

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

A Study of Financial Performance Using DuPont Analysis in a Supply Chain

Dr. Aikor, Shirgba Timothy

Lecturer, Department of Supply Chain Management,
School of Logistics and Innovation Technology,
Federal University of Technology, Owerri, Nigeria

Abstract:

This study attempts to assess the financial performance of a supply chain company. In order to achieve the objective, this study has analysed the financial ratios applying the DuPont analysis, which has been demonstrated with tables to show the company's performance trend for five years (2018-2022). DuPont analysis is based on the analysis of Return on Equity (ROE) and Return on Assets (ROA). The ROE disaggregates performance into three components:

- *Net Profit Margin,*
- *Total Asset Turnover, and*
- *The Equity Multiplier*

The return on investment consists of Assets Turnover (Operating Income \times Total Assets) and Net Profit Margin (EBIT \times Operating Income). From the study, it is found that:

- *The company under study is more efficient in managing assets to generate profits than the use of equity to generate profits.*
- *The company is, on average, a low-risk firm for investors and shareholders.*
- *ROE and ROA are the most comprehensive measure of the profitability of a firm as well as a compass for making operating, investing, financing, and leverage-related decisions.*

Based on these findings, it is recommended that:

Management of the company needs to do an operational overhaul to sustain the significant areas of strength and overcome the weakness evident in the financial statements.

Keywords: *Financial performance, financial ratios, DuPont analysis, supply chain*

1. Introduction

DuPont analysis is a method of performance measurement that was started by the DuPont Corporation in the 1920s (Osteryoung & Constand, 1992). DuPont analysis, also known as DuPont identity, measures assets at their gross book value rather than at net book value to produce a higher Return on Equity (ROE). The method became a widely-used tool of financial analysis due to the elegance of Return on Assets (ROA) being affected by a profitability and efficiency measure. In the 1970s, emphasis in financial analysis shifted from ROA to return on equity (ROE), and the DuPont model was modified to include the ratio of total assets to equity. The key deliverables from three distinct versions of DuPont method have been created and used to help unravel the underlying drivers of profitability and turnover over time. It can be used as a compass in the process by directing the analyst toward significant areas of strength and weakness evident in the financial statements.

Basically, this study attempts to measure the financial performance of a supply chain company based in India. Performance Ratios are used to depict the performance of the business. These ratios are derived from the items of the audited financial statement of the company. The main objective is to assess the ratios of the company based on DuPont model, return on equity, and assets covering a period of five years, from March 2018 - March 2022, using trend analysis. The study also aims to review the concept of financial performance and financial ratios generally; profitability, management efficiency, liquidity, and leverage ratios. To derive a financial ratio, one variable of the financial statement is divided by the other. It illustrates the relationship between two financial variables. A financial ratio is an essential tool for small business firms and managers to measure the progress in achieving the targeted goals. Financial Analysis is the summarizing of large quantities of financial data for the purpose of evaluation and assessment of the performance of a company over time. It is more or less the process of reducing a large amount of historical financial data, from financial accounting statements to a smaller set of information more useful for decision-making. This analysis is usually done using accounting ratios, otherwise known as financial ratios (Yim & Lee, 2015).

The company under study is Future Supply Chain Solutions Limited (FSC). It is a leading third-party logistics service operator in India and covers the entire gamut of supply chain services across the logistics value chain, including smart warehousing, efficient transportation, and distribution system, temperature-controlled logistics, and last-mile

delivery logistics. FSC operates a pan-India distribution network and offers integrated warehouse management systems with highly automated state-of-the-art technology systems and speaks of the transportation model that enables innovative service offerings to the customers in an optimized and cost-efficient manner.

2. Literature Review

2.1. Concept of Financial Performance

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period (Kim, 2016). In other words, it is used to measure a firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Financial statements provide a formal record of a business's financial activities and position. Financial performance has been stated in the literature as being affected by certain factors such as liquidity, ownership, age, size, leverage, productivity, solvency, and asset turnover, and these may change in the face of a crisis. Performance ratios, otherwise called financial ratios, are used to depict the performance of the business. These ratios are derived from the items of the audited financial statement of the company (Yang & Kim, 2008).

