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A Study on Financial Performance of NLC India Limited Using Dupont Analysis

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Abstract:

This study provides a detailed analysis of the financial performance of NLC India Limited (NLCIL), a central public sector undertaking in the mining and power generation sector. Understanding NLCIL's financial health is crucial for making informed strategic decisions, enhancing investor confidence, and informing policymakers. The study aims to assess NLCIL's profitability, liquidity, solvency, and efficiency, as well as its ability to manage risks effectively. It involves a comparative analysis with industry peers, historical trend analysis, assessment of financial risks, and forecasting future performance. Thae study contributes to academic research by providing empirical evidence and insights into financial analysis in the energy sector context. Through strategic recommendations, the study aims to improve NLCIL's financial performance, optimize capital structure, enhance operational efficiency, and maximize shareholder value.

Keywords: financial performance, NLC India Limited (NLCIL), mining, power generation, strategic decisions, investor confidence, policymaking, profitability, liquidity, solvency, efficiency, risk management, comparative analysis, historical trends, financial risks, forecasting, academic research, strategic recommendations.

I INTRODUCTION:

Financial performance analysis is a critical tool used by investors, managers, and other stakeholders to evaluate the health and effectiveness of a company's financial operations. It involves assessing various financial metrics and ratios to gain insights into a company's profitability, efficiency, liquidity, solvency, and overall operational effectiveness.

The analysis of financial performance helps stakeholders understand how well a company is utilizing its resources, managing its finances, and generating returns for its investors. By examining financial statements, such as income statements, balance sheets, and cash flow statements, analysts can identify trends, strengths, weaknesses, and areas for improvement within the organization.

Key aspects of financial performance analysis include

- This aspect focuses on a company's ability to generate profits relative to its revenue and expenses. Profitability ratios, such as net profit margin, return on assets (ROA), and return on equity (ROE), provide insights into how efficiently a company is operating and how well it is utilizing its assets to generate profits.
- Liquidity analysis assesses a company's ability to meet its short-term financial obligations. Liquidity ratios, such as the current ratio and quick ratio, help determine whether a company has enough liquid assets to cover its short-term liabilities.
- Solvency analysis evaluates a company's long-term financial stability and its ability to meet its long-term obligations. Solvency ratios, such as the debt-to-equity ratio and interest coverage ratio, indicate the extent to which a company relies on debt financing and its ability to service its debt obligations.

- Efficiency analysis examines how effectively a company manages its resources to generate revenue. Efficiency ratios, such as asset turnover ratio and inventory turnover ratio, measure the effectiveness of a company's asset utilization and inventory management practices.

II REVIEW OF LITERATURE

Isberg (1998) has established a strong case for using DuPont ratio as a very useful tool in financial statement analysis for variety of reasons. The author has suggested the use of DuPont ratio in the process of company analysis which generally begins with qualitative inquiries of policies and strategies, creating a context for investigation. Subsequently goals and objectives of a company are defined which provides a basis for interpreting the results. The author has theoretically analysed various ratios making up DuPont analysis. At the same time the author frankly highlights various limitations of DuPont ratio.

Blumenthal (1998) has analysed that the consensual view among the academics and managers is that DuPont system helps companies to visualize the critical blocks in Return on Assets and Return on Investments. Proponents of EVA have pointed to several limitations inherent in DuPont model. The biggest benefit of the expandable DuPont model is its flexibility which can enable finance executives to combine Return on Investment with measures that do incorporate growth prospects.

Herciu, Ogrean & Belascu (2009) has concluded that absolute measurements of profit are meaningless. Investors cannot base their decisions on absolute profit numbers. Hence profit ratios make sense. To have a common basis of comparison between several companies and to compose ranks – the relative sizes for measuring efficiency are necessary when calculating the ratio between effect (profit) and effort (given by either sales, total assets or stockholders' equity). The authors demonstrated that the most profitable companies are not the most attractive for investors. Unique feature of this paper is that the authors established interrelationship between ROS, ROA & ROE. They concluded that in order for ROE to increase, ROA & ROS should be higher because there is a direct relationship between the three ratios taken into consideration.

