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Performance Benchmarking Of Tata Power And Adani Power Using Financial Ratios

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Abstract

This study aims to benchmark the financial performance of two major players in the Indian power sector Tata Power Limited and Adani Power Limited using key financial analysis over a year. The power sector in India plays a vital role in economic development and understanding the financial health of its leading companies is essential for investors, stakeholders and policymakers. The research employs a comparative analytical methodology focusing on various financial parameters. Analysis is used to examine the growth patterns and performance consistency of both companies.The findings reveal significant differences in financial strategies and risk management approaches adopted by Tata Power and Adani Power. While one company demonstrates stability and consistent returns, the other reflects aggressive expansion backed by higher leverage. This benchmarking offers a clear picture of each company's financial strengths and vulnerabilities, thus helping in informed decision-making for stakeholders.The study concludes with key insights and suggestions to enhance financial performance and maintain sustainable growth in a competitive and evolving energy market.

Keywords: Tata Power, Adani Power, Financial Performance, Ratio Analysis, Trend Analysis

1. Introduction

In the absence of the power sector, the infrastructure of any nation would be lacking, since the power sector is crucial to the growth and development of any economy. The state-owned monopolies that existed in India's electrical business have been replaced by a market that is more liberalized and competitive. This industry has seen significant transformations over the course of the last several decades. The functioning of power companies is a national concern since this industry directly impacts the day-to-day lives of millions of people in addition to providing fuel for the operations of industrial and commercial institutions.

It is noteworthy that Tata power and Adani Power are the two most prominent electrical businesses in India. The wide and diverse business model that Tata Power employs includes all aspects of the electricity industry including production, transmission and distribution. Among India's oldest and largest integrated power enterprises, this firm is a member of the Tata Group and ranks among the leaders in the industry. In spite of this, Adani Power which is a branch of the Adani Group, has seen rapid expansion since its inception. It has emerged as a significant figure in the power generation business, especially in connection to thermal and renewable energy sources [3, 4]. It is possible that by studying the financial performance of these companies, we will get a great deal of knowledge on the operational efficiency, profitability and overall financial health of these companies. This kind of analysis not only provides assistance to investors and other stakeholders, but it also sheds light on the inner workings of the power business. When doing an analysis of a company's health, the ratios that measure profitability, liquidity and solvency are among the most essential financial performance indicators.
A second illustration of the relevance of the research is provided by the regulatory and competitive environment in which these firms operate. Both Tata Power and Adani Power are making significant investments in environmentally friendly technologies, which is a reflection of the rising significance of renewable and sustainable energy sources.

The purpose of this research is to provide a comprehensive analysis of two well-known power companies by contrasting their respective financial information. Both Tata Power and Adani Power delivered their best performance. It is anticipated that the findings of this research will contribute to the ongoing discussion over the long-term financial sustainability of the electricity industry and will provide stakeholders with assistance in making informed choices. Any nation's infrastructure is not complete without electricity, which is a highly crucial component. Currently, economic activity is not restricted to the hours of daylight. Countries make efforts to guarantee that everyone has access to electricity that is both inexpensive and uninterrupted. In terms of both use and production of electricity, India is the third-largest country in the world. On the other hand, the consumption on a per capita basis is less than a third of the average for the whole world. As a result, power businesses such as Adani Power and Tata Power have a significant chance to capitalize on. The demand for electricity in India is anticipated to increase by a factor of three by the year 2040, according to experts.

2. Overview of Company

Adani Power Overview:

The thermal power facilities that Adani Power runs are located in the states of Gujarat, Maharashtra, Karnataka, Rajasthan, and Chhattisgarh. Adani Power is the largest thermal power company in India. In addition to that, it operates a solar power facility in Gujarat that is 40 megawatts in capacity. In 2010, Adani Power was the first company to officially launch a coal-based supercritical thermal power plant in Mundra. This was done in accordance with the Clean Development Mechanism of the Kyoto Treaty framework.The company contributes significantly to India's coal and lignite-based power production industry.The company's active projects now cover the states of Jharkhand, Madhya Pradesh, Gujarat,

Rajasthan, and Karnataka. The strategic presence of the firm, long-term power purchase agreements, and experience in ultra-supercritical technologies all contribute to the company's dominant position in India's energy landscape.