Financial ratios, also called accounting ratios, express relationships between financial statement items. They are a useful source of historical data used by the management of a company to identify internal strengths and weaknesses and serve as a guide to estimate future financial performance. The ratios are also useful to investors as they are useful tools in making investment decisions. It also helps assess intercompany comparisons within the same industry or a 'trend' review of a company's performance over a period of time. Ratios are not generally meaningful as standalone numbers; they are meaningful only when compared to historical data and industry averages (Aikor, 2000). To derive a financial ratio, one variable of the financial statement is divided by the other to illustrate the relationship between two financial variables (Yim & Kim, 2016). A financial ratio is an essential tool for assessing or measuring the financial performance of a supply chain. Company owners and managers use it to track the progress in achieving the targeted goals. Financial Analysis is the process of reducing a large amount of historical financial data, taken from financial accounting statements to a smaller set of information more useful for decision-making or the summarizing of large quantities of financial data for the purpose of evaluation and comparison of the performance of a company over time. This analysis is usually done using accounting ratios, otherwise known as financial ratios.

2.2. Concept of Supply Chain

The supply chain is a business cycle made of the manufacturer, suppliers, transporters, warehouses, wholesalers, retailers, other intermediaries, and customers (final consumers) as partners or players. In a typical consumer goods market, any product traded evolves from raw material to finished products through a series of successive transactions on the business-to-business market (Chopra & Meindl, 2007). Within each organization, such as a manufacturer, the supply chain includes all functions involved in receiving and filling a customer request. These functions include, but are not limited to, new product development, marketing, operations, distribution, finance, and customer service.

Future Supply Chain Solutions Limited (FSC) is a leading third-party logistics service operator in India and covers the entire gamut of supply chain services across the logistics value chain, including:

- Smart warehousing,
- Efficient transportation and distribution system,
- Temperature-controlled logistics, and
- Last-mile delivery logistics

FSC operates a pan-India distribution network and offers integrated warehouse management systems with highly automated state-of-the-art technology systems and a hub and spoke transportation model that enables an innovative service offering to the customers in an optimized and cost-efficient manner. It caters to corporates in Fashion and apparel, Food and Beverages, Consumer Electronics, and High Tech Automotive. Others are:

- Engineering Home and Furniture Healthcare,
- General Merchandise, and
- E-Commerce sectors

As of September 30, 2018, FSC operations are run through 80 distribution centers across India, covering approximately 6.40 million sq. ft. of warehouse space. Its 'hub-and-spoke' distribution model comprises 14 hubs and 129 branches across India, covering 11,559 pin codes across 29 states and 5 union territories. During September 2018, FSC operated 832 containerized vehicles and 116 company-owned refrigerated trucks. The company is promoted by Future Enterprises Limited, which is promoted by Kishore Biyani.

2.3. Concept of DuPont Analysis

There are numerous models to describe how well the business is running, especially in the private sector of the economy. DuPont model is one such model. It was created by a DuPont employee by the name of F. Donaldson Brown. He developed a formula in 1914 that was used by the company as an internal management tool to better understand where its operating efficiency was coming from and where it was falling short. The model is still a valid tool for assessing a company's financial performance and, specifically, profitability (Kim, 2016). This is done by breaking down ROE into a

more complex equation called DuPont Equation. DuPont analysis shows the causes of shifts in this DuPont model, which is a product of two often-computed ratios, net profit margin and total asset turnover, which equals Return on Assets (ROA).

The elegance of ROA being affected by a profitability measure and an efficiency measure led to the DuPont method becoming a widely-used tool of financial analysis (Liesz & Maranville, 2008). DuPont model was modified in the 1970s to include the ratio of total assets to equity due to the general shift of emphasis in financial analysis from ROA to Return on Equity (ROE) using DuPont identity.

