

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Master's Thesis

**Investing in the Nigerian Stock Market (case study
Dangote Cement plc)**

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Thesis title

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Objectives of thesis

The aim of this thesis is to find out key determinants affecting Dangote Cement Plc as a possible investment. This will be achieved through a comprehensive study of the Nigerian stock market and a detailed analysis of the financial report of Dangote cement plc and understanding the price trajectory of the company's share price through fundamental study.

Methodology

The thesis is divided into theoretical and practical. The theoretical section describes the Nigerian stock exchange, its origins, and highlight the different sectors of the markets and opportunities. In the practical section, Dangote financial statements was used to make future financial projections of earning and calculate its intrinsic value.

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shares, fundamental analysis, financial ratios, financial modeling, financial statements, stock market, stock market index, market capitalization

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- Timothy, O (2014) The Effects of Stock Market on Economic Growth and Development of Nigeria Journal of Economics and Sustainable Development, ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.5, No.15 2014 181.

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Declaration

I declare that I have worked on my diploma thesis titled "Investing in the Nigeria Stock Market (Case study Dangote Cement Plc) " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on date of submission

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Investing in the Nigerian Stock Market (Case study Dangote Cement Plc)

Abstract

This diploma thesis focuses on studying and analysing investment how to make investment in the Nigerian stock exchange market with broad discussion on fundamental and financial investing approach in the market.

The most capitalised stock on the exchange – Dangote Cement Plc was used as a case study. The thesis is divided into two parts, theoretical and practical. The theoretical part describes the Nigerian stock exchange, the instruments traded on the exchange and the different sectors. The practical section is the fundamental and financial analysis of Dangote Cement Plc. A brief account of the company is given and investment decision on the share is analysed with scenario analysis. The result of this research work is to give investors a better understanding and guidance in making investment decision.

Keywords: Shares, stock market, cash flow, financial modelling, financial statements, market capitalization, moving average, WACC, DCF.

Investování na nigerijském akciovém trhu (Případová studie Dangote Cement Plc)

Abstrakt

Tato diplomová práce se zaměřuje na studium a analýzu investic, jak investovat na nigerijském burzovním trhu s širokou diskusí o fundamentálním a finančním investičním přístupu na trhu.

Jako případová studie byla použita nejvíce kapitalizovaná akcie na burze – Dangote Cement Plc. Práce je rozdělena do dvou částí, teoretické a praktické. Teoretická část popisuje nigerijskou burzu, instrumenty obchodované na burze a jednotlivé sektory. Praktickou částí je fundamentální a finanční analýza společnosti Dangote Cement Plc. Je uveden stručný popis společnosti a investiční rozhodnutí o podílu je analyzováno s analýzou scénářů. Výsledkem této výzkumné práce je poskytnout investorům lepší porozumění a rady při rozhodování o investicích.

Klíčová slova: Akcie, akciový trh, cash flow, finanční modelování, finanční výkazy, tržní kapitalizace, klouzavý průměr, WACC, DCF.

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List of abbreviations

Unlevered Free Cash Flow	UFCF
Weighted Average Cost of Capital	WACC
Earnings before interest, taxes, depreciation, and amortization	EBITDA
Earnings before interest and tax	EBIT
Earnings before tax	EBT
Net present value	NPV

1 Introduction

Nadarajah et. al. (2018) opined that one very important consideration for business firms is market liquidity because it influences firm value and their cost of capital thereby improving their corporate governance mechanisms.

Ellington (2018) stressed that the liquidity in stock market remains of great importance to any economy stating that during market crisis, lower liquidity levels will likely hinder economic growth.

The stock market enables governments and companies to raise capital for financing new projects and modernizing commercial concerns. If capital resources is not sufficiently provided to economic significant areas, especially to industries where demand is growing and in which there is possibility of increasing production outputs, the rate of expansion of the economy often suffers. One of the benefit of the stock market is the provision of long-term and non-debt financial capital.

Economists and finance researchers have put considerable efforts to better understanding of emerging economics stock markets with special focus on markets efficiency. This is reflected in an efficient stock market and is very crucial to the promotion of high economic growth. Several studies have been conducted to investigate the behaviour of stock market as it relates to market efficiency in emerging economies with mixed results, little empirical analysis had been conducted on Nigeria. Several factors affect the stock price aside the company's performance in Nigeria and these include company's top management, assets creation, dividend pay-out, company's indebtedness.

Nigeria has the largest economy in Africa and is one of the fastest growing economies in the world (World bank 2019). The nation has a vibrant stock market and in terms of market capitalization, the Nigerian stock exchange is the third largest exchange in Africa.

This research focuses its attention on the Nigerian stock exchange which can be described as the most visible mirror of the capital market in the country. The Nigerian stock exchange is a network of individual institutions and instruments which specializes in all forms of marketable trading securities .

The desire to develop financial market in an economy is connected with the objective of accelerating industrial and economic development. Among this financial market is the stock exchange, which deals with the mobilization of bank medium and long-term capital funds (Sule & Momoh, 2009). The stock exchange started to enable investments, which were are not illiquid to make them become liquid by converting the investments into cash at the decision of the investor without inconveniencing the company (Olowe, 1997).

Dangote Cement remains Africa's most foremost cement producer with a production capacity of 48.6 million tonnes (Mta) per year across Africa. The cement company is a fully integrated quarry-to-customer producer with a production capacity of 32.25Mta in Nigeria (Dangote Cement, 2022).

In Africa, the Obajana cement plant in Kogi state, Nigeria, remains the largest having a 16.25Mta capacity across five lines. The Ibese plant in Ogun State, Nigeria has four cement lines amounting to a 12Mta capacity while the Gboko plant in Benue state, Nigeria has a capacity of 4Mta. (Dangote Cement 2022).

Through rigorous investments and dedicated management, Dangote Cement has expanded to serve 9 other neighbouring countries aside Nigeria. Dangote cement is operational in Cameroon (1.5Mta clinker grinding), Congo (1.5Mta), Ghana (1.5Mta import), Ethiopia (2.5Mta), Senegal (1.5Mta), Sierra Leone (0.5Mta import), South Africa (2.8Mta), Tanzania (3.0Mta), and Zambia (1.5Mta). (Dangote Cement, 2022).

2 Objectives and Methodology

The significance of this research is to examine the usefulness of investing in the Nigerian Stock Exchange to measure the market depth using Dangote Cement Plc as a case study. This study will be very important to all participants in the capital market, to the regulatory authorities, investors, analysts, stockbrokers and issuing houses.

As a market place where securities are bought and sold, the stock exchange is important to investors. This research work will be relevant to government policy makers because they will have better knowledge of the policies necessary to improve the contribution of the stock market to the economy. This research work will also serve as a reference for subsequent researchers.

2.1 Objectives

The study aims to find out key determinants affecting Dangote Cement as a possible investment in Nigeria. This will be achieved through a comprehensive study of the Nigerian stock market and a detailed analysis of the financial report of Dangote cement plc and understanding the company's price trajectory of its share price.

Other objectives of the study include.

1. To highlight the different sectors of the market and their investment opportunities.
2. To find out key determinants affecting Dangote Cement plc as a possible investment.
3. To understand the price trajectory of the company's share price through fundamental study.

To achieve the above objectives, the following research questions were raised.

1. How to analyse the financial statements of Dangote Cement plc and make future projections?
2. What are the different sectors of the stock market and their investment opportunities?

2.2 Methodology

The methodology is a case study of Dangote Cement company share price in the Nigerian stock exchange as a representative of the capital market. The choice of the company is based on sufficient and detailed information about the company on the Nigerian exchange market and the company's website. It is also the most capitalized stock in the Nigerian stock exchange market.

Various methods and procedures to achieve the objectives of the research. The data were obtained information from secondary sources. Secondary sources which include materials obtained from, newspapers, annual reports, seminar papers, Nigerian stock exchange portal and online.

In the study, there will be two main parts, theoretical analysis methods and practical analysis methods.

1. The theoretical analysis focuses on the Nigerian Stock Exchange; definition, history and functions, the structure of stock market, the segmentation of stock market, stock exchange indices and market capitalization.

2. The practical analysis will be based on the financial modelling. The financial model is used for making operational business decisions and performing financial analysis. The model that will be used for the forecast and projections of earnings using the 3-statement financial model and creating scenarios of future possibilities of best case, base case and worst-case scenarios.

The 3-statement model links the three financial statements (income statement, balance sheet and cash flow statements) with formulas in excel.

