

Impact of Capital Market Financing on the Nigerian Manufacturing Sector Growth

Sebastian O. Uremadu

Department of Banking and Finance,
Michael Okpara University of Agriculture,
Umudike, Umudike, Abia State.
Email: sebauremadu@yahooo.com
Phone: +234-8037876614

Odom Chima Pantaleon

(Ph.D Student)
Email: dochleon2000@gmail.com
Phone: +234-8034470474

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Abstract

This study examined the impact of capital market financing on the Nigerian manufacturing sector growth. The study captured capital market financing with equity financing, debt financing, foreign direct investments (FDIs) and market capitalization as explanatory variables, while foreign exchange rate and foreign portfolio investments (FPIs) were used as control variables. Manufacturing sector growth was measured by manufacturing sector value added (MVA). The study adopted an ex-post facto research design. To estimate the impact of capital market financing on manufacturing sector growth, the study employed and modified the supply-leading hypothesis, to capture variables of interest using secondary sources of data in the form of annual data that spanned the period (1981-2022). The study used the Autoregressive Distributed Lag (ARDL) model for its estimation. From the estimations, it was observed that a long-run relationship existed between the independent variables and the dependent variable using the ARDL bounds test procedure. Also, the long-run estimation results showed that equity financing and FPIs had a positive and insignificant impact on MVA, indicating an increase but little impact of equity financing and FPIs on manufacturing sector growth. However, debt financing and exchange rate exerted a positive and significant impact on MVA in the long run, implying an increasing and considerable impact on manufacturing sector growth. However, FDI had a negative and significant effect on the MVA of the Nigerian economy, indicating that FDI caused the manufacturing sector to decrease. Debt financing, in the long run, had a positive and significant impact on manufacturing sector value added, meaning that debt financing exerted an increasing impact on manufacturing sector growth. Hence, from the findings of the study, capital market financing was a good policy option for manufacturing growth in Nigeria.

1.0 Introduction

Capital market financing has been a topical issue in the academic and public discourse, which has serious impacts on the Nigerian manufacturing sector growth. This has been receiving serious academic and scholarly attention in the field of finance and investment (Sanusi, 2010). Governments as well as other authorities in Nigeria like Securities and Exchange Commission (SEC) have adopted several measures to increase the level of capital market financing (Egbuche & Simon, 2020). According to Ewah et al. (2009), the capital market plays a significant role in stimulating the manufacturing sector's growth. The manufacturing companies quoted on the Nigerian stock exchange derive numerous advantages in terms of the marketability of their shares, wider sphere of ownership, public confidence, risk diversification, retaining control, etc. The capital market efficiently channels funds to various economic agents that need them for productive uses; and creates links between the

surplus and deficit units of the economy. In the capital market, the surplus units of the economy (suppliers of funds) are mainly individuals and corporate bodies, as governments rarely supply funds to the market, while the deficit units consist only of corporate bodies and governments.

Like most developing countries, Nigeria is one of the beneficiaries of capital market financing through trade and capital flows on the Nigerian stock exchange, because of the transmission channel of the global economy from one country to another. For most emerging market economies, there has been an increase in trade and foreign portfolio investment, and a sharp increase in portfolio investment inflows to equity markets, amongst others (Frank & Hesse, 2009). Currently, the soundness and stability of the Nigerian stock exchange market are impressive after the 2009 economic meltdown because of the intervention of different authorities like the Securities and Exchange Commission (SEC), Central Bank of Nigeria (CBN), etc. This has helped to restore the confidence of investors in investing tremendously in the Nigerian stock exchange market.

The Nigerian capital market has continued to play its traditional role of mobilizing medium to long-term funds for growth and development purposes. The Securities and Exchange Commission (SEC) is the regulatory authority of the market and the operational institutions are the Nigerian Stock Exchange (NSE), the Issuing Houses and the Stock Broking Firms. The Capital Market consists of the primary market for new issues of securities and the secondary market for trading the existing securities (Francis, 2009).

Investors all over the world are becoming aware of the gains of investing in the capital market. Investment in the capital market leads to capital accumulation which is the key to improving manufacturing sector growth, as well as, increases in the national income (Coskun et al., 2017).

Capital market financing is an efficient medium of financial intermediation through which financial institutions, individuals, states and countries interact to mobilize and allocate long-term funds from surplus units to deficit units of the economy. It is an engine of Nigerian manufacturing sector growth while the capital market, according to Onyele et al. (2017), is a network of specialized financial institutions, a series of mechanisms, processes and infrastructures, that facilitate the bringing together of suppliers and users of funds for investment in the socio-economic developmental projects.

The Nigerian manufacturing sector, over the years, has remained the engine of the country's economic growth. To sustain the trend, successive governments have intervened through various policy initiatives and programs meant to elevate the manufacturing sector to a level that would make the nation an economic nucleus and the driver of Africa's economic revival.

A fundamental goal of every country is to ensure continuous and sustained economic growth. To achieve this, the capital market through its financing ensures that the manufacturing sector, being a vital channel of economic growth receives adequate attention. This sector is strategic in the acquisition of factor inputs used to manufacture goods and services that satisfy the needs of citizens which ultimately accelerates economic growth. The manufacturing sector is important because it has the potential to meet economic growth parameters, such as increased output, creation of employment, reduction of poverty, increase in standard of living and generation of revenue for the government (Oduyemi, 2013). The manufacturing sector is responsible for the production of goods necessary to meet the consumption demand of the citizens.

Manufacturing companies are responsible for the production of materials which are either raw, semi or finished goods for onward sales to users or consumers, thus increasing the economic output of the nation. The possession of manufacturing capabilities by an economy is considered an important potential for improved economic growth (Etale & Sawyer, 2020). Indeed, one of the distinguishing factors between developed and developing economies is the level of their production within the country, and or overdependence on importation of produced goods. The benefits of an appropriate manufacturing base for an economy lie in its combination of suitable technology management techniques and other resources to move the economy from a traditional and low level of production to a more automated and efficient system of mass processing and manufacture of goods and services. This explains why every economy seeks to expand if the economy is already developed (Cline, 2015).

According to Okerete (2009), the capital market performs a role in the provision of long-term, non-debt financial capital, which enables manufacturing companies to avoid over-reliance on debt financing, thereby improving corporate debt-to-equity ratio and also in the mobilization of resources for national growth. For sustainable economic growth, funds must be effectively mobilized from the surplus units and efficiently allocated to the deficit units which would enable businesses and the economies to harness their human, material, and management resources for optimal output. Hence, the capital market is an economic institution, which promotes effectiveness and efficiency in capital formation and, or allocation where necessary.

1.2 Statement of the Problem

The capital market is established to carry out transmission mechanisms from surplus units (savings institutions and individuals) to deficit investment outlets. Capital market also efficiently and effectively allocates these funds to projects of best returns to fund owners. The Nigerian economy lacks savings institutions in sufficient numbers to create a robust capital market. Despite the gains derived from the banking industry's mergers and acquisitions over the years, the Nigerian banking system is yet to attain stability which is tied to failure to address the challenges of non-performing loans (NPLs) and corporate governance which has been affecting the capital market. Policies and their strict compliance are putting additional pressure on the banking industries, while rising economic factors such as inflation, higher exchange rates, and lack of power supply, are leading to higher operating costs for corporate bodies (Donwa & Odia, 2010). Besides, Pandemic-related policies and regulations, and interest rates are top concerns in financial services and other industries. The continuing global challenges like the existential threat posed by the COVID-19 pandemic are still ongoing (Onyele & Nwadike, 2020).

