

# Financial Health of Power Distribution Companies in India:A Comparative Analysis

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## Abstract

The financial health of power distribution companies (DISCOMs) in India remains a critical concern due to persistent losses, operational inefficiencies, and structural challenges. This paper evaluates the financial performance of DISCOMs using key indicators such as profitability, liquidity, solvency, and operational efficiency. A comparative analysis between public and private DISCOMs is conducted to identify variations in performance. The study concludes that while private DISCOMs show relatively better financial discipline, public DISCOMs continue to struggle due to socio-economic obligations and policy constraints. The power distribution sector plays a vital role in the economic and infrastructural development of India. Financial sustainability of power distribution companies (DISCOMs) is essential for maintaining reliable electricity supply and supporting national development. This study examines the financial sustainability and corporate performance of public and private power distribution companies in India. Using financial ratio analysis and comparative evaluation, the study assesses profitability, liquidity, solvency, and operational efficiency indicators of selected companies. Secondary data has been collected from annual reports, government publications, and industry reports. The findings reveal that private distribution companies tend to demonstrate higher operational efficiency and better financial performance due to improved management practices and technology adoption, while public sector DISCOMs face structural challenges such as high Aggregate Technical and Commercial (AT&C) losses, subsidy burdens, and delayed tariff revisions. However, recent reforms and government initiatives have significantly improved the financial position of many DISCOMs. The study highlights the importance of policy reforms, improved governance, and technological innovation to ensure long-term financial sustainability in India's power distribution sector.

**Keywords:** Financial Health, Power distribution companies (DISCOMs), Financial performance, Comparative Analysis, Power sector reforms, India.

## 1. Introduction

The power sector plays a vital role in India's economic development, with the distribution segment acting as the final link between electricity generation and consumers. However, the financial viability of the sector depends largely on the performance of DISCOMs. Despite reforms such as UDAY and other restructuring schemes, DISCOMs continue to face financial distress. Accumulated losses have crossed ₹7 lakh crore, highlighting the severity of the issue. Electricity is one of the most critical components of economic development. The power sector in India consists of three major segments:

generation, transmission, and distribution. Among these, the distribution segment is considered the most financially vulnerable due to operational inefficiencies, high losses, and regulatory challenges. Distribution companies (DISCOMs) are responsible for delivering electricity from transmission networks to end consumers and maintaining the distribution infrastructure. India operates one of the largest electricity distribution networks in the world, but the sector has historically struggled with financial instability. Structural issues such as power theft, delayed tariff revisions, cross-subsidies, and high transmission and distribution losses have weakened the financial health of many public distribution companies.

Despite these challenges, recent reforms have improved the sector's performance. For example, Aggregate Technical and Commercial (AT&C) losses have reduced significantly over the last decade, falling from around 22.6% in 2013-14 to about 15% in 2024-25. Furthermore, the sector has recently recorded a financial turnaround. Power distribution companies collectively reported a consolidated profit of approximately ₹2,701 crore in FY2024-25 after many years of sustained losses. This improvement has been driven by reforms such as the **Ujwal DISCOM Assurance Yojana (UDAY)** and the **Revamped Distribution Sector Scheme (RDSS)**, which focus on debt restructuring, efficiency improvement, and digital monitoring. However, differences remain between public and private power distribution companies in terms of financial sustainability and corporate performance. Private companies often demonstrate higher operational efficiency, whereas public sector utilities continue to face structural challenges. Therefore, a comparative analysis of the financial sustainability and corporate performance of these companies is essential.

## 2. Literature Review

Several studies have examined the financial performance and sustainability of power distribution companies in India. Biswas (2025) analysed the impact of the UDAY scheme on power distribution companies and found that debt restructuring helped reduce interest burdens and improve cash flow stability. Research on DISCOM efficiency has also highlighted the importance of regulatory reforms and operational efficiency. Studies using advanced efficiency models such as stochastic frontier analysis have shown that financial reforms and improved governance significantly enhance the performance of electricity distribution utilities. Singh, Kaur, and Vashishtha (2023) analysed the impact of reforms on DISCOMs in Haryana. The study found that government initiatives and improved governance practices helped enhance billing efficiency and reduce transmission losses. Das and Srikanth (2020) examined the financial distress faced by electricity distribution companies in India. The study found that high power procurement costs and technical losses are major contributors to financial instability. Other research has emphasized that operational inefficiencies and structural issues continue to affect the financial sustainability of many DISCOMs. Patel and Gajjar (2025) conducted a comparative study between public and private power sector companies. The study found that private companies generally perform better in terms of efficiency, profitability, and cost management. High subsidies, delayed payments, and the gap between the average cost of supply and revenue realization remain key challenges. Yadav (2022) conducted a comprehensive study on the financial performance of the Indian power sector, focusing on cost structures, tariff policies, and operational efficiency. The study revealed that increasing operational costs, especially fuel and maintenance expenses, have significantly impacted profitability. Recent industry reports suggest that improvements in billing efficiency and collection efficiency have significantly strengthened the financial position of distribution companies. In addition, the reduction in AT&C losses has contributed to better financial outcomes in recent years. These studies highlight that while reforms have improved financial performance, structural issues still need to be addressed to ensure long-term sustainability.

