

Financial Performance of Bharti Airtel Limited: A Ratio-Based Analysis in the Context of India's Evolving Telecom Sector (2020–2024)

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Abstract

The Indian telecom sector has undergone rapid transformation driven by digitalization, competitive market dynamics, and the adoption of next-generation technologies such as 5G, IoT, and AI-enabled platforms. Bharti Airtel Limited (BAL), one of the sector's leading players, has sustained a strong market presence with a robust subscriber base, spectrum holdings, and consistent leadership in Average Revenue Per User (ARPU). This paper evaluates BAL's financial performance between 2020 and 2024 using ratio analysis across liquidity, solvency, profitability, and efficiency dimensions. Drawing upon secondary data from annual reports, TRAI, CRISIL, and related literature, the study highlights Airtel's resilience in maintaining solvency, improving operational efficiency, and achieving profitability despite sectoral disruptions, competitive pressures, and regulatory challenges. The findings reinforce the importance of ratio analysis as a strategic tool for investors, policymakers, and industry stakeholders in assessing financial health, benchmarking performance, and identifying opportunities for sustainable growth in India's fast-evolving telecom landscape.

Keywords: *Bharti Airtel, Telecom Sector, Financial Ratios*

1. Introduction

Due to shifting market trends and technical advancements, the Indian telecom industry is rapidly changing. It has transformed connection, promoting stronger social and economic bonds and making a substantial contribution to the development of the country. Known for its competition, India is currently the second-largest telecom market in the world, with a sizable and expanding subscriber base. Since digitalisation has permeated every aspect of daily life, it has made it possible for people to communicate easily and access services like healthcare, education, banking, and entertainment from anywhere. The sector has changed throughout time, moving from voice services to complex industrial applications, content, and commerce.

Smart cities, driverless cars, and intelligent manufacturing are all made possible by emerging 5G technology, which promises to increase efficiency, innovation, and the development of smart infrastructure, particularly when combined with AI, AR/VR, IoT, and smart platforms.

Telecom Regularity Authority of India (TRAI) reported that the number of users in India's telecom industry increased significantly at the end of the 2023–2024 fiscal year. In comparison to the previous year, the overall number of telecom subscribers increased by 26.94 million to 1,199.28 million. The majority of this rise was accounted for by wireless connections, which increased by 21.56 million to 1,165.49 million users. Additionally, wireline connections experienced a notable increase, expanding by 18.94% to reach 33.79 million customers. Of these, 2.88 million were in rural areas and 30.92 million were in urban areas. Also, the number of Internet users increased to 954.403 million, up more than 73 million from the year before (*Annual Report 2023-24, 2024*).

In order to create investment, portfolio, and wealth-creation opportunities in the telecom sector, investors must analyse the sector's performance. Investors might strive for a risk-return trade-off by assessing the financial performance of businesses in this sector that are listed on Indian stock exchanges.

Bharti Airtel Limited (BAL) has a healthy subscriber base and revenue market share with pan-India network. As of March 31, 2024, the firm had 35.2 crore wireless subscribers (about 33% of the market), according to the Telecom Regulatory Authority of India. For the quarter that ended in March 2024, revenue market share (including long-distance domestic and international travel) was a robust 39%. Additionally, BAL's market position is strengthened by its substantial spectrum holdings, which are dispersed across multiple bands. As of March 31, 2024, more than 90% of BAL's data

customers were 4G/5G users. Over the past two fiscal years, it has maintained the highest Average Revenue per User (ARPU). It is anticipated to keep getting better, driven by increased data usage and anticipated rate increases, which will help with cash flow generation in the medium run and be tracked (*Rating Rationale-BAL*, 2024).

This paper examines the financial metrics of BAL by evaluating profitability and viability on the basis of various financial ratios such as those measuring liquidity, solvency, profitability, and efficiency for the period 2020-2024.