For the analysis certain formulas were used in calculating and building the financial statement. The below steps were used to build the 3-statement model

- Input historical financial statements into excel
- Build projection ratios and assumptions from the historical financial statements
- Develop forecast of the income statement and the balance sheet
- Complete the cashflow statement
- Valuation analysis

Forecast ratios used for projections

$$\text{Year on year (yoy) growth} = \frac{\text{current value}}{\text{previous value}} - 1 \quad \dots\dots\dots (1)$$

The year-over-year growth compares how much the business have grown in the recent period compared to the past periods

$$\text{Percentage of revenue} = \frac{\text{current value}}{\text{revenue}} * 100 \quad \dots\dots\dots (2)$$

Calculating the percentage of revenue shows how much the revenue has increased after the addition of new products. It shows by what percentage the business is growing or shrinking

$$\text{Days inventory outstanding (DIO)} = \frac{\text{average inventory}}{\text{cost of goods sold}} * 365 \quad \dots\dots\dots (3)$$

DIO is a working capital management ratio that measures the average number of days that a company holds inventory before turning it into sales.

$$\text{Days sales outstanding (DSO)} = \frac{\text{average account receivable}}{\text{revenue}} * 365 \quad \dots\dots\dots (4)$$

DSO is a working capital ratio that measures the number of days a company takes to collect its accounts receivable.

$$\text{Days payable outstanding (DPO)} = \frac{\text{average account receivable}}{\text{cost of goods sold}} * 365 \quad \dots\dots\dots (5)$$

Cost of Goods Sold

DPO is also a working capital ratio used that measures the number of days it takes the company to pay its suppliers.

$$\text{Moving averages (4 years)} = \frac{y1 + y2 + y3 + y4}{4} \quad \dots\dots\dots (6)$$

A moving average is used to determine the direction of the asset price. Here the average closing price of assets for different years is calculated.

Valuation analysis calculations

$$WACC = \frac{E}{E + D} * Ke + \frac{(D)}{E + D} * Kd * (1 - T) \dots\dots\dots (7)$$

Where WACC = Weighted Average Cost of Capital
 D = Debt
 E = Equity
 Ke = Cost of Equity
 Kd = Cost of Debt

The weighted average cost of capital (WACC) shows a firm’s average cost of capital from all sources of finance which include common stocks, bonds and debt (Hargrave, 2022)

$$CAMP = Rf + \beta (Rm - Rf) \dots\dots\dots (8)$$

Where CAMP = Capital Asset Pricing Model
 Rf = Risk free rate
 Rm = Long term market return

The capital asset pricing model (CAPM) is the relationship between the expected return and risk of investing in a security. The goal of CAPM formula is to evaluate whether a stock is fairly value.

$$DCF = \frac{CF1}{(1 + r)\Delta1} + \frac{CF2}{(1 + r)\Delta2} \dots\dots \frac{CFn}{(1 + r)\Delta n} \dots\dots\dots(9)$$

Where : DCF = Discounted cash flow
 CF = Cash flow for the given year (year 1, year 2 and n for additional years)
 r = Discount rate

DCF is used to calculate the present value of an investment based on the estimated future cashflows.

3 Literature Review

The stock exchange market is believed to have started around late 1400s in Antwerp, modern day Belgium which was the hub of international trade (Hwang, 2021). The first stock trading was created in Amsterdam and the Dutch East India Company was the first publicly traded company for many years. Stock exchange market act as a financial information market, a securities market and capital allocation market. The market gives managers, stock and bond holders, securities analysts, suppliers, lenders, regulatory authorities, government and the public an opportunity to evaluate the financial statements to improve their decisions on their investments (Gibson, 2009).

3.1 Stock Exchange

There are many views to what a stock exchange is. Armstrong (1994) describes a stock exchange as the citadel of capital market, the temple of values. It is the fulcrum on which the whole financial structure of the capitalist system runs. A stock exchange can be described as a market for securities.

The determination of the overall growth of an economy depends on how efficient the stock market performs its allocative functions of capital (Timothy, 2014). The stock exchange is an organized secondary market for trading existing securities. It provides an avenue for the movement of long-term capital funds from those with savings to invest in areas such as development of industry, trade and even government where the funds are needed for expansion and development. It is an institution which allocates efficiently capital funds to different uses in the economy through its sensitive pricing mechanism.

The stock exchange gauge changes in the economic conditions and trends which reflect the mindset of persons using the stock exchange. The participants in the stock exchange comprises of different individuals, firms, institutions and activities which relate to it. Microeconomic and macroeconomic factors affect company's stock movements (Ozlen, 2010). The microeconomic factors are derived from analysing a firm's financial situation such as its capital reserve, turnover, credit worthiness etc.

3.1.1 The Nigerian Stock Exchange Market

The Nigerian stock exchange like any other stock exchange is an organized auction market where buyers and sellers meet through their brokers to effect transactions in securities that are listed on the exchange. Stocks, bonds, debt and funds are traded on the exchange. The development of the stock market in Nigeria can be followed to 1949 with the floating of N600, 000 (more than 300,000 pounds sterling) worth of development stock by the colonial administration. However, an organized market for secondary trading of issued stock was lacking (Jibril et al, 2015).

The stock exchange market was established in 1960 as Lagos Stock Exchange, the name was changed to Nigerian Stock Exchange in 1977 (NGX, 2022). It started operations officially on August 25, 1961, with 19 securities listed for trading but informal operations had commenced earlier in June 1961 (Jibril et al, 2015). The stock exchange market is divided into two segments, the primary and secondary markets. The primary market deals with the issuance of new shares or stocks while the secondary market trades in already existing shares or stocks that are quoted on the Nigerian stock exchange.

The Nigeria stock exchange is an essential piece of the Nigerian financial system with several stockbrokerage firms, issuing houses, finance houses and auditing firms working in the ecosystem. Pricing and controls led to the establishment of the Securities and Exchange Commission (SEC) in 1979 (SEC, 2022). The SEC is the regulator of the capital market regulating the capital market with a view of protecting investors and developing the capital market by enhancing efficiency. To achieve these objectives, the SEC performs these following functions.

- Register all securities entering the capital market
- Register market participants such as registrars, investment advisers, securities dealers
- Maintain supervision over the securities market to ensure orderly, fair and equitable dealings in securities
- Stand as the apex regulatory body of the Nigeria Stock Exchange
- Protect the market from shar practices such as insider dealings. (SEC, 2022)

Central Securities Clearing System Limited (CSCS) is also a subsidiary of the stock exchange. The CSCS was established in 1992 as part of the effort to make the Nigerian stock market more efficient and investor friendly. The CSCS is Nigeria's Central Securities Depository (CSD) licensed to carry on the safe depository, clearing and settlement of all stock transactions in the Nigerian Capital Market. It processes securities in an electronic book-entry form, ensuring safe and efficient transaction processing within the ecosystem (CSCS, 2022). CSCS performs post transactions functions on securities exchanges in the Nigerian stock market.

The primary aim of the Nigerian Stock Exchange as stated in the Memorandum of Association is to create an appropriate mechanism for capital formation and provide efficient allocation of resources among competing alternatives. This is expected to provide fund for important projects with long term duration. It also helps to maintain discipline in the capital market as far as the participants and the investors are concerned and expand the the share ownership in the market by providing a suitable environment and, provide and maintain fair prices for securities (Olowe et al, 2021). It provides a conducive atmosphere for the transfer of funds from the surplus sector of the economy to the deficit sector.

In 2021 the Nigerian stock trade was completely demutualised transforming from a member-owned not-for-profit entity into a shareholder-owned, profit-making entity. This led to a new structure – Nigerian Exchange Group Plc (NGX Group) with subsidiaries – Nigerian Exchange Limited (NGX Exchange), NGX Regulation Limited (NGX REGCO), and NGX Real Estate Limited (NGX RELCO)- (NGX, 2022).

3.1.2 Functions and Importance of the Nigerian Stock Exchange

The Nigerian stock exchange is a self-regulatory organization, making and enforcing rules for its members. It regulates its members (brokerage firms) and listed companies to ensure compliance with listing rules.

Adekanye (1986) enumerated the functions of the Nigerian stock exchange to include the following:

1. To stand as the central meeting point for those who wants to buy and sell existing stocks

and shares and giving price quotes to new shares issues through the provision of new capital raised in the market.

2. To provide machinery through stocks and shares for mobilizing private and public savings and making these available for productive investment.
3. To provide opportunities for the continued operation and attraction of foreign capital for Nigeria's development.
4. To facilitate dealings in government securities.
5. To prescribe requirements for new listings and to regulate secondary trading activities and the activities of its dealing members.
6. To ensure that information on the quoted companies are publicly available for fair dealings.
7. To protect the public from shady dealings and practice in quoted securities with the objective of ensuring fair dealings.

3.2 The Structure of the Nigerian Stock Exchange

The Nigerian stock exchange completed its demutualization process with a holding company, HoldCo structure. Nasdaq (2021) describes demutualization as the process by which a member-owned company legally changes its structure to become a profit-making venture owned by shareholders. The aim of the demutualization is to give investors opportunities to invest in the market, improve corporate governance of the market, access to large pool of capital, diversification of the business to give the market a global brand and visualization and opportunity for technological innovation.

