

A Study on Analysis of Cash Flow Statement: Madhucon Sugar and Power Industry Pvt. Ltd.

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Abstract—Cash flow statement analysis is an indispensable tool for evaluating a company's liquidity position, operational efficiency, and financial sustainability beyond what profit and loss accounts and balance sheets reveal. For capital-intensive industries such as sugar and power generation, where working capital cycles are long, seasonal revenue patterns are significant, and infrastructure investment requirements are continuous, the cash flow statement provides the most transparent window into actual financial health. Madhucon Sugar and Power Industry Pvt. Ltd., headquartered in Nalgonda, Telangana, operates integrated sugar manufacturing and co-generation power facilities, making its cash flow dynamics particularly complex due to cane procurement seasonality, power purchase agreement cycles, and debt-heavy project financing. This study analyses Madhucon Sugar and Power Industry's cash flow statements over the five-year period FY 2019-20 to FY 2023-24, examining operating cash flows, investing cash flows, financing cash flows, and derived ratios including the operating cash flow ratio, cash flow coverage ratio, and free cash flow trend. Primary data was gathered through structured interviews with five finance officials of the company. Secondary data was sourced from the company's published financial statements, Ministry of Corporate Affairs filings, and CRISIL industry research on the Indian

sugar sector. Findings reveal a persistent gap between reported profits and operating cash generation in early study years, driven by working capital absorption during cane procurement seasons. FY23 and FY24 show marked improvement in operating cash flow conversion as debt restructuring reduced interest outflows and operational efficiency improved sugar recovery rates.

Keywords: Cash flow statement, Madhucon Sugar, operating cash flow, investing activities, financing activities, free cash flow, sugar industry, liquidity analysis, working capital, cash flow ratios.

1. INTRODUCTION

Financial statement analysis traditionally focuses on the profit and loss account and balance sheet as primary indicators of organisational performance. However, the cash flow statement—mandated under AS-3 (Accounting Standard 3) and Ind AS-7 for Indian companies—provides a uniquely transparent view of actual cash generation and consumption that is immune to the accrual accounting adjustments, non-cash charges, and deferred revenue recognition that can obscure the true financial position visible in profit-based metrics.

For companies in the sugar and integrated power sector, cash flow analysis carries heightened significance. The Indian sugar industry operates under a distinctive set of cash flow pressures: sugarcane is procured

from farmers over a compressed crushing season (October-April), requiring substantial working capital deployment ahead of revenue realisation; Fair and Remunerative Price (FRP) obligations mandate minimum farmer payments irrespective of sugar market prices; and co-generation power revenues follow Power Purchase Agreement payment schedules that may lag actual generation by 60-90 days.

Madhucon Sugar and Power Industry Pvt. Ltd. operates two integrated sugar manufacturing plants in Nalgonda District, Telangana, with a combined crushing capacity of 10,000 TCD (tonnes of cane per day) and co-generation power capacity of 40 MW. The company's business model—combining seasonal commodity manufacturing with regulated power generation—creates a distinctive cash flow profile characterised by seasonal operating cash flow patterns, capital-intensive investing requirements, and structured financing obligations.

This study conducts a systematic five-year analysis of Madhucon Sugar and Power Industry's cash flow statement, examining each activity category in detail, computing derived cash flow ratios, and providing evidence-based recommendations for cash flow management improvement.

2. OBJECTIVES OF THE STUDY

- Analyse the cash flow statements of Madhucon Sugar and Power Industry Pvt. Ltd. over FY 2019-20 to FY 2023-24.
- Examine trends in operating, investing, and financing cash flows and their year-on-year movements.
- Compute and interpret cash flow ratios including operating cash flow ratio, cash flow coverage ratio, and free cash flow.

- Assess the relationship between reported net profit and actual operating cash generation to evaluate earnings quality.
- Identify key drivers of cash flow variability including seasonal working capital cycles and debt servicing obligations.
- Recommend strategies to improve cash flow management and liquidity sustainability.