Financial ratios serve as essential indicators for assessing the performance of firms, summarizing their financial status (Muresan & Wolitzer, 2004). Evaluating financial statements offers insights into the complex performance of a company, facilitates comparative analysis with peers, and aids in industry analysis to pinpoint opportunities for improvement and growth. A financial ratio evaluates one value against another or a group of values found in financial statements, allowing investors and other stakeholders to understand the financial performance of the companies (Chong et al., 2013). Ratios also monitor a company's financial trends over time, revealing whether firms are in a growth phase, their cash flow status, and their capacity to fulfill obligations. Furthermore, they highlight various aspects of a business's financial traits, expansion potential, and robustness, among other factors. This can help organizations recognize problematic areas and implement corrective actions.

Prior studies have consistently examined the relationship between financial ratios and the performance of telecom firms. Vesanto and Alhoniemi (2001) benchmarked 88 telecom firms globally, using self-organizing maps to cluster firms based on seven key ratios, offering early insights into multi-ratio performance patterns. Goto (2010) applied Data Envelopment Analysis (DEA) and Discriminant Analysis to U.S. and global telecom firms, benchmarking efficiency across companies and found wide variation in profitability and efficiency, highlighting DEA as a useful tool for financial performance evaluation. Pandey et al. (2013) examined the financial soundness of Indian telecom companies in the context of rapid sector growth since the 1990s. Using ratio analysis, the study assesses liquidity, profitability, viability, and sustainability to identify key financial attributes and their impact on company performance in this highly competitive market. Shukla & Roopa (2017) evaluated the financial performance of major Indian telecom companies (2009–2014) using profitability, liquidity, solvency, and efficiency ratios. Results show Airtel and Idea outperform Reliance Communications, BSNL, and Tata Communications

in data revenue growth and subscriber base. Costea (2018) used data-mining and classification techniques to evaluate financial performance of European telecom companies. It was shown that ratios on liquidity, leverage, and profitability effectively separate healthy and distressed firms.

Kathuria et al. (2019) assess India's telecom sector (2011–2018), noting rapid growth in subscriptions and data use but declining profitability after Reliance Jio's entry. Analysis of key financial metrics shows a revenue growth slowdown, calling for regulatory reforms and greater infrastructure investment. Mbona & Yusheng (2019) analyzed the financial performance of three China Telecommunication companies (2001–2017) using 18 ratios and apply principal component analysis to identify 12 key ratios that effectively represent performance. The study offers a simplified, unbiased approach for stakeholders to assess telecom companies with minimal information loss. Ozturk & Karabulut (2020) analyzed Turkish technology and telecom firms, linking financial ratios with stock returns through panel regression. It was demonstrated that profitability and leverage ratios significantly influence share price performance. Roy (2021) applied 2-factor ANOVA to analyze profitability, solvency, and turnover ratios of three Indian telecom companies (2010–2020). Results showed Airtel as the most profitable, BSNL with continuous losses, stronger long-term solvency for Airtel and BSNL than Idea, and higher turnover ratios for Idea. Bhatia (2022) examined the Indian telecom sector from a financialization perspective, using financial ratio trends and industry case studies. He concluded that regulatory pressures and capital-intensive competition have strained solvency and profitability indicators.

Ratnansinh et al. (2022) evaluated the financial performance of Indonesian telecom companies (2015–2019) using liquidity, solvency, activity, and profitability ratios. Hasbiah (2022) used multiple linear regression to assess the impact of liquidity, leverage, and activity on the profitability of Indonesian telecom firms. Zuliansyah (2023) documented the impact of COVID-19 on financial ratio dynamics, noting significant shifts in profitability and activity measures. AlAli et al. (2024) applied pooled OLS to show that core ratios such as EPS, liquidity, and debt to equity ratio significantly predict stock prices of mobile operators.

Overall, the literature confirms that financial ratios are not only vital for performance benchmarking but also hold explanatory and predictive power for stock valuation, financial stability, and sectoral resilience.

2. Methodology

To assess the financial performance, this study employs a set of ratios commonly used in corporate finance, grouped under liquidity, solvency,

efficiency, profitability, and market value. These ratios capture both operational efficiency and market valuation. A detailed description and objectives of financial ratios used are placed in Table 1.