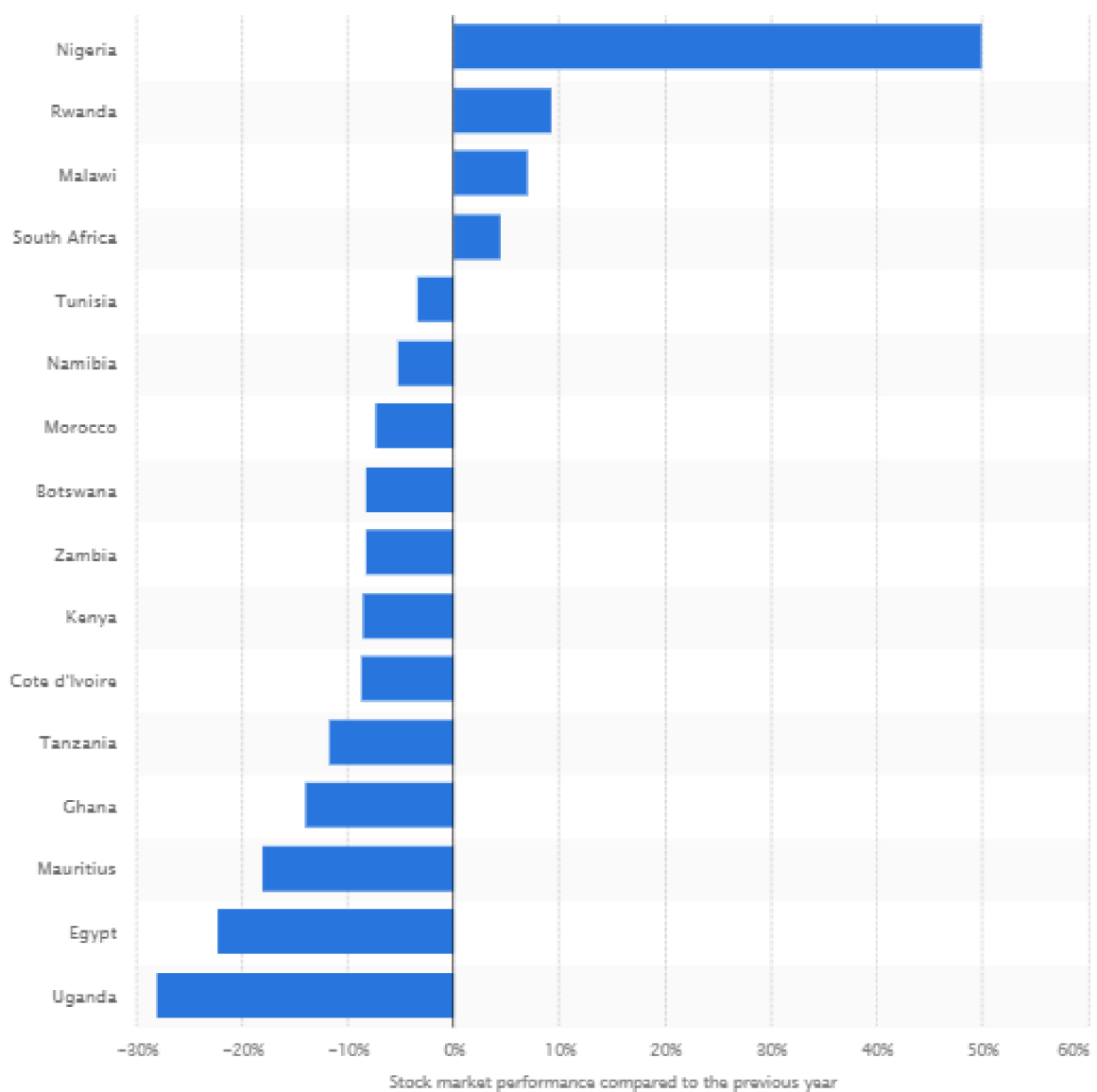
3.2.1 The Nigerian Exchange Limited (NGX Exchange)

Reforms from technological development and financial market regulation have led to an increase of integration and internationalization of the Nigerian capital market resulting in availability of financial information. Trading on the Nigerian stock exchange is electronic using the X-Gen platform which is based on the NASDAQ's X-stream trading platform (NGX, 2022). Individual and retail investors can trade using the platform if they have an account with the Central Securities Clearing System (CSCS) which they opened via a stockbroker.

There are a range of investment products such as equities, exchange traded funds and bonds that are traded on NGX platform. As of June 2021, the exchange operates 166 Equities, 154 Bonds, 9 Exchange Traded Funds (ETFs) and 53 Memorandum listings (NGX, 2022). The market opens each day except for weekends and public holidays to accept orders from market participants set at current market prices. The trading time on the exchange is between 09:30am and 02:30pm. The trading platform, X-Gen, enables a mobile trading technology for retail investors and individuals. Investors place order to buy or sell securities through licensed stockbrokers which is immediately maintained in the Central Order Book (NGX, 2022). If the order is the same with the bid or offer price, the trade will be executed immediately. But in case the orders are not met, it will be queued up according to priority. At each days closing, all unmatched orders will lapse, and you will have to enter your unfulfilled order on the next trading day (NGX, 2022). The Central Securities Clearing System (CSCS) settles equities transactions electronically in T+3 days. Brokerage fees are charged for executing a trade and the fee is fixed or a specific little percentage of the total value of shares traded.

Nigerian Stocks continues to attract institutional funds at a steady pace. Investors' search for a haven for their investments and they need of returns that could match rising inflation and exchange rates. A lot of firms listed on the the Nigerian exchange are reporting record performance in their financial reports in recent years. These performances usually led to eventual dividend payment hence, a positive sentiment drive for the stock market. Continuous interest in the Nigeria stock exchange pushed the market as the best performing stock market in Africa as shown in the figure below. The exchange grew by over 50%.

Figure 1: Selected African countries stock market performance in 2020



Statista (2021)

Nigeria still remain one of the top destination for investment capital in Africa given the high returns in the stock exchange market. The year 2020 showed a massive growth in the market ahead of other countries in Africa. The market is diversified in which investments could be in securities, bonds or other debt instruments.

3.2.2 The NGX Regulation Limited (NGX REGCO)

The exchange continuously monitors and enforces compliance by listed companies with its listing and post listing requirements to ensure high standards of disclosure, transparency and corporate governance practices (NGX, 2022). Where there are rule breaches, the exchange investigates and take appropriate actions. The exchange may suspend the shares of a company for a number of reasons including:

- Failure to disclose material information on time.
- Free float deficiency
- Failure to pay annual listing fees.
- Breach of any rule or regulation of the exchange.

The NGX REGCO performs the regulatory function of the Nigeria exchange by maintaining a fair, orderly and transparent market. Its activities seek to promote the integrity, transparency, and efficiency of the market by ensuring that the standards set out are effective in maintaining a fair and orderly market and investor protection (NGX, 2022). The market surveillance function of REGCO also entails risks mitigation and damage to the Nigerian exchange marketplace and work with international organizations to support global cooperation against market abuse and promotion of rules in the market.

3.2.3 NGX Real Estate Limited (NGX RELCO)

Set up in 1974 the NGX RELCO subsidiary business engage in buying, leasing, hiring and exchanging of property. RELCO manages both personal properties and high valuable assets for investors and maximise their returns. They offer their real estate investment services to individual, corporations or government agencies. They are also into property letting and facilities management (NGX, 2022).

