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EFFECT OF CASH FLOW ACTIVITIES ON FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA.

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ABSTRACT: The study assessed the impact of cash flow activities on financial performance of manufacturing firms in Nigeria. Specifically, the study examined the effect of Net Cash Flow from Operating Activities (NCFOP), Net Cash Flow from Investing Activities (NCFIA) and Net Cash Flow from Financing Activities (NCFFA) on Profit for the Year (PFY) of manufacturing firms in Nigeria. The study was based on a sample of eighteen (18) manufacturing firms listed on Nigeria Exchange Group during 2013-2024 period. The data obtained from the annual reports and financial statements of the selected firms were analyzed using, Descriptive Statistics, Pairwise Granger Causality test, Levin, Lin & Chu t***** Unit Root test, and Panel Least Square Regressing Analysis. Results of the analysis suggest that NCFOA and NCFIA positively and significantly affect Profit for the Year of manufacturing firms in Nigeria, while NCFFA negatively, but non-significantly affect Profit for the Year of the firms. The implication of these findings is that Profit for the Year of the firms will improve when NCFOA and NCFIA are increased. Likewise, Profit for the Year will improve as NCFFA is reduced. Based on these findings, the study recommends that manufacturing firms in Nigeria should maximize returns for shareholders by improving their NCFOA. This can be achieved by increasing the current assets of the firms and reducing the current liabilities. It was also recommended that the manufacturing firms should maximize profit for shareholders by increasing their NCFIA. This can be done by increasing finance income and reducing investment in long term assets that will not guarantee significant revenue for the firms. It was finally recommended that the firms should increase profitability by reducing their NCFFA. This can be achieved by increasing dividend distribution to shareholders. More dividends to shareholders will attracting more investors to the manufacturing firms. More borrowings can also be used to curtail excessive financing cash flow and monitor agency conflicts in the manufacturing firms.

Keywords: Cash Flow Activities, Financial Performance, Manufacturing Firms, Panel Data Analysis, Profit for the Year

1.1 Introduction

The traditional financial statements, namely, the statement of profit or loss and the statement of financial position provide information for firm managers, investors, analysts and other users using accrual accounting system, which is compulsory for business transactions in accordance with the generally accepted accounting principles (GAAP). However, the accrual accounting system is the result of the revenue recognition and the matching principle in

accounting, which recognize revenue when earned and expenses when incurred, rather than when cash is received or paid (Bhandari & Iyer, 2013). As a result of this, data from a statement of financial position tends to be static in nature, meaning that they measure only one point in time period. Again, statement of profit or loss is characterized by a lot of random non-cash allowances, for instance, contributions to pension, amortization and depreciation (Albrecht, 2003). Thus, the fact that a firm is profitable does not mean that it is also liquid or solvent, because the profit is not cash. The liquidity, solvency, flexibility and the financial performance of the firm are set on the firm's ability to generate positive cash flows from its operating, investing and financing activities (Turcas, 2011).

Rogers and Grimsley (2023) described cash flow as presented on cash flow statement as showing the cash inflow and outflow, and gives insight as to how the funds in a business are spent. A cash flow statement is important because it allows businesses to monitor their financial health and determine whether they can afford to cover their expenses. Wingerard et al, 2013) also defined cash flow as the amount of money that the business is able to obtain from customers and debtors (cash inflow) and the same amount of money that the business is able to spend (cash outflow) within a period. It is the inflow of cash to the business as well as the outflow of cash from the business. Adetifa (2005) stated that the importance of cash management is to make sure that there is positive cash flow for smooth business operation. Cash management is professional because of its importance in managing corporate cash transactions.

1.2 Statement of the Problem

The manufacturing sector in Nigeria serves as a pivotal component in the country's economic framework, contributing significantly to its GDP and providing a substantial number of employment opportunities. However, the performance of manufacturing firms in Nigeria is often plagued by numerous challenges, one of the most critical being the management of cash flow activities. Cash flow, defined as the net amount of cash and cash-equivalents being transferred into and out of a business, has a direct influence on the liquidity, solvability, and overall financial health of firms. The unique business environment of Nigeria, characterized by infrastructural deficiencies, power supply inconsistency, and regulatory challenges, puts additional strain on the cash management strategies of these firms. Consequently, ineffective cash flow management may lead to liquidity shortfalls, hamper day-to-day operations, limit strategic investment opportunities, and ultimately impact the performance and sustainability of manufacturing firms.

This research intends to bridge the knowledge gap by examining the relationship between cash flow activities and the performance of manufacturing firms in Nigeria, with the aim of identifying the cash flow management practices that are most conducive to enhancing firm performance. The study will employ a mixed-methods approach, combining quantitative analysis of financial data with qualitative insights gleaned from industry stakeholders. This comprehensive assessment will provide both theoretical and practical contributions, offering a basis for policy recommendations and strategic planning for manufacturing firms and stakeholders within the Nigerian economic milieu.