Almazari (2012) has given an excellent theoretical introduction to the need for using DuPont model in performance analysis of banks. The author has presented a model for the financial analysis of a bank based on DuPont system of financial analysis. Using various ratios he concluded that the impact of the financial crisis of 2008-2009 on the performance of Arab Bank of Jordan was the least.

AlAli & Alshamali (2019) has analysed that the modified DuPont model doesn't consider the volatility and results in misleading information about the true financial position of the bank. The paper recommended using improved modified DuPont model which considers volatility.

Doorasamy (2016) has conducted detailed analysis of all financial ratios with reference to the selected three companies to assess their financial performance. This paper is illustrative of how one can apply the DuPont analysis to get an excellent idea of how a company is performing and the sources of financial troubles. This in turns helps investors in taking correct decisions. By applying various financial ratios, the author recommended which company is worth investing. Nanavati (2013) concluded that company had negative Return on Equity in 2010-11 which resulted in reduction of equity but in subsequent year, Return on Equity became positive and seemed good enough looking to the type and nature of business as peer group (TCS, INFOSYS & WIPRO). Average Return on Equity was low compared to Satyam's Return on Equity. One could have considered Satyam Limited as an investment option as company had lowered financial leverage and efficient in making profitability with superior Return on Equity.

Botika (2012) has evaluated that before the beginning of financial crises in 2007, the strong dependence was found between CAR and profitability and Return on Assets. DuPont components represented an important and viable form of stock's abnormal return analysis which is helpful to investors in stock markets in their decision making. On the basis of 5 – point DuPont Analysis along with the support of T-test, Singhal & Narang (2016), concluded that Oil and Gas sector was impacted and could not fully recover from the effects of global financial crisis of 2008 even until 2013. Two companies named ONGC Ltd and Reliance Industries Ltd had much larger impact to ROE of the whole sector as compared to other Oil and Gas companies. T-test analysis concluded that Tax Burden and Equity Multiplier did not play significant role while Interest Burden, Operating Profit Margin and Asset Turnover played a crucial role in determining the ROE at the time of recession.

Rogova (2014) has divided all companies into the best ten and worst ten in order to understand the nature of difference between high and low ROE. It is worth mentioning that there were two Russian companies named Novatek and Gazprom Neft among the best ten while there was no one among worst ten. With the help of regression analysis, it was evident that four factors named NPM/OPM, IB, TB & ATR played major role in investigating efficiency deeper while EM/FL was inconsiderable because of all the companies in their low level of financial leverage. From this it can be concluded that management should improve and increase ATR & EBIT margin of ROE which makes company more efficient, reliable and attracts a greater number of investors.

For an investment to be acceptable to a firm's financial management it must provide a positive answer to the question Will the acquisition of this asset increase the value of the owners' equity? (F. Arditti, 1967)

The financial objectives of a for-profit business primarily concern the needs of the external suppliers of debt and equity capital. The economic returns to shareholders comprise dividends and capital gains on the market value of their shares. As earning determine what can be paid out as dividend in the long run, shareholders are primarily concerned with financial measures like earnings, ROS, ROA, ROE, ROI. (R. Thorpe, J. Holloway, 2008)

Du Pont analysis, a common form of financial statement analysis, decomposes return on net operating assets into two multiplicative components: profit margin and asset turnover (B. McClure). These two accounting ratios measure different constructs and, accordingly, have different properties. Prior research has found that a change in asset turnover is positively related to future changes in earnings (M. Soliman)

Hawawini and Viallet (1999) offered yet another modification to the DuPont model. This modification resulted in five different ratios that combine to form ROE and ROI. In their modification they acknowledge that the financial statements firms prepare for their annual reports (which are of most importance to creditors and tax collectors) are not always useful to managers making operating and financial decisions. In order to more effectively evaluate operational managers, Nissim & Penman (2001) suggest using a modified version of the traditional DuPont model in order to eliminate the effects of financial leverage and other factors not under the control of those managers. Using operating income to sales and asset turnover based on operating assets limits the performance measure of management to those factors over which management has the most control. The modified DuPont model has become widely recognized in the financial analysis literature. See, for example, Pratt & Hirst (2008), Palepu & Healy (2008), and Soliman (2008). In addition, Soliman (2004) found that industry-specific DuPont multiplicative components provide more useful valuation than do economy-wide components, suggesting that industry-specific ratios have increased validity.