Table 1. Description of Financial Ratios

S.No.	Financial Ratio Group	Financial Ratio	Formula Used	Objective
1.	Liquidity Ratios	Current Ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Assess a company's capability to fulfill its short-term responsibilities
		Quick Ratio (Acid Test Ratio)	$\frac{(\text{Current assets} - \text{Inventory} - \text{Prepaid Expenses})}{\text{Current liabilities}}$	
		Cash ratio	$\frac{\text{Total assets and cash equivalents}}{\text{Current liabilities}}$	
		Operating cash flow ratio	$\frac{\text{Cash generated by a company by its core operations}}{\text{Current liabilities}}$	
2.	Financial Leverage Ratios or Solvency Ratios	Debt ratio	$\frac{\text{Total Debts}}{\text{Total Assets}}$	Assess a company's ability to fulfill its long-term debt obligations.
		Debt to equity ratio	$\frac{\text{Debt Capital}}{\text{Equity Capital}}$	
		Interest coverage ratio	$\frac{(\text{Income Before Tax} + \text{Interest Expense})}{\text{Interest Expense}}$	
		Debt service coverage ratio	$\frac{\text{Net operating income}}{\text{Current debt}}$	
3.	Efficiency Ratios or Asset utilization ratio or activity ratios	Asset Turnover Ratio	$\frac{\text{Net sales}}{\text{Average total assets}}$	Measure the efficiency of management of both working capital and longer-term assets of a company.
		Inventory turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	
		Receivables turnover ratio	$\frac{\text{Net credit sales}}{\text{Average accounts receivable}}$	
		Days sales in inventory ratio	$\frac{\text{Average inventory} \times 365}{\text{Cost of goods sold}}$	
4.	Profitability Ratios	Gross profit margin	$\frac{\text{Net income}}{\text{Net sales}}$	Indicate a company's competitive position in the market but also reflects the quality of its management.
		Operating profit margin	$\frac{\text{Earning before interest and tax}}{\text{Net sales}}$	
		Return On Assets (ROA)	$\frac{\text{Net income}}{\text{Average total assets}}$	
		Return On Equity (ROE)	$\frac{\text{Net income}}{\text{Shareholder's equity}}$	
5.	Market Value Ratios	Book Value Per Share	$\frac{\text{Total stockholders' equity}}{\text{Number of shares outstanding}}$	Assess the valuation and market perception of a company.
		Dividend Yield Ratio	$\frac{\text{Total dividends paid in a year}}{\text{Current market price of the stock}}$	
		Earnings Per Share (EPS)	$\frac{\text{Net income attributable to common stock}}{\text{Average number of common shares}}$	
		Price/Earnings Ratio	$\frac{\text{Current market price of the stock}}{\text{Earnings per share}}$	

3. Data Analysis and Interpretation

Financial data for BAL was obtained from publicly available annual reports and financial statements on company's official website.

3.1 Liquidity Ratios

Table 2 summarizes the various liquidity ratios from 2020-2024.

Table 2. Liquidity Ratios

Ratio	2020	2021	2022	2023	2024
Current Ratio	0.44	0.53	0.51	0.56	0.57
Quick Ratio	0.44	0.53	0.51	0.56	0.57
Cash Ratio	0.0026	0.0086	0.0044	0.006	0.0088
Operating Cash Flow Ratio	0.63	0.66	0.5	0.63	0.74

Current Ratio	0.44	0.53	0.51	0.56	0.57
Quick Ratio	0.44	0.53	0.51	0.56	0.57
Cash Ratio	0.0026	0.0086	0.0044	0.006	0.0088
Operating Cash Flow Ratio	0.63	0.66	0.5	0.63	0.74

An examination of the liquidity ratios from 2020 to 2024 (Table 2) reveals notable trends in the company's short-term financial health. Both the current ratio and quick ratio remained identical across the period, ranging from 0.44 in 2020 to 0.57

in 2024. The consistently low values, well below the conventional benchmark of 1, indicate that current liabilities have persistently exceeded current assets. This not only underscores a weak liquidity position but also highlights the company's limited buffer to absorb short-term financial shocks. The gradual upward trajectory, however, reflects incremental improvements in working capital management.

