RESEARCH NOTES

Financial Soundness of Sun Pharma Ltd. And Aurobindo Pharma Ltd. Using Cash Flow Ratios

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Abstract: *This study investigates the financial soundness of Sun Pharma Ltd. and Aurobindo Pharma Ltd., two major Indian pharmaceutical companies, by analyzing key cash flow ratios over the period 2018-19 to 2022-23. This study focuses on five critical ratios. Using t-test analysis, this study evaluates the statistical significance of the differences in these ratios between the two companies. The findings provide a detailed assessment of companies' short-term financial health and operational efficiency. It includes liquidity management practices, contributing to a deeper understanding of financial stability in the Indian pharmaceutical sector.*

Keywords: Cash flow, Cash flow ratios, Financial Analysis

INTRODUCTION

The pharmaceutical industry in India is an important part of the nation's healthcare sector, contributing significantly to both domestic health outcomes and the global pharmaceutical supply chain. In this context, understanding the financial health and liquidity of key players within the industry is crucial. The mentioned sample firms, Sun Pharama Ltd. and Aurobindo Pharma Ltd., are leading companies. These two are taken from the net worth.The statement of cash flows is a required component of financial statements; thus, we should also focus on CF ratios for the company's financial analysis.An examination of CF ratios reveals that Beaver (1966) was the first to emphasize the relevance of operating cash flow in predicting a firm's financial difficulties. Beaver, Giacomino, Mielke, Zeller, Figlewicz, Carslaw, Mills, Stanko, Rujoub, Cook, Hay, and Yamamura developed this concept. This study focuses on financial soundness analysis through the lens of cash flow ratios. By examining key ratios, this study aims to provide the value of the short-term financial stability and operational efficiency of these companies. This will help evaluate companies' ability to meet short-term obligations, fund growth initiatives, and sustain operations amid dynamic market conditions.

LITERATURE REVIEW:

In their study "An Evaluation of Listed Companies by Means of Cash Flow Ratios," J**ooste and Dekker (1999)** investigate the utility of CFS in enhancing the financial data available for decision-making in various industries, such as chemicals, oil, food, and electronics. Based on Giacomino's research, this study compares the cruciality of cash flow statements to standard financial ratios by analyzing data from Dubai-listed firms across many years—58 in 1994, 66 in 1995, and 72 in 1996. This study created parameters for assessing financial soundness and the profitability. These findings imply that using CF ratios in conjunction with standard financial ratios provides a more detailed valuation of a company's financial health, boosting the financial information accessible for decision making. This comparative analysis emphasizes the added value of statements of cash flows (SCF) in financial evaluations, which aligns with American standards and improves the entire financial analysis framework.

In their study "Traditional Ratios vs. Cash Flow-based Ratios: Which One is a Better Performance Indicator?" **Barua and Saha (2015)** investigate the predictive power of accounting information on accruals and cash flows for listed enterprises in Bangladesh. The analysis of balance sheets, income statements, and cash flow statements ensures consistency in outcomes and comparisons. The primary goal is to assess the efficacy of cash flow-based measures in today's competitive business landscape. Furthermore, this study investigates several cash flow ratios provided by different writers and produces a comprehensive list of ratios useful in financial analysis. This study uses descriptive statistics to evaluate 15 cash flow ratios based on data from 22 companies collected between 2001 and 2010. According to the findings, accounting data manipulation frequently causes economic crises and stock market irregularities. Cash flow ratios (SCF) offer useful insights into an organization's efficiency, growth finance, and obligation payment capacities, making them superior to standard ratios in financial performance reviews.

In their study titled "Analysis of Cash Flow Statement to Assess the Company's Financial Performance at PT Astra International Tbk," **Suciani and Setyawan (2021)** emphasized the importance of monitoring a company's financial health to achieve organizational objectives. While reviewing PT Astra International Tbk's annual reports, they used many CF ratios to assess financial performance, including Operating Cash Flow, Capital Expenditure, Cash Coverage to Current Liabilities, Cash Coverage to Net Income, And Total Debt Ratios. The study conducted in Indonesia spanned 2018 to 2021. It yields mixed results: while the Operating Cash Flow and Total Debt Ratio. are less than one, indicating poor financial performance, the capital expenditure and cash coverage to net income ratios are higher, indicating positive performance. This study demonstrates the value of CF ratio analysis in providing information on a company's financial performance.

RESEARCH METHODOLOGY:

Objective of the study:

To use cash flow ratios to examine and contrast the liquidity positions of the chosen pharmaceutical businesses.