Prendergast (2006) and Milbourn & Haight (2005) present examples of using DuPont analysis in both a business and classroom setting. Prendergast illustrates how a modified DuPont approach to ratio analysis can be used to drill down to the true cause of financial performance problems in a small manufacturing business (p. 48). Milbourn & Haight show the use of Du Pont

Analysis as a teaching aid to equip students with an understanding of how management decisions influence the bottom line (p. 46). Unfortunately, the Milbourn & Haight paper is concerned exclusively with only the original Du Pont model, i.e. it shows the drivers of no more than Return on Assets. We will show the impact and value of the Du Pont model drivers on Return on Equity.

Saunders (2000) provides a model of financial analysis for financial institutions based on the DuPont system of financial analysis return on equity model and return on investment model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. The profit margin allows the financial analyst to evaluate the income statement and the components of the income statement. Total asset turnover allows the financial analyst to evaluate the left-hand side of the balance sheet: assets. The equity multiplier allows the financial analyst to evaluate the right-hand side of the balance sheet: liabilities and owners' equity

Brigham and Houston, (2001) The modified model was a powerful tool to illustrate the interconnectedness of a firm income statement and its balance sheet, and to develop straight-forward strategies for improving the firm ROE.

Sundararajan, (2002) Various measures of rates of return are used mainly for that purpose. We fully agree with the opinion that Relaying too heavily on just a few indicators of bank profitability can be misleading. While ROI, ROE, and interest margin (and non-interest expenses) to gross income remain the key measures, they should ideally be supplemented by the analysis of other operating ratios

Debasish Sur and kaushik Chakraborty (2006) in his study financial performance of Indian Pharmaceutical Industry: The Indian Pharmaceutical Industry has been playing a very significant role in increasing the life expectancy and in decreasing the mortality rate. It is the 5th largest in terms of volume and 14th largest in value terms I the world. The comparative analysis the financial performance of Indian pharmaceutical industry for the period 1993 to 2002 by selecting six notable companies of the industry. The comparison has been made from almost all points of view regarding financial performance using relevant statistical tools.

T. Vanniarajan and C. Samuel Joseph (2007) in his study An Application of DuPont Control chart in Analysing the financial performance of Banks. The liberalization of the finance sector in India is exposing Indian banks to a new economic environment it is characterized by increased competition and new regulatory requirements. Indian and foreign banks are exploring growth opportunities in India by introducing new products for different customer segments, many of which were not conventionally viewed as customer for the Banks have, in the last ten years, witnessed new shareholders. All banks are in a position to evaluate its performance compared to others. In general, the performance of the banks may be viewed on three dimensions namely structural, operational and efficiency factors are suggested by India Bank Association.

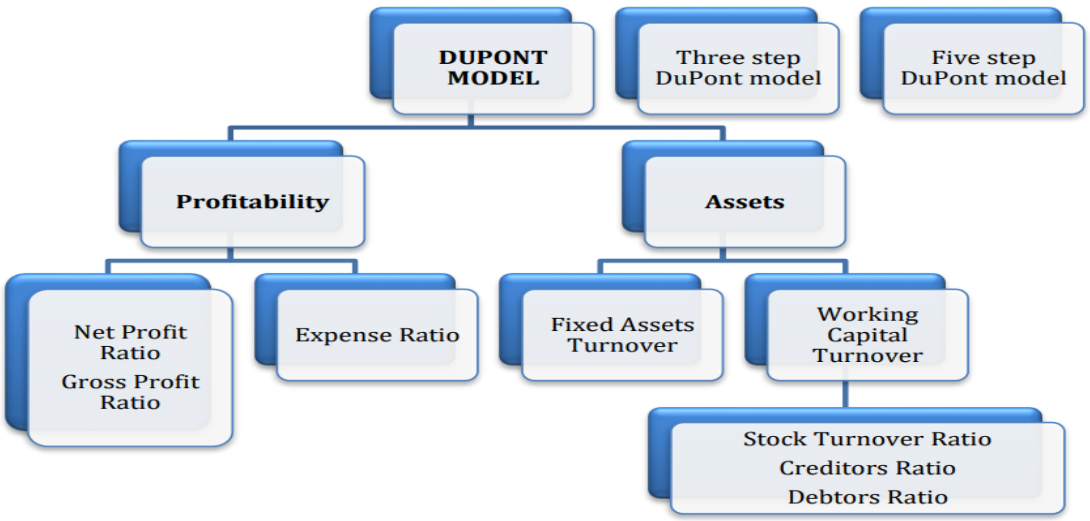
Mihaela Herciu, Claudia Ogrean & Lucian Belascu(2011) The present paper aims to demonstrate that in most cases the most profitable companies are not the most attractive for investors ñ through Du Pont Analysis method. In order to do this, we take into account the top 20 most profitable companies in the world in 2009 (according to Fortune). By using Du Pont analysis, we came to the results that the ranking is not preserved when indicators (ratios) such as ROA (return on assets) or ROI (return on Investment), ROE (return on equity) or ROS (return on sales) are taken into consideration.