The DuPont identity is an expression that breaks Return on Equity (ROE) down into three parts:

- Profit margin,
- Total asset turnover, and
- Financial leverage

In other words, the DuPont identity is an expression that shows how a company's return on equity (ROE) can be represented as a product of three other ratios:

- The net profit margin,
- The total asset turnover, and
- The equity multiplier

Profit margin is a reflection of operating efficiency, asset turnover is a reflection of the efficient use of assets, and leverage shows how much a firm relies on debt to drive profitability. The DuPont identity is important because it helps an analyst understand what drives a company's ROE. The primary advantage of DuPont analysis is the fuller picture of a company's overall financial health and performance that it provides, compared to more limited equity valuation tools.

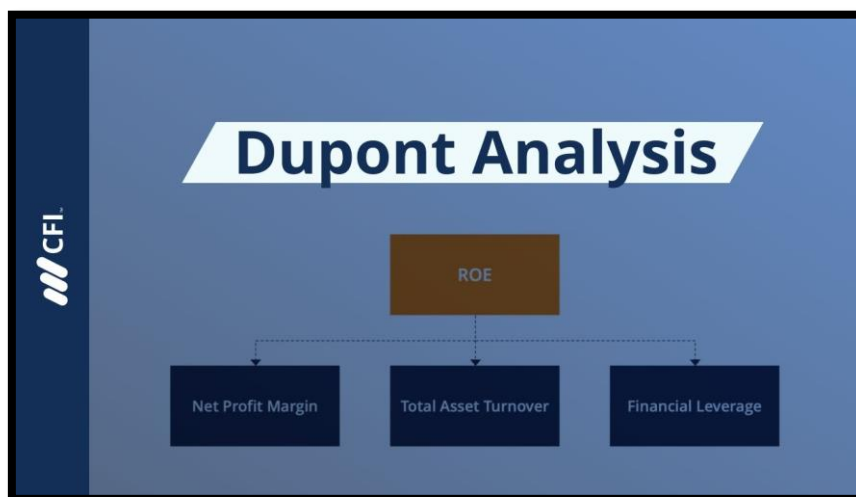


Figure 1: DuPont Analysis
Source: Corporate Finance Institute (CFI), 2022

The DuPont analysis formula is an alternate way to calculate and deconstruct Return on Equity (ROE) to better understand the underlying factors behind a company's ROE. It is done by adding additional factors and data points into the basic ROE equation to get a clearer glimpse of what is driving the changes over time in a company's ROE. The DuPont method has three assessment components; operating efficiency, asset efficiency, and financial leverage (equity multiplier). The DuPont Analysis allows analysts to understand where a company is strong and where it is weak when it comes to generating profitability. Whereas return on equity relies on a simple calculation of net income divided by shareholder equity to evaluate a company's performance, the DuPont formula goes deeper, focusing on the three crucial categories of return on equity.

2.3.1. DuPont Equation

There are two methods of DuPont equation:

- Three-step method, and
- Five-step method

The two methods are:

The three-step method is the easiest DuPont formula. It is done by simply multiplying the three determinants of three main components—net profit margin, total asset turnover, and equity multiplier to determine the return on equity.

When the calculations for the different components are broken down into the DuPont three-step method formula looks thus:

$$\text{ROE} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Common Equity}}$$

The second method is the five-step DuPont method, which is a slightly more detailed version of the three-step equation. This formula allows investors to see whether a company is propping up its return on equity through accumulating debt or payables while suffering from a low-profit margin and/or depreciating assets. The individual calculations for determining asset efficiency and financial leverage remain the same. However, the net profit margin

formula used to calculate operational efficiency changes to better show a company's earnings before interest and taxes or EBIT.

The EBIT is calculated by subtracting a company's earnings before taxes (EBT) from its interest expense (IE). The rest of the equation is then multiplied by one minus the tax rate to determine the effect of tax on a company.

The five-step DuPont equation looks like this:

$$\text{ROE} = \left(\frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{IE}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}} \times (1 - \text{Tax Rates}) \right)$$

2.4. Return of Equity (ROE)

Return on equity (ROE) is the measure of a company's net income divided by its shareholders' equity.

$$\text{ROE} = \frac{\text{Net income}}{\text{Shareholders' equity}}$$

Where: Shareholder's equity = Total Assets - Total liabilities.