**3. Objectives of the Study:** The main objectives of this study are:

1. To analyse the financial health of power distribution companies in India
2. To compare public and private DISCOMs

## 4. Research Methodology

**Research Design:** The study adopts a **comparative and analytical research design**.

**Data Sources:** The research is based on **secondary data** collected from:

Annual reports of power distribution companies, Government reports and policy documents, Ministry of Power publications, Academic journals and industry reports

**Study period:** The data are collected for five years (2020-2021 to 2024-2025).

**Sample Selection:** The study considers selected public and private distribution companies in India.

➤ **Public Sector Companies: Maharashtra State Electricity Distribution Company Limited (MSEDCL)**

It is the largest electricity distribution public company in India. It supplies electricity to more than **2.7 crore consumers**. Its detailed annual reports and financial data available. It represents **large public sector DISCOM with financial challenges and reforms**. It is useful in our **research** for analysing **financial sustainability, losses, and government support**.

➤ **Private Sector Companies: Tata Power Distribution Ltd.**

It is one of the most successful **private electricity distribution companies in India**. It is known for **technology adoption and smart grid systems**. Its AT&C losses reduced drastically after privatization. It represents **efficient private sector distribution model**.

**Analytical Tools:** The following financial tools are used for analysis:

Ratio analysis (profitability, liquidity, solvency, efficiency ratios)

## 5. Data Analysis and Interpretation:

### 1) Profitability Ratios

These ratios measure the company's ability to **generate profit from its operations and resources**.

#### a) Return on capital employed

$ROCE = EBIT / \text{Capital employed}$

Company /Year	MSEDCL	Tata Power Distribution ltd.
2021	0.04	8
2022	0.09	9
2023	-1.33	12
2024	2.73	11
2025	8.95	11

(Source: Researcher calculation)

Return on Capital Employed (ROCE) reflects how efficiently a company utilizes its capital to generate operating profits. In the case of MSEDCL, the ROCE values indicate a weak and fluctuating performance over the years. The ratio remains extremely low in 2021 (0.04) and 2022 (0.09), suggesting inefficient use of capital. A negative ROCE in 2023 (-1.33) highlights operational losses and serious financial inefficiencies. However, a noticeable improvement is observed in 2024 (2.73) and 2025 (8.95), indicating a recovery in operational performance and better utilization of capital resources in recent years.

On the other hand, Tata Power Distribution Ltd. demonstrates consistently strong and stable ROCE throughout the period, ranging from 8 to 12. This indicates efficient capital utilization and steady profitability. Compared to MSEDCL, Tata Power shows superior performance with minimal fluctuations, reflecting better management efficiency and operational control. Overall, the comparison reveals that the private sector company outperforms the public sector company in terms of capital efficiency, although MSEDCL shows signs of improvement in the later years.

### b) Return on Equity (ROE)

ROE = Net profit / Shareholders' equity

Company /Year	MSEDCL	Tata Power Distribution ltd
2021	-0.01	5
2022	0	8
2023	-25.77	13
2024	-28.55	12
2025	6.51	12

(Source: Researcher calculation)

Return on Equity (ROE) measures the profitability of a company from the shareholders' perspective, indicating how effectively equity funds are utilized to generate net profit. In the case of MSEDCL, the ROE shows highly unstable and poor performance over the years. It is slightly negative in 2021 (-0.01) and remains at zero in 2022, reflecting negligible returns to shareholders. A sharp decline is observed in 2023 (-25.77) and 2024 (-28.55), indicating heavy losses and erosion of shareholders' value. However, in 2025, the ROE turns positive (6.51), suggesting a recovery in profitability and improved financial performance, although it still remains comparatively low.

In contrast, Tata Power Distribution Ltd. demonstrates a consistently positive and stable ROE, increasing from 5 in 2021 to 13 in 2023 and stabilizing around 12 in 2024 and 2025. This indicates efficient utilization of shareholders' funds and strong profitability. Compared to MSEDCL, Tata Power shows superior and stable performance with minimal fluctuations, reflecting better financial management and operational efficiency. Overall, the analysis highlights that the private sector company significantly outperforms the public sector company in terms of generating returns for shareholders, although MSEDCL shows signs of recovery in the final year.