Overview of Tata Power Tata:

Power is India's most integrated power provider, and it operates throughout the whole spectrum of energy sources from conventional to renewable. With a long and illustrious history that dates back to 1915, when it was the first hydroelectric power plant in India, Originally operating under the name Tata Electric, the firm has now expanded to become the owner of a strong 13,515 MW generating capacity, with a significant 34 percent of that capacity coming from sustainable energy sources. Tata Power is a leading private participant in a variety of energy sectors, including solar roofs and value-added services. In addition, the company has a vast transmission and distribution network that spans 3,532 kilometres and more than 400,000 circuit kilometres over the whole of India. Its leadership in the energy industry is shown by its extensive experience, broad reach, and diverse energy footprint, all of which provide it with a nationwide presence.

Table 1: Show the Company Overview [6, 7]

Particulars	Tata Power Limited	Adani Power Limited
Headquarters	Mumbai, Maharashtra	Ahmedabad, Gujarat
Parent Group	Tata Group	Adani Group
Type of Company	Public – Diversified Power Utility	Public – Thermal Power Generation
Core Business Areas	Generation (Thermal, Hydro, Solar, Wind), Transmission, Distribution, EV Charging, Rooftop Solar, Smart Energy Solutions	Generation (Thermal), Transmission, Power Trading
Installed Capacity (2023)	~14.3 GW (including renewables)	~13.6 GW (primarily thermal)
Renewable Energy Focus	Strong focus – expanding rapidly in solar & wind	Limited focus – handled by Adani Green Energy Ltd.
Major Plants / Projects	Trombay (Thermal), Mundra (Ultra Mega), Maithon, Delhi Distribution, EV Infra	Mundra UMPP (Gujarat), Tiroda (Maharashtra), Kawai (Rajasthan), Udupi (Karnataka)
Listed On	NSE & BSE	NSE & BSE

Market Capitalization (2023)	Approx ₹85,000 crore	Approx ₹1,00,000 crore
Key Strength	Diversification, Sustainability, Brand Trust	Scale, Cost Efficiency, Aggressive Expansion
Vision	Lead the transition to sustainable power	Be the largest and most efficient power producer
Recent Initiatives	EV Charging Infra, Solar Rooftops, Battery Storage	Coal Imports Optimization, Expanding Thermal Plants

2.1 Literature Review

The Indian power sector has garnered increasing scholarly attention in recent years, especially regarding its financial performance, corporate governance, and strategic responses to renewable energy integration.

Chattopadhyay (2020), empirically analyzed corporate governance and its influence on shareholder value within India's power sector. Though methodologically rigorous, the study was limited to a small set of firms, which reduces its generalizability.

Ghosh (2020),examined the strategic implications of renewable energy integration through sectoral analysis and select case studies, but the findings remain narrowly focused on renewable energy firms and may not translate across the broader power industry.

Gupta and Agarwal (2018), assessed debt management strategies using financial ratios, offering insight into leverage practices but without sector-specific granularity.

Kumar and Bhagat (2015), explored the liquidity and performance metrics of Indian power firms, yet their data is outdated and may not reflect current trends shaped by policy reforms and market dynamics.

Kumar and Gupta (2020), studied the financial impact of power sector reforms using quantitative analysis; however, isolating reform effects from broader market factors posed a limitation.

MoneyControl (2024) provide secondary financial data for companies like **Tata Power** and **Adani Power**, enabling firm-level performance assessments. Nonetheless, this data is static and descriptive, lacking predictive or causal insight.

Patel and Desai (2021) focused specifically on operational efficiency and profitability within the power sector, employing ratio analysis techniques but limiting scope to operational metrics without a holistic financial performance view.

Johnson and Scholes (2017) and Porter (2018), were instrumental in offering conceptual models for corporate analysis and industry competition. However, these frameworks are theoretical and not tailored to the Indian power sector's dynamic regulatory and market environment.

Rathore and Mathur (2017), contributed to the understanding of renewable energy challenges through policy analysis, though their work lacks empirical data, calling for future studies to test their frameworks in real-world settings.

Sharma and Singh (2019), addressed the solvency and financial stability of Indian power firms using trend analysis, revealing critical insights but ignoring other dimensions like profitability or capital structure.

Sharma (2019), made a comparative assessment between public and private firms based on a few financial ratios, but the narrow parameter scope limits a broader interpretation.Several studies offered comparative or firm-specific insights, though not all focused on the power sector.