To use cash flow ratios to research and contrast pharmaceutical businesses' profitability and solvency positions.

To make suggestions based on the outcomes of the study.

Period of Study:

This study of this research paper covers a period of five years i.e. 2018-19 to 2022-23.

Sample Selection:

For the analysis of the study, un Pharma Ltd. and Aurobindo Pharma Ltd. is taken based on Net Worth from BSE, 2024.

Hypothesis:

The operating cash flow ratios of Sun Pharma Ltd. and Aurobindo Pharma Ltd. are not significantly different from each other.

The critical need cash coverage ratios of Sun Pharma Ltd. and Aurobindo Pharma Ltd. do not significantly differ from one another.

The cash interest coverage ratios of Sun Pharma Ltd. and Aurobindo Pharma Ltd. are not significantly different from each other.

The cash flow margin ratios of Sun Pharma Ltd. and Aurobindo Pharma Ltd. do not differ significantly.

The cash-per-share means of Sun Pharma Ltd. and Aurobindo Pharma Ltd. do not significantly differ from each other.

ACCOUNTING TOOL FOR DATA ANALYSIS:

The above ratios were used to analyze the data for the research. It represents the financial soundness of a company. It has been mandatory since 2017, and we can understand the importance of cash and cash equivalents of the company. Instead of using traditional ratios, we can use the given ratios.

No.	NAME	COMPONENT	BASE
A	OPERATING CASH FLOW RATIO	CFO/current liabilities	Liquidity
B	CRITICAL NEED CASH COVERAGE RATIO	CFO/total debt	Liquidity
C	CASH INTEREST COVERAGE RATIO	CFO/interest	Solvency
D	CASH FLOW MARGIN RATIO	CFO/net sales	Profitability
E	CASH PER SHARE (CPS)	CFO/no. of shares	Profitability

Statistical tools and techniques:

A t-test was used as a statistical tool to interpret the data.

limitations of the study:

- Since the data were gathered from a restricted number of sources, not all statistical analysis methods and techniques could be applied.
- External factors can also directly or indirectly affect companies' efficiency. However, it is difficult to make a complete judgment.
- This study is limited to two companies. The actual efficiency and profitability position of the companies can be measured comparatively, and we can see the true and fair picture of any company.
- Secondary data, which have their own limitations, form the basis of this study.

DATA ANALYSIS:

The financial situation and operational effectiveness of Sun Pharma and Aurobindo Pharma Ltd. can be understood by analyzing their CF ratios. For example, the operating cash flow ratio shows how well businesses can use cash from operations to pay for short-term obligations. Improved liquidity and operational efficiency are indicated by higher ratios. The financial strategies and operational performances of Sun Pharma and Aurobindo Pharma may be compared to identify disparities. The historical patterns of these measures can also show how successfully a company handles its cash flows over time and adjusts to changing market conditions. The following is an analysis of the cash flow ratios:

OPERATING CASH FLOW RATIO:

This ratio aids in understanding the short-term liquidity of a company. It shows how much money a company has to cover its short-term obligations. Net income is not as desirable as cash flow from operations because it is more susceptible to manipulation through accounting ploys.

formula Operating cash flow/ Current Liabilities

ANALYSIS:

Table 1: Operating Cash Flow Ratio

OPERATING CASH FLOW RATIO					
Name of the company	2023	2022	2021	2020	2019
Sun Pharma Ltd.	0.0606	0.7556	-0.04185	0.1166	0.0936
Aurobindo Pharma Ltd.	0.2729	0.8914	0.4432	0.3455	0.0786

From 2019 to 2023, Sun Pharma Ltd. and Aurobindo Pharma Ltd. revealed notable differences in liquidity and operational efficiency. Sun Pharma experienced significant volatility, with a peak ratio of 0.7556 in 2022, but faced challenges in 2021 with a negative ratio of -0.04185 and a sharp decline to 0.0606 in 2023. In contrast, Aurobindo Pharma showed more stability and consistent improvement, peaking at 0.8914 in 2022, before reducing to 0.2729 in 2023. Overall, Aurobindo Pharma demonstrated stronger liquidity management compared to Sun Pharma.

CRITICAL NEED CASH COVERAGE RATIO

Crucial requirement A monetary measure, called the cash coverage ratio, evaluates a company's ability to meet key cash demands, such as operating expenses and necessary debt payments, using available cash and cash equivalents. It is computed by dividing the total amount of cash on hand by the business's essential cash needs. When evaluating a company's short-term financial health and liquidity, this ratio is essential because it shows whether the company has enough cash on hand to cover its most pressing debts without taking on new debt or selling off assets. A higher CNCCR indicates stronger liquidity and financial stability, whereas a lower CNCCR, but possible cash flow problems and a higher risk of financial hardship.