It is, therefore, a gauge of a company's profitability and how efficiently it generates those profits. The higher the ROE, the better a company converts its equity financing into profits. Return on Equity provides you with an insight into your business's profitability for owners and investors (Yim & Lee, 2015). In short, it helps investors understand whether they are getting a good return on their money, while it is also a great way to evaluate how efficiently your company can utilize the firm's equity. ROE can also be thought of as a return on assets minus liabilities. In other words, return on equity measures the profitability of a company in relation to stockholders' equity. The higher the ROE, the more efficient a company's management is at generating income and growth from its equity financing. ROE is often used to compare a company to its competitors and the overall market. ROEs of 15-20% are generally considered good. The higher a company's ROE percentage, the better. A higher percentage indicates that a company is more effective at generating profit from its existing assets. Likewise, a company that sees increases in its ROE over time is likely getting more efficient. ROE is also a factor in stock valuation, in association with other financial ratios

2.5. Concept of Return on Assets (ROA)

Return on assets is a metric that indicates a company's profitability in relation to its total assets. ROA can be used by management, analysts, and investors to determine whether a company uses its assets efficiently to generate a profit. You can calculate a company's ROA by dividing its net income by its total assets.

$$\text{ROA} = \frac{\text{Net income}}{\text{Total assets}}$$

Net income can be arrived at by deducting interest paid on debt, income tax due to the government, and all operational and non-operational expenses. Operational costs can include:

- Cost of goods sold (COGS),
- Administrative and marketing costs, and
- Amortization and depreciation of equipment and property

A ROA of 5% or more is typically considered good, while 20% or better is considered great. In general, the higher the ROA, the more efficient the company is at generating profits from assets. However, for the basis of comparison, any one company's ROA must be considered in the context of its competitors in the same industry and sector.

2.6. Concept of Equity Multiplier

The equity multiplier is a ratio that measures a company's financial leverage, which is the amount of money the company has borrowed to finance the purchase of assets. The formula for calculating a company's equity multiplier is:

$$\text{Equity multiplier} = \frac{\text{Total assets}}{\text{Total stockholder's equity}}$$

In other words, the equity multiplier reveals how much of the total assets are financed by shareholders' equity. This ratio is essentially a risk indicator used by investors and other interested parties to determine how leveraged the company is. It is generally accepted that there is no ideal value for an equity multiplier ratio because not all business strategies are the same. It can be high or low depending upon the financing strategies of a business; it can also differ from company to company depending on its size. However, a lower equity multiplier indicates a company has lower financial leverage, and a higher ratio means high leverage, which is a business risk. Hence, it is better to have a low equity multiplier because that means a company is not incurring excessive debt to finance its assets.

2.7. Net Profit Margin

Net Profit margin gauges the degree to which a company or a business activity makes money, essentially by dividing income by revenues. Expressed as a percentage, profit margin indicates how much kobo of profit has been generated for each naira of sale. It measures how much net income is generated as a percentage of revenues received. Net profit margin helps investors assess if a company's operating costs and overhead costs are under control by management and/or if management is generating enough profit from its sales. Net profit margin is one of the most important indicators of a company's financial health. By tracking increases and decreases in its net profit margin, a company can assess whether current practices are working and forecast profits based on revenues. Because companies express net profit margin as a percentage rather than a naira amount, it is possible to compare the profitability of two or more businesses regardless of size and do a self-business assessment.