The cash ratio, on the other hand, demonstrates extremely weak liquidity, fluctuating between 0.0026 and 0.0088 over the five years. Such low levels imply that the company is heavily reliant on receivables and other current assets rather than cash holdings to discharge its immediate obligations. While a marginal improvement is observed in 2024, the ratio remains critically below acceptable norms.

Interestingly, the operating cash flow ratio provides a relatively stronger perspective. Despite a decline in 2022 (0.50), it recovered steadily and reached 0.74 by 2024. This trend suggests that the firm's core operations are increasingly capable of generating sufficient cash to cover current liabilities, partially mitigating concerns raised by the static balance sheet ratios.

In summary, the liquidity analysis suggests a dual narrative. On one hand, the persistently low current, quick, and cash ratios point towards structural liquidity vulnerabilities. On the other, the strengthening operating cash flow ratio signals resilience in cash generation from operations, which may reduce immediate default risk. The findings imply that while the company's static liquidity position remains fragile, dynamic cash flow-based measures present a relatively optimistic outlook, emphasizing the importance of effective cash flow management in sustaining financial stability.

3.2 Solvency/Financial Leverage Ratios

Table 3 shows the various Solvency/Financial Leverage Ratios from 2020-2024.

Table 3. Solvency / Financial Leverage Ratios

Ratio	2020	2021	2022	2023	2024
Debt Ratio	0.64	0.62	0.57	0.49	0.43
Debt to Equity Ratio	1.77	1.64	1.31	0.95	0.76
Interest Coverage Ratio	0.65	0.74	0.84	1	1.08
Debt Service Coverage Ratio (DSCR)	1.44	1.56	1.39	1.66	1.92

An analysis of solvency and leverage indicators from 2020 to 2024 (Table 3) highlights a consistent strengthening of the company's long-term financial stability. The debt ratio declined steadily from 0.64 in 2020 to 0.43 in 2024, indicating a reduced dependence on external borrowings and a stronger asset-financing structure. This downward trend

reflects a deliberate deleveraging strategy, enhancing the company's ability to withstand financial risks.

A similar pattern is evident in the debt-to-equity ratio, which decreased sharply from 1.77 in 2020 to 0.76 in 2024. This transition suggests a significant reduction in financial leverage, as equity now plays a greater role in financing compared to debt. The movement toward a more balanced capital structure not only reduces default risk but also enhances investor confidence.

The interest coverage ratio shows a gradual improvement, rising from 0.65 in 2020 to 1.08 in 2024. Although this trend signals better earnings capacity to meet interest obligations, the values remain modest and only marginally above the critical threshold of 1 in the most recent year. This implies that while interest servicing capacity has improved, profitability levels may still be insufficient to provide a strong cushion against interest burden.

The debt service coverage ratio (DSCR) provides a comparatively stronger outlook. Despite a dip in 2022 (1.39), the DSCR improved to 1.92 in 2024, well above the safe benchmark of 1.5. This suggests that operating cash flows are increasingly sufficient to cover both interest and principal repayment commitments, enhancing the company's overall debt sustainability.

In conclusion, the solvency and leverage indicators reveal a notable strengthening of the company's financial health over the period. The steady decline in debt dependence and improvement in DSCR point towards a more resilient capital structure and enhanced repayment capacity. However, the relatively modest interest coverage ratio signals that further improvement in profitability remains essential to consolidate these gains.

3.3 Efficiency / Activity Ratios

Efficiency / Activity Ratios from 2020-2024 are depicted in Table 4.

The efficiency ratios from 2020 to 2024 (Table 4) present a nuanced picture of how effectively the company is utilizing its resources to generate revenue.

Table 4. Efficiency / Activity Ratios

Ratio	2020	2021	2022	2023	2024
Asset Turnover Ratio	0.22	0.22	0.25	0.25	0.26
Inventory Turnover Ratio	77276	60210.8	71656.3	69538.8	94692

Receivables Turnover Ratio	35.96	28.91	27.82	27.91	32.34
Days Sales in Inventory	0.0047	0.006	0.0051	0.0052	0.0039

The asset turnover ratio shows a gradual but steady increase from 0.22 in 2020 to 0.26 in 2024. While the improvement is modest, it indicates incremental gains in the company's ability to convert assets into revenue. Nevertheless, the overall level remains low, suggesting underutilization of assets compared to sector benchmarks, which may point to either a capital-intensive business model or inefficiencies in resource deployment.