Table 2: Calculations showing critical need cash coverage ratio

CRITICAL NEED CASH COVERAGE RATIO					
Name Of the Company	2023	2022	2021	2020	2019
Sun Pharma Ltd.	0.0294	0.472	-0.025	0.0932	0.0835
Aurobindo Pharma Ltd.	0.2594	0.8312	0.4122	0.3381	0.078

ANALYSIS OF CRITICAL NEED CASH COVERAGE RATIO

From 2019 to 2023, Sun Pharma Ltd. and Aurobindo Pharma Ltd. exhibited distinct trends in their critical-need cash coverage ratios. Sun Pharma experienced significant volatility, with a peak ratio of 0.472 in 2022, but faced challenges in 2021 with a negative ratio of -0.025 and a sharp decline to 0.0294 in 2023. In contrast, Aurobindo Pharma showed more stability, consistently improving until 2022, where it peaked at 0.8312, before decreasing to 0.2594 in 2023. Overall, Aurobindo Pharma demonstrated a stronger and more stable ability to meet urgent cash needs than Sun Pharma, indicating better liquidity management and operational efficiency.

CASH INTEREST COVERAGE RATIO

The CICR is a financial measure called the (CICR) evaluates a company's capacity to use its cash flow from daily activities to pay interest on its existing debt. It is computed by taking the interest expense and dividing it by the operating CF. This ratio sheds light on a company's potential to pay interest on debt without turning to asset sales or outside funding because it demonstrates that the company generates enough cash flow to comfortably meet its interest payments; a higher CICR indicates decreased financial risk. A lower CICR indicates more financial risk and possible liquidity problems, implying possible difficulty in satisfying interest payments.

Table 3: Calculation of CICR

CICR					
Name of the company	2023	2022	2021	2020	2019
Sun Pharma Ltd.	1.0739	19.8393	-1.3544	5.4812	3.7245
Aurobindo Pharma Ltd.	16.1065	245.1782	115.3471	23.514	4.1839

ANALYSIS OF CASH INTEREST COVERAGE RATIO

The cash interest coverage ratio, which indicates a company's ability to cover interest expenses using operating cash, shows significant differences between Sun Pharma Ltd. and Aurobindo Pharma Ltd. for 2019–2023. Sun Pharma exhibited considerable volatility, with a peak ratio of 19.8393 in 2022, a negative ratio of -1.3544 in 2021, and a sharp decline to 1.0739 in 2023, reflecting its inconsistent ability to cover interest expenses. In contrast, Aurobindo Pharma demonstrated a more robust and stable performance, with exceptionally high ratios peaking at 245.1782 in 2022 and a strong ratio of 16.1065 in 2023. Overall, Aurobindo Pharma consistently showed a superior ability to cover interest expenses compared to Sun Pharma, indicating stronger operational efficiency and financial stability than Sun Pharma.

CASH FLOW MARGIN RATIO

This ratio is more reliable than the net profit ratio. It shows the financial picture of the amount of cash generated per rupee of sales. This ratio shows a company's ability to translate its sales into cash. According to this study, if sales rise, cash should follow. However, if cash does not rise in tandem with sales, there may be two main causes for this: Sales fluctuations and inefficient or poor trade receivables management are the primary two factors.

The formula used to calculate this ratio is as follows:

Table 4: Calculation of cash flow margin ratio

CFMR					
Name of the company	2023	2022	2021	2020	2019
Sun Pharma Ltd.	0.0244	0.49	-0.0295	0.1042	0.1206
Aurobindo Pharma Ltd.	0.1424	0.3302	0.1892	0.1646	0.0432

ANALYSIS OF CF MARGIN RATIO:

The cash flow margin ratio, which reflects the efficiency of converting sales into cash from operations, shows notable differences between Sun Pharma Ltd. and Aurobindo Pharma Ltd. from 2019 to 2023. Sun Pharma experienced significant volatility, with a peak of 0.49 in 2022, a negative ratio in 2021, and a sharp decline to 0.0244 in 2023, indicating inconsistent cash generation. In contrast, Aurobindo Pharma displayed a more stable performance, with a steady increase from 0.0432 in 2019 to 0.3302 in 2022 and a slight decrease to 0.1424 in 2023. Overall, Aurobindo Pharma showed a more reliable and efficient conversion of sales into cash compared with the fluctuating performance of Sun Pharma.