Past empirical works such as Edame & Uchenna (202), Ikeobi, (2023), Egbuche & Simon (2020), Sukmawati & Jean (2019), Uremadu et al. (2019), Novita et al. (2018), Odo et al. (2017), Onigbinde & Hunga (2016), Ibi et al. (2015), Shigehiro (2014), Idyu et al. (2013), Edame & Uchenna (2013), Jerome & Paul (2013), Oke (2012), Nwakanma & Nnamdi (2012), have examined capital market on different variables such as inflation rate, interest rate, exchange rate, stock prices, market capitalization, number of deals, the volume of transactions, all share index, value of transactions and gross domestic product, etc. and the results were found to be significant but negative in the long-run, but none of the studies studied capital market financing on the Nigerian manufacturing sector. Hence the gap which the study intends to fill.

1.3 Objectives of the Study

The main objective of this study is to investigate the impact of capital market financing on the Nigerian manufacturing sector. The specific objectives are to:

- i. examine the impact of equity financing on the manufacturing sector value added in Nigeria,
- ii. evaluate the impact of debt financing on the manufacturing sector value added in Nigeria,
- iii. determine the impact of foreign direct investment on the manufacturing sector value added in Nigeria,
- iv. examine the impact of foreign portfolio investment on the manufacturing sector value added in Nigeria, etc.

1.4 Research Questions

The following research questions are considered relevant to guide the study:

- i. To what extent does equity financing impact the manufacturing sector value added in Nigeria?
- ii. To what extent does debt financing impact the manufacturing sector value added in Nigeria?
- iii. To what degree does foreign direct investment impact the manufacturing sector value added in Nigeria?
- iv. To what extent does foreign portfolio investment impact the manufacturing sector value added in Nigeria?

1.5 Hypotheses

The following hypotheses stated in their null forms are to be tested in this study.

- H₀₁:** Equity financing has no significant impact on the manufacturing sector value added in Nigeria.
- H₀₂:** Debt financing has no significant impact on the manufacturing sector value added in Nigeria.
- H₀₃:** Foreign direct investment does not significantly impact on the manufacturing sector value added in Nigeria.
- H₀₄:** Foreign portfolio investment has no significant impact on the manufacturing sector value added in Nigeria.

2.1 Conceptual Framework

The capital market plays a tremendous role in the Nigerian manufacturing sector's growth. The Nigerian stock exchange holds numerous advantages in terms of the marketability of their shares, wider sphere of ownership, public confidence, sharing of risks and retaining control for firms that take advantage to mobilize investable funds for their operations. As manufacturing is a prerequisite for economic growth, availability of capital stands as a sure guarantee for effective manufacturing which is where the capital market comes in. The capital market forms the major source of capital for the manufacturing sector in developing economies like Nigeria. It is believed that only the manufacturing sector could break the vicious circle of poverty and underdevelopment among growing economies of sub-Saharan African countries of which Nigeria is one. Therefore, conceptually speaking if adequate funds could be mobilized via the stock market to fund the Nigerian manufacturing sector it would lead to the growth of the productive sector of the country.

2.2 Theoretical Framework

This study is hinged on the supply-leading hypothesis which was propounded by Schumpeter (1959) when he argued that financial services are paramount in the promotion of economic growth. This theory states that bank lending leads to economic growth, which means that rapidly growing financial development (increase and diversification of financial institutions and their instruments), ensures improvement in economic growth and development. The theory explains that production requires credit to materialize and that one can only become an entrepreneur by previously becoming a debtor, what the entrepreneur first wants is credit. Before he requires any goods, he requires purchasing power. Schumpeter's hypothesis has found support in McKinnon & Shaw (1973) who also argued that financial development has a causal influence on economic growth. They explained that the creation and strengthening of financial institutions and markets could increase the supply of financial services, increase savings and allocate them to more productive investments. Hence, they argued (like Schumpeter) that financial development could stimulate economic growth.

Financial sector development has positive impacts on economic growth and development. The size of the sector determines the amount of resources mobilized for investment. The development of an economy's financial system provides good and easily accessible information that lowers transaction costs, which in turn, improves resource allocation, and boosts economic growth and development, which is the main factor in poverty reduction (Yadirichukwu & Chigbu, 2014). Holding a similar supply-leading theoretic view, the Central Bank of Nigeria formulates its monetary policy to regulate the value, supply and cost of money consistent with the absorptive capacity of the economy and or the expected level of economic activities without necessarily generating undue pressure on domestic prices and the exchange rate.

2.3 Empirical Review of Literature

Edame & Uchenna (2023) studied the impact of capital market and economic growth in Nigeria using correlation. From the result obtained, the capital market had a positive but insignificant impact on

economic growth in Nigeria. The capital market variables captured in the model such as market capitalization, number of deals and value of transactions were all positive but insignificant in promoting economic growth in Nigeria.

Ikeobi (2023) examined capital market intermediation and manufacturing sector financing in Nigeria, using secondary data covering 13 years from 2008 to 2020. The variables included manufacturing output, market capitalization, equities and corporate bonds. Analysis was carried out using a multiple regression model and an ordinary least squares technique. Results showed that market capitalization had a positive and significant impact on manufacturing sector output; corporate bonds had a negative but insignificant impact while equities had a significant negative impact on manufacturing output.

Egbuche & Simon (2020) studied the effect of the stock market on the manufacturing sector output in Nigeria using the Ordinary Least Square method (OLS) and regression method. The study showed that the stock market had a positive and significant effect on the performance of the manufacturing sector output.

Sukmawati & Jean (2019) examined the interrelationship between the capital market index and economic growth in the United States of America, England and Japan. The variables of the study were S&P100, FTSE100, Nikkei225, and GDPs. Quarterly data obtained from official trustful websites, were used. The period of the study was from the premier quarter of 1987 to the last quarter of 2016. The study concluded that there was an interrelation between the capital market index and economic growth, but the direction of causality between the two variables was different in each country. A unidirectional causality from capital market index to economic growth has been observed in the case of the United States of America. Feedback causality between capital market index and economic growth has been seen in England. A unidirectional causality has been examined between the capital market index and economic growth in Japan too.

Uremadu et al. (2019) investigated the effect of stock market performance on industrial productivity in Nigeria from 1985 to 2016 using vector error correction mechanism (VECM) to analyze indices such as market capitalization, all share index, value of shares traded, number of deals and gross domestic product. It was also discovered that market capitalization though negative had the leading impact on the industrial productivity of Nigeria.