Dr Ahmed Arif Almazari (2012) This study attempts basically to measure the financial performance of the Jordanian Arab commercial bank for the period 2000-2009 by using the DuPont system of financial analysis which is based on analysis of return

on equity model and return on investment model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. It was found that the financial performance of Arab Bank is relatively steady and reflects minimal volatility in the return on equity. Net profit margin and total asset turnover exhibit relative stability for the period from 2001 to 2009.The equity multiplier also show almost stable indicators for the period from2001-2005 and the ratios declined from 2006-2009 which indicates that the Arab bank had less financial leverage in the recent years, which means the bank is relying less on debt to finance its assets.

Generally, DuPont model is used to evaluate profitability position and trend of a company given the appropriate data regarding tax burden, interest burden, operating income margin, assets turnover, net profit margin and equity multiplier.

DuPont model has one more application which has gone unnoticed by many researchers. DuPont model helps in assessing asset utilization and its trends of a company given certain data. Assets utilization has an impact on profitability. Efficient asset utilization leads to an increase in sales, given other things, and thereby increases Return on Equity. It is required of the company to either maintain its Asset Turnover Ratio at current level or increase it further so that Return on Equity improves. The following chart meaningfully captures interrelationship between asset utilization and profitability:



Dupont Model

The DuPont model was created in 1919 by a finance executive at E.I. du Pont de Nemours & Co. DuPont analysis is a technique that can be used to analyse the profitability of a company using traditional performance management tools. Till 1970, an important goal of financial management was maximizing Return on Assets. But after 1970s, the generally accepted goal of financial management became maximization of shareholder's wealth and therefore the focus shifted from Return on Assets to ROE.

III RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. It May be understood as a science of study how research is done scientifically. In This study the various steps that are generally adopted by the researcher in Studying his research problem along with the logic behind them.

RESEARCH DESIGN

The proposed study is of DESCIRPTIVE IN NATURE. Research design is Needed because it facilitates the smooth sailing of the various research Operations, thereby making research as efficient as possible. A research design for a particular problem usually involves the consideration of the following factors.

SOURCE OF DATA

Utilizing secondary sources of data, including financial reports and government documents, to gather comprehensive information on NLCIL's financial performance.

DATA COLLECTION METHOD

Secondary data collection methods involve gathering information that has already been collected, processed, and published by other sources. The common secondary data collection methods for analysing the financial performance.

- Reviewing NLCIL's annual reports, which contain comprehensive financial statements, management discussions, and analyses of the company's performance, operations, and financial position.

LIMITATIONS OF THE STUDY:

- Our study might not cover every single aspect of NLCIL's financial performance. Due to time and resource constraints, we may have to focus on specific areas, which could affect the completeness of our analysis.
- We'll be using certain financial models to analyse NLCIL's performance. However, these models come with their own limitations and assumptions, which could influence our findings.
- Things happening outside of NLCIL, like changes in the economy or regulations, could impact its financial performance. We need to be aware of these external factors, as they might affect our conclusions.
- Our findings may apply only to NLCIL and might not be relevant for other companies or industries. NLCIL's unique circumstances could limit how broadly we can apply our results.
- NLCIL's financial performance can change over time. Our study will reflect its performance during a specific period, so our findings might not accurately predict its future performance.