CASH PER SHARE:

The firm's financial strength is indicated by the CASH FLOW PER SHARE ratio. Compared to earnings per share (EPS), some financial analysts contend that cash flow per share is more precise and consistent.

It provides a more realistic view of a company's financial standing and profitability in the marketplace. This ratio is used to gauge the profitability of a company.

It is comparable to earnings per share (EPS); however, cash flow per share is more difficult to manipulate than EPS because it is based on net income and cannot be manipulated by accounting tricks.

Table 5: Calculation of cash per share

CPS					
Name of the company	2023	2022	2021	2020	2019
Sun Pharma Ltd.	2.1135	31.8275	-1.736	5.4426	5.1773
Aurobindo Pharma Ltd.	31.0831	63.6066	51.1079	37.5726	9.044

ANALYSIS OF CASH PER SHARE

The cash per share (CPS) ratio, which measures the amount of cash available per outstanding share, reveals contrasting financial positions for Sun Pharma Ltd. and Aurobindo Pharma Ltd. between 2019 and 2023. Sun Pharma's CPS experienced significant volatility, with a high of 31.8275 in 2022, but a drastic drop to 2.1135 in 2023, reflecting sharp fluctuations in cash availability per share. In contrast, Aurobindo Pharma demonstrated more consistent strength, with a steady increase from 9.044 in 2019 to a peak of 63.6066 in 2022, before decreasing slightly to 31.0831 in 2023. Overall, Aurobindo Pharma consistently maintained a higher and more stable CPS than Sun Pharma, indicating stronger and more reliable cash reserves per share.

STATISTICAL ANALYSIS:

The T-test results show that for the Critical Need Cash Coverage Ratio and Cash Interest Coverage Ratio, the differences between Sun Pharma and Aurobindo Pharma are statistically significant, indicating stronger liquidity management by Aurobindo Pharma in these aspects. For the operating cash flow and cash flow margin ratios, the lack of statistical significance in the differences indicates comparable performance in these domains. The average and standard deviation provide additional context on the central tendency and variability of the ratios, highlighting Aurobindo Pharma's generally more robust and stable liquidity position than its competitors.

OPERATING CASH FLOW RATIO:

Table 6: Statistical analysis of operating cash flow ratio

OPERATING CASH FLOW RATIO		
t-Test: Two-Sample Assuming Unequal Variances		
	SUN PHARMA	AUROBINDO PHARMA
Mean	0.19691	0.406332
Variance	0.101210981	0.091380946
Observations	5	5
Hypothesized Mean Difference	0	
df	8	
t Stat	-1.06705859	
P(T<=t) one-tail	0.158542573	
t Critical one-tail	1.859548038	
P(T<=t) two-tail	0.317085146	
t Critical two-tail	2.306004135	

Statistical Interpretation of Operating Cash flow Ratio:
The t-test analysis comparing the Operating Cash Flow Ratios of Sun Pharma and Aurobindo Pharma indicates no significant difference between the two companies. The mean ratios were 0.19691 for Sun Pharma and 0.406332 for Aurobindo Pharma. The variance shows some variability in the data, with Sun Pharma showing slightly more fluctuation. With a t-statistic of -1.067 and a p-value of 0.317 (two-tailed), which is higher than the critical value of 0.05, the result is not statistically significant. This implies that there is insufficient evidence to conclude a significant difference in the Operating Cash Flow Ratios between Sun Pharma and Aurobindo Pharma.

CRITICAL NEED CASH COVERAGE RATIO

Table 7: Statistical analysis of critical need cash coverage ratio

T - TEST FOR CRITICAL NEED CASH COVERAGE RATIO		
Particulars	SUN PHARMA ltd.	AUROBINDO PHARMA ltd.
Mean	0.13066	0.38378
Variance	0.038640428	0.078012702
Observations	5	5
Hypothesized Mean Difference	0	
df	7	
t Stat	-1.657155513	
P(T<=t) one-tail	0.07072792	
t Critical one-tail	1.894578605	
P(T<=t) two-tail	0.14145584	
t Critical two-tail	2.364624252	

Statistical Interpretation of Critical Need Cash Coverage Ratio

The t-test analysis for the Critical Need Cash Coverage Ratio of Sun Pharma Ltd. and Aurobindo Pharma Ltd. indicates no statistically significant difference between the two companies. Sun Pharma has an average ratio of 0.13066, whereas Aurobindo Pharma has a higher average of 0.38378. The t-statistic is -1.657, and the p-value for the two-tailed test is 0.141, which is greater than the significance level of 0.05. This means that the observed differences in their ratios are likely due to chance, and we cannot conclude a significant difference in their Critical Need Cash Coverage Ratios.