A good net profit margin will vary considerably by industry. However, as a general rule of thumb, a 10% net profit margin is considered average, a 20% and above margin is considered high (or 'good'), and a 5% margin is low (Kang & Ahn, 2008).

$$\text{Net Profit Margin (NPM)} = \frac{R - \text{COGS} - E - I - T}{R} \times 100 = \frac{\text{Net income}}{R} \times 100$$

Where:

- R- Revenue
- COGS- the Cost of goods sold
- E- Operating and other expenses
- Interest
- T- Taxes

3. Methodology

The objective of this study is to assess the financial performance of a supply chain company through the use of ratio analysis. The paper assessed the financial performance of Future Supply Chain Solution Ltd. It is a leading third-party logistics service operator in India and covers the entire gamut of supply chain services across the logistics value chain, including smart warehousing, an efficient transportation and distribution system temperature-controlled logistics, and last-mile delivery logistics operating in the Transport and Distribution sector, using financial ratios to measure. The data is presented through table and graph using Microsoft Excel 2016 and analyzed using Trend Analysis. Trend analysis is a statistical tool that helps to determine the future movements of a variable on the basis of its historical trends (Aikor & Gbade, 2018). In simple words, it predicts future behavior on the basis of past data. Under this method, a researcher collects information from multiple time periods and plots the information on a horizontal line to get some meaningful information. There is no specific amount of time for a movement to become a trend. However, the longer the movement, the better it is.

The periods of assessment cover the five years from 2018 to 2022, and the ratios analyzed are:

- Net Profit Margin,
- Assets turnover ratio, and
- Equity Multiplier (Leverage)

These ratios are selected in line with the 3 and 5 steps process of the DuPont model.

All the analyzed data collected is retrieved from:

<https://www.moneycontrol.com/financials/futuresupplychainsolutions/ratiosVI/FSC> as authored by Dion Global Solutions Ltd (Software company in India) and electronically retrieved under the following considerations:

- Data is certified Audited Financial Statements of the company posted on its website in accordance with the provisions of Section 129(3) of the Companies Act, 2013, read with the Companies (Accounts) Rules, 2014, a statement in Form AOC-1 containing the salient features of the financial statements of the said company and Associate company in India.
- There is no error value on the financial information disclosed.

4. Data Presentation and Analysis

The data so presented here was retrieved as presented earlier in the methodology audited Financial Statements of Future Supply Chains Ltd website authored by Deon Global Solutions Ltd in a clearly tabulated excel form properly titled as 'Future Supply Chain Solutions Ltd, Key Financial Ratios' (March, 2018-March,2022).

4.1. Net Profit Margin

Net Profit margin is an operating efficiency ratio derived (as part of profitability ratios) from a comparison of revenues to different groupings of expenses within the income statement. A different class of profitability ratios compares the results listed on the income statement to the information on the balance sheet.

Net profit margin measures how much net income is generated as a percentage of revenues received. In other words, the net profit margin is intended to be a measure of the overall success of a business. A high net profit margin indicates that a business is pricing its products correctly and exercising good cost control. Net profit margin helps investors assess whether a company's management is generating enough profit from its sales and whether operating costs and overhead costs are under control. A good margin will vary considerably by industry. However, as a general rule of thumb, a 10% net profit margin is considered average, a 20% margin is considered high (or 'good'), and a 5% margin is low (Yang & Yoon, 2005).

	2022	2021	2020	2019	2018
Operating Profit Margin (%)	18.75	9.74	22.23	13.34	16.01
Profit Before Interest and Tax Margin (%)	-3.3	-23.95	7.55	9.55	10.38
Gross Profit Margin (%)	-3.71	-25.69	7.68	9.6	10.52
Cash Profit Margin (%)	16.21	-3.8	16.61	12.34	16.11
Adjusted Cash Margin (%)	16.21	-3.8	16.61	12.34	16.11
Net Profit Margin (%)	-114.64	-39.52	-5.6	5.85	3.67
Adjusted Net Profit Margin (%)	-101.96	-36.85	-5.5	5.82	3.62
Return On Capital Employed (Assets turnover) (%)	13.19	-7.37	9.2	13.74	17.68
Return On Net Worth (%)	497.37	-33.04	-8.59	10.85	5.72
Adjusted Return on Equity (%)	--	-33.04	3.62	16.05	16.88
Return on Assets Excluding Revaluations	-31.98	127.14	169.35	149.78	133.51
Return on Assets, Including Revaluations	-3.1	12.7	16.9	14.99	13.5
Return on Long-Term Funds (%)	33.13	-8.81	9.92	13.74	17.68

Table1: Profitability Ratios

Source: Dion Global Solutions Ltd. Assessed on 11/06/2022 from <https://www.moneycontrol.com/financials/futuresupplychainsolutions/ratiosVI/FSC>

Statistics in table 1 above show a low performance for the whole period, with the worst year being 2022 (-11.46%) and the improved being year 2019 (5.85%). This means the company was inefficient in generating profits from sales either due to poor management of costs or other extraneous factors.