1.3 Objectives of the study

The main objective of this study is to analyze the effect of cash flow activities on financial performance of manufacturing firms in Nigeria. The specific objectives of the study are to:

i. Determine the effect of net cash flow from operating activities on profit for the year of manufacturing firms in Nigeria.

ii. Ascertain the effect of net cash flow from investing activities on profit for the year of manufacturing firms in Nigeria.
iii. Investigate the effect of net cash flow from financing activities on profit for the year of manufacturing firms in Nigeria.

1.4 Research Questions

The above objectives are in line with the following research questions:

i. What is the effect of net cash flow from operating activities on profit for the year of manufacturing firms in Nigeria?
ii. To what extent does net cash flow from investing activities affect profit for the year of manufacturing firms in Nigeria.?
iii. How does net cash flow from financing activities affect profit for the year of manufacturing firms in Nigeria?

1.5 Statement of Hypotheses

The following null hypotheses are formulated to guide the analysis of the study:

i. Net cash flow from operating activities does not significantly affect profit for the year of manufacturing firms in Nigeria.
ii. Net cash flow from investing activities does not significantly affect profit for the year of manufacturing firms in Nigeria.
iii. Net cash flow from financing activities does not significantly affect profit for the year of manufacturing firms in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Cash Flow Activities

Bhandari and Iyer (2013) describe cash flow as an essential element of financial management process which is important for the successful performance of business organizations. Cash flows create value. Duhovnik (2008) stated that traditional accounting statements do not assure adequate information about the liquidity and solvency of a firm. For instance, a firm which has to finance its inventory before it is sold and is unable to collect the receivables without a time lag. While profit is recognized in the income statement, the statement of cash flows expresses negative net cash flow from operating activities. Since the liquidity problems are not recognized in the income statement, the income statement ratios cannot be a good indicator of liquidity. Stobierski (2020) noted that for investors, understanding the difference between profit and cash flow makes it easier to know whether a profitable company is a good, long-term investment based on its ability to remain solvent in times of economic crisis.

2.1.2 Cash Flow from Operating Activities

Faulkenberry (2015) noted operating cash flow is cash generated from normal operations of a business. Operating cash flow is a measure of the cash generated or used by a company in a given period solely related to its core operations. Operating cash flow is not the same as net income, which includes transactions that did not involve actual transfers of money (depreciation is a common example of a noncash expense that is part of net income but not operating cash flow). Prowal and Tainis (2013) observed that operating cash flow represents the company's ability to generate cash and working capital. Excess operating cash flow is achieved through an effective working

capital management and shorter period of cash conversion. For a company to be said to be successful in its operation, the company should generate enough cash to meet daily operation, pay taxes and dividend.

2.1.3 Cash Flow from Investing Activities

Titman, et al (2011) described investing activities as the purchase and sale of long term assets. Cash inflows are associated with the sale of long term assets such as buildings. On the other hand, cash outflows occur through long term asset purchases. Orhan and Basar (2015) general, there could be a net cash inflow or outflow from investing activities. On the other hand, cash inflows may sometimes be equal to cash outflows. Boyd and Cortese-Danile (2000) stated that cash is regularly invested in productive assets. Among these assets, property, plant and equipment are essential for growth. Moreover, there could be need for intangibles and long-term securities of other companies.

2.1.4 Cash Flow from Financing Activities

Taillard (2012) opined that cash flow from financing activities is the process of acquiring capital to fund a start-up, an expansion, basic operations or whatever else the company needs the extra funds for. Retained earnings are the resources for internal financing. However, external financing involves two key resources which are equity and debt. The sale of company shares to investors provides cash, whereas, loans and the sale of bonds constitute the methods for debt financing. Consequently, financial markets should be used for external funds. Mc Laney and Atrill (2014) explained that financing activities may produce cash inflows or outflows which are affected by financial strategies of companies. For instance, in the period of expansion, cash inflows are usually observed since there could be insufficient cash flows from operating activities which requires the sale of shares or debt securities for the maintenance of company operations. In contrast, operations need relatively lower amount of financing in the period of maturity.