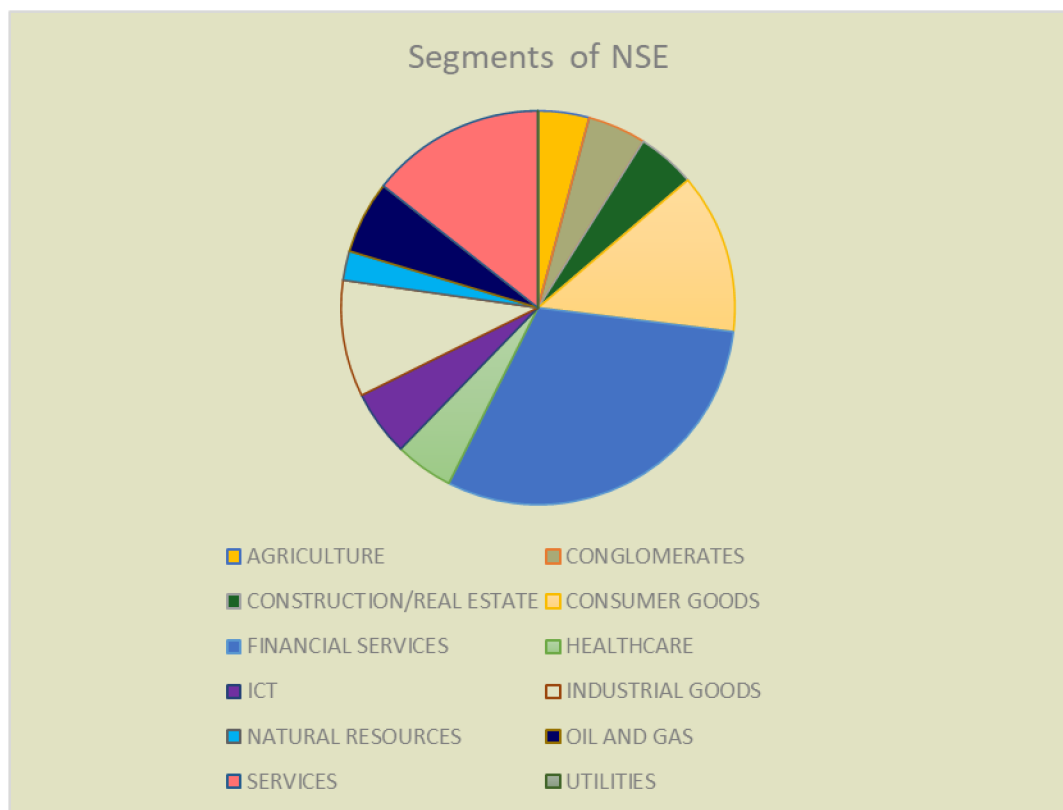
3.3 The Segmentation of the Nigerian Stock Exchange

There are different segments in the Nigerian stock exchange market. Listed companies are grouped into industries and classified within the 12 sectors in the Nigerian stock exchange market (NGX, 2022). The sectors are

- **Agriculture:** Consist of companies that produces livestock feeds, fish farming, oil palm cultivation, oil palm processing, oil palm refining, milling and crushing of palm kernels, vegetable oil production, natural rubber products and rubber cultivation and banga cooking oil. There are 7 companies listed in this sector.
- **Construction/ Real Estate:** Companies in this sector specializes in developing, promoting and managing residential and commercial real estate assets, real estate investment trust, building and civil engineering construction, designing, construction and maintenance of buildings, infrastructure and industry projects, traffic solutions and procurement services. Listed in this sector are 8 companies
- **Consumer goods:** In this sector are leading food and fast-moving consumer goods (“FMCG”) business which processes, manufactures, and distributes food produce. Products such as sweets and drinks, tires and tubes, alcoholic drinks, flour and wheat, cocoa butter and cocoa cake, beverages, enamelware, plastic products and other consumer products such as detergents, toiletries, soaps and home appliances. There are 22 companies listed in this sector.
- **Financial services:** In this sector are listed mortgage banks, insurance companies, banks and investment companies. There are 51 companies that investors can choose from to invest their fund
- **Healthcare:** The sector has one company that provide medical service and 7 other pharmaceutical manufacturing companies.
- **ICT:** Information and communications technology sector has 9 companies that provide telecommunications and money services, broadband data provision and installation, identity management and transaction, communications and integration services, cloud services and local assembly of computer systems.
- **Industrial goods:** There are 16 companies in this sector, and they specialise in the manufacturing and sale of building materials, and thermoplastics. Products include paints, surface coating, glassware, cement and electrical cables and equipment.
- **Natural Resources:** Companies in this sector engage in aluminium production, manufacturing of industrial and medical gases, mining and exploration of solid minerals and paper conversion and printing. There are 4 companies.
- **Oil and Gas:** Companies that specialises in oil and gas exploration, sale and distribution of petroleum products are listed in this sector – 10 companies.

- **Services:** This sector consists of companies that offers various services. They include printing companies, advertising companies, bus and airline transport companies, waste management companies, broadcasting company (one company), hotels, marketing companies, leasing companies and logistic companies. There are 24 companies in total in this sector.
- **Conglomerates:** There are 5 companies listed in the Nigeria stock exchange as conglomerates. These companies are into manufacturing, retail, distribution and power generation, construction, warehouse, automobile assembly, hospitality, agribusiness, energy sectors, logistics and real estate.
- **Utilities:** There is currently no company listed in this sector

Figure 2: Segmentation of Nigerian Stock Exchange Sectors



Source: prepared by author (data from NGX, 2022)

The figure above shows that the financial services have the largest number of companies listed in the Nigerian stock exchange. The sector is the most liquid in the market.

3.4 Nigeria Exchange Market Indices

According to Miao et al (2007) stock market's movements are affected by many macro-economic factors such as political events, firms' policies, general economic conditions, commodity price index, bank rate, bank exchange rate, investors' expectations, institutional investors' choices, movements of other stock markets, psychology of investors, etc. Stock markets activities can be grouped into sectors by industry classification and these sectors has an index, which shows the movement of price fluctuation in each sector. Guha et al (2016) describes stock market index as the barometer to judge the sentiment of the market. It monitors activities of market stakeholders, investors and policy makers. Understanding the market indices and the various industry groups can be a valuable tool in portfolio management and guide to diversification of investments (Kalu, 2017). These indices help investors to select better stocks to invest in by identifying the most promising sectors.

There are currently nineteen (19) indices on the Nigeria stock exchange used for investment management and benchmarking. There are

Table 1: Nigerian Stock Exchange Indices

1	NGX All-Share Index (ASI)
2	NGX-Main Board Index
3	NGX 30 Index
4	NGX CG Index
5	NGX Premium Index
6	NGX Banking Index
7	NGX Pension Index
8	NGX Insurance Index
9	NGX ASeM Index
10	NGX-AFR Bank Value Index
11	NGX AFR Div Yield Index
12	NGX MERI Growth Index
13	NGX MERI Value Index
14	NGX Consumer Goods Index
15	NGX Oil/Gas Index
16	NGX Lotus Islamic Index
17	NGX Industrial Goods Index
18	NGX Growth Index
19	NGX Sovereign Bond Index

(NGX, 2022)

The indices were developed to allow investors to follow market movements and properly manage investment portfolios. It was created using the market capitalization methodology, the indices are rebalanced on a semi-annual basis in January and in July.

The NGX All-Share Index tracks the general market movement of all listed equities on the Nigerian Exchange. The ASI started in January 1984 with the highest value recorded to be 66,371.20 on March 3, 2008. The ASI represents the major performance benchmark.

Figure 3: Nigerian Stock Exchange All Share Index



(Trading Economics, 2022)

The figure shows the general performance of the NGX ASI for several years and also currently rising. The ASI crashed during the financial crisis of 2008 and also dip again during the peak of covid.

NGX-Main Board Index is the founding board of the exchange and consist of well-established companies with a demonstrable track record since 1961. A listing on the NGX Main Board requires a commitment to high standards of disclosure and corporate governance (NGX, n.d).

The NGX 30 index tracks the performantce of the top 30 companies in terms of market capitalisation and liquidity. It began publishing in February 2009.

NGX CG Index tracks the performance of the Corporate Governance Rating System (CGRS) which is used to rate companies together with their market capitalization, free float and corporate governance rating scores (Olowookere, 2018). The Index is reviewed twice in a year and other companies that have become CGRS rated during the year are included into the index while companies that suspended their ratings or withdrawn are removed.

The NGX Premium Index is a list of elite group of companies that meets the Nigerian exchange's very stringent corporate governance and listing conditions. The companies are industry leaders in their sectors and adhere to international best practices on corporate governance and meet NGX's highest standards of capitalization and liquidity (NGX, 2022).

NGX Banking Index shows captures the performance of the banking sector. It comprises of all the banks listed on the exchange. It began on 1st July 2008 with a base value of 1,000.

The NGX Pension Index tracks the performance of the 40 companies in terms of market capitalization and liquidity. The companies must meet certain criteria as stipulated by the National Pension Commission (Pencom). The index was created to serve as an investment guide for Pension asset managers and investors to include equities in their portfolios and serve as a performance benchmark.

NGX Insurance Index designed to serve as a benchmark to capture performance of the insurance sector. It began on 1st July 2008 with a base value of 1,000.(Kalu, 2017).

NGX ASeM Index tracks price movements of all equities listed on the Alternative Securities Market. It includes all the small to mid-cap companies and provides a platform for sustainable growth and development in these organisations.

NGX-AFR Bank Value Index and NGX AFR Div Yield Index also referred to as **NGX-Afrinvest Banking Value Index** and **NGX-Afrinvest High Dividend Yield Index** were designed as benchmarks for measuring value in banking stocks and high dividend stocks in the exchange. They serve as tools for investment managers and other investors seeking appropriate benchmarks to evaluate the performance of their portfolios to a section of the banking sector or high dividend orientation as applicable. The indices are not tradeable.