Novita et al. (2018) determined the short and long-term effects of three Islamic capital market instruments, namely: the corporate sukuk, the Jakarta Islamic Index, and Islamic Mutual Funds on economic growth with data running from January 2011 to December 2017. This research used the co-integration test to examine the long-term relationship, as well as the error correction model, to analyze the existence of a short-term relationship. The results showed that in the long term, there was a significant positive influence of the corporate sukuk, the Jakarta Islamic Index and Islamic Mutual Funds on economic growth, while in the short term, there was a significant impact of the corporate sukuk, Jakarta Islamic Index, and Islamic Mutual Funds on economic growth in Indonesia.

Odo et al. (2017) determined the impact of capital market indicators on economic growth in Nigeria, from 1986 – 2015, using co-integration, vector error correction mechanism and Granger causality econometric tools of estimation. The result of the estimation showed a stable long-run relationship between the dependent and independent variables as supported by the existence of 3 co-integrating equations. The results of the ECM revealed a positive significant relationship among stock traded, total value, money supply and economic growth, in the long run.

Ibi et al. (2015) examined the relationship between capital market and industrial sector development in Nigeria, utilizing annual time series data covering the period, from 1980 to 2012. The analytical methodology employed modern econometric methods such as the unit root tests, co-integration tests, granger causality tests and the error correction mechanism (ECM) in the estimation of the relevant relationships. The results of the co-integration tests showed that there existed a long-run equilibrium relationship among these variables. The results of the Granger causality test showed that there was a bi-directional relationship between industrial output and market capitalization and

between industrial output and a number of deals, but a unidirectional causality relationship ran from industrial sector development to value of transaction.

Shigehiro (2014) examined capital market financing for Small and Medium-Sized Enterprises in Asia. Three-tier approach was used to assess the potential of capital market financing for SMEs: It adopted online and paper-based surveys for the supply- and demand-sides of growth capital, and interviews with the supply- and demand-sides. The study countries selected were the PRC, India, the Republic of Korea, and Malaysia. The survey used a set of questionnaires specially designed to ascertain the real needs of the supply- and demand-sides for the development of SME capital markets, which comprised five-scale check-box, and fill-in style questions. The study found that simple procedures and low-cost structures for SMEs were key to creating a functional SME capital market.

Idyu et al. (2013) examined the impact of the Nigerian capital market on the industrial sector component of the Nigerian gross domestic product for the period, 1990 – 2009. The ordinary least squares (OLS) estimation technique was adopted. The results showed a positive significant impact of the market capitalization on the industrial sector component of the gross domestic product and a positive significant impact of the market capitalization on average capacity utilization rates of the manufacturing sector. The results, however, showed a positive but non-significant impact of the annual market capitalization on industrial loans of the stock exchange.

Edame & Uchenna (2023) investigated the effect of capital market activities on the development of the Nigerian oil industries, utilizing annual time series data for the period from (1999-2009), co-integration technique and error correction mechanism. The results of the co-integration tests showed that there was an equilibrium long-run relationship among the variables in the model. The results of the empirical estimation showed that stock market capitalization and stock market prices had a positive effect on the development of the oil and gas industry, both in the short run and long run in Nigeria.

Jerome & Paul (2013) assessed the contributions of the capital market to economic growth in Nigeria for the period (1986-2011) using the vector error correction method (VECM). The study found a long-run positive relationship between capital market and foreign direct investment as well as a long-run negative relationship between capital market and domestic investment within the period (1986-2011) studied.

Oke (2012) examined the effect of capital market activities on the development of the Nigerian oil industries, utilizing annual time series data covering the period, from 1999 to 2009 under the framework of a co-integration technique and error correction mechanism. The result of the co-integration tests showed that there was an equilibrium long-run relationship among the variables in the model. The results of the empirical estimation showed that stock market capitalization and stock market prices had a positive effect on the development of the oil and gas industry in Nigeria in the short run, but a negative impact on the sector in the long run.

Nwakanma & Nnamdi (2012) evaluated the extent to which market capitalization of the Nigeria stock exchange reflected the net sectoral investments of corporate organizations quoted therein. Covering the period 1984 to 2009, the study population consisted of all the thirty (30) classified sectors of the market, while the study sample was made up of the eighteen (18) sectors with operational activities throughout the study. Multiple correlation and stepwise regression techniques were utilized. The results established a significant multiple correlation between the Nigerian Stock Market Capitalization and Corporate net sectoral investments, while net corporate investments in four sectors of capital market activity –petroleum marketing, building materials, packaging and banking were found to significantly contribute to variations in Nigeria's GDP growth.

3.0 Methodology

3.1 Research Design

The study adopted an *ex-post facto* research design to identify the variables in the study and their impacts on one another. *Ex-post-facto research* design involves ascertaining the impact of past factor(s)

on the present happenings or events. The *ex-post-facto* research design examined how independent variables, present before the study, affect the dependent variable. The reason for choosing an *ex-post facto* research design in this study is that the researcher cannot control and manipulate the variables in the study because the events in the variables have already taken place; both the independent and dependent variables exist and are observed at the same time (Ihemeje et al., 2011).

3.2 Nature and Sources of Data

The study used annual time series data from 1986 to 2022, sourced from the Nigerian Stock Exchange Factbook, National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN) Statistical Bulletin, World Bank Report, etc. The choice of time frame for the study was chosen to accommodate the major changes that took place in the Nigerian Stock Exchange market.

3.3 Model Specification

This study adopted and modified the model used by Ikeobi (2023), who investigated the impact of capital market intermediation on the manufacturing sector financing in Nigeria. The model of the study was given as:

$$MNNO = f(MCAP, CORPBD, EQUITY) \text{ ----- (1)}$$

The econometric specification is thus;

$$MNNO = \beta_0 + \beta_1MCAP + \beta_2CORPBD + \beta_3EQUITY + U \text{ ----- (2)}$$

To account for other indices that are not specified the researchers introduced the error term. Thus;

$$MNNO = \beta_0 + \beta_1MCAP + \beta_2CORPBD + \beta_3EQUITY + U \text{ ----- (3)}$$

Equation 3 is linearized by logging both sides and it becomes,

$$\text{Log MNNO} = \beta_0 + \beta_1\text{logMCAP} + \beta_2\text{logCORPBD} + \beta_3\text{logEQUITY} + U \text{----- (4)}$$

Where;

MNNO= Manufacturing Output

MCAP= Market Capitalization

CORPBD=Corporate Bonds

EQUITY=Equities

U= Error Term

a priori expectation; $\beta_1, \beta_2, \beta_3, > 0$.