2.1.6 Financial Performance

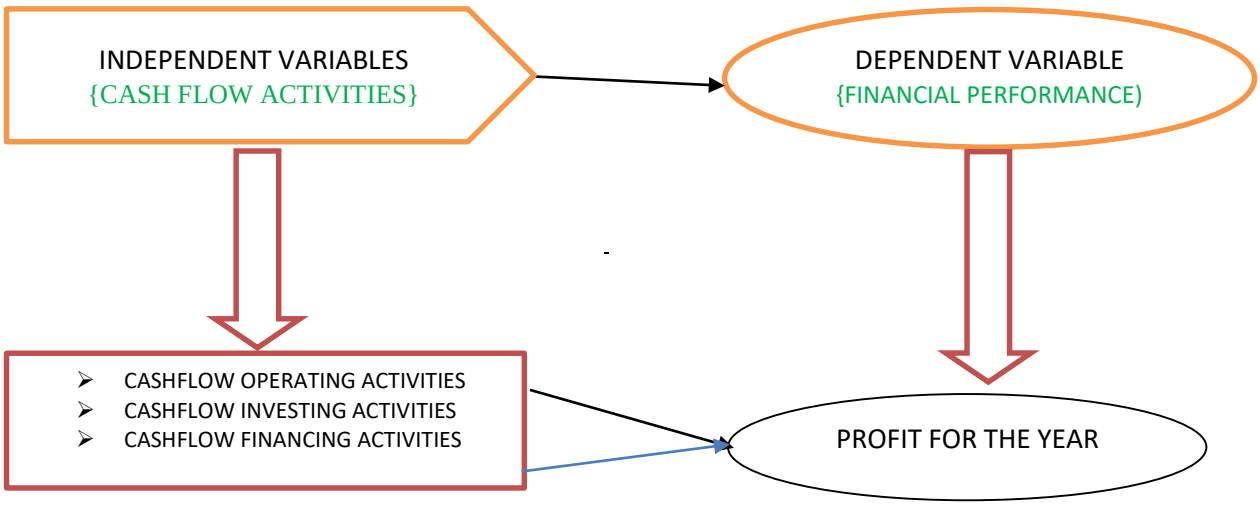
Verma (2018) stated that financial performance is an aspect of financial management that measures the degree to which financial objectives is being or has been accomplished. It is the process of measuring the result of a firm's policy and operations in monetary terms. It is used to measure a firm's overall 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. Refmasari and Supriyono (2019) noted that firm performance is an important value for stakeholders. If the firm's performance is good, it will increase stakeholders' confidence and add its own positive value to management. Therefore, management must improve their firm's performance and make decisions for the firm's survival. Nelly (2019) equally said that financial performance measures mainly serve three purposes; they serve as major objectives of the business (profit), they serve as a tool of financial management, and also serve as a mechanism for control and motivation within an organization.

2.1.7 Profit for the Year

James (2021) described profit for the year also known as profit after tax as the amount that is remains after a company has paid off all of its operating and non-operating expenses, other liabilities and taxes. This profit is what is distributed by the entity to its shareholders as dividends or is kept as retained earnings in reserves. Analysts look at many different measures of performance when assessing a firm for investment. Kathuri (2014) stated that firms that are more profitable are assumed to grow while firms that are less successful or are less profitable are assumed to lose market share. Profitable firms are in a position to gain competitive advantage either through the

discovery of cost reducing innovations or by imitating the best practices of the industry. An above average profitability leads to a firm to a subsequent growth trajectory.

Fig 2.2: Conceptual Framework Summary



Source: Author's Compilation, 2025

2.2 Theoretical Framework

We anchored the study on Free Cash Flow Theory, which was developed by Jensen and Michael in 1996. The Free Cash Flow Theory described the agency conflict and the process of decision making by firm managers when there is free cash flow and how their decisions affect the financial performance of the manufacturing firms.

2.2.1 Free Cash Flow Theory

The Free Cash Flow Theory was developed by Jensen and Michael in 1996. Jensen and Michael (1996) argued that managers do not behave in a manner consistent with profit maximization of the firms. Managers instead use increased cash flow to pursue objectives that have little to do with increasing profits and a great deal to do with making the managers lives better (such as increasing the size of their company). The agency cost explanation introduced by Jensen, et al (1995), suggests that monitoring difficulty creates the potential for management to

spend internally generated cash flow on projects that are beneficial from a management perspective but costly from a shareholder perspective.

Donaldson (1997), argues that managers of firms with free cash flows (cash flows in excess of profitable investment opportunities) tend to waste cash by taking excessive perquisites or by making unprofitable investments. Managers are more likely to use the free cash flows to make investments that will be incremental to the size of the firm (or to pay themselves excessive perks), than to pay dividends to the shareholders or repurchase outstanding shares. A testable implication of the agency hypothesis is that firms that have free cash flows are likely to grow beyond the optimal point of shareholder wealth maximization. Shareholders of such firms will benefit from any managerial decision that prevents these wasteful expenditures. Share repurchases prevent such waste by using up excess cash flows (Jensen & Smith, 1995).

2.3 Empirical Review

2.3.1 Operating Cash Flow and Financial Performance

Rahman and Sharma (2020) assessed the impact of operating cash flows on the companies' financial performance using manufacturing and insurance firms listed on Tadawul, Saudi Arabia Stock Exchange during 2015-2018 periods for insurance companies, while the periods are 2014-2018 for the manufacturing companies. The sample consists of five (5) companies from each sector totaling 10. The sample size depends on data availability. The data were extracted from companies' annual reports by considering Return on Assets (ROA) and Return on Equity (ROE) as dependent variables, CFOs as an explanatory variable, firm size (SIZE) and Leverage (LEV) as control variables, and an industry dummy. The result of analysis reveals a positive and significant association between financial performance (ROA and ROE) and operating cash flows (CFOs), and a negative association for SIZE and LEV.