NGX MERI Growth Index and NGX MERI Value Index (NGX-Meristem Growth Index and NGX-Meristem Value Index) launched March 2019 offers investors' opportunity to make investments in products that truly match their investment styles and objectives. The indices are benchmark to track the performance of growth and value stocks that are traded on the Nigerian stock exchange (Alade, 2019). The constituents of the index must have first satisfied a minimum liquidity criterion of trading for at least 95% of the trading days of the market in each half-year, over the previous three years at each review date. Afterwards, the stocks are selected and categorized based on the 10 value and growth factors.

NGX Consumer Goods Index is designed to provide a benchmark to capture the performance of the consumer goods sectors. The index shows the most capitalized and liquid companies in food, beverages, and tobacco. It began on 1st July 2008 with a base value of 1,000 (Kalu, 2017).

NGX Oil/Gas Index comprises ten listed Oil and Gas Marketing companies which are Ardova, Conoil, Eterna, Japaul, MRS, Oando, Seplat, Total, Capoil and Rakunity plc. The Oil & Gas Index began on 1st July 2008 with a base value of 1,000 (Kalu, 2017). It was designed to provide an investable benchmark to capture the performance of the oil and gas sector.

NGX Lotus Islamic Index launched July 2012 consists of companies whose business practices are in conformity with Sharia's investment principles. It aim's to deepens the market transactions and creating an alternative on an ethical and noninterest investment space. The organisations that appear on the Islamic Index have been completely screened

by Lotus Capital Halal Investment, in accordance with a methodology approved by an internationally recognized Sharia's advisory board comprising of renowned Islamic scholars (NGX, 2022).

NGX Industrial Goods Index is designed to provide a benchmark to for companies in the the industrial sector. These companies are the most capitalized and liquid companies in the exchange. The index started on April 9, 2013 (Kalu, 2017).

NGX Growth Index consist of small-cap and growth-oriented companies, fast-growth companies such as SMEs operating in various sectors.

NGX Sovereign Bond Index tracks the performance of local currency (naira- NGN) denominated sovereign debt publicly issued by the government of Nigeria in its domestic market. The index help encourage more active trading in the bond market and improve transparency in the pricing of debt instruments in Nigeria. The Nigerian exchange debt market provides access to a range of fixed income securities from local and international issuers.

3.5 Trajectory Share Price of a Company

Shares are evaluated in the light of the future assumptions that the company will experience growth and it will be profitable. The share price could rise and also falls. There are several elements to use to determine if the share price of a company will continue to rise or fall. One of such determinant is the dividend that the company pays its shareholders, this amount represent profitability. The other factors are an investigation to the future cash flows of the company, its level of debt, and the amount of liquidity it has on hand. These are examined to see if a company can meet both its long-term and short-term obligations.

3.5.1 Why Company's care about their share price

A stock or share price is the value of the share in a company. According to Usman and Modibbo (2016), all investors have one common objective when investing in the equity

market, they all hope to maximize expected returns. This makes the firms to devise a means of increasing the value of their shares in the market in order to meet the objective of such investors. A company's stock price reflects investor perception of its ability to earn and grow its profits in the future.

A highly priced share may show that the company is valuable but this could also be attributable less outstanding shares which will also priced the its shares high. If the share price of the company is high the company's management might decide to undergo a stock split, reducing the price of the shares by increasing the number of shares outstanding. If the share price is low, it might be interpreted as poor performance of the company.

3.5.2 The key drivers of the share market price

Sunde and Sanderderson (2009) view some of the factors that affects stock market price to include corporate earnings, management strength, news of lawsuit, mergers, takeovers, market liquidity, government policies, analysts report, macroeconomic issues, investor's perception and technical influences can affect share price of companies. To achieve a favourable price various factors are usually taken into consideration by firms which include what size is the firm, its leverage, profitability, liquidity and growth among others, which serves as a barometer to the investors as regard to the worthiness of a firm (Usman and Modibbo, 2016).

The factors that affect the stock market prices include:

- **Demand and Supply:** The key element that determine stock market prices is the demand and supply in the market. The stock market act as a meeting point in which buyers and sellers transact on the share price of companies. When buyers are more than the sellers it means the demand is greater than supply, this increases the share price. The price goes down when there are more sellers than buyers.
- **Earnings:** shows if a company is profitable or not. Musa (2009) examined whether current earnings, dividend history, investment, cash flow and assets all have significant impact on the dividend policy of 53 companies listed on the Nigerian Stock Exchange (NSE) during the period 1993 to 2002. The study concluded by stating that companies earnings, dividend history and cash flow all have significant positive impact on the dividend policy of the quoted firms in Nigeria.

- The share market provide important information about the performance of a company. The company's earnings history and forecasted earnings are vital in determining its current valuation. Most investors view company earnings as the essential manual to determine a company's worth, companies with strong earnings will witness higher demand for its stock which translate to higher price.
- **Dividends:** The main objective of financial management is to maximize the market value of equity shares and one key area of study is the relationship between the dividend policy and market price of equity shares (Waithaka, Ngugi, Aiyabei, Itunga and Kirago, 2012). Dividends are the share of corporate profits a company gives to its shareholders. A vital part of a company's valuation comes from its dividend. When a company gets to a particular growth level, it could choose to not re-invest all its profits into the company for future growth and distribute as dividends to its shareholders.

3.6 Market Capitalization

Market capitalization is the total value of all equity securities listed on a stock exchange. The size or value is determined by the current market price of listed equities and the size of their issue and paid-up capital. Market capitalization is another major performance indicator for assessing the size of a stock market and the barometer for measuring its growth and development. The value of market capitalization at any time is also a function of investors' perception of the worth of securities on offer and their willingness to invest in the market.

Murni et al (2019) posit that the stock price of a company is a reflection of the firm's value to the general public, the higher the stock price of a company the higher the value of the company in the eyes of society and vice versa.

Consequently, stock price is an important aspect of the health of a company and for publicly quoted firms' stock, price is an essential component of firms' value. The value of a company provides maximum shareholder wealth if the stock price increases. The market price per share is the value of the equity shares as quoted on the NSE for a trading day day (Olowe, 2017). It is the price set by the powers of those want the shares and those

individuals that are willing to supply to the market. The stock market shows the real worth of the market.

There are a lot of determinants of stock market prices such as the profit per share, risk-free interest rate and the level of uncertainty of the company's operations. The value of a firm based on the investors' expectation is all about the impact of its investment and policies (Murni et al., 2019).

The Nigeria stock exchange market capitalization for equities as at February 2022 stands at 61.3 million dollars with a total of 376 listed securities on the exchange.

3.7 Financial Modelling

Financial modelling is a tool for determining likely financial outcomes based the past financial performance of a company and predictions on future earnings, cost and other variables. Financial modelling relies on financial forecasts, it takes a forecast's assumptions and build on them using the company's financial statements to show how those statements may look in the future (PWC 2022). The success of an investment depends on reliable financial models help avoid wrong decisions and unnecessary cost.

Most financial models are built in an excel spreadsheet using manual data entry. Companies routinely build models for their own purposes. There also are software that allows users to optimize forecasting estimates with a rigorous, pre-built statistical modelling engine. With a few clicks, predictive modelling will collect historical data, match it to industry standard statistical models and generate a dashboard with forecast of financial results and enabling users to use the predicted values and include in their plan and forecast.

A good financial model needs to be simple, focus on the key cashflow drivers of the business and convey assumptions that are clear and the conclusion. Financial models are intended to be used as a decision-making tool.

3.7.1 Importance of Financial Modelling

Financial models are useful for many applications. Businesses commonly use them for:

- Valuations and raising capital

- Making business and assets acquisitions
- Useful when making decisions regarding growing the business and entering new markets
- Applied when companies sell their assets and business units
- It is used for budgeting and forecasting planning for future years
- Making financial statement analysis and ratio analysis (CFI 2022)

3.7.2 Types of Financial Models

They are many types of financial models but only 5 will be listed here (Ashar, 2019)

1. Three-Statement Model

The 3-statement model is the most basic setup for financial modelling. The model links the income statement, balance sheet and cash flow statement with formulas in excel. The model integrates and forecasts the company's three financial statements—the income statement, balance sheet, and cash-flow statement—into the future. The three-statement model is the premise on which other more advance models are built.

The three-statement model include assumption of getting the terminal value of the company if the company is to shutdown or close in the future. The terminal value is the conclusion at the end of the financial model

2. Discounted Cash Flow (DCF) Model

The DCF model is built on the 3-statement model to value a company based on the Net Present Value (NPV) of the company's future cashflow. It is a prediction of a company's unlevered free cashflow discounted back to today's value (NPV).

The DCF model calculates current value while considering predictions of the profitability of a project. It is also used to estimate the value of a company such as the share price of the company, investment within the company or cost-saving initiative for the company.