SCOPE OF THE STUDY:

- Conducting a comparative analysis of NLC India Limited (NLCIL) with its industry peers or competitors to benchmark its financial performance. This will provide insights into NLCIL's relative strengths and weaknesses within the industry landscape.
- Examining the historical trend of financial performance metrics of NLCIL over a period of time to identify any patterns, trends, or fluctuations. This will help in understanding the company's financial trajectory and performance stability over time.
- Assessing the financial risks faced by NLCIL, including market risks, operational risks, financial risks, and regulatory risks. Understanding these risks will enable stakeholders to make informed decisions and develop risk mitigation strategies.

- Utilizing historical financial data and performance trends to forecast NLCIL's future financial performance. This can involve projecting key financial metrics such as revenue, profitability, and ROE over the short-term and long-term horizons.

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TOOLS USED FOR STUDY

Years	Revenue	EBIT	EBT	Income Tax	Net Income / Net Profit	Total Assets	Shareholder's equity
2018 - 2019	7,145.92	2,525.00	2,135.87	868.9	1,266.97	34,682.35	12,511.34
2019 - 2020	7,916.30	3,024.00	2,204.59	790.74	1,413.85	37,873.79	12,055.26
2020 - 2021	7,249.63	2,734.00	1,722.07	711.61	1,010.46	37,081.52	12,959.10
2021 - 2022	9,856.48	3,390.00	2,606.42	1,369.64	1,236.78	33,641.18	13,806.64
2022 - 2023	12,955.00	2,479.00	1,724.15	475.91	1,248.24	35,212.00	14,638.80

The following are major tools used in analysis and interpretation

- Ratio analysis
- Trend percentage analysis
- Dupont analysis

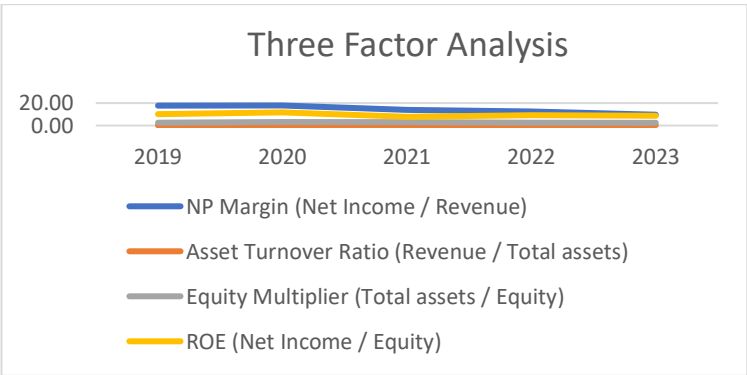
IV DATA ANALYSIS AND INTERPRETATION

NLC India Limited Datasheet for DuPont Analysis (Numbers are in crores)

DuPont Testing Using 3 Factor Analysis for NLC India Limited

Years	NP Margin (Net Income / Revenue)	Asset Turnover Ratio (Revenue / Total assets)	Equity Multiplier (Total assets / Equity)	ROE (Net Income / Equity)
	A	B	C	D=A*B*C
2018 - 2019	17.72997739	0.206039095	2.772073175	10.12657317
2019 - 2020	17.85998509	0.209017899	3.141681722	11.72807555
2020 - 2021	13.93809063	0.1955052	2.861427105	7.797300738
2021 - 2022	12.54788728	0.292988534	2.436594276	8.957863753
2022 - 2023	9.635198765	0.367914347	2.40538842	8.526928437