Sarpingah (2020) appraised the effect of cash turnover, receivables turnover and inventory turnover on the level of liquidity, an empirical study of Property, Real Estate, and Building Construction Companies that Go Public in Kompas 100 Index 2013-2018. The research objectives were to: (i) determine the effect of cash turnover on liquidity; (ii) Examine the effect of accounts receivable turnover on liquidity; (iii) Investigate the effect of inventory turnover on liquidity. The population of this research are property, real estate, and building construction companies which are included in the Kompas 100 index, listed on the Indonesia Stock Exchange during 2013-2018 periods. Multiple Regression Analysis was used to test the null hypotheses formulated for the study. Research findings indicate that: (i) cash turnover has a negative effect on liquidity measured by cash ratio; (ii) accounts receivable turnover has a positive effect on liquidity measured by cash; (iii) inventory turnover has an influence on liquidity measured by cash ratio.

Elahi, et al (2021) examined the influence of operating cash flows on financial stability of banks in Pakistan during 2011-2019 periods. The sample consists of 20 commercial banks listed on the Pakistan Stock Exchange during the period. Free cash flow yield was taken as the dependent variable while cash flow ratio was used as the independent variable, and net interest margin, income diversification, asset quality, financial leverage, the cost to income ratio, advance net of provisions to total assets ratio, capital ratio, financial performance, breakup value per share and bank size were taken as control variables. Ordinary Least Square Regression Analysis, Random and Fixed Effects Models, Hausman test, Lagrange Multiplier Test, Descriptive and Correlation Analysis were used for data analysis. Findings suggest that operating cash flows and net interest margin significantly and positively influenced banks' financial stability while the cost to income ratio and advances net of provisions to total assets ratio significantly and negatively associated with banks' financial stability.

2.3.2 Investing Cash Flow and Financial Performance

Liman and Mohammed (2018) evaluated the impact of operating cash flow and corporate financial performance of listed conglomerate companies in Nigeria during 2005-2014 periods. Five (5) listed Conglomerate companies from the population of six (6) companies were studied. The data were analyzed using Descriptive Statistics, Correlation Analysis as well as Regressions Techniques to determine the variation in financial performance due to the variation in operating cash flow. A Panel Data Regression Technique was employed since the data have both time series and cross sectional characteristics. Results of analysis indicate Cash Flow from Operating activities (CFO) positively and significantly impact financial performance proxied by ROA, the impact was also positive and significant when financial performance was proxied by ROE of the listed conglomerate companies in Nigeria. The control variable Firm Size and Financial Leverage have a positive and negative significant impact on ROA respectively, while their impact on ROE is positive and insignificant.

Rajapaksha and Weerawickrama (2020) embarked on a study to determine the effect of free cash flow on the profitability on the Diversified Holding companies listed in the Colombo Stock Exchange. The population consisted of nineteen (19) companies listed as Diversified Holdings on the CSE at June 2019. A Purposive sampling method was used to select a sample of 17 companies listed at CSE (panel data). Secondary data were obtained from the audited financial statements of the firms, sourced from CSE for a period of five years (2014 - 2019). Data analysis was done using a Regression Model since the nature of the data was quantitative. Result of analysis indicate that free cash flows significant impact profitability of the listed diversified holdings companies in Sri Lanka. Odo and Ohazuluike (2021) studied the effect of cash flow on financial performance of food and beverage firms in Nigeria during 2010-2019 periods. Specifically, the study examined the effect of cash from operating activities, cash from financing activities and cash from investment activities on profit for the year of food and beverage firms in Nigeria. The analytical techniques used for the study were Panel Data, Random Effect Model as well as Descriptive Statistics. Results of analysis show that cash from Operating Activities and Cash from Financing Activities as well as cash from investment activities positively and significant affect profit for the year of the firms.

2.3.3 Financing Cash Flow and Financial Performance

Durun, et al (2015) examined the effect of cash flow on performance of companies in food and beverages sub-sector in Nigeria during 2007-2011 periods. The study involved a survey of Six (6) companies in food and beverages companies quoted on the Nigerian Exchange Group during the period. Time series data were extracted from the annual reports and accounts of the selected firms. The relevant data were analyzed using multiple regression analysis. Findings from the study show that operating and financing cash flows have significant positive effect on corporate performance in the food and beverages sector in Nigeria, while investing cash flow has significant negative effect on the corporate performance of the firms.