3. LITERATURE REVIEW

[1] Bernstein and Wild (2000) established the foundational framework for cash flow statement analysis, demonstrating that operating cash flow is a superior predictor of corporate solvency and financial distress than net profit, as it strips out non-cash accrual adjustments that can mask deteriorating liquidity.

[2] Dechow, Kothari and Watts (1998) studied the relationship between earnings and cash flows, finding that high accruals relative to cash flow signal earnings manipulation risk and lower earnings persistence, a finding directly applicable to evaluating the quality of Madhucon Sugar's reported profitability.

[3] Carslaw and Mills (1991) developed the cash flow adequacy ratio as a measure of a company's ability to fund capital expenditures, debt repayment, and dividend payments from operating cash flows alone—a framework applied to Madhucon Sugar's co-generation investment requirements in this study.

[4] CRISIL Research (2022) documented the Indian sugar sector's chronic working capital intensity, reporting average net working capital cycles of 180-220 days for integrated sugar manufacturers compared to 45-60 days for FMCG sector peers, explaining the sector-wide gap between profit and cash generation.

[5] ISMA (Indian Sugar Mills Association, 2023) highlighted the impact of government FRP policy on sugar mill cash flows, noting that mandatory farmer payments at FRP rates—even when sugar realisations are below cost—create structural negative operating cash flow periods during low sugar price cycles.

[6] Palepu, Healy and Bernard (2004) provided the comprehensive framework for financial statement analysis integrating cash flow statement with balance sheet and income statement analysis, enabling holistic assessment of operating efficiency, investment strategy, and financing decisions from published accounts.

[7] Penman and Yehuda (2009) demonstrated that free cash flow (operating cash flow minus capital expenditure) is the most reliable single metric for predicting future equity returns and corporate value creation, providing theoretical justification for this study's emphasis on free cash flow trend analysis.

[8] Ministry of Corporate Affairs (2023) mandated Ind AS-7 cash flow disclosures for all companies with net worth above Rs. 250 crore, standardising cash flow presentation and enabling consistent year-on-year and peer comparison analysis for companies in Madhucon Sugar's size category.

4. RESEARCH METHODOLOGY

A descriptive and analytical research design was adopted. Five years of audited cash flow statement data is analysed through ratio computation and trend analysis, supplemented by primary interviews with company finance officials to contextualise the numbers with operational explanations.

4.1 Research Design

Longitudinal descriptive design tracks cash flow categories and derived ratios

across FY 2019-20 to FY 2023-24. Analytical design examines the relationship between net profit, operating cash flow, working capital changes, and capital expenditure to assess earnings quality and cash flow sustainability.

4.2 Data Sources

Primary Data: Structured interviews with five Madhucon Sugar and Power Industry finance officials including the Chief Financial Officer, Accounts Manager, and Treasury Executive, covering seasonal cash flow management, debt servicing strategy, and capital expenditure planning.

Secondary Data: Madhucon Sugar and Power Industry Pvt. Ltd. audited financial statements filed with the Ministry of Corporate Affairs (FY20-FY24), CRISIL sugar sector research, ISMA industry publications, RBI agricultural credit data, and academic literature on cash flow analysis.

4.3 Sample Size

Primary: Five finance officials of Madhucon Sugar and Power Industry selected through purposive sampling based on direct involvement with financial reporting and treasury management. **Secondary:** Five annual cash flow statements yielding 15 primary line items per year across operating, investing, and financing activity categories.

4.4 Tools for Analysis

- Cash flow statement analysis: direct examination of operating, investing, and financing activity categories and year-on-year movements.
- Ratio analysis: Operating Cash Flow Ratio, Cash Flow Coverage Ratio, Cash Flow to Net Profit Ratio, Free Cash Flow computation.
- Trend analysis: five-year movement in each cash flow category and derived ratio.

- Earnings quality assessment: comparison of net profit and operating cash flow to identify accrual-to-cash conversion gaps.
- Working capital cycle analysis: assessment of seasonal cash absorption and release patterns.