3. Merger Model (M&A)

The model is mostly used in investment banking and corporate development. M & A is used to access the the merit of a merger or acquisition. With this model you ask question such as the purchase of the company, the holding price of the company and if to sell or exit the company in the future. It shows how financing are sourced and repaid

4. Initial Public Offering (IPO) Model

This model value's the company in excel just before it goes public. The IPO model equate company analysis with regards to an assumption about how much investors would be willing to pay for the company.

5. Leveraged Buyout (LBO) Model

A leverage buyout happens when a company is acquired using debt as the main source of finance. It requires financial modelling with debt schedules that is detailed as they are many layers of financing required.

3.8 Scenario Analysis

Scenario analysis is a process of evaluating different event possibilities or scenarios that could happen in the future and predicting the various outcomes (CFI, 2022). It estimates the risk on values in a financial model before making an investment or a new project. It is an analytical tool used to manage uncertainty allowing organisations to evaluate the impact of unexpected changes the business environment will have on the company decision.

According to Ali (2020), companies use it to determine impact of negative and positive event such:

- The possible impacts on business of an economic slow down
- What will happen to revenue and profitability if the cost of raw materials rises
- What revenue will the company generate if a new product is introduced
- How the business will be affected by the entrance new competitors into the market

Scenario analysis does not predict a single outcome of future events, it considers different future occurrence from a best-case scenario to worse-case possibility. It makes assumptions about multiple variables and factors for possible future scenarios and looks at how each would affect the business (Ali, 2020).

Best Case Scenario – analysis future events if every company decision goes according to plan. It is the idea projected scenario and what is intended to be implemented by the management to achieve their objectives (CFI, 2022).

Base Case Scenario – is prepared with the use of current and already know assumptions of the company future. It is the average scenario based on management assumptions (CFI, 2022).

Worst Case Scenario – looks at the negative impacts of the assumptions that might affect returns for the company. Factors such as economic regression, change of government plans for the whole economic, higher interest rates, global disruption and drop in sales. It is the complete opposite of the best-case scenario.

4 Practical Part

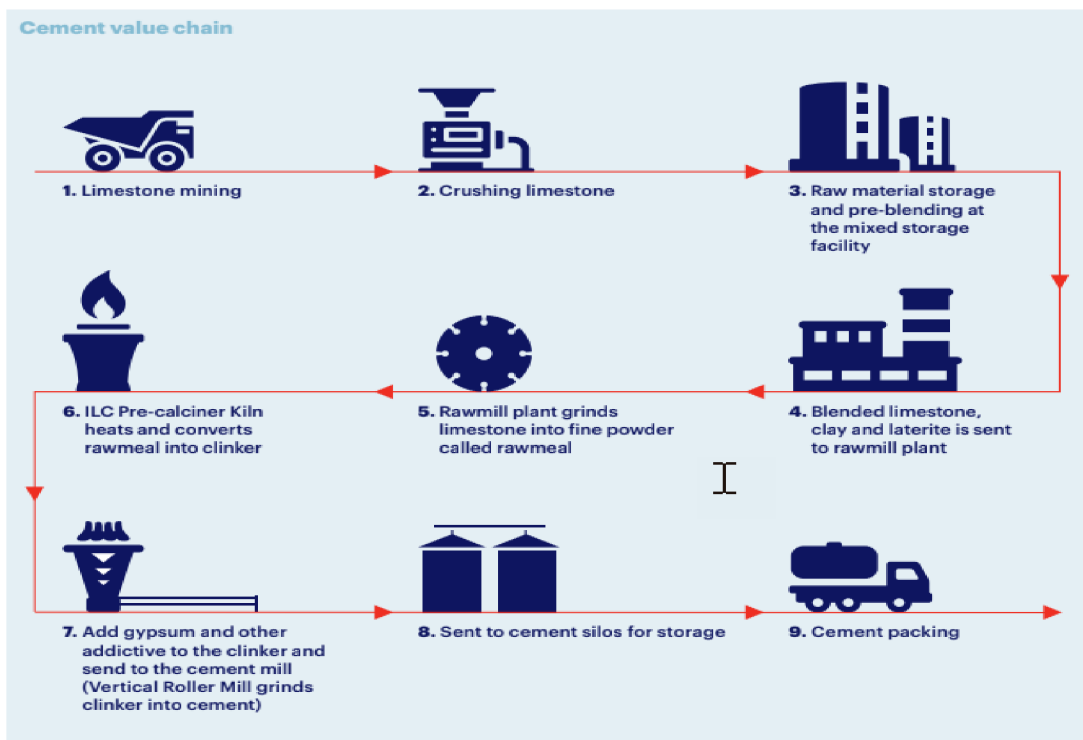
The practical part is focused on the financial statements of Dangote Cement company. The company analysis was carried out to determine if Dangote Cement share is a good investment at the current market price.

4.1 Dangote Cement Company Profile and Business

Dangote Cement company is a part of Dangote Group with 15 subsidiaries with 3 of the companies publicly listed on the Nigeria stock exchange market. The total earning of the Dangote Group is \$4.3 billion. The Group is one of Nigeria's most diversified manufacturing conglomerates.

Dangote Cement is mainly involved in the manufacturing, preparation, and distribution of cement and related products in Nigeria and the rest of Africa. 24,000 persons are employed in all its branches in Africa, and it has a total production capacity of 48.6 million tonnes per year across ten countries (Dangote 2022). Dangote Cement is focusing on an 'export to import' strategy in West and Centra Africa.

Figure 4: Cement Production Process



(African Financials, 2021)

The diagram shows a simplified process of cement production from limestone mining till cement packaging and distribution.

4.2 Nigeria Currency (Naira-NGN) to United State Currency (Dollars-\$)

The data used for the analysis is in the Nigerian currency naira. The conversion rate of dollars to the Nigerian currency Naira as at 28th of February 2022 is \$1 = N416.06

Figure 5: Naira Conversion Rate (as at February 28 2022)

The screenshot displays a currency conversion interface. At the top, 'Currency I Have' is set to 'US Dollar' (USD) and 'Currency I Want' is set to 'Nigerian Naira' (NGN). The 'AMOUNT' field for USD is '1', and the resulting NGN amount is '415.060'. Below this, the 'INTERBANK +/-' is set to '0%' and the 'DATE' is 'Feb 28, 2022'. A 'HELP' link is visible. The 'Rate Details' section is expanded, showing 'USD/NGN Details' for the 24-hour period ending Sunday, Feb 27, 2022 22:00 UTC @ +/- 0%. It lists 'Selling 1.00000 USD → you get 415.060 NGN' and 'Buying 1.00000 USD → you pay 416.060 NGN'. A red arrow points to the 'Buying' rate.

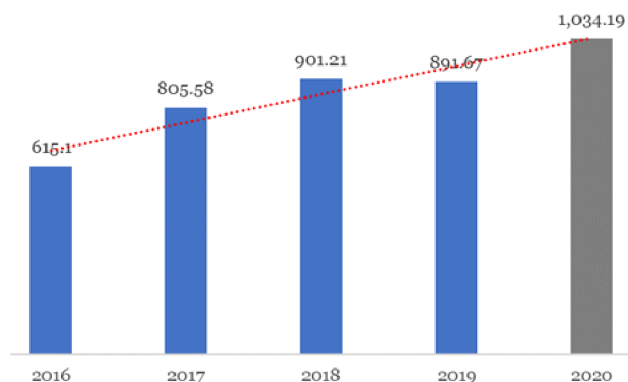
(Oanda, 2022)

Printscreen shows the value of united state dollars again the Nigerian currency naira

4.3 Dangote Cement Financial Report Analysis

Dangote Cement growth performance could be traced to the year 2010 and reports shows it is the most profitable subsidiary of the Dangote Industries. Between 2010-2017 it expanded into 9 African countries. The company has been expanding its production and growing its revenue as shown below. For the financial year ending 2020 Dangote cement revenue hit the N1trn mark despite macroeconomic challenges with a year on year growth rate of 15.98%.

Figure 6: Dangote Cement's Revenue 2016-2020 (N'bn)



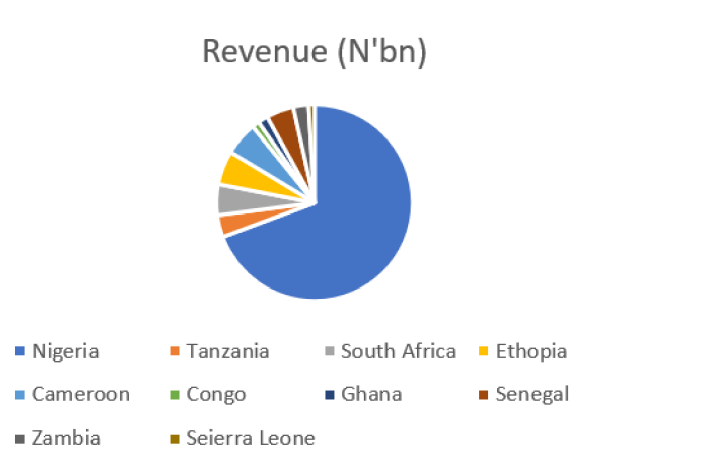
(Proshare Research, 2021)

Figure 6 shows increase trend of revenue for Dangote Cement from N615.1 billion in year 2016 to N1,034.19 trillion in year 2022 representing over 68% growth in revenue in 5 years.