Three Factor Analysis



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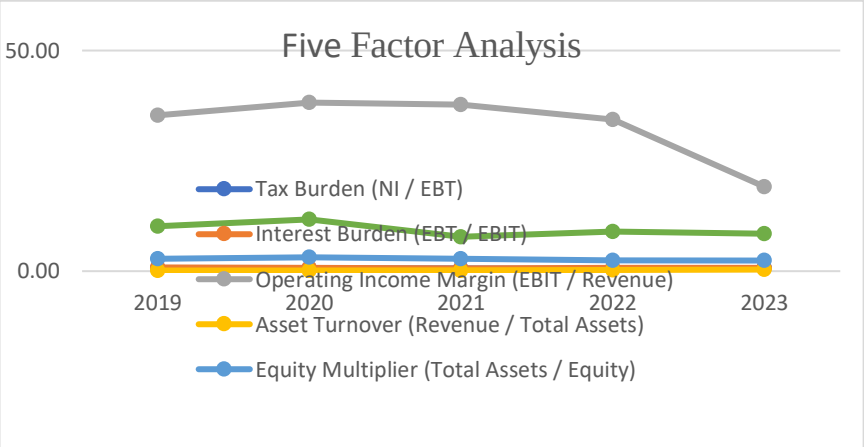
DuPont Testing Using 5 Factor Analysis for NLC India Limited

Years	Tax Burden (NI / EBT)	Interest Burden (EBT / EBIT)	Operating Income Margin (EBIT / Revenue)	Asset Turnover (Revenue / Total Assets)	Equity Multiplier (Total Assets / Equity)	ROE (Net Income / Equity)
	A	B	C	D	E	F=A*B*C*D*E
2019	0.593186851	0.845889109	35.33484842	0.206039095	2.772073175	10.12657317
2020	0.641321062	0.729031085	38.19966398	0.209017899	3.141681722	11.72807555
2021	0.586770573	0.629871982	37.71226945	0.1955052	2.861427105	7.797300738
2022	0.474512933	0.768855457	34.39361719	0.292988534	2.436594276	8.957863753
2023	0.723974132	0.695502219	19.13546893	0.367914347	2.40538842	8.526928437

Five Factor Analysis



NLC India Limited Datasheet for Assets Utilization (Numbers are in crores)

Years	Revenue/ Sales	Total Fixed Assets	Closing stock	Trade Payables / Creditors	Trade Receivables / Debtors	Total purchases
2019	7,145.92	11,684.43	910.41	1,988.07	4,606.19	3471.19
2020	7,916.30	17,716.16	828.42	1,830.89	6,691.83	3395.48
2021	7,249.63	20,045.74	908.2	1,512.18	5,611.18	983.18
2022	9,856.48	19,184.95	500.23	1,076.51	3,128.65	526.76
2023	12,955.00	18,731.91	231.81	1,635.53	3,791.44	2047.19

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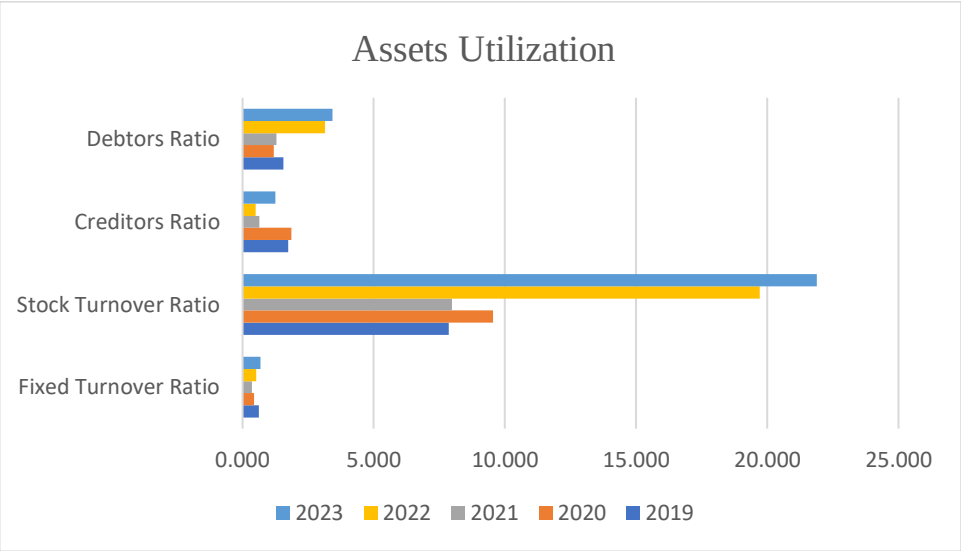
Assets Utilization Testing for NLC India Limited