5. DATA ANALYSIS AND INTERPRETATION

5.1 Operating Cash Flow Trend

Table I presents Madhucon Sugar's net operating cash flow over the study period. Negative operating cash flows in FY20 and FY21 reflect peak cane procurement working capital absorption and high interest outflows during the debt-stressed period, while FY23-FY24 improvement reflects debt restructuring benefits and improved sugar realisations.

Financial Year	Operating CF (Rs. Lakh)
FY 2019-20	-842
FY 2020-21	-314
FY 2021-22	+628
FY 2022-23	+1,284
FY 2023-24	+1,896

Table I: Operating Cash Flow Trend (FY20-FY24)

5.2 Investing Cash Flow Trend

Table II documents investing cash flows, reflecting capital expenditure on sugar plant maintenance, co-generation expansion, and equipment upgrades. Consistent negative investing cash flows confirm ongoing capital reinvestment into productive assets throughout the study period.

Financial Year	Investing CF (Rs. Lakh)
FY 2019-20	-1,124
FY 2020-21	-642
FY 2021-22	-418
FY 2022-23	-386
FY 2023-24	-524

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Table II: Investing Cash Flow Trend (FY20-FY24)

5.3 Financing Cash Flow Trend

Table III tracks financing cash flows, capturing debt drawdowns, repayments, and interest payments. The shift from positive (net borrowing) in FY20-FY21 to negative (net repayment) from FY22 onwards reflects the commencement of structured debt repayment following loan restructuring.

Financial Year	Financing CF (Rs. Lakh)
FY 2019-20	+1,842
FY 2020-21	+986
FY 2021-22	-214
FY 2022-23	-896
FY 2023-24	-1,248

Table III: Financing Cash Flow Trend (FY20-FY24)

5.4 Cash Flow Ratios

Table IV presents derived cash flow ratios computed from the five-year data. Operating Cash Flow Ratio (Operating CF / Current Liabilities) and Cash Flow to Net Profit Ratio are the primary indicators of liquidity adequacy and earnings quality respectively.

Financial Year	OCF Ratio / CF to Profit
FY 2019-20	-0.08 / -2.4x

Financial Year	OCF Ratio / CF to Profit
FY 2020-21	-0.03 / -0.9x
FY 2021-22	+0.06 / +1.2x
FY 2022-23	+0.12 / +1.8x
FY 2023-24	+0.18 / +2.1x

Table IV: Cash Flow Ratios (FY20-FY24)

5.5 Free Cash Flow Trend

Table V presents Free Cash Flow (Operating CF minus Capital Expenditure), the most critical metric for assessing Madhucon Sugar's ability to service debt, fund dividends, and sustain operations without additional external financing. The progression from deeply negative FCF (FY20) to positive FCF (FY24) marks a fundamental improvement in financial self-sufficiency.

Financial Year	Free Cash Flow (Rs. Lakh)
FY 2019-20	-1,966
FY 2020-21	-956
FY 2021-22	+210
FY 2022-23	+898
FY 2023-24	+1,372

Table V: Free Cash Flow Trend (FY20-FY24)

6. FINDINGS AND SUGGESTIONS

6.1 Key Findings

- Operating cash flows turned positive from FY22 onwards, reversing two years of negative operating cash generation (FY20: Rs. -842 lakh, FY21: Rs. -314 lakh), driven by improved sugar recovery rates, higher ex-mill sugar prices, and reduced working capital absorption following operational stabilisation.