4.2. Assets Turnover Ratio

Asset turnover ratio is the ratio between the value of a company's sales or revenues and the value of its assets. It is an indicator of the efficiency with which a company is deploying its assets to produce revenue. Thus, the asset turnover ratio can be a determinant of a company's performance. The higher the ratio, the better the company's performance. Asset turnover ratio can be different from company to company. Usually, it is calculated on an annual basis for a specific financial year. In the retail sector, an asset turnover ratio of 2.5 or more could be considered good, while a company in the utilities/logistics sector is more likely to aim for an asset turnover ratio between 0.25 and 0.5 (Aikor, 2022).

	2022	2021	2020	2019	2018
Inventory Turnover Ratio	275.57	197.07	323.95	201.24	--
Debtors Turnover Ratio	1.31	0.6	1.96	3.66	3.47
Investments Turnover Ratio	1.51	0.4	0.97	201.24	--
Fixed Assets Turnover Ratio	1.48	0.51	1.03	2.13	2.05
Total Assets Turnover Ratio	1.51	0.4	0.98	1.36	1.49
Asset Turnover Ratio	0.78	0.4	1.15	1.61	1.8
Number of Days in Working Capital	-99.28	259	-18.29	34.82	32.56

Table 2: Management Efficiency Ratios

Source: Dion Global Solutions Ltd. Assessed on 11/06/2022 from <https://www.moneycontrol.com/financials/futuresupplychainsolutions/ratiosvi/Fsc>

The results in table 2 show an efficient management of assets for years: 2018(1.8), 2019(1.61), 2020(1.15), and 2022(0.78), except for 2021(0.4), which is below the sector average. Future Supply Chains Ltd is a logistics company. This is most likely attributable to COVID-19 and its devastating effects on businesses generally, especially those in logistics and transport that involve the movement of goods and services despite the lockdown.

4.3. Return on Assets (ROA)

In DuPont analysis, return on assets is a company's operating profit margin multiplied by asset turnover ratio (Corporate Finance Institute, 2022). In other words, return on assets is a metric that indicates a company's profitability in relation to its total assets. ROA can be used by management, analysts, and investors to determine whether a company uses its assets efficiently to generate a profit. You can calculate a company's ROA by dividing its net income by its total assets. A ROA of 5% or lower might be considered low, while a ROA over 20% high. However, it is best to compare the ROAs of similar companies. A ROA for an asset-intensive company might be 2%, but a company with an equivalent net income and fewer assets might have a ROA of 15%.

Accordingly, the result from table 1 shows a healthy performance of efficient generation of profits from assets of 13.35% (2018), 14.99% (2019), 16.93(2020), and 12.7(2021). However, the performance slid to a negative ratio of -3.98%

in 2022. This means, on average, for the period of five years, the company exhibits efficiency four times before sliding to negative. Management needs to do a surgical review of operations to identify the possible cause(s).

	2022	2021	2020	2019	2018
Current Ratio	0.42	1.09	1.15	1.76	1.67
Quick Ratio	0.97	1.75	1.37	1.75	1.67
Debt Equity Ratio	--	1.09	0.57	0.36	0.05
Long-Term Debt Equity Ratio	--	0.75	0.46	0.36	0.05
Debt Coverage Ratios					
Interest Cover	0.67	-0.87	1.33	6.99	11.38
Total Debt to Owners Fund	--	1.09	0.57	0.36	0.05
Financial Charges Coverage Ratio		0.81	3.39	9.59	16.62
Financial Charges Coverage Ratio Post Tax	-6.11	0.81	2.26	7.64	9.76