### c) Net Profit Ratio

Net Profit Ratio = Net Profit after tax / Revenue × 100

Company/Year	MSEDCL	Tata Power Distribution ltd
2021	-0.02	4
2022	0	5
2023	-4.78	7
2024	-4.04	7
2025	0.71	7

(Source: Researcher calculation)

The Net Profit Ratio measures the percentage of profit earned from total revenue, indicating overall profitability after all expenses and taxes. In the case of MSEDCL, the ratio reflects weak and fluctuating performance throughout the period. It is negative in 2021 (-0.02), indicating losses, and remains at zero in 2022, showing no profitability. The situation worsens in 2023 (-4.78) and 2024 (-4.04), where significant losses are recorded, suggesting high costs and operational inefficiencies. However, in 2025, the ratio turns positive (0.71), indicating a slight recovery and marginal profitability, though still at a very low level.

In contrast, Tata Power Distribution Ltd. maintains a consistently positive and stable Net Profit Ratio, increasing from 4 in 2021 to 7 from 2023 onwards. This reflects efficient cost management and the ability to generate steady profits from revenue. Compared to MSEDCL, Tata Power demonstrates superior profitability with minimal fluctuations. Overall, the analysis indicates that the private sector company outperforms the public sector company in terms of net profitability, although MSEDCL shows signs of improvement in the final year.

## 2) Liquidity Ratio

This ratio measures the company's ability to **meet short-term financial obligations**.

### a) Current Ratio

Current Ratio = Current Assets / Current Liabilities

Company/ Year	MSEDCL	Tata Power Distribution Ltd.
2021	0.79	0.65
2022	0.84	0.66
2023	0.85	0.74
2024	1.09	0.78
2025	1.03	0.72

(Source: Researcher calculation)

The Current Ratio measures a company's ability to meet its short-term obligations using its current assets, with a standard benchmark of around 2:1 considered ideal. In the case of MSEDCL, the ratio shows gradual improvement over the years. It starts below the ideal level in 2021 (0.79), 2022 (0.84), and 2023 (0.85), indicating insufficient liquidity and potential difficulty in meeting short-term liabilities. However, a significant improvement is observed in 2024 (1.09) and 2025 (1.03), where the ratio crosses 1, suggesting that current assets are now sufficient to cover current liabilities. This reflects better working capital management and improved short-term financial stability, although it still remains below the ideal benchmark.

On the other hand, Tata Power Distribution maintains a consistently lower Current Ratio throughout the period, ranging from 0.65 to 0.78. Although there is slight improvement until 2024, it declines again in 2025 (0.72). This indicates relatively tighter liquidity and dependence on efficient cash flow management to meet short-term obligations. Compared to MSEDCL, Tata Power shows lower liquidity levels, but this may also reflect more efficient utilization of current assets. Overall, while MSEDCL shows improvement in liquidity position, both companies operate below the ideal standard, with Tata Power maintaining stable but lower liquidity levels.

## 3) Solvency Ratio

These ratios measure the company's **long-term financial stability and debt management**.

### a) Debt–Equity Ratio

Debt–Equity Ratio = Total Debt / Shareholders' Equity

Company/ Year	MSEDCL	Tata Power Distribution Ltd.
2021	1.88	1.88
2022	1.92	2.00
2023	3.39	1.57
2024	6.08	1.41
2025	6.47	1.49

(Source: Researcher calculation)

The Debt–Equity Ratio measures the proportion of debt and equity used to finance a company’s assets, indicating long-term financial stability and risk. In the case of MSEDCL, the ratio shows a continuously increasing trend from 1.88 in 2021 to 6.47 in 2025. While the ratio is already relatively high in 2021 and 2022 (1.88 and 1.92), it rises sharply in 2023 (3.39) and further escalates in 2024 (6.08) and 2025 (6.47). This indicates excessive reliance on debt financing, leading to higher financial risk and burden of interest obligations. Such a rising trend reflects weakening solvency and increasing vulnerability to financial distress.

In contrast, Tata Power Distribution Ltd. maintains a relatively stable and declining Debt–Equity Ratio over the years, moving from 1.88 in 2021 to around 1.41–1.49 during 2023–2025. This suggests a balanced capital structure with controlled use of debt and improved financial stability. Compared to MSEDCL, Tata Power demonstrates stronger solvency and lower financial risk due to prudent debt management. Overall, the analysis indicates that while MSEDCL’s financial position is becoming increasingly leveraged and risky, Tata Power maintains a stable and healthier long-term financial structure.

#### 4) Efficiency Ratio

These ratios measure how efficiently the company uses its assets to generate revenue.