The table shows a breakdown of revenue of Dangote Cement operations in different countries. Nigeria is the largest market for cement in Sub-Saharan Africa and a highly attractive production centre, having significant deposits of limestone.

Table 2 and Figure 7: Dangote Cement Revenue from 10 African Countries

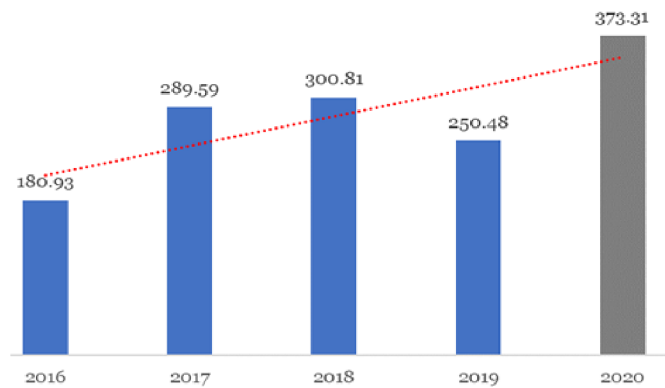
Country	Revenue (N'bn)
Nigeria	719.9
Tanzania	37.9
South Africa	52.7
Ethopia	58.1
Cameroon	57.3
Congo	12.4
Ghana	16.9
Senegal	46.9
Zambia	26.1
Seierra Leone	10.3
Total Revenue	1038.5



Soure: prepared by author (with data from African Financials, 2021)

Figure 7 shows a graphical representation of how much each countries operations generated revenue for Dangote in year 2020. Nigeriawas the largest contributor to the revenue of the company representing 69.3%

Figure 8: Dangote Cement's Profit Before Tax 2016-2020 (N'bn)



(Proshare Research, 2021)

The figure shows that profit before tax (PBT) rose by +49.04% from N250.48bn in 2019 to N373.31bn in 2020. This was largely driven by a +291.77% significant rise in finance income while finance cost declined Y-o-Y by -23.73%. Also the picture shows that the company PBT of N180.93 billion in year 2016 grew to a PBT of N373.31 billion in year 2020 representing an increase of 106.3%

4.4 Dangote Cement Three-Statement Financial Modelling

Financial modelling enables businesses to forecast their future profits and cashflow. The financial model for this thesis summarizes the reality of Dangote's Cement company based on the financial statements of the company to achieve a projected share price for the company.

4.4.1 Historical Financial Statements

The historical Financial Statements (Income Statement, Balance Sheet and Cash Flow) were extracted from the actual Financial Statement report of Dangote Cement plc. The tables below shows five years (2016- 2020) financial statement of Dangote Cement.

Table 3: 5 Years Company Income Statement

DANGOTE CEMENT PLC					
Historical Income Statement					
NGN Million	2016	2017	2018	2019	2020
Profit for the year	186,624	204,248	390,325	200,521	276,068
Revenue	615,103	805,582	901,213	891,671	1,034,196
Cost of sales	(272,571)	(291,692)	(318,767)	(314,735)	(373,024)
Gross Profit	342,532	513,890	582,446	576,936	661,172
Operating Expenses	(95,831)	(130,956)	(157,767)	(184,750)	(189,466)
EBITDA	246,701	382,934	424,679	392,186	471,706
Depreciation & amortisation	(74,750)	(83,939)	(96,203)	(95,463)	(89,538)
EBIT	171,951	298,995	328,476	296,723	382,168
Other Income	10,542	5,213	10,222	3,170	4,566
Financial Income	43,817	38,093	11,886	8,259	30,564
Finance Cost	(45,381)	(52,711)	(49,778)	(57,673)	(43,988)
EBT	180,929	289,590	300,806	250,479	373,310
Income tax expense	5,695	(85,342)	89,519	(49,958)	(97,242)
Net income for the year	186,624	204,248	390,325	200,521	276,068

(Source: data extracted from NGX, 2022)

Table 4: 5 Years Company Balance Sheet Statement

DANGOTE CEMENT PLC					
Historical Statement of Financial Position					
NGN Million	2016	2017	2018	2019	2020
Assets					
Non-current assets					
Property, plant and equipment	1,155,711	1,192,140	1,171,864	1,206,749	1,390,687
Intangible assets	4,145	6,355	5,969	3,663	4554
Financial assets	1,582	10,363	10,787	16,246	15,557
Other fixed assets	63,306	46,726	77,005	107,957	61,515
Total non-current assets	1,224,744	1,255,584	1,265,625	1,334,615	1,472,313
Current assets					
Inventories	82,903	94,594	106,998	114,806	108,270
Trade and other receivables	26,279	30,155	44,468	31,093	35,194
Other current assets	78,289	117,163	110,476	138,026	260,839
Cash and bank balances	115,693	168,387	166,896	123,903	145,835
Total current assets	303,164	410,299	428,838	407,828	550,138
Total assets	1,527,908	1,665,883	1,694,463	1,742,443	2,022,451
Liabilities					
Current liabilities					
Trade and other payables	268,966	270,721	230,970	285,831	349,388
Current deferred tax	4,674	63,901	9,223	49,932	59,781
Short term loan	220,300	144,783	220,128	260,631	335,011
Other current liabilities	18,307	41,071	35,185	35,492	85,637
Total current liabilities	512,247	520,476	495,506	631,886	829,817
Non-current liabilities					
Long term loan	152,475	242,894	125,725	107,279	158,908
Other non-current liabilities	65841	121153	86619	105341	142,756
Total non-current liabilities	218,316	364,047	212,344	212,620	301,664
Total liabilities	730,563	884,523	707,850	844,506	1,131,481
Equity					
Share capital, premium and minority interest	40,902	66,457	65,313	65,124	59,018
Reserve	78,964	75441	72605	55974	52681
Retained earnings	677,479	639,462	848,695	776,839	779,271
Total equity	797,345	781,360	986,613	897,937	890,970
Total equity and liabilities	1,527,908	1,665,883	1,694,463	1,742,443	2,022,451

(Source: data extracted from NGX, 2022)

Table 5: 5 Years Company Cash Flow Statement

DANGOTE CEMENT PLC					
Historical Cash Flow					
NGN Million	2016	2017	2018	2019	2020
Cash flows from operating activities					
Profit after tax	186,624	204,248	390,325	200,521	276,068
Adjustments for:					
Depreciation & amortisation	74,750	83,939	96,203	95,463	89,538
other Non-cash items	(11,814)	6,410	30,914	50,383	28,076
Changes in working capital:	35,857	(31,351)	(41,412)	34,391	41,958
Income tax expense	(5,695)	85,342	(89,519)	49,958	97,242
Income tax paid	(1,128)	(3,213)	(11,163)	(4,601)	(20,997)
Net cash generated from operating activities	278,594	345,375	375,348	426,115	511,885
Cash flows from Investing activities					
Interest received	2,662	9,136	9,974	6,460	8,438
Acquisition of intangible assets	(745)	(1,639)	(796)	(220)	(551)
Increase / decrease in long term receivables from subsidiaries	0	0	0	0	0
Repayment by subsidiaries	-	-	-	0	0
loan given to parent company	-	-	-	0	(70,000)
Acquisition of investment	0	0	0	-	0
Acquisition of property, plant and equipment	(118,841)	(107,953)	(131,045)	(177,042)	(210,370)
Net cash used in investing activities	(116,924)	(100,456)	(121,867)	(170,802)	(272,483)
Cash flows from Financing activities					
Interest paid	(39,029)	(48,358)	(45,782)	(34,842)	(48,288)
Non-controlling shareholders contribution	617	-	-	-	-
Lease payment	-	-	-	(967)	(1,202)
Dividend paid	(136,324)	(144,844)	(178,925)	(272,785)	(272,693)
Loans obtained	343,071	310,659	215,052	406,933	500,786
Loans repaid	(262,240)	(308,068)	(247,399)	(393,443)	(377,861)
Net cash used in financing activities	(93,905)	(190,611)	(257,054)	(295,104)	(199,258)
Increase in cash and cash equivalents	67,765	54,308	(3,573)	(39,791)	40,144
Effects of exchange rate changes on the balance of cash held in foreign currencies	3,791	(1,954)	844	(7,144)	(11,196)
Cash and cash equivalents at beginning of year	37,845	109,401	161,755	159,026	112,091
Cash and cash, equivalents at end of year	109,401	161,755	159,026	112,091	141,039

(Source: data extracted from NGX, 2022)

The financial statements show the company results have been profitable despite the challenging 2020 due to the impact of Covid-19 globally. The company's profit dipped by nearly 50% in 2019. The income for year 2020 grew to NGN1,034 billion about US\$2.5 billion 16% increase from N892 billion (US\$ 2.14 billion). Finance income which is the interest income on short term deposits with banks, interest on leases, dividend income and foreign exchange gains increased by 270% from N8,259 million (US\$19.9 million) to N30,564 million (US\$73.5\$). A total of 25.7 million tonnes of cement were sold across the group up from 23.7 million tonnes.