Baveja (2021), conducted a comparative financial analysis in the FMCG sector, while Sinha and co-authors (2018) examined Tata Steel and Jindal Steel, both outside the power domain. However, they provide useful methodological templates for cross-sector financial analysis.

Rai and co-authors (2019) conducted a comparative study on financial performance across generation companies, highlighting sector trends though limited by short timeframes.

Dalavaniya and Pravinbhai (2022), used empirical methods to analyze selected power firms, yet the study's selectivity restricts generalization across the sector.

Rajamani et al. (2022) performed a fundamental analysis of Tata Power, yielding valuable firm-specific insights, but offering limited utility for sector-wide conclusions.

Lakshmi and colleagues (2021) performed a financial assessment of Reliance Industries, a diversified conglomerate whose power segment forms only a part of its portfolio.

A. **W. (2022)** examined the pre- and post-demerger financial performance of Adani Enterprises using event study analysis, providing a unique lens into how corporate restructuring influences shareholder value. However, the company-specific focus curtails broader sectoral inference.

3. Research Motivation

In today's dynamic and competitive economic environment, analyzing the financial health of companies is crucial for investors, stakeholders, and policymakers. The Indian power sector, being the backbone of industrial and economic development, is currently undergoing a significant transformation shifting from traditional thermal power to cleaner and more sustainable energy solutions.Tata Power and Adani Power are two of the most prominent players in this sector, yet they follow different business models, investment strategies, and financial structures. While Tata Power is increasingly investing in renewable energy and long-term sustainability, Adani Power is known for its aggressive growth in thermal power and large-scale infrastructure.As a commerce/management student (or finance enthusiast), the researcher is driven by a curiosity to explore how financial data can be used to compare companies in the same industry, assess risk, and derive meaningful insights for future business decisions.Moreover, with increasing awareness of sustainable energy and ESG (Environmental, Social, Governance) factors, it becomes important to assess whether financial performance is aligned with long-term sustainability goals.Thus, this study aims to bridge the gap between theoretical financial analysis and its practical application in real-world corporate benchmarking.

4. Research Objective

To evaluate the financial performance of Tata Power and Adani Power Limited

5. Hypothesis

Null Hypothesis (H_0):

There is no significant difference in the financial performance of Tata Power and Adani Power Limited

Alternative Hypothesis (H_1):

There is a significant difference in the financial performance of Tata Power and Adani Power Limited

6. Data Interpretation

A comprehensive analysis of financial ratios from annual reports up to March 2024 compared Tata Power and Adani Power Limited, revealing consistent trends and variations in their financial health and strategic direction [1-5].For this purpose, we collected detailed financial ratio data of both Tata Power and Adani Power for each financial year. These ratios were extracted from publicly available annual reports, stock exchange filings, and reliable financial databases such as Moneycontrol and Screener.in. The selected ratios cover various dimensions of performance including profitability, liquidity, solvency, and operational efficiency, giving a well-rounded view of each company's financial standing.

On analysing the 2024 data:

- Tata Power showed stronger performance in renewables, profitability margins, and debt management, reflecting its shift towards sustainable energy and improved operational efficiency.
- Adani Power, although high in revenue generation, continued to operate with a higher debt-equity ratio, reflecting its aggressive capital structure and expansion in thermal projects.

The data interpretation supports the view that both companies follow different financial strategies and have varied outcomes in terms of stability, profitability, and long-term sustainability, especially visible in the latest fiscal year's performance.

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
Adani Power	21.7824	38.81458	21
Tata Power	18.5952	33.01929	21

The descriptive statistics provide an initial comparison of the financial performance of Adani Power and Tata Power based on the selected data set comprising 21 observations for each company. The mean value for Adani Power is 21.78, which is slightly higher than Tata Power's mean of 18.59. This suggests that, on average, Adani Power has demonstrated better financial performance compared to Tata Power over the study period. However, this higher performance comes with greater variability, as indicated by Adani Power's standard deviation of 38.81 which is significantly higher than Tata Power's standard deviation of 33.02. A higher standard deviation implies that Adani Power's performance has been more volatile and less consistent, possibly due to its aggressive growth strategies, changing debt levels, or operational fluctuations. In contrast, Tata Power, although slightly behind in average performance, shows more financial stability and consistency over time. This comparison highlights that while Adani Power may offer higher returns in certain periods, Tata Power presents a more predictable and steady financial profile, which could be more attractive to conservative investors or stakeholders prioritizing long-term stability.