Equation above was modified by disaggregating capital market intermediation variables into capital market financing variables based on stated objectives of this study. Hence, the model for this study is as follows;

$$MVA = f(EQTF, DBTF, FDI, FPI, MCAP, EXCHR) \text{ -----(5)}$$

The specification is thus:

$$MVA = \beta_0 + \beta_1TEQF + \beta_2TBDF + \beta_3FDI + \beta_4FPI + \beta_5MCAP + \beta_6 EXCHR \text{ -----(6)}$$

The econometric specification to account for other indices that are not specified we introduced the error term. Thus:

$$MVA = \beta_0 + \beta_1 TEDF + \beta_2 TBDF + \beta_3 FDI + \beta_4 FPI + \beta_5 MCAP + \beta_6 MEXCHR + U \text{ ----- (7)}$$

By Log linearization which is to standardize the differences in the data, the equation is thus:

$$MVA = \beta_0 + \beta_1 \text{LogTEQF} + \beta_2 \text{LogTBDF} + \beta_3 \text{LogFDI} + \beta_4 \text{LogFPI} + \beta_5 \text{LogMCAP} + \beta_6 \text{LogEXCHR} + U \text{ ... (8)}$$

Where:

MVA = Manufacturing Value Added

TEQF = Total Equity Financing (TEQF)

TBDF = Total Bank Debt Financing

FDI = Foreign Direct Investment

FPI = Foreign Portfolio Investment

MCAP = Market Capitalization

EXCHR = Foreign Exchange Rate

μ = stochastic or error term

The *a priori* expectation of the independent variables are as follows:

$$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, > 0.$$

3.4 Description of Model Variables

3.4.1 Dependent Variable:

Manufacturing Sector Value Added (MVA)

The manufacturing sector value added of an economy is the total estimate of the net output of all resident manufacturing activity units obtained by adding up outputs and subtracting intermediate consumptions (CBN, 2023). Measurement of manufacturing value-added requires appropriate demarcation of the type of economic activity, and of the territory in which the activity has taken place. Manufacturing value added measures an exclusive and exhaustive contribution of manufacturing to the gross domestic product of an economy and therefore refers explicitly to the gains. The value added of the manufacturing industries is a survey concept that refers to the given industries' net output derived from the difference between gross output and intermediate consumption.

3.4.2 Independent Variables

(i) Equity Financing (EQF): Equity financing is *the* sale of company shares in order to raise capital *or* the process of the sale of an ownership interest to various investors to raise funds for business objectives such as common stocks, preferred shares, share warrants, etc. Investors who purchased the shares are also purchasing ownership rights to the company. Equity Financing could be raised through corporate investors, and shares could be sold to the public in the form of an initial public offer (IPO), etc.

(ii) Debt Financing (DF): Debt financing occurs when a company raises money by selling debt instruments, most commonly in the form of bank loans or bonds. It is when a company borrows money to be paid back at a future date with interest. As a result of taking on additional debt, the company makes the promise to repay the loan and incurs the cost of interest. It could then use the borrowed money to pay for large capital expenditures or fund its working capital. In general, well-established businesses that demonstrate constant sales, solid collateral, and are profitable would rely on debt financing. Debt financing could be short-term or long-term, businesses use short-term debt financing to fund their working capital for day-to-day operations. This would include paying wages, buying inventory, or costs incurred for supplies and maintenance. The scheduled repayment for the loans is usually within a year.

(iii) Foreign Direct Investment (FDI): Foreign direct investment is an investment in a foreign country where the investing party (corporation firm/Individual) retains control over the investment, and generally takes the form of branch, affiliates or subsidiary operations. In this case, the investment is classified as direct and not portfolio because control is exercised by the foreign investors. Foreign direct investment has been characterized as the best form of foreign finance since it comes in a package to include finance, technology and highly skilled personnel. Most scholars agree that the motivation for multinational corporations to invest abroad is to take advantage of their technological superiority over their domestic counterparts. Technology in the legally recognized forms of patents or trademarks, in patentable or unpatented know-how; skilled labour, and physical goods.

(iv) Foreign Portfolio Investment (FPI): Foreign portfolio investment facilitates manufacturing sector growth in an economy. A foreign portfolio investment is an investment activity that involves the purchase of stocks, bonds, commodities, or money market instruments that are based in a different country, where the investing party does not seek control over the investment. At other times, the foreign portfolio investment is acquired with plans of holding onto the investment for an extended period. Investors would normally, consider the financial condition of the entity that is issuing the investment, gauge the potential for that investment to generate returns over a specific period, and consider what type

of events could occur that would have a negative or otherwise impact on the growth potentials of that holding. Consideration of the ease of trading the asset when and as desired would also be a factor that investors would assess before choosing to make the purchase.

(v) Market Capitalization (MCAP): Market capitalization is measured by the total value of all equity securities listed on the stock exchange. It is the total value of all equity securities listed on a Stock Exchange. Market capitalization is the most important measure for assessing the size of a capital market. It is a function of the prevailing market price of quoted equities and the size of their issued and paid-up share capital.

(vi) Foreign Exchange Rate (EXCHR): The exchange rate policy is one of the macroeconomic policies employed to manage the economic growth of the economy. The exchange rate is the price of one currency in relation to another. It is either fixed by the monetary authorities or determined by the forces of demand and supply. The exchange rate in a free market situation is determined by the forces of demand and supply. The demand for foreign exchange means a derived demand for foreign currencies which depends on the supply of the naira. Nigerians demand dollars to enable them to pay for import system, capital movement and other resource outflows. The use of foreign exchange arises because different nations have different monetary units, and the currency of one country cannot be used for making payments in another country.

Note. The above-described explanatory variables for the study were sourced from the World Indicators and CBN Statistical Bulletin (2023).

3.5 Method for Data Analysis

The time series data sets were analyzed using an autoregressive distributed lag (ARDL) bounds test approach for the study. The choice of the Autoregressive Distributed Lag (ARDL) method of estimation was because it offers built-in lag-length selection methods and contains lags of the dependent and explanatory variables as regressors as well as post-estimation views. The key advantage of Autoregressive Distributed Lag over other Ordinary Least Squares estimation methods, according to, Nnaji et al. (2013), is that Autoregressive Distributed Lag estimation disregards the uncertainties created by unit root pre-testing. The bounds testing was used to determine the long-run relationship between the variables in the model. If the variables were co-integrated, the long-run ARDL model would be estimated and also the speed of adjustment would be found.

In ARDL analysis, long-run and short-run coefficients would be estimated simultaneously, and the model could be developed and utilized for co-integration tests even if all the variables were not stationary after first differencing $I(1)$, or at levels i.e. $I(0)$. ARDL model would be developed when there is mixed integration at order one, $I(1)$ and at level, $I(0)$, but none was integrated at the second differencing, $I(2)$ (Pesaran *et al.*, 2001). Before ARDL estimation, the time series data were tested for stationarity. The test for stationarity of data was carried out with an Augmented Dickey-Fuller (ADF) unit root test. This particular stage is necessary because most macroeconomic time series contain unit roots and any regression involving non-stationary series almost always produces significant relation where no relationship exists, between the variables. However, as the variables are stationary at the first difference, further statistical tests were carried out which tested the long-run relationship among the variables of the study. If there is a long-run relationship among the variables of the study, error correction estimation is done to integrate the short-run dynamics with its long-run equilibrium.

4.0 Data Presentation

4.1 Results and Discussions

The originating raw data for the analysis was extracted from the computed data by Odom's (2024) unpublished doctorate thesis presented to the Department of Banking and Finance, College of Management Sciences (COLMAS), Michael Okpara University of Agriculture, Umudike, Umudike, Abia State, Nigeria.