Table 3: Liquidity and Solvency Ratios

Source: Dion Global Solutions Ltd. Assessed on 11/06/2022 from

<https://www.moneycontrol.com/financials/futuresupplychainsolutions/ratiosVI/FSC>

4.4. Leverage Ratios (Equity Multiplier)

A leverage ratio is any one of several financial measurements that assesses the ability of a company to meet its financial obligations. A leverage ratio may also be used to measure a company's mix of operating expenses to get an idea of how changes in output will affect operating income. It is synonymous with the equity multiplier in DuPont model. Generally, a solvency or leverage ratio measures the size of a company's profitability and compares it to its obligations. By interpreting a solvency ratio, an analyst or investor can gain insight into how likely a company will be to continue meeting its debt obligations. A stronger or higher ratio indicates financial strength. By interpreting a solvency ratio, an analyst or investor can gain insight into how likely a company will be to continue meeting its debt obligations.

A stronger or higher ratio indicates financial strength. In other words, it measures the margin of safety a company has for paying interest on its debt during a given period. The higher the ratio, the better. If the ratio falls to 1.5 or below, it may indicate that a company will have difficulty meeting the interest on its debts. So, the term 'solvency' always means long-term solvency, as it is possible for a company to have high liquidity but low solvency. This would imply that the business will soon face financial difficulty. A healthy company will have a good amount of both short-term liquidity and long-term financial solvency. The solvency ratios of the company under study are reflected in Debt Equity ratio and Interest Coverage Ratio.

4.5. Debt/Equity Ratio

The Debt/Equity Ratio is a ratio of ordinary shareholders' equity and the stake of creditors in a company. In other words, it is a measure of a company's financial leverage. Debt/equity ratio is calculated as long-term debt divided by common shareholders' equity.

From the results in table 2, the company was a low-risk investment for lenders or interested investors with a debt-to-equity ratio of .05(2018) and 0.36(2019). The solvency ratio shows a gradual weakness from 2020(0.57 to 2021(1.09). Generally, a debt-equity ratio of 0.25- 0.50 indicates a satisfactory ratio. However, anything above 0.50 shows gradual weakness, while a negative ratio means the company has more liabilities than assets which can lead to insolvency. A Long Term-Debt Equity ratio of 0.05(2018) and 0.36(2019) and 2020(0.46) shows strength. However, the leverage ratio slides to a weak position in 2021(0.75).

4.6. Interest Coverage Ratio

The interest coverage ratio is a debt and profitability ratio used to determine how easily a company can pay interest on its outstanding debt. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) by its interest expense during a given period. Analysts prefer to see a coverage ratio of three (3) or better. A coverage ratio below one (1) indicates a company cannot meet its current interest payment obligations and, therefore, is not in good financial health. It is often used by creditors, investors, and lenders to judge the risk of lending any amount of capital to a business.

The statistics, as contained in table 2, indicate that the Interest coverage ratio was strong in 2018(11.38) and 2019(6.99). However, it showed a weakness in 2020(1.33), 2021(-0.87), and 2022(0.67). Management needs to do an overhaul to sustain the gain of 2018 and 2019 against the unhealthy status in the other three years.

5. Findings and Conclusion

This study attempts to measure the financial performance of Future Supply Chain Solutions Ltd. It is a company that specializes in offering transport and logistics services. To achieve its objective, the researcher analyzed the following ratios associated with DuPont model; Net profit margin, assets turnover ratio, and leverage ratio (debt equity and interest coverage-equity multiplier) using DuPont analysis. The data, which is the audited financial statements of the company under study, is sourced online and presented through a table using Microsoft Excel 2016. It is analyzed using trend

analysis covering the period of five years (2018 to 2022). The ratios so analyzed are: Net Profit Margin, Assets turnover ratio, and Equity Multiplier (Leverage) and are selected in line with the 3 and 5-step DuPont method.