Deviana (2020) studied the effect of cash turn over, receivable turnover and total assets turn over on profitability of Construction Company listed on Indonesia Stock Exchange during 2019-2019 periods. The study targeted the population of construction companies listed on the Indonesia Stock Exchange during the period. Multiple Linear Regression, t test, F test and coefficient of determination were used to examine the data collected. Based on the results of the study, it was concluded that the cash turnover inversely relates to the profitability of the firms with a significance value 0,21, receivable turnover has a positive relationship with the profitability with a significance value of 0,03 total assets turnover a positive relationship with the profitability of the firms. Results of F-Statistics indicates that the variable cash turnover and total assets turnover simultaneously affect profitability because the

significance value is less than 0,05 that is equal to 0,03. Total assets turnover has the dominant influence with the highest coefficient of 0,660. Ferri, et al (2020) examined the relationships between cash flows of several management areas and economic performance, using a complete sample of Italian listed companies during 2008-2017 period. The database used to collect all the balance sheet data necessary to conduct our research is Amadeus of the Bureau Van Dijk platform, which already shows reclassified and easily comparable financial statements. Correlation and Multiple Regression Analysis were used to assess if our cash flow proxies could be strong predictors of future cash flow and, consequently, of business performance. Results of analysis reveal that the cash flow proxies were strong predictors of the future cash flow and financial performance of the firms.

3 METHODOLOGY

3.1 Research Design

The study adopted *ex-post facto* research design. Thus, the study relied on financial data already in existence. The data were collected from the published annual reports and financial statements of the selected manufacturing firms listed on Nigeria Exchange Group during 2013-2024 periods.

3.2 Area of Study

The area of the study is Nigeria and specifically on the manufacturing firms listed on the Nigeria Exchange Group during 2013-2024 periods.

3.3 Sources of Data

The source of data for the study is secondary data, which were obtained from the published annual reports and financial statement of the selected manufacturing firms listed on the Nigeria Exchange Group during 2013-2024 periods.

3.4 Population

There were thirty-four (34) manufacturing firms listed on the Nigerian Exchange Group as at June, 2025. These manufacturing firms listed on the exchange group during the period constituted the population of the study.

3.5 Sample Size Determination

A sample of eighteen (18) firms was selected from the thirty-five (34) manufacturing firms listed on the Nigeria Exchange Group during the period. Only firms with assets size of N10 billion and above were considered in the sample. Firms that did not publish their 2024 annual financial statement as at June, 2025 were also not considered in the sample.

3.6 Model Specification

The following regression model was developed based on the variables of the study:

$PFY = \beta_0 + \beta_1 NCFOA + \beta_2 NCFIA + \beta_3 NCFFA + \varepsilon$

Where:

PFY = Profit for the Year

NCFOA = Operating Cash Flow

NCFIA = Investing Cash Flow

NCFFA = Financing Cash Flow

β = Beta

ε = error term

3.7 Description of Variables

Variable Name	Label	Variable Description

Profit for the Year	PFY	Profit for the year is a final measure of economic success achieved by a company in relation to the capital invested in it. It is calculated by deducting all expenses and taxes from the revenue generated during an accounting period.
Cash Flow from Operating Activities	NCFOA	Cash flow from operating activities is an accounting item that indicates the amount of money a company brings in from its ongoing, regular business activities, such as manufacturing and selling of goods or providing a service.
Net Cash Flow from Investing Activities	NCFIA	Cash Flow from investing activities is an item on the cash flow statement that reports the aggregate change in a company's cash position resulting from investment gains or losses and changes resulting from amounts spent on investments in capital assets, such as plant and equipment.
Net Cash Flow from Financing Activities	NCFFA	Cash flow from financiering activities measures the movement of cash between a firm and its owners and creditors. It indicates the means by which a firm raises cash to maintain or grow its operations. Debt and equity financing are reflected in the cash flow from financing section which varies with the different capital structures, dividend policies, or debt terms that firms may have.

Source: Author's Compilation, 2025.

3.8 Method of Data Analysis

Panel Least Square Regression Analysis was the main statistical tool of analysis used to test the three null hypotheses formulated for the study. Pairwise Granger Causality test was used to complement the regression analysis. Descriptive Statistics and Levin, Lin & Chu t*Unit Root test were used as diagnostic statistical tools. Specifically, Descriptive Statistics was used to test the normal distribution and volatility of the data set, while Unit Root test was used to test for the presence of unit root in the model of the study. The explanatory variables of the study and measures of cash flow activities are: Net Cash Flow from Operating Activities, Net Cash Flow from Investing Activities and Net Cash Flow from Financing Activities while the dependent variable and proxy for financial performance is Profit for the Year.

4 DATA ANALYSIS AND RESULTS

4.1 Data Analysis

A sample of eighteen (18) manufacturing firms listed on Nigeria Exchange group during 2013-2024 periods were used to investigate the impact of cash flow activities on financial performance of manufacturing firms in Nigeria. Panel Least Square Regression Model was used to test the three null hypotheses formulated for the study. This test formed the basis for the findings and conclusion of the study. Also, Pairwise Granger Causality test was used as a complementary tools of analysis while Descriptive Statistics and Unit Root tests were used as preliminary tests. The results of these teste are presented in tables 4.2.1 to 4.2.4