Descriptive Statistic

The descriptive statistic of the set of data under consideration in this study was carried out to show their basic features. The outcome of the descriptive statistic is displayed in Table 1:

Table 1: Descriptive Statistic

	MSVA	TEQF	TDBF	FDI	FPI	MCAP	EXCHR
Mean	4101386.	4141.572	166.4077	2523861.	1867126.	6552.267	100.8962
Median	3568687.	466.1000	3.490000	1345369.	23555.51	472.3000	102.1100
Maximum	6684218.	22296.84	1400.430	8841062.	14299501	42054.50	400.2400
Minimum	2898474.	1.000000	0.000000	189164.8	15.99000	5.000000	0.610000
Std. Dev.	1228891.	6027.079	385.4013	2600313.	3601820.	10513.78	106.9396
Skewness	1.005849	1.505332	2.531696	1.138547	2.277741	1.909034	1.136555
Kurtosis	3.506647	4.506395	8.107169	3.048216	7.097279	6.261221	3.688420
Jarque-Bera	6.971779	18.41665	84.04682	8.429659	61.00269	40.97146	9.166545
Probability	0.030626	0.000100	0.000000	0.014775	0.000000	0.000000	0.010221
Observations	39	39	39	39	39	39	39

Source: Authors' results from E-Views 10.0 package (2024)

Note: For the Jarque-Bera test, a prob. less than 0.05 leads to the rejection of the null hypothesis of a normal distribution (Jarque and Bera, 1987)

Table 1 indicates the descriptive statistics of the data set used for the analysis. The mean scores denoted the average value of the series associated with each variable. The minimum and maximum values represented the lowest and highest values associated with each variable. The standard deviation which is a measure of the amount of variation of a random variable expected about its mean denoted that the series of data associated with the variables were highly deviated from their respective mean values. In all the cases, the measure of skewness turned out to be positive and greater than one, implying that the distribution of the data had a long tail to the right and was not normally skewed. Also, the Kurtosis is used to help measure how data disperse between a distribution's centre and tails, the values (Kurtosis > 3) indicated that the distribution had "heavy" tails that are thickly concentrated with observations or that are long with extreme observations (leptokurtic). The probability value ($p < 0.05$) of the Jarque-Bera showed that the data series associated with the model variables did not have a normal distribution. Hence, the variables were transformed into logarithmic form to reduce the tails of the distribution and to better fulfil the distributional assumptions.

4.2 Test for Stationarity of Data

The test for stationarity of data followed the Augmented Dickey-Fuller (ADF) approach to unit root testing. The ADF test was applied to the variables under consideration to ascertain the stationarity of the time-series data. Table 2 displayed the variables in level form and first difference form (where the variable was not stationary at level).

Table 2: ADF Unit Root Test

Variable	ADF at Level; I(0)		ADF at first difference; I(1)		Order of integration
	t-Statistic	Prob.	t-Statistic	Prob.	
LNMSVA	-2.501103	0.3260	-4.938276	0.0014	I(1)
LNTEQF	-1.322650	0.8681	-7.072914	0.0000	I(1)
LNTDBF	-2.607813	0.2793	-5.465342	0.0004	I(1)
LNFDI	-1.904942	0.6338	-8.605753	0.0000	I(1)
LNFPI	-3.956314	0.0183	-	-	I(0)
LNMCAPI	-1.167401	0.9040	-4.953192	0.0014	I(1)
LNEXCHR	-1.419903	0.8400	-5.814717	0.0001	I(1)

Source: Authors' results from E-Views 10.0 package (2024)

From Table 2, the series of LNFPI was stationary at levels but LNMSVA, LNTEQF, LNFDI, LNMCAPI and LNECHR were non-stationary at levels form but taking the first difference of the series made them stationary. The probability values of t-statistic values were tested at a 5 per cent level of significance. Hence, variables were adjudged stationary if their respective probability values fell below 0.05 at either level, that is, I(0) or the first difference, that is, I(1). This result implied that the variables were integrated of varying order (but none was integrated at second difference) which informed the use of the Autoregressive Distributed Lag (ARDL) technique.

4.3 ARDL Bounds Test

Next, the study proceeded to examine the co-integration or the existence of a long-run equilibrium relationship between the variables studied using the bounds test of Pesaran et al. (2001) based on the ARDL approach. The outcome of the bounds test approach to co-integration which measured the existence of long-run relationships in the models was presented in Table 5:

Table 5: Bound test results

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	5.229477	10 %	1.99	2.94
K	6	5 %	2.27	3.28
		2.5 %	2.55	3.61
		1 %	2.88	3.99

Source: Authors' results from E-Views 10.0 package (2024)

The null hypothesis for the bounds co-integration test is that there is no long-run relationship. Therefore, looking at the F-bounds test, the value of the F- statistic was greater than the value of I(1) at both 1 % and 5 % levels, and so, the null hypothesis of no co-integration was rejected for the three models. Hence, it was concluded that there was a long-run relationship between the dependent and independent variables, meaning that the relationship between capital market financing and the Nigerian manufacturing sector productivity followed a long-run path. The long-run estimates of the ARDL model have been summarized in Table 6:

Table 6: Long-run (OLS Function) estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNTEQF	0.067271	0.376518	0.178666	0.8614
LNTDBF	0.139351	0.043765	3.184077	0.0087*
LNFDI	-0.024226	0.005611	-4.317590	0.0002*
LNFPI	0.105227	0.064574	1.629547	0.1315
LNMCAPI	-0.128510	0.390885	-0.328767	0.7485
LNECHR	0.191656	0.042610	4.497911	0.0001*
C	29.07243	1.270389	22.88467	0.0000*

Source: Authors' results from E-Views 10.0 package (2024)

Key: *Significant at 1 % level of Significance

The coefficients from Table 6, were expressed in a model form. The long-run model was as depicted by the equation (9):

$$\begin{aligned}
 MVA = & 29.07243 + 0.067271LNTEQF + 0.139351LNTDBF - 0.024226LNFDI \\
 & + 0.105227LNFPI - 0.128510LNMC \\
 & + 0.191656LNECHR
 \end{aligned}
 \tag{9}$$

From equation (9), the estimated coefficient of LNTEQF was -0.067271 which implied that a percentage increase in equity financing resulted in about a 0.67 % increase in manufacturing sector growth in the long run. Also, the coefficient associated with LNTBDF was 0.139351, meaning that a one per cent change in debt financing caused the Nigerian manufacturing sector to grow by approximately 1.39 % in the long run. The estimated coefficient of LNFDI turned out -0.024226, indicating that a percentage change in FDI resulted in a 0.24% decrease in the growth of the Nigerian manufacturing sector. On the other hand, the coefficient of LNFPI was 0.105227 which was indicative of the fact that the Nigerian manufacturing sector increased by 1.05 % due to a percentage increase in foreign portfolio investments. With an estimated coefficient of -0.128510 associated with LNMCM, it was found that a percentage change in market capitalization resulted in about a 1.29 % decrease in the Nigerian manufacturing sector growth in the long run.