Table 2: Correlations

		Adani Power	Tata Power
Pearson Correlation	Adani Power	1.000	.958
	Tata Power	.958	1.000
Sig. (1-tailed)	Adani Power	.	.000
	Tata Power	.000	.
N	Adani Power	21	21
	Tata Power	21	21

The Pearson Correlation Coefficient is shown in Table 2, which compares the findings of Adani Power and Tata Power about their respective financial performance over a period of 21 observations. The score of 0.958 for the correlation coefficient suggests that there is an extremely robust positive linear link between the two businesses. In light of this, it may be deduced that the performance of Tata Power tends to improve in tandem with the improvement of Adani Power's financial performance, and vice versa. The significance value, often known as the p-value, is 0.000, which ranks significantly lower than the conventional threshold of 0.05. It is clear from this that the association is not the result of random chance but rather a statistically significant correlation. The performance patterns of both companies move in the same direction with a high degree of resemblance. This could be owing to the fact that they operate in the same sector and are exposed to similar market and economic conditions. To put it another way, the performance trends of both companies look quite similar. A degree of interconnection in their financial outcomes is highlighted by this strong positive correlation, which may be influenced by factors that are applicable across the entire industry such as the demand for energy, changes in regulatory policies, or the price of coal.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.958[a]	.917	.913	11.44013

a. Predictors: (Constant), Tata Power

The linear regression analysis reveals a strong positive correlation between Tata Power's financial performance and Adani Power's performance. The R value of 0.958 indicates a strong positive correlation, with 91.7% of Adani Power's variation explained by Tata Power's performance. The Adjusted R Square value of 0.913 supports the model's reliability. The Standard Error of the Estimate (11.44) indicates better prediction accuracy.

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27644.775	1	27644.775	211.228	.000[b]
	Residual	2486.656	19	130.877		
	Total	30131.431	20			

a. Dependent Variable: Adani Power

b. Predictors: (Constant), Tata Power

Table 4 displays the results of the ANOVA (Analysis of Variance) test conducted as part of the regression analysis with Adani Power’s financial performance as the dependent variable and Tata Power’s performance as the predictor (independent variable). The table shows that the F-statistic is 211.228, which is quite high, and more importantly, the Significance value (Sig.) is 0.000. This p-value is well below the standard threshold of 0.05, indicating that the regression model is statistically significant. In simpler terms, there is strong evidence that the variation in Adani Power’s financial performance is

significantly influenced by the variation in Tata Power's performance. Based on this result, we reject the null hypothesis, which stated that there is no significant difference between the financial performances of Tata Power and Adani Power. Instead, we accept the alternative hypothesis (H_1), which states that there is a significant difference in the financial performance of Tata Power and Adani Power Limited. This significance implies that the relationship observed between the two companies is not due to chance, and their financial outcomes are meaningfully different potentially due to variations in strategy, capital structure, investment focus, or market operations.

7. Conclusion

In present study was undertaken to evaluate, compare, and analyse the financial performance of two of India's leading power sector companies over a selected period using key financial ratios and statistical tools.Based on the analysis of profitability, liquidity, solvency, efficiency, and cash flow ratios FY 2024, the study concludes that both companies follow distinct financial strategies and exhibit different financial characteristics. Adani Power shows higher average performance in several profitability indicators such as Net Profit Margin and Return on Net Worth, reflecting aggressive growth and large-scale thermal project investments. However, it also displays higher volatility, as seen in its standard deviation values, which indicates less consistency in financial outcomes.On the other hand, Tata Power, while having a slightly lower average in some ratios, demonstrates greater financial stability and consistency, especially in areas like liquidity and capital structure. Its focus on renewable energy, EV infrastructure, and long-term sustainability reflects a balanced approach between profitability and risk management.The statistical tests, including correlation and regression analysis, further support the conclusion that there is a significant relationship and difference between the financial performances of Tata Power and Adani Power. The ANOVA results validated the alternative hypothesis, confirming that the financial performance variation between the two companies is statistically significant.Adani Power may appeal to high-risk, high-return investors, while Tata Power offers a more stable and sustainable investment profile. The study highlights the importance of not only focusing on profitability but also assessing consistency, risk, and strategic direction while benchmarking financial performance in the power sector.

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