4.2.1 Descriptive Statistics

	PFY	NCFOA	NCFIA	NCFFA

Mean	4203520.	14032049	-7093559.	-2964091.
Median	1760896.	3287831.	-798215.5	-472385.0
Maximum	1.15E+08	2.12E+08	21053339	2.25E+08
Minimum	-1.93E+08	-3.72E+08	-1.41E+08	-1.24E+08
Std. Dev.	29421069	41074280	18027881	31340522
Skewness	-2.661176	-2.583061	-3.926719	3.661424
Kurtosis	21.06871	41.25979	22.87132	31.08661
Jarque-Bera	3193.250	13414.50	4108.913	7582.336
Probability	0.000000	0.000000	0.000000	0.000000
Sum	9.08E+08	3.03E+09	-1.53E+09	-6.40E+08
Sum Sq. Dev.	1.86E+17	3.63E+17	6.99E+16	2.11E+17
Observations	216	216	216	216

Source: E-view 8.0 Output

The results of the Descriptive Statistics are presented in table 42.1. The results show that the mean of the variables are: 4203520, 14032049, -7093559 and -2964091 for Profit for the Year (PFY), Net Cash Flow from Operating Activities (NCFOA), Net Cash Flow from Investing Activities (NCFIA) and Net Cash Flow from Financing Activities (NCFFA) respectively. Similarly, the Standard Deviations of the variables are: 29421069, 41074280, 18027881 and 31340522 for PFY, NCFOP, NCFIA and NCFFA respectively. The results reveal that the Standard Deviations of the variables are all above their mean, except PFY. This is suggesting that data set used for the study were highly volatile during the study period. Jacque-Bera Statistics, Skewness and Kurtosis tests were used to test the distribution of the data set. The most critical test among the three is the Jacque-Bera Statistics. From the table, the p-value of Jacque-Bera Statistics for all the variables are 0.000000 (p-vale<0.05). In line with this result, we conclude that the data set used for the study are normally distributed. This result was corroborated by the Kurtosis test. The Kurtosis coefficient of all the variables are above the benchmark rate of three, thus, confirming that the data set are normally distributed.

4.2.2 Granger Causality Test

Pairwise Granger Causality Tests
Date: 07/05/25 Time: 21:38
Sample: 2013 2024
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
NCFOA does not Granger Cause PFY	216	6.43915	0.0020
PFY does not Granger Cause NCFOA		19.7697	2.E-08
NCFIA does not Granger Cause PFY	216	8.63994	0.0003
PFY does not Granger Cause NCFIA		3.04892	0.0499

NCFFA does not Granger Cause PFY	216	17.3161	1.E-07
PFY does not Granger Cause NCFFA		5.91544	0.0033
NCFIA does not Granger Cause NCFOA	216	3.75924	0.0252
NCFOA does not Granger Cause NCFIA		1.52108	0.2213
NCFFA does not Granger Cause NCFOA	216	1.78565	0.1707
NCFOA does not Granger Cause NCFFA		17.3298	1.E-07
NCFFA does not Granger Cause NCFIA	216	1.09566	0.3366
NCFIA does not Granger Cause NCFFA		2.08626	0.1272

Source: E-view 8.0 Output.

Presented in table 4.2.2 is the Granger Causality test, a complementary statistical tool of analysis of the study. The first result from the table indicates a unidirectional relationship from Net Cash Flow from Operating Activities (NCFOA) to Profit for the Year (PFY) of the manufacturing firms in Nigeria. This result suggest that NCFOA is a significant predictor of financial performance of manufacturing firms in Nigeria. The second result detected a bidirectional relationship between Net Cash Flow from Investing Activities (NCFIA) and Profit for the Year (PFY) of the manufacturing firms. This result implies that NCFIA is a key factor or strong predictors of financial performance of manufacturing firms in Nigeria and vice versa. The third result again, established a bidirectional relationship between Net Cash Flow from Financing Activities (NCFFA) and Profit for the Year (PFY) of the manufacturing firms. However, the causality in this case was running from Profit for the Year (PFY) to Net Cash Flow from Financing Activities (NCFFA).

Table 4.2.3: Levin, Lin & Chu t*

Null Hypothesis: Unit root (common unit root process)
Series: D(PFY,2)
Date: 07/05/25 Time: 21:41
Sample: 2013 2024
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 144
Cross-sections included: 18

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-5.32810	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(PFY,2)

Cross	2nd Stage	Variance	HAC of	Max	Band-

section	Coefficient	of Reg	Dep.	Lag	Lag	width	Obs
1	-2.13447	7.E+13	3.E+13	1	1	6.0	12
2	-0.34867	5.E+13	1.E+14	1	1	5.0	12
3	-2.64810	2.E+14	1.E+14	1	1	8.0	12
4	-2.89960	3.E+14	2.E+14	1	1	5.0	12
5	-0.45859	1.E+12	8.E+11	1	1	8.0	12
6	-2.53349	2.E+14	1.E+14	1	1	6.0	12
7	-3.56655	1.E+15	1.E+15	1	1	8.0	12
8	-1.60999	3.E+15	8.E+14	1	1	8.0	12
9	-2.65412	1.E+10	8.E+09	1	1	6.0	12
10	-2.96594	6.E+12	3.E+12	1	1	7.0	12
11	-1.57652	3.E+10	1.E+10	1	1	6.0	12
12	-2.25377	2.E+15	9.E+14	1	1	8.0	12
13	-2.49399	4.E+15	3.E+15	1	1	6.0	12
14	-1.64624	3.E+10	5.E+10	1	1	2.0	12
15	-2.84608	3.E+11	6.E+11	1	1	3.0	12
16	-2.23408	1.E+13	6.E+12	1	1	8.0	12
17	-2.01243	4.E+11	2.E+11	1	1	8.0	12
18	-2.58773	1.E+10	1.E+10	1	1	6.0	12

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-2.30294	-14.704	1.047	-0.554	0.919	216

Source: E-view 8.0 Output.