4.4 Error Correction Mechanism (ECM)

The ECM is sometimes referred to as the speed of adjustment test. It tells of the degree to which the equilibrium behaviour drives short-run dynamics. The value of the error correction term is expected to be between 0 and 1, and it is also expected to be negative because a positive value would mean an ambiguous estimation. The ECM results are detailed in Table 7:

Table 7: ECM Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNTEQF)	0.033916	0.082948	0.408884	0.6905
D(LNTEQF(-1))	0.473366	0.120136	3.940242	0.0023*
D(LNTEQF(-2))	0.345031	0.084437	4.086256	0.0018*
D(LNTBDF)	-0.005495	0.012537	-0.438280	0.6697
D(LNFDI)	-0.003674	0.016128	-0.227797	0.8240
D(LNFDI(-1))	-0.006550	0.017139	-0.382172	0.7096
D(LNFPI)	0.037335	0.008012	4.660082	0.0007*
D(LNFPI(-1))	-0.002508	0.007260	-0.345384	0.7363
D(LNFPI(-2))	0.013100	0.007891	1.660101	0.1251
D(LNMCAP)	-0.123181	0.092554	-1.330919	0.2101
D(LNMCAP(-1))	-0.490502	0.139474	-3.516804	0.0048*
D(LNMCAP(-2))	-0.417178	0.100283	-4.160013	0.0016*
D(LNEXCHR)	0.028913	0.033685	0.858335	0.4090
D(LNEXCHR(-1))	-0.066073	0.038391	-1.721047	0.1132
D(LNEXCHR(-2))	-0.098716	0.034033	-2.900594	0.0144**
ECM(-1)	-0.445450	0.053837	-8.273972	0.0000*
R-squared	0.844735	/84.47%		
Adjusted R-squared	0.698095	/69.81%		
F-statistic	60.31587			
Prob(F-statistic)	0.000024*			
Durbin-Watson stat	1.936529	R/ 1.94		

Source: Authors' results from E-Views 10.0 package (2024)

Key: *Significant at 1 % level significance.

**** Significant at 5 % level significance.**

The error correction term in the table 7 is denoted as ECM (-1). The error correction term carried the expected sign. The coefficient for the ECM, estimated at -0.445450 was highly significant and negative

as expected, which showed the speed of adjustment to equilibrium. The ECM revealed that approximately 44.5% deviation of LNMSVA from its long-run level was adjusted in one year. This highly significant ECM further confirmed the existence of a stable long-run relationship between LNMSVA and the independent variables. Based on the coefficient of the ECM, the adjustment mechanism was moderate.

The F-statistic of 60.31587 with its prob. (0.0000) showed that the independent variables collectively exerted a statistically significant effect on the manufacturing sector growth in Nigeria. This implied that the interactions between the independent variables significantly affect manufacturing sector growth in Nigeria. Similarly, the adjusted R-squared (0.698095) indicated that the interactions between the independent variables accounted for approximately 69.81 % of the total variations in manufacturing sector growth in Nigeria, implying that the independent variables jointly explained a significant proportion of the manufacturing sector. As such, the model was found fit after taking into account the loss in the degree of freedom. The Durbin – Watson statistic of 1.936529 was observed to be tending the approximately 2, which indicated the model had no autocorrelation and it was not spurious.

In the short run, LNTEQF had a positive but non-significant impact on LNMSVA, implying that equity financing did not have an instantaneous impact on the manufacturing sector growth in Nigeria. However, at lags 1 and 2, it was observed that LNTEQF turned significant, meaning that the impact of equity financing took at least 2 years to exert a considerable impact on the Nigerian manufacturing sector.

Both LNDBF and LNFDI did not exert a significant impact on the Nigerian manufacturing sector in the short-run. This implied that debt financing and foreign direct investment did not have an immediate impact on the Nigerian manufacturing sector within the period under study.

The estimated coefficient of D(LNFPI) was positive and significant. This showed that a percentage change in foreign portfolio investment caused an instantaneous significant increase in the growth of the Nigerian manufacturing sector, that is, higher inflows of portfolio investments triggered the requisite growth in the Nigerian manufacturing sector.

Also, the coefficients of LNMCP and LNEXCHR were negative and non-significant in the short run. However, after 1 and 2 periods lag they became significant. This meant that the time lag for LNMCP and LNEXCHR had a noticeable impact on the growth of the Nigerian manufacturing sector to the time of about 2 years.

4.5 Diagnostic Tests of the ARDL Models

To ascertain the robustness of the outcomes of the results, it was important to ensure that the stability and the correct functional form of the models were specified, and avoidance of severe serial correlation and heteroscedasticity (see Odom, 2024). The test statistic for the various tests must be statistically insignificant to ensure the absence of the aforementioned econometric problems.

Table 3: Diagnostic Tests

Test	Test statistic	Prob.	Null hypothesis	Remark
Serial correlation test:	0.335235	0.7237	$p > 0.05$	Residuals are not serially correlated.
Heteroskedasticity test:	1.088611	0.4613	$p > 0.05$	Residuals are homoscedastic.
Jarque-Bera test:	2.317615	0.3138	$p > 0.05$	Residuals are normally distributed.

Source: Author's results from E-Views 10.0 package (2024)

The results of the diagnostic tests are presented in Table 3. The tests of serial correlation based on the Breusch-Godfrey Serial Correlation LM tests among the residuals confirmed the absence of any serious serial correlation since the F-Statistic was statistically insignificant. The test of heteroscedasticity based on the Breusch-Pagan-Godfrey tests also reported a statistically insignificant F-statistic at 5 per cent level, thus indicating the absence of heteroscedasticity among the residuals, that is, the residuals were homoscedastic. Also, the Jarque-Bera tests confirmed that the residuals of the ARDL were normally distributed since its probability value was greater than 0.05. This gave the assurance that the results from the models were reliable, efficient and suitable for forecasting and policy and decision-making.

Figures 1 and 2 showed that the cumulative number of recursive residues (CUSUM) and the cumulative number of recursive residues of squares (CUSUMSQ) for the ARDL models were within critical limits for the 5 per cent significance level, indicating that the ARDL model coefficients in each specification were stable.

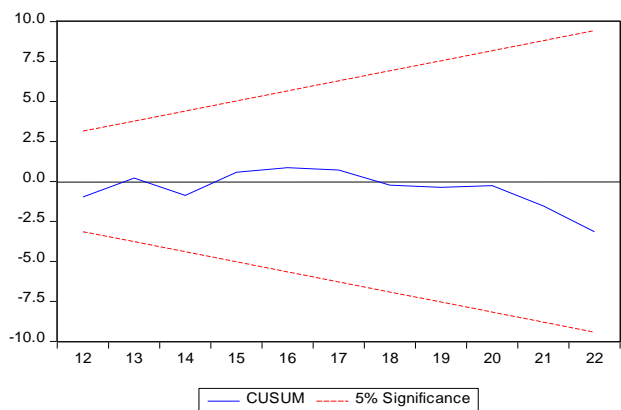


Fig. 1: CUSUM test

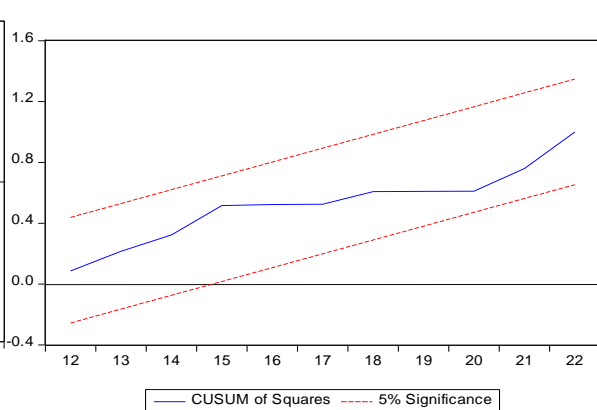


Fig. 2: CUSUMSQ test

Further into the analysis, the test for multicollinearity was carried out to ensure that the independent variables were not highly correlated. This test was carried out using the variance inflation factor (VIF). VIF measures how much the dynamics (variance) of an explanatory variable is inflated or influenced by its interaction with other explanatory variables. In general, if the VIF values falls between 5 and 10, it shows evidence of high correlation but, if the VIF is greater than 10, multicollinearity becomes a significant problem (Sheater, 2009).