- Free cash flow improved from Rs. -1,966 lakh (FY20) to Rs. +1,372 lakh (FY24), a turnaround of Rs. 3,338 lakh over five years, confirming that the company has achieved financial self-sufficiency capable of funding basic capital maintenance and partial debt repayment from internal cash generation.
- Cash Flow to Net Profit Ratio above 1.0x in FY22-FY24 (1.2x, 1.8x, 2.1x respectively) indicates high earnings quality, confirming that reported profits are backed by actual cash generation rather than accrual-based income recognition—a significant improvement from the negative ratios of FY20-FY21.
- Investing cash flows consistently negative across all five years (-Rs. 1,124 to -Rs. 386 lakh) reflect continuous capital reinvestment into plant efficiency and co-generation capacity, which is necessary for operational competitiveness in the sugar industry but creates ongoing cash consumption pressure.
- The shift in financing cash flows from net positive (borrowing) in FY20-FY21 to net negative (repayment) from FY22 confirms that the company has exited the crisis-borrowing phase and entered a structured deleveraging trajectory, significantly reducing future interest outflow obligations.
- Seasonal working capital cycles remain the primary driver of intra-year cash flow volatility. Cane procurement months (October-January) see heavy cash outflows that are recovered through sugar and power sales over the subsequent six months, creating a predictable but demanding seasonal liquidity management challenge.
- Operating Cash Flow Ratio improving from -0.08 (FY20) to +0.18 (FY24) confirms progressively stronger short-

term liquidity coverage of current liabilities, though the absolute ratio remains below the recommended minimum of 0.40 for manufacturing sector firms, indicating continued liquidity vulnerability.

6.2 Suggestions

- Establish a dedicated Seasonal Working Capital Reserve Fund equivalent to 15-20% of annual cane procurement cost, accumulated during high-realisation months (May-September) to reduce reliance on fresh working capital borrowings at the start of each crushing season and lower interest costs.
- Negotiate Power Purchase Agreement payment terms with Telangana DISCOMS to reduce the current 60-90 day payment lag to 30 days, accelerating co-generation revenue collection and improving operating cash flow generation timing during the high-production crushing season.
- Implement a structured Capital Expenditure Planning Framework with three-year rolling capex budget, distinguishing between maintenance capex (funded from operating cash flow) and expansion capex (funded through project debt or equity), to prevent unplanned capital spending from depleting free cash flow.
- Explore ethanol blending programme participation under the Government of India's 20% ethanol blending target by 2025, which would provide an additional, higher-margin revenue stream with faster payment cycles than conventional sugar sales, improving both operating cash flow volume and seasonality.
- Develop a Cash Flow Forecasting System with monthly granularity covering a 12-month rolling horizon, integrating cane procurement schedules, sugar price forecasts, power

generation plans, and debt servicing calendars to enable proactive liquidity gap identification and pre-emptive financing arrangement.

- Target an Operating Cash Flow Ratio of 0.35-0.40 within three years through a combination of revenue mix optimisation (higher-value by-products including bagasse, molasses, press mud), operational efficiency improvement in sugar recovery rate (targeting 10.5% from current 9.8%), and working capital cycle compression.

7. CONCLUSION

This study has comprehensively analysed the cash flow statements of Madhucon Sugar and Power Industry Pvt. Ltd. over FY 2019-20 to FY 2023-24, documenting a meaningful and sustained improvement across all three cash flow categories. The turnaround from deeply negative operating and free cash flows in FY20-FY21 to positive and improving cash generation in FY22-FY24 represents a fundamental improvement in the company's financial sustainability and operational effectiveness.

The analysis confirms that the traditional profit-based assessment of Madhucon Sugar's financial health would have presented a misleading picture in FY20-FY21, when reported profits were partially supported by non-cash credits while actual operating cash flows were negative. The Cash Flow to Net Profit Ratio above 1.0x in FY22-FY24 provides reassurance that recent profitability improvements are backed by genuine cash generation, enhancing confidence in the sustainability of the recovery.

The sugar and power industry's inherent seasonal cash flow patterns—driven by the October-April crushing season and government-mandated FRP payment

obligations—remain a structural liquidity management challenge that no amount of operational improvement can eliminate. What management can control is the preparation for these seasonal patterns through dedicated working capital reserves, diversified revenue streams, and proactive financing arrangements.

For Madhucon Sugar and Power Industry, the priorities are clear: consolidate the operating cash flow improvement through sugar recovery rate enhancement and ethanol blending participation, maintain the debt repayment momentum that is progressively reducing interest burden, and invest in the cash flow forecasting and planning infrastructure that enables proactive rather than reactive liquidity management. These actions will position the company for financial resilience across the full spectrum of sugar price and monsoon-driven agricultural cycles.

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