Levin, Lin & Chu t*****Unit Root test presented in table 4.2.3 was used to analyze the data for the presence of unit root. The results of individual tests confirmed that all the variables of the study, with the exception of Net Cash Flow from Operating Activities (NCFOA) exhibit unit roots at the same critical levels (0.05). The variables with unit roots, namely, Profit for the Year (PFY), Net Cash Flow from Investing Activities (NCFIA) and Net Cash Flow from Financing Activities (NCFFA) were found stationary in levels. In particular, NCFFA was found stationary after the first differencing (1(1), while NCFIA and PFY were found stationary after the second differencing 2(2). These findings imply that the variables are of mix order of integration. The variables combined together were found stationary after the second differencing 2(2), thereby confirming that they are fit for a regression analysis.

Table 4.2.4: Pane Least Square Regression Analysis

Dependent Variable: PFY
Method: Panel Least Squares
Date: 07/05/25 Time: 21:34
Sample: 2013 2024
Periods included: 12
Cross-sections included: 18
Total panel (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NCFOA	0.505361	0.053853	9.384068	0.0000
NCFIA	0.693523	0.101611	6.825270	0.0000
NCFFA	-0.000992	0.070349	-0.014101	0.9888
C	2028873.	1559499.	1.300978	0.1947
R-squared	0.507653	Mean dependent var		4203520.
Adjusted R-squared	0.500686	S.D. dependent var		29421069
S.E. of regression	20789555	Akaike info criterion		36.55614
Sum squared resid	9.16E+16	Schwarz criterion		36.61865
Log likelihood	-3944.064	Hannan-Quinn criter.		36.58140
F-statistic	72.86367	Durbin-Watson stat		1.802324
Prob(F-statistic)	0.000000			

Source: E-view 8.0 Output.

The Panel Least Square Regression results of the eighteen (18) selected manufacturing firms in Nigeria are presented in table 4.2.4. It was observed from the table that the Adjusted Coefficient of Determination, (R^2) of the model is 0.500686. This suggests that about 50% of the variations in Profit for the Year of the manufacturing firms is explained by the independent variables. comprising: Net Cash Flow from Operating Activities (NCFOA), Net Cash Flow from Investing Activities (NCFIA) and Net Cash Flow from Financing Activities (NCFFA) while the remaining 50% is explained by other quantitative and qualitative variables not included in the model. Another important statistical test in the table is the Durbin Watson Statistics, used to test the model for autocorrelation. Results from the table show that the Durbin Watson Statistics coefficient is 1.802324, which is slightly below the acceptable range of 2-4, used as a benchmark in the test for autocorrelation. Since this value is close to the lower limit of 2, we approximate it to 2 and rely on the result to conclude that there is no autocorrelation in the model.

4.3 Test of Hypotheses and Discussion of Findings

4.4.1 Net Cash Flow from Operating Activities and Financial Performance

The p-value of Net Cash Flow from Operating Activities (NCFOA) in the regression model is 0.0000, which is less than the critical value of 0.05 (0.0000<0.05). It was also observed from the table that the coefficient of NCFOA in the regression model is 0.505361, which is positive. Based on these results, we postulate that NCFOA positively and significantly affect Profit for the Year (PFY) of manufacturing firms in Nigeria. This result is consistent with the finding from the Granger Causality test, which found that NCFOA is a significant predictor of financial performance (that is PFY) of manufacturing firms in Nigeria. The results are also agreed with: Elahi, et al (2021) who found that operating cash flows and net interest margin significantly and positively influenced banks' financial stability. Odo and Ohazuluike (2021) who found that cash flow from operating activities significantly affect profit for the year of food and beverage firms in Nigeria. Rahman and Sharma (2020) who found a positive and significant association between financial performance (ROA and ROE) and operating cash flows (CFOs), and a negative association for firm size (SIZE) and leverage (LEV) in Saudi Arabia. Durun, et al (2015) who found that operating and financing cash flows have significant positive effect on corporate

performance in the food and beverages sector in Nigeria. Results also indicate that investing cash flow has significant negative relationship with corporate performance