Table 4: Variance Inflation Factor (VIF)

Variable	Coefficient Variance	Uncentered VIF
LNTEQF	0.913151	8.803507
LNTDBF	0.035097	3.194135
LNFDI	0.006026	5.354971
LNFPPI	0.021439	6.882047
LNMCPAP	0.915125	1.463431
LNEXCHR	0.206317	9.113645

Source: Authors’ results from E-Views 10.0 package (2024)

As Table 4 showed, since VIF values for the independent variables across all models were below ten (10), it was concluded that there was a negligible risk of multicollinearity in the specified model. Hence, all the explanatory variables were retained in the model.

4.6 Discussion of Findings

The long-run coefficient showed that equity financing had a positive and non-significant impact on the manufacturing sector value added in Nigeria. This was indicative of the fact that equity financing had no considerable increasing impact on the manufacturing sector growth in Nigeria. A plausible reason for the insignificance of equity financing on the manufacturing sector value added could be that most of the manufacturing companies did not access sufficient capital from the equity market due to the high costs of listing. This finding aligns with that of Ibi et al. (2015), who found a positive but marginal impact of equity financing on domestic production. On the other hand, the findings of Onigbinde & Hunga (2016) revealed that equity financing significantly enhanced economic output.

It was found that debt financing had a positive and significant impact on manufacturing sector growth in Nigeria. This implied that debt financing enhanced the manufacturing sector value added in Nigeria. A cogent reason for this could be attributed to the fact that debt instruments could be appealing to investors in the capital market as a veritable source of financing. This finding is in tandem with Odo et al. (2017), Uremadu et al. (2019) and Novita et al. (2018) that debt instruments (debt financing) have been good for business entities in Nigeria. On the other hand, Ema & Rai (2018) held the view that debt financing did not enhance productivity because it was not accessible to small businesses.

The findings from the long-run regression estimation revealed that FDI had a negative and significant impact on the manufacturing sector value added. This implied that the FDI inflows did not help in augmenting manufacturing sector growth in Nigeria. This further implied that inflows of FDI had not been sustained over a long period. This could be instabilities in Nigeria, associated with the incessant insecurity and macroeconomic distortions or instabilities in Nigeria. This finding did not agree with Okonkwo et al. (2015) that FDI flows enhanced manufacturing sector growth in a resource-scarce economy like Nigeria. However, Jerome & Paul (2013) agreed with this study that FDI might have exerted a negative impact on the manufacturing sector growth due to the massive withdrawal of investments and capital flight.

The findings of the study showed that FPI had a positive and significant impact on the manufacturing sector growth in the long run. The long-run positive and significant impact of FPI was indicative of the fact that foreign investments in financial assets enhanced the manufacturing sector value added in Nigeria. The positive impact of FPI could be attributed to the fact that domestic firms' shares, might have been subscribed to by foreigners, thereby making capital available for investments in economically productive activities. That it was not significant, could plausibly portray that enough FPI was not adequately mobilized to engender growth in the manufacturing sector. This was against the findings of Francis (2009) who observed that FPI flows were ineffective in boosting economic productivity as against the findings of Etale & Sawyerr (2020) that FPI did not drive productivity in Nigeria.

The foreign exchange rate (EXCHR) had a positive and significant effect on the manufacturing sector value added in Nigeria. This implied that the Nigerian manufacturing sector could have developed some resilience to foreign exchange rate depreciation over the long term. This finding was against that of Ibi et al. (2015) who found that exchange rate volatility deterred domestic productivity. In tandem with Akuku (2015), the positive and significant effect of the exchange rate could be attributed to speculative activities in the global financial markets. In consonance with Shirota (2013), the positive impact of the exchange rate could be explained by the fact that banks could cushion this exchange rate effect by increasing interest rates and imposing lending conditions that might reduce the negative effects of the foreign exchange rate on manufacturing activities of corporate bodies in the country.

5.0 Summary, Conclusion and Recommendations

5.1 Summary of Findings

This study investigated the impact of capital market financing on Nigerian manufacturing sector growth from 1981 to 2022. Empirical findings from the study showed that:

(i) Equity financing had a long-run positive and insignificant impact on manufacturing sector value added in Nigeria. The implication of this to the manufacturing sector is that it could lead to a lack of appetite on the part of investors to hold certain stocks which could bring down the stock prices.

(ii) Debt financing exerted a positive and significant impact on the manufacturing sector value added in Nigeria in the long run. The implication of this to the manufacturing sector is that it could lead to increasing the leverage of the manufacturing sector which would lead to higher demand for shares then the stock price would normally rise thereby attracting more investors.

(iii) Foreign direct investment (FDI) had a negative and significant impact on the manufacturing sector value added in Nigeria in the long run. The implication of this to the manufacturing sector is that it would necessitate the government and the manufacturing sector to encourage foreign capital inflows in terms of foreign direct investment and foreign portfolio investment in a bid to bridge the gap. The determinants of foreign direct investment and foreign portfolio investment inflows into the country are market size, trade openness, government expenditure, inflation and interest rate, etc.

(iv) Foreign portfolio investment (FPI) caused a positive and non-significant impact on the manufacturing sector value added in Nigeria in the long run. The implication is that the manufacturing sector should not rely wholly on foreign portfolio investment bearing in mind the past series of economic crises ranging from macroeconomic instability occasioned by a fall in oil prices (on which the Nigerian economy is dependent) and the COVID-19 pandemic that resulted to low foreign portfolio investment inflow in Nigeria.

(v) Market capitalization (MCAP) resulted in a negative and non-significant impact on the manufacturing sector value added in Nigeria in the long run. The implication of this to the manufacturing sector is slow growth, what drives the performance of a market capitalization is the availability of capital to trade with and the level of confidence exhibited by investors. The Nigerian Stock Exchange (NSE) has always been overwhelmed with trades in existing securities. Major Initial Public Offerings (IPOs) are seldom sold in the market.