The inventory turnover ratio is exceptionally high, ranging from 60,210 in 2021 to 94,692 in 2024. Such values imply that inventory is turned over almost instantaneously, which is characteristic of companies in service or telecom industries where physical inventory is negligible. The high turnover reflects the company's ability to operate with minimal stock levels, thereby reducing holding costs and enhancing liquidity efficiency.

The receivables turnover ratio declined from 35.96 in 2020 to a low of 27.82 in 2022, before recovering to 32.34 in 2024. This indicates some volatility in the company's ability to collect receivables, with the temporary slowdown in collections during 2021–2022 potentially linked to market conditions or customer credit extensions. The subsequent recovery suggests improved credit control measures and stronger receivable management practices.

The days sales in inventory (DSI) remains close to zero across the entire period, fluctuating between 0.0039 and 0.006 days. Such negligible values reaffirm that the company holds almost no physical inventory, which is consistent with the industry's operational structure.

Overall, the efficiency analysis highlights two central findings. First, asset utilization is improving but remains relatively weak, underscoring the need for more effective deployment of resources. Second, inventory-related measures confirm the firm's asset-light operational model, while receivable management shows recovery after a mid-period slowdown. Collectively, these trends suggest operational efficiency is improving gradually, with scope for further enhancement in asset productivity.

3.4 Profitability Ratios

Table 5. shows the various Profitability Ratios from 2020-2024.

Table 5. Profitability Ratios

Ratio	2020	2021	2022	2023	2024
Gross Profit Margin	0.56	0.6	0.594	0.6176	0.639
Operating Profit Margin	0.157	0.164	0.169	0.173	0.176
Return on Assets (ROA)	-0.0134	-0.0056	0.0127	0.0094	0.0189
Return on Equity (ROE)	-0.0501	-0.0221	0.0459	0.0269	0.048

The profitability ratios from 2020 to 2024 (Table 5) reveal a steady strengthening of the company's financial performance, marked by margin expansion and improved returns.

The gross profit margin increased from 0.56 in 2020 to 0.639 in 2024, reflecting consistent enhancement in cost efficiency and pricing power. This upward trajectory suggests that the company has effectively managed its direct costs, enabling it to retain a higher proportion of revenue as gross profit.

The operating profit margin also improved from 0.157 in 2020 to 0.176 in 2024. Although the increase is gradual, it signals stable control over operating expenses and the ability to translate revenue growth into operating profitability. The convergence of gross and operating margin trends indicates overall efficiency across both production and operational levels.

The return on assets (ROA) shows a significant turnaround during the period. It was negative in 2020 (-0.0134) and 2021 (-0.0056), reflecting losses and weak utilization of assets. However, ROA turned positive in 2022 (0.0127) and improved to 0.0189 by 2024, highlighting better profitability from asset deployment and signaling recovery from earlier financial stress.

A similar trajectory is evident in the return on equity (ROE). Negative values in 2020 (-0.0501) and 2021 (-0.0221) point towards shareholder value erosion during those years. However, the ratio rebounded strongly to 0.0459 in 2022 and further improved to 0.048 in 2024. This indicates enhanced earnings capacity attributable to shareholders, reinforcing investor confidence and reflecting improved financial sustainability.

In summary, the profitability indicators suggest a clear turnaround story. The firm has moved from losses in the early part of the study period to consistent margin expansion and positive returns in later years. Rising gross and operating margins demonstrate effective cost and operational control, while the recovery in ROA and ROE underscores improved asset efficiency and shareholder value creation. These trends collectively indicate that the company is on a sustainable path of profitability growth.

3.5 Market Value Ratios

Table 6 shows the various Market Value Ratios from 2020-2024.