4.4.2 Net Cash Flow from Investing Activities and Financial Performance

The table also show that the p-value of Net Cash Flow from Investing Activities (NCFIA) is 0.0000, which is less than the critical value of 0.05 (0.0000<0.05). The table further revels that the coefficient of NCFIA in the regression model is 0.693523, which is positive. These results present enough evidence to conclude that NCFIA positively and significantly affect Profit for the Year (PFY) of manufacturing firms in Nigeria. This result is in agreement with the Granger Causality test, which indicates that NCFIA is a key factor in determining financial performance (PFY) of manufacturing firms in Nigeria. The results also agreed with: Odo and Ohazuluike (2021) who found that cash flow from operating activities significantly affect profit for the year of food and beverage firms in Nigeria. Rajapaksha and Weerawickrama (2020) who found that free cash flows have significant impact on profitability of the listed diversified holdings companies in Sri Lanka. Durun, et al (2015) who found that operating and financing cash flows have significant positive effect on corporate performance in the food and beverages sector in Nigeria. Results also indicate that investing cash flow has significant negative relationship with corporate performance.

4.4.3 Net Cash Flow from Financing Activities and Financial Performance

The table equally disclosed that the p-value of Net Cash Flow from Financing Activities (NCFFA) is 0.9888, which is more than the critical value of 0.05 (0.9888>0.05). It was also ascertained from the table that the coefficient of NCFFA in the regression model is -0.000992, which is negative. In line with these results, we state that NCFFA negatively, but non-significantly affect Profit for the Year (PFY) of manufacturing firms in Nigeria. This result sharply differs from the Granger Causality test, which shows that NCFFA is a strong predictor of financial performance of manufacturing firms in Nigeria. The result also differs with: Odo and Ohazuluike (2021) who found that cash flow from operating activities significantly affect profit for the year of food and beverage firms in Nigeria. Rajapaksha and Weerawickrama (2020) who noted that free cash flows have significant impact on profitability of the listed diversified holdings companies in Sri Lanka.

The result is, however consistent with: Durun, et al (2015) who found that operating and financing cash flows have significant positive effect on corporate performance in the food and beverages sector in Nigeria. Results also indicate that investing cash flow has significant negative relationship with corporate performance.

5 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

In line with the results of analysis, we summarize the findings of the study ae stated below.

i. Net cash flow from operating activities positively and significantly affect profit for the year of manufacturing firms in Nigeria. {NCFOA Coeff = 0.505361, and p-value = 0.0000 (0.000<0.05)}.

ii. Net cash flow from investing activities positively and significantly affect profit for the year of manufacturing firms in Nigeria. {NCFIA Coeff = 0.693523, and p-value = 0.0000 (0.0000<0.05)}.

iii. Net cash flow from financing activities negatively, but non- significantly affect profit for the year of manufacturing firms in Nigeria. {NCFFA Coeff = -0.000992, and p-value = 0.9888 (0.9888>0.05)}.

5.2 Conclusion

The study analyzed the effect of cash flow activities on financial performance of manufacturing firms in Nigeria. The study was based on 216-year data observations from a sample of eighteen (18) manufacturing firms listed on Nigeria Exchange group during 2013-2024 periods. The data were analyzed using: Descriptive Statistics, Granger Causality test, Unit Root test and Panel Least Square Regression Model. Based on the findings from the test of hypotheses, the study concludes that Net Cash Flow from Opiating Activities (NCFOA) and Net Cash Flow from Investing Activities (NCFIA) positively and significantly affect Profit for the Year of manufacturing firms in Nigeria, while Net Cash Flow from Financing Activities (NCFIA) negatively, but non-significantly affect Profit for the Year of the firms.

5.3 Recommendations

In the light of the findings and conclusion of the study, we suggest the following recommendations to manufacturing firms in Nigeria.

i. The manufacturing firms in Nigeria should maximize returns for shareholders by improving their net cash flow from operating activities. This can be achieved basically by increasing the current assets of the firms and also by reducing the current liabilities.

ii. The manufacturing firms should also maximize profit for shareholders by increasing their net cash flow from investing activities. This can be done by increasing finance income, disposing obsolete assets at a profit, and also by reducing investment in long term assets that will not guarantee significant revenue for the firms.

iii. The firms should also increase profitability by reducing their net cash flow from financing activities. This can be achieved by increasing dividend distribution to shareholders. More dividends to shareholders will send positive signal about the firms to the stock market thereby attracting more investors to the manufacturing firms. More borrowings can also be used to curtail excessive financing cash flow and monitor agency conflicts in the manufacturing firms. Misuse of free cash flow can also be controlled by using the excessive cash flow to repurchase the companies' shares floating around the stock exchange market.

5.4 Contributions to Knowledge

The major contributed of this study to existing knowledge is the finding that cash flow from financing activities negatively affect profit for the year of manufacturing firms in Nigeria. This result is contrary to a prior expectation that cash flow from financing activities will positively and significantly affect profit for the year of the firms. Manufacturing firms in Nigeria can take a cue from this result to increase their borrowing in order to monitor agency conflicts and misuse of free cash flow in the firms. The firms can also rely on the result to improve their dividend policy, and distribute more dividends to shareholders to attract fresh investors to the firms.

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