The study shows five key results:

- First, the study confirms that financial ratios are an essential tool to measure or assess the financial performance of a company despite its limitations. In addition, DuPont analysis method helps deepen the assessment by revealing the efficiency capabilities or otherwise of management.
- Secondly, the trend of net profit margin shows that the management of the company did not efficiently generate profits from sales either due to poor management of costs or other extraneous factors, as reflected in the ratios assessed compared to normal standards.
- Thirdly, management efficient application of assets to generate income. The result shows that, for the period of five years, the company exhibited efficiency four times before sliding to negative in only one year.
- Fourthly, the company was a low-risk investment for lenders or interested investors with a debt-to-equity ratio of .05(2018) and 0.36(2019). However, the leverage ratio shows a gradual weakness from 2020(0.57 to 2021(1.09) as compared normal standard.
- Finally, Interest Coverage Ratio was strong in 2018(11.38) and 2019(6.99). However, it showed a weakness in 2020(1.33), 2021(-0.87), and 2022(0.67). This means, on average, the company will have challenges meeting interest payment obligations.

It is recommended that:

- Management of the company needs to do an operational overhaul to sustain gains and overcome unhealthy status performance in some years. Since these ratios are interpreted and often used by creditors, investors, and lenders to judge the risk of lending any amount of capital to a business or investing.
- The management of the Company has to put in place a mechanism to identify, assess, monitor, and mitigate various risks to key business objectives. In addition, the internal control systems need to be commensurate with the nature of its business and the size and complexity of its operations and should be routinely tested by the Auditors.
- Management has to devise resilient strategies to sustain the good results of the past years and overcome the current challenge especially challenges associated with the general effect of COVID-19 on businesses.
- Management, therefore, needs to efficiently boost revenue through: controlled operational costs, redesigning of operational verticals,
- Lower finance costs, and other measures to improve the overall service delivery and increase internal consistency.

6. References

- i. Hak SK (2016). A study of financial performance using DuPont analysis in a food distribution market 'Culinary Science & Hospitality Research'. DOI: 10.20878/cshr.2016.22.6.005.
- ii. Aikor ST (2000). The use of Accounting Ratios in making company decisions. University of Jos, Jos, Master of Business Administration Thesis.
- iii. Yim BJ, Lee SY (2015). An empirical study on the mutual influence between trade and economic growth in Korea. *J Int Trade Commer* 11(4):537- 552.
- iv. Yim HR, Kim HS (2016). The study of the behavioral intention of environmentally friendly agricultural products choice in consumers by using the theory of planned behavior. *J Foodservice Mgmt* 19(1):201- 221.
- v. Osteryoung J, Constand R (1992). Financial ratios in large public and small private firms. *Journal of Small Business Management* July: 35-47.
- vi. Liesz TJ, Maranville SJ (2008). Ratio analysis featuring the DuPont method: an overlooked topic in the finance module of small business management and entrepreneurship courses. *Small Business Institute Journal* 1:17-34.
- vii. Yang SP, Yoon DS (2005). The impacts of financial characteristics on profitability performances in food-service companies. *J Foodservice Mgmt* 8(1):273-293.
- viii. Yang SP, Kim HI (2008). Financial ratios analyses of Korean food service companies subject to external audit. *Korean J Tourism Res* 23(2): 321-343.
- ix. Chong YK, Koo WI (2004). Using EVA to analyze the management performance of non-listed family restaurants. *J of Tourism Sci* 15(4):212- 223.
- x. Aikor ST, (2022). Small and Medium Enterprises (SMEs): Key to Socio-Economic Development of Nigeria. *International Journal of Research and Innovation in Social Sciences (IJRISS)*; Vol.5 No12, December 2021, PP 866-872.
<https://doi.org/10.47772/IJRISS.2021.51256>
- xi. Aikor ST & Gbande CPA (2018). Effect of Enabling Environment on Small and Medium Enterprises Growth in Makurdi metropolis, *Journal of Accounting, Finance, and Development (JAFID)*, Vol.1 No2,
- xii. Corporate Finance Institute (CFI), 2022. Accessed on 11/14/2022 from:
<https://corporatefinanceinstitute.com/resources/accounting/DuPont-analysis>