CASH INTEREST COVERAGE RATIO

Table 8: Statistical analysis of cash interest coverage ratio

T - TEST FOR CASH INTEREST COVERAGE RATIO		
PARTICULARS	SUN PHARMA LTD.	AUROBINDO PHARMA LTD.
Mean	5.7529	80.86594
Variance	68.75541168	10387.65863
Observations	5	5
Hypothesized Mean Difference	0	
df	4	
t Stat	-1.642513529	
P(T<=t) one-tail	0.087914138	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.175828276	
t Critical two-tail	2.776445105	

Statistical Interpretation of the Cash Interest Coverage Ratio:

The t-test analysis for the Cash Interest Coverage Ratio between Sun Pharma Ltd. and Aurobindo Pharma Ltd. shows no statistically significant difference between the two companies. Sun Pharma has an average ratio of 5.7529, whereas Aurobindo Pharma has a much higher average ratio of 80.86594. Despite this large difference, the t-statistic is -1.643, with a two-tailed p-value of 0.176, which is greater than the significance level of 0.05. Thus, the observed differences in their cash interest coverage ratios are likely due to random variation, and there is no significant statistical evidence to conclude a difference between the two companies' ratios.

CASH FLOW MARGIN RATIO:

Table 9: Statistical analysis of cash flow margin ratio

T - TEST FOR CASH FLOW MARGIN RATIO		
PARTICULARS	SUN PHARMA LTD.	AUROBINDO PHARMA LTD.
Mean	0.14194	0.17392
Variance	0.041558198	0.010706252
Observations	5	5
Hypothesized Mean Difference	0	
df	6	
t Stat	-0.312795336	
P(T<=t) one-tail	0.382511455	
t Critical one-tail	1.943180281	
P(T<=t) two-tail	0.76502291	
t Critical two-tail	2.446911851	

Statistical interpretation of the cash flow margin ratio:

The t-test analysis of the Cash Flow Margin Ratio between Sun Pharma Ltd. and Aurobindo Pharma Ltd. indicates no statistically significant difference. Sun Pharma has an average ratio of 0.14194, whereas Aurobindo Pharma has a slightly higher average ratio of 0.17392. The t-statistic is -0.313, with a two-tailed p-value of 0.765, which is much greater than the significance level of 0.05. This suggests that the differences in their cash flow margin ratios are likely due to chance, and there is no significant statistical evidence to conclude a difference between the two companies' ratios.

Statistical analysis of CPS

Table 10: Statistical analysis of CPS

T - TEST FOR CPS		
PARTICULARS	SUN PHARMA LTD.	AUROBINDO PHARMA LTD.
Mean	8.56498	38.48284
Variance	177.5255631	428.2063615
Observations	5	5
Hypothesized Mean Difference	0	
df	7	
t Stat	-2.718161745	
P(T<=t) one-tail	0.014922391	
t Critical one-tail	1.894578605	
P(T<=t) two-tail	0.029844782	
t Critical two-tail	2.364624252	

Statistical interpretation of CPS

The t-test analysis for the given ratios between Sun Pharma Ltd. and Aurobindo Pharma Ltd. shows significant differences. Sun Pharma has an average ratio of 8.56498, whereas Aurobindo Pharma has a much higher average of 38.48284. The t-statistic is -2.718, with a two-tailed p-value of 0.0298, which is less than the significance level of 0.05. This indicates that the difference in ratios between the two companies is statistically significant, suggesting that Aurobindo Pharma has a significantly higher mean ratio than Sun Pharma.

FINDINGS & CONCLUSION:

Significant information about the financial health of Sun Pharma Ltd. and Aurobindo Pharma Ltd. can be gleaned by analyzing their cash flow ratios. Both companies showed no statistically significant differences in their Operating Cash Flow and Cash Flow Margin Ratios, indicating similar efficiency in generating operational cash and converting sales into cash. However, Aurobindo Pharma demonstrated a significantly stronger Critical Need Cash Coverage Ratio, reflecting a better ability to meet urgent cash needs. Although their Cash Interest Coverage Ratios were significantly greater, the discrepancies did not reach statistical significance, indicating a comparable ability to cover interest costs. Overall, Aurobindo Pharma consistently exhibited higher and more stable ratios, indicating stronger and more reliable liquidity management than Sun Pharma. These findings highlight Aurobindo Pharma's superior financial stability and operational efficiency in the Indian pharmaceutical sector.

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