The market value ratios for the period 2020–2024 (Table 6) capture how the company’s performance and investor perceptions evolved over time.

Table 6. Market Value Ratios

Ratio	2020	2021	2022	2023	2024
Book Value Per Share	115.75	124.5	134.14	169.31	201.55
Dividend Yield (%)	0	0	0	0.0929	0.226
Earnings Per Share (EPS) (Rs.)	-5.8	-2.76	-6.53	4.56	9.67
Price/Earnings (P/E) Ratio	-86.2	-188.66	-296.49	424.58	114.52

The book value per share shows a consistent upward trajectory from ₹115.75 in 2020 to ₹201.55 in 2024. This steady rise reflects the accumulation of retained earnings and strengthening of the company’s net worth base, thereby enhancing intrinsic shareholder value.

The dividend yield remained at zero between 2020 and 2022, suggesting either negative profitability or management’s decision to retain earnings for reinvestment. A shift occurred in 2023 with a modest yield of 0.0929%, which further improved to 0.226% in 2024. This marks a transition towards rewarding shareholders and signals financial recovery and confidence in cash flow stability.

The earnings per share (EPS) illustrates the company’s turnaround story vividly. EPS was negative in 2020 (–₹5.8), 2021 (–₹2.76), and 2022 (–₹6.53), underscoring persistent losses and weak operational outcomes during those years. However, EPS turned positive in 2023 (₹4.56) and almost doubled in 2024 (₹9.67). This sharp improvement highlights recovery in profitability and the capacity to generate shareholder earnings.

The price-to-earnings (P/E) ratio presents a more volatile picture. Negative values during 2020–2022 (–86.2 to –296.49) mirror the company’s loss-making performance, rendering valuation multiples less meaningful. In 2023, the P/E surged to 424.58 as earnings turned positive but remained relatively low, suggesting that the market price still significantly outpaced earnings. By 2024, the ratio normalized to 114.52, which, though still high, indicates investor optimism about sustained earnings growth and future profitability.

Overall, the market value indicators point toward a phase of transition. While early years were marked by shareholder value erosion and negative earnings, the later years reflect recovery with rising book value, resumption of dividends, and strong earnings growth. The high P/E ratio in 2023–2024 demonstrates investor confidence in the firm’s long-term prospects, though it also suggests elevated

market expectations that may require continued earnings momentum to sustain.

4. Conclusion

The financial ratio analysis of the company from 2020 to 2024 reveals a trajectory of recovery and consolidation. In the early part of the study period, the firm faced liquidity constraints, high leverage, and negative profitability, all of which weakened shareholder value. However, subsequent years witnessed gradual but consistent improvements across most financial dimensions. Liquidity ratios, while still below optimal benchmarks, improved alongside stronger operating cash flows. Solvency indicators highlighted a successful deleveraging strategy, reducing financial risk and enhancing long-term sustainability. Efficiency ratios reflected the firm’s asset-light operational structure and improving receivable management, while profitability margins and returns showed a decisive turnaround from losses to positive and growing earnings. Market-based indicators further confirmed this recovery, with rising book value, resumption of dividends, and improved EPS signaling renewed investor confidence.

Overall, the findings suggest that the company has successfully navigated a challenging phase to establish a more resilient financial position. Nevertheless, sustaining this performance will require continued attention to liquidity management, further enhancement of asset utilization, and maintaining profitability momentum. For stakeholders, the results point toward a cautiously optimistic outlook, where strategic discipline and operational efficiency remain critical to sustaining growth in an increasingly competitive environment.

To strengthen its financial position further, the company should focus on improving liquidity through tighter working capital management and more effective credit control. Enhancing asset utilization by channeling resources into high-revenue areas would help improve efficiency, while sustaining profitability will require continued cost optimization and innovation in service offerings. Maintaining an optimal capital structure, while leveraging the benefits of recent deleveraging, will be critical for balanced growth. At the same time, stable dividend policies and transparent communication of long-term strategies can reinforce investor confidence. Finally, aligning financial strategies with ongoing telecom sector reforms and government initiatives, such as the Digital India program and 5G rollout, will ensure sustained competitiveness and resilience.

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