##### a) Inventory Turnover Ratio

Inventory Turnover Ratio = Cost of goods sold / Average Inventory

Company/ Year	MSEDCL	Tata Power Distribution Ltd.
2020-2021	173.21	39.45
2021-2022	276.47	72.46
2022-2023	325.38	67
2023-2024	389.98	59
2024-2025	516.46	69

(Source: Researcher calculation)

The Inventory Turnover Ratio measures how efficiently a company manages its inventory by indicating how many times inventory is sold and replaced during a period. In the case of MSEDCL, the ratio is exceptionally high and shows a continuous increasing trend from 173.21 in 2020–21 to 516.46 in 2024–25. This indicates very fast movement of inventory and minimal holding levels, which is typical in power distribution companies where physical inventory is limited. The rising trend suggests improved operational efficiency and effective inventory management, although excessively high ratios may also indicate very low inventory levels, leaving little buffer for contingencies.

On the other hand, Tata Power Distribution Ltd. maintains a comparatively lower but stable Inventory Turnover Ratio, ranging between 39.45 and 72.46 over the years. While there are slight fluctuations, the ratio remains consistent, reflecting steady and efficient inventory management practices. Compared to MSEDCL, Tata Power holds relatively higher inventory levels but manages them effectively without excessive fluctuation. Overall, both companies demonstrate efficient inventory utilization, but MSEDCL shows extremely high turnover due to the nature of operations, whereas Tata Power reflects a more balanced and stable approach.

#### 6. Overall Scenario Financial Health of DISCOMs in Indian Power Distribution Sector

DISCOMs are considered the weakest link in the power sector. Persistent losses, rising costs, and delayed payments worsen their condition. High AT&C losses and tariff gaps remain major issues. Historically, many Indian distribution companies have faced heavy debt burdens and liquidity shortages. As of 2025, DISCOMs collectively owed generators more than ₹5.8 lakh crore, highlighting the persistent financial stress in the sector.

The Government of India introduced several reforms to improve financial sustainability. The UDAY scheme enabled state governments to take over a large portion of DISCOM debt and introduced performance improvement measures such as reducing AT&C losses and improving billing efficiency.

Additionally, improvements in operational metrics have been observed in recent years. AT&C losses have declined significantly, and billing and collection efficiency have improved across many states. These reforms have contributed to a gradual improvement in the financial health of distribution companies.

## 7. Findings: The study reveals the following key findings:

- Profitability Performance: Tata Power Distribution Ltd. shows consistently strong profitability across all ratios (ROCE, ROE, Net Profit Ratio). MSEDCL exhibits weak and negative profitability in most years, with heavy losses especially during 2023–2024. However, MSEDCL shows signs of recovery in 2025, indicating improvement in operational performance.
- Return to Investors: Tata Power provides stable and positive returns to shareholders (ROE) throughout the period. MSEDCL shows negative returns in multiple years, indicating erosion of shareholders' wealth. The recovery in 2025 suggests a turnaround phase for MSEDCL.
- Operational Efficiency (Profit Margin): Tata Power maintains a steady and increasing Net Profit Ratio, reflecting strong cost control and efficiency. MSEDCL suffers from negative profit margins in most years, indicating high costs and inefficiencies. Slight improvement in 2025 indicates better cost management.
- Liquidity Position: Both companies operate below the ideal current ratio (2:1). MSEDCL shows gradual improvement, crossing 1 in recent years, indicating better short-term financial stability. Tata Power maintains consistently lower liquidity, suggesting efficient working capital management but tighter short-term position.
- Solvency and Financial Risk: MSEDCL has a rapidly increasing Debt–Equity Ratio, indicating excessive dependence on debt and higher financial risk. Tata Power maintains a stable and controlled capital structure, reflecting strong long-term financial stability. The widening gap highlights higher financial vulnerability in the public sector company.
- Asset Utilization Efficiency: MSEDCL shows extremely high Inventory Turnover Ratio, indicating minimal inventory holding and fast movement. Tata Power maintains a moderate and stable turnover, reflecting balanced inventory management. Both companies are efficient, but MSEDCL's very high ratio may indicate limited buffer stock.
- Comparative Performance: Overall, Tata Power Distribution Ltd. outperforms MSEDCL in profitability, solvency, and stability. MSEDCL shows high volatility and financial stress, but recent improvements suggest a positive recovery trend.

## 8. Conclusion

The study concludes that private sector efficiency (Tata Power) is significantly higher than public sector performance (MSEDCL) in terms of profitability, financial stability, and shareholder returns. However, MSEDCL's recent improvements indicate potential for future growth if operational and financial challenges are effectively addressed.

The financial health of power distribution companies in India remains fragile despite continuous reforms. While private DISCOMs demonstrate better performance, public DISCOMs struggle due to systemic and policy-related challenges. Sustainable improvement requires structural reforms, technological intervention, and financial discipline.

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