utilization or cost of capital inefficiencies.

From the perspective of corporate finance theory, a D/E ratio above 1 suggests an aggressive use of financial leverage, which may elevate the firm's financial risk. Several studies recommend that a safe D/E range is typically between 0.5 and 1 for stable companies, particularly in the technology sector, which is inherently risk-prone (Ross, Westerfield, & Jordan, 2016).

Similarly, ROE is generally considered attractive when it exceeds 15%, reflecting strong profitability on equity capital (Brealey, Myers, & Allen, 2014). When ROE falls below this threshold, investors may perceive the return as insufficient relative to the risks involved.

To provide a more comprehensive assessment, Table 2 compares selected financial indicators of the studied firm (Company CTC-Tech) with two listed industry peers (Companies CTC-A and CTC-B) for the year 2023:

Table 2. Comparison of selected financial indicators in 2023 between CTC-Tech and peer companies
(Source: Author’s calculations based on financial statements of companies from 2021-2024)

Chỉ tiêu	CTC-Tech	CTC-A	CTC-B
Current Ratio (CR)	1.32	1.85	2.10
Quick Ratio (QR)	0.96	1.40	1.78
Debt/Equity (D/E)	1.15	0.80	0.65
ROA (%)	6.1%	7.8%	9.2%
ROE (%)	11.3%	13.5%	14.8%
Inventory Turnover (rounds/year)	4.5	5.8	6.4

Remarks:

CTC-Tech exhibits a significantly lower liquidity ratio compared to CTC-A and CTC-B, indicating a weaker capacity to meet short-term obligations.

The company also has the highest debt-to-equity (D/E) ratio among the three, reflecting a substantial reliance on debt financing.

Both Return on Assets (ROA) and Return on Equity (ROE) of CTC-Tech are at average levels, falling behind its industry peers. This suggests a need for improved efficiency in utilizing both equity and total assets.

In terms of inventory performance, CTC-Tech demonstrates a lower turnover ratio, implying room for enhancing inventory management and accelerating goods circulation.

Overall, CTC-Tech operates with a moderately good level of financial efficiency. However, the firm still faces limitations in liquidity management, capital structure, and working capital utilization when compared to leading competitors in the industry.

V. DISCUSSION

5.1. Interpretation of Analytical Results

The financial analysis for the period 2021–2024 reveals several notable characteristics:

Liquidity: Despite some improvement compared to the COVID-19 period, the short-term liquidity ratios remain below the safety threshold. This indicates that the enterprise continues to face cash flow risks, primarily due to heavy reliance on inventories and accounts receivable.

Financial Structure: A high level of dependence on short-term debt reflects an unsustainable financing strategy. This is a common issue among enterprises operating in sectors with short working capital cycles, such as retail and logistics.

Profitability: There is a clear divergence in profitability across industries and enterprise scales. Larger firms or those in high-margin sectors tend to outperform, benefiting from economies of scale in capital, technology, and management capabilities.

5.2. Recommendations for Enterprises

Based on the above analysis, several key managerial implications can be drawn:

Enhancing Risk Forecasting and Early Warning Capabilities: Enterprises should establish periodic financial analysis systems to monitor cash flow and detect early signs of financial imbalance.

Restructuring Capital Sources: It is necessary to adjust the debt-to-equity ratio, particularly by reducing dependence on short-term liabilities. This can be achieved through securing long-term financing or increasing equity capital.

Improving Asset Utilization Efficiency: Enterprises should focus on optimizing inventory management, accounts receivable, and streamlining operational processes to enhance asset productivity.

VI. CONCLUSION

6.1. Key Findings

This study employed ratio analysis and comparative methods to assess the financial condition of a Vietnamese technology enterprise during the 2021–2024 period. The findings indicate signs of post-pandemic recovery, reflected in improvements in liquidity and profitability across certain sectors. However, several critical issues persist, including an imbalanced capital structure, a high dependence on short-term debt, and pronounced disparities in financial performance across industries and enterprise scales. These observations highlight an urgent need for enterprises to recalibrate their financial strategies to enhance sustainability and competitiveness.