Years	Fixed Turnover Ratio	Stock Turnover Ratio	Creditors Ratio	Debtors Ratio
2019	0.61157626	7.849122923	1.746009949	1.551373261
2020	0.446840625	9.555901596	1.854551612	1.182979843
2021	0.361654396	7.982415767	0.650173921	1.291997405
2022	0.513761047	19.70389621	0.489321976	3.15039394
2023	0.69160059	22.88628618	1.251698226	3.41690756

Assets Utilization



V FINDINGS

The analysis of NLC India Limited's financial performance reveals several key trends and fluctuations over the years. The net profit margin, ranging from 9.64% in 2023 to 17.86% in 2020, exhibits a slight downward trend from 2019 to 2023, indicating a potential decrease in profitability relative to revenue. Similarly, the asset turnover ratio shows a general increasing trend, varying from 0.206 in 2019 to 0.368 in 2023, suggesting improved efficiency in generating revenue from assets. However, the equity multiplier fluctuates between 2.405 in 2023 and 3.142 in 2020, reflecting inconsistencies in financial leverage. Return on equity (ROE) varies from 7.80% in 2021 to 11.73% in 2020, with no distinct trend, implying mixed performance in generating profit from shareholder equity. Tax burden and interest burden show slight fluctuations across the years, while the operating income margin experiences a noticeable decrease from 2020 to 2023, indicating a potential decline in operational efficiency. Additionally, the fixed turnover ratio sees a notable increase from 2021 to 2023, while the stock turnover ratio exhibits a significant increase over the years, suggesting faster inventory turnover. Both the creditors and debtors' ratios show variability, with no clear trend observed. Overall, these findings provide insights into NLCIL's financial performance, highlighting areas of strength and opportunities for improvement.

SUGGESTIONS

Based on the findings of the financial analysis, NLC India Limited (NLCIL) should focus on several strategic initiatives to improve its overall financial performance. Firstly, it should prioritize efforts to enhance profitability. Despite fluctuations, the net profit margin can be stabilized through measures such as cost optimization, revenue diversification, and enhancing operational efficiency. Moreover, while there is an upward trend in the asset turnover ratio, NLCIL can further optimize asset utilization through better management practices and strategic investments. Careful management of debt levels is essential, as fluctuations in the equity multiplier indicate varying levels of financial leverage. NLCIL should maintain an optimal balance to avoid excessive risk while ensuring sufficient capital for growth initiatives.

Efforts to enhance shareholder value should be emphasized. Despite mixed performance in return on equity (ROE), NLCIL can improve shareholder value by focusing on profitability, optimizing capital structure, and efficiently utilizing resources to generate higher returns. Additionally, minimizing tax and interest burdens is crucial. Adopting tax planning strategies and negotiating favourable financing terms can help reduce tax liabilities and interest expenses, thus improving overall financial performance.

Given the decrease in operating income margin, NLCIL should focus on enhancing operational efficiency. This involves streamlining processes, adopting innovative technologies, and improving productivity to reduce costs and increase margins. Furthermore, effective management of inventory and receivables is vital. NLCIL should optimize inventory levels and ensure timely collection of receivables to improve cash flow and working capital management.

Lastly, NLCIL should remain vigilant and adaptive to market dynamics and industry trends. Regular monitoring of financial metrics and prompt adjustment of strategies can help maintain competitiveness and resilience in a dynamic business environment. By implementing these strategic initiatives, NLCIL can strengthen its financial position and achieve sustainable growth in the long term.

VI CONCLUSION

The analysis of NLC India Limited's financial performance, including DuPont analysis, highlighted strengths in asset turnover and inventory management, but also challenges in managing financial leverage and profitability. Recommendations include strategies to improve profitability, enhance operational efficiency, and manage financial risks effectively. Strategies like cost optimization, revenue diversification, and debt management are crucial. Continuous monitoring of financial metrics, market dynamics, and industry trends is essential for prompt strategy adjustments. Leveraging these insights and implementing recommended strategies can help NLCIL achieve sustainable growth and profitability.

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