(e) Foreign exchange rate (EXCHR) exerted a positive and significant impact on the manufacturing sector value added in Nigeria in the long run. The foreign exchange rate appreciation that was recorded could be attributed to a rejuvenated stock market of Nigeria as many foreign investors were attracted to Nigeria at that time (see Odom, 2024). The implication is that it would lead enterprises in the private sector to patronize the capital market for their fund-raising efforts. As a result, greater opportunities for private investors who wanted to borrow from the capital market would be created.

5.2 Conclusion

This research documented how capital market financing could impact the manufacturing sector's growth. The study was focused on the Nigerian context for the period 1981 to 2022. The auto-regressive distributed lag (ARDL) model was used. Results showed that in Nigeria, some of the indicators of capital market financing like debt financing significantly favoured manufacturing sector growth while equity financing and foreign portfolio failed to have any considerable impact on the manufacturing sector value added. Foreign direct investment and market capitalization caused a diminishing impact on manufacturing sector value added, meaning that capital market financing influenced manufacturing sector growth. The capital market has an important role to play in the growth of the Nigerian

manufacturing sector. However, this study has concluded that capital market financing has failed to propel the manufacturing sector growth because the variables of capital market financing except debt financing were not significant in explaining the manufacturing sector growth in Nigeria.

5.3 Recommendations

Based on the findings of the research, the following recommendations are made:

- 1) The government needs to strengthen the supervision of equity financing to ensure manufacturing sector growth over time.
- 2) The issue of debt financing remains a critical aspect for the success of manufacturing activities and the economy at large. Hence, policymakers such as the Ministry of Finance and other government departments should ensure that policies are put in place so that manufacturing firms are given access to short-term and long-term debts.
- 3) There is a need for an enabling environment in Nigeria for FDI flows that would target the manufacturing sector growth.
- 4) Regarding foreign portfolio investments, there is a compelling need to initiate policies that would promote the long-run growth of the capital market and the manufacturing sector, at large. This would go a long way in attracting long-term funds that would be available for productive purposes through foreign portfolio investments.
- 5) Financial authorities in Nigeria should ensure improvement in the declining market capitalization by encouraging more foreign investors to participate in the market, maintaining state-of-the-art technology like automated trading and settlement practice, electronic fund clearance and eliminating physical transfer of shares.
- 6) There is a need to improve the existing exchange rate management framework in Nigeria. This could stabilize the exchange rate and enhance manufacturing sector activities, but only in the context of a broad-based economic reform involving a complementary monetary policy regime.

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Appendix 1

Table 4.1: Presents the time series data used for the analysis.

YEAR	MSVA ₦' Billion	TEQF ₦' Billion	TBDF ₦' Billion	FDI ₦' Billion	FPI ₦' Billion	MCAP ^{₦' ₦'} Billion	EXCHR USD \$
1981	5,838,894.38	1.90	0.00	542,327.29	17.16	5.00	0.61
1982	4,984,786.85	1.00	1.00	430,611.26	16.90	5.00	0.67
1983	3,537,722.56	2.20	0.00	364,434.58	15.99	5.70	0.72
1984	3,282,517.20	2.40	0.20	189,164.78	18.81	5.50	0.76
1985	3,453,716.78	2.70	0.40	485,581.32	21.34	6.60	0.89
1986	3,137,508.81	3.70	0.40	193,214.91	151.60	6.80	2.02
1987	3,680,713.67	4.00	0.00	610,552.09	4,353.10	8.20	4.02
1988	4,237,795.57	5.10	0.40	378,667.10	2,611.80	10.00	4.54
1989	3,568,686.64	8.00	0.60	1,884,249.74	1,618.80	12.80	7.39
1990	3,825,609.02	12.10	0.80	587,882.97	435.20	16.30	8.04
1991	4,165,391.96	18.40	1.40	712,373.36	594.90	23.10	9.91
1992	4,667,756.77	26.20	1.80	896,641.28	36,851.80	31.20	17.30
1993	3,850,410.60	41.80	2.10	1,345,368.59	377.00	47.50	22.05
1994	3,364,568.45	61.00	2.10	1,959,219.86	203.50	66.30	21.89
1995	2,898,474.25	175.10	2.10	335,842.16	5,785.00	180.40	21.89
1996	2,990,688.68	279.80	3.00	499,276.81	12,055.20	285.80	21.89
1997	3,051,910.78	276.30	2.80	469,577.02	4,785.80	281.90	21.89
1998	2,908,213.80	256.80	3.10	299,566.66	637.52	262.60	21.89
1999	2,975,615.23	294.50	3.10	1,004,915.63	1,015.74	300.00	92.69
2000	2,980,651.72	466.10	4.10	1,140,167.56	51,079.13	472.30	102.11
2001	3,050,505.05	648.40	5.80	1,190,618.64	92,518.92	662.50	111.94
2002	3,591,402.08	748.70	3.50	1,874,070.75	24,789.19	764.90	120.97
2003	3,203,242.03	1,325.70	8.40	2,005,353.56	23,555.51	1,359.30	129.36
2004	3,169,211.13	1,926.50	7.90	1,874,060.89	23,541.00	2,112.50	133.50
2005	3,242,196.81	2,523.50	9.83	4,982,533.93	896,082.50	2,900.06	132.15
2006	3,268,550.08	4,227.13	3.49	4,854,353.98	1,244,628.18	5,120.90	128.65
2007	3,271,654.48	10,180.29	16.98	6,036,021.40	1,459,134.36	13,181.69	125.83
2008	3,369,712.54	6,957.45	16.41	8,194,071.90	1,816,468.35	9,562.97	118.57
2009	3,491,293.54	4,989.39	10.05	8,555,990.01	2,149,297.07	7,030.84	148.88
2010	3,578,641.72	7,913.75	56.37	6,026,253.09	2,094,331.92	9,918.21	150.30
2011	4,216,191.30	6,532.58	1,341.29	8,841,062.05	2,328,382.63	10,275.34	153.86
2012	4,783,659.43	8,974.45	1,400.43	7,069,908.43	3,517,886.57	14,800.94	157.50
2013	5,826,358.45	13,226.00	1,394.00	5,562,857.99	3,564,937.84	19,077.42	157.31
2014	6,684,217.74	11,477.66	144.96	4,693,828.63	2,856,173.25	16,875.10	158.55
2015	6,586,618.64	,850.61	205.89	3,064,168.90	2,187,152.59	17,003.39	193.28
2016	6,302,232.45	9,246.92	281.97	3,453,258.41	3,665,070.50	16,185.73	253.49
2017	6,288,896.80	13,609.47	276.50	2,412,974.92	10,538,751.79	21,128.90	305.79
2018	6,420,590.28	11,720.72	256.56	775,247.40	10,669,091.44	21,904.04	306.08
2019	6,469,831.88	12,968.59	3.55.82	2,305,099.81	12,590,817.28	25,890.22	306.92
2020	6,291,592.13	21,056.76	507.76	2,385,277.67	11,431,134.04	38,589.58	358.81
2021	6,502,257.60	22,296.84	718.30	3,313,210.00	14,299,501.34	42,054.50	400.24
2022	6,661,391.84	22,167.45	613.83	186,792.43	16,623,683.95	51,188.87	425.98

Source: Computed by the Author (2024) from the World Development Indicators (WDI) and CBN Statistical Bulletin (2023).