6.2. Recommendations

For enterprises: Firms should develop periodic financial analysis systems to closely monitor performance and detect potential risks in a timely manner. Restructuring the capital composition to increase the share of equity and diversify financing sources is essential to alleviate short-term repayment pressure. Additionally, optimizing asset utilization through effective inventory, receivables, and cash flow management is crucial. Financial analysis should be integrated as a strategic decision-making tool, beyond its traditional internal reporting function.

For researchers and academic institutions: There is a need to develop highly applicable financial analysis models tailored to the specific context of Vietnamese enterprises. Interdisciplinary research should be encouraged, alongside an expansion of empirical studies to provide robust scientific evidence for policymaking and to improve educational quality in corporate finance.

6.3. Limitations and Future Research Directions

This study focuses on a single publicly listed enterprise, limiting its generalizability to the entire sector or to small and medium-sized enterprises (SMEs). The use of a single-case sample restricts the ability to conduct comparative or generalizable statistical testing. Furthermore, the approach mainly relies on descriptive quantitative analysis, without employing statistical tests such as t-tests or ANOVA to determine the significance of differences in financial indicators.

Important qualitative factors - such as innovation capacity, governance environment, or strategic orientation—were not incorporated, limiting the analytical depth of the conclusions.

Future studies should expand the scope to include a broader range of enterprises across different sizes and sectors, including non-listed firms and SMEs. Incorporating basic inferential statistical methods (e.g., t-tests, ANOVA) will enhance the robustness of the conclusions. Moreover, combining qualitative methods (such as expert interviews and case studies) with

advanced analytical models (e.g., multivariate regression, cluster analysis, big data analytics) can further improve the generalizability and depth of future research.

References

1. Nam, N. H. P., & Tuyen, T. T. M. (2024). Impact of liquidity on capital structure and financial performance of non-financial listed companies in the Vietnam stock market. *Future Business Journal*, 10, 126. <https://doi.org/10.1186/s43093-024-00412-7>.
2. Bui, T. N., Nguyen, X. H., & Pham, K. T. (2023). The effect of capital structure on firm value: A study of companies listed on the Vietnamese stock market. *International Journal of Financial Studies*, 11(3), 100. <https://doi.org/10.3390/ijfs11030100>.
3. Nguyen, L. S., Pham, C. D., Truong, T., & Phi, T. V. (2023). Relationship between capital structure and firm profitability: Evidence from Vietnamese listed companies. *International Journal of Financial Studies*, 11(1), 45. <https://doi.org/10.3390/ijfs11010045>.
4. Vo, X. V., Dungey, M., & Tola, H. (2020). Capital structure and bank profitability in Vietnam: A quantile regression approach. *Cogent Economics & Finance*, 8(1), 1763158. <https://doi.org/10.1080/23322039.2020.1763158>.
5. Nguyen, H. (2023). Credit risk and financial performance of commercial banks: Evidence from Vietnam. *arXiv*. <https://arxiv.org/abs/2304.08217>.
6. Kebewar, M. (2013). The effect of debt on corporate profitability: Evidence from French service sector. *arXiv*. <https://arxiv.org/abs/1301.0072>.
7. Ma, L., Ausloos, M., & Schinckus, C. (2019). Fundamental analysis in China: An empirical study of the relationship between financial ratios and stock prices. *arXiv*. <https://arxiv.org/abs/1910.06746>.
8. Holden, C. W., Jacobsen, S., & Subrahmanyam, A. (2012). Do liquidity measures measure liquidity? *Journal of Financial Economics*, 92(2), 153–181. <https://doi.org/10.1016/j.jfineco.2008.03.001>.
9. Brealey, R. A., Myers, S. C., & Allen, F. (2014). *Principles of corporate finance* (11th ed.). McGraw-Hill Education.
10. Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2016). *Corporate finance* (11th ed.). McGraw-Hill Education.

∴ Cite this article ∴

Chau, L. T. M. (2025). Applying Ratio and Comparative Methods to Evaluate the Financial Performance of Technology Enterprises in Vietnam. SK INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH HUB, 12(7), 11–20.
<https://doi.org/10.61165/sk.publisher.v12i7.2>