The company usually get incentives from government of the country when they build factory. Most often the incentives were tax holidays which as shown in the income statement were either a reduction in tax or a positive tax item. However, in 2020, Dangote

Cement reported the highest corporate income tax in Nigeria for the year 2020, N97 billion. The actual tax amount paid was N20.9 billion compared to N4.6 billion paid in 2019.

Table 6: Dangote Cement Foreign Exchange earnings

NGN Million	2016	2017	2018	2019	2020
Effects of exchange rate changes on the balance of cash held in foreign currencies	3,791	(1,954)	844	(7,144)	(11,196)

(Source: data extracted from NGX, 2022)

Due to its operations in international markets, Dangote Cement sometimes gains or loses money on currency translation. This line item affects the company's bottom line even though it is not derived from the company's core operations.

The expansion of the company from building factories over the years has continued to generate substantial cashflow for the company. The company has been forthright in executing its expansion strategies.

Table 7: Dangote Cement Cashflow from Operating Activities

NGN Million	2016	2017	2018	2019	2020
Net cash generated from operating activities	278,594	345,375	375,348	426,115	511,885
		24%	9%	14%	20%

(Source: data extracted from NGX, 2022)

The net cash flow from operating activities increased by 20% to N511,885 million (US\$ 1,230 million, US \$ = NGN 416.06) with further expansion in investing activities amounting to N272,483 million (US\$ 655 million, US\$ = NGN 416.06) representing 60% increase in year 2020

4.4.2 Projected Future Financial Statements

This was built using scenario analysis based on what drives the company's financial performances, that is how much the company will make as revenue and how much is retained as profit. Three scenarios were created based on different assumptions which are best-case scenario, base-case scenario and worse-case scenario. Forecast of the analysis is 5 years into the future (year 2021-year 2025) for Dangote Cement with assumptions based

on company's financial statement ratios, current economic and business environment reality.

4.5 Forecasted Income Statement

Every line in the income statement for the company was forecasted for the next five years. Forecast ratios were built from the company's historical financial statement. The below ratios were calculated into an excel format for the income statement.

Based on the formula in the methodology

$$\text{Year on year (yoy) growth} = \frac{\text{current value}}{\text{previous value}} - 1 \quad \dots\dots\dots (1)$$

The year-on-year growth rate was used to calculate the revenue, other income (revenue outside the company's core business), financial income and finance cost

$$\text{Percentage of revenue} = \frac{\text{current value}}{\text{revenue}} * 100 \quad \dots\dots\dots (2)$$

Cost of goods sold forecast was based on the percentage of revenue. Companies devote a percentage of their revenue to purchase raw material which is determined by a certain percentage. 2 percent was used as best-case scenario since the company cannot bring down their cost drastically. Also operating expenses was estimated using percentage of revenue estimating further growth above company's average by 2% in the best-case scenario. The operating costs element in the income statement are administrative expenses, selling and distribution expenses.

Depreciation and amortization is calculated as percentage of revenue since companies use assets to generate revenue.

Dangote Cement income tax was projected using the effective tax rate of companies in the Nigerian cement industry. In Nigeria the corporate tax rate is 30% and compulsory education tax of 2%. The company has been enjoying a lot of pioneer status and tax credit as can be seen in table 3. The below formula used to calculate the tax rate is

$$\text{Tax rate} = \frac{\text{income tax expense}}{\text{profit before tax}}$$

The future income tax expense was calculated after the EBIT was calculated

$$\text{Moving averages (4 years)} = \frac{y1 + y2 + y3 + y4}{4} \dots\dots\dots (6)$$

Moving average of four years from 2016 -2020 was used to determine the base line for the forecasting ratios into the future of 2021, 2022, 2023, 2024 and 2025. The moving average was used to calculation the growth rate of the company.

Best case – The assumptions built into the model is the company will grow its revenue by 5% in the next five years and that the cost of sales and operating expenses will decrease by 2%.

Base case – The company will maintain it performance trajectory based on its historical performance. 4 years moving average was used to estimate the percentage.

Worse case - That company’s revenue will decrease by 5% in the next five years and that the cost of sales and operating expenses will increase by 2%.

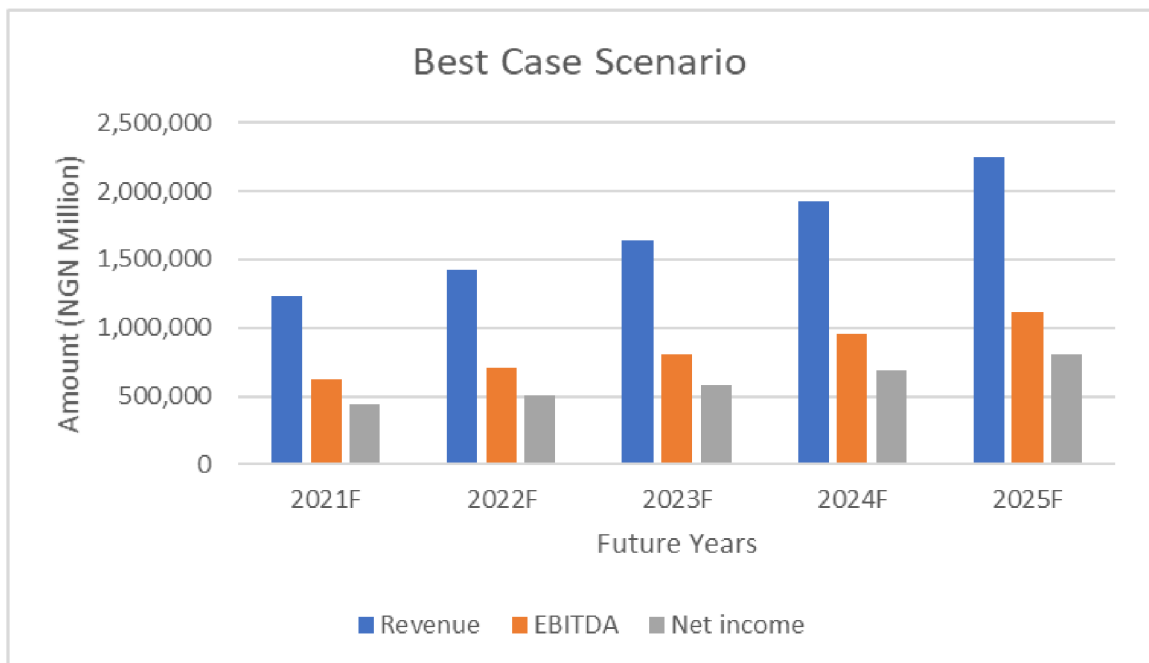
Table 8a: Income Statement Calculations (2021-2025) – Best Case Scenario

Income Statement Forecast					
NGN Million					
Years	2021F	2022F	2023F	2024F	2025F
Revenue	1,235,252	1,424,360	1,636,858	1,925,981	2,250,182
Cost of sales	(416,731)	(478,847)	(551,298)	(650,520)	(758,374)
Gross Profit	818,522	945,513	1,085,560	1,275,461	1,491,808
Operating Expenses	(200,116)	(237,677)	(277,966)	(318,696)	(373,619)
EBITDA	618,405	707,837	807,594	956,765	1,118,188
Depreciation & amortisation	(100,236)	(114,494)	(128,971)	(147,770)	(178,352)
EBIT	518,170	593,342	678,623	808,995	939,836
Other Income	4,566	4,566	4,566	4,566	4,566
Financial Income	30,564	30,564	30,564	30,564	30,564
Finance Cost	(43,988)	(43,988)	(43,988)	(43,988)	(43,988)
EBT	509,312	584,484	669,765	800,137	930,978
Tax rate	-14%	-14%	-14%	-14%	-14%
Income tax expense	(71,304)	(81,828)	(93,767)	(112,019)	(130,337)
Net income for the year	438,008	502,657	575,998	688,118	800,641

(Source: author’s calculation based on NGX data, 2022)

The table shows calculated income statement for the next five years based on the best-case scenario forecast assumptions.

Figure 9 Best Scenario – Dangote Income Statement



(Source: author's estimation based on NGX data, 2022)

Based on table 8a and figure 9, it shows there revenue , earnings before income and tax and net income will increase for the company in the best case scenario. The company will maintain its current growth rate trajectory in the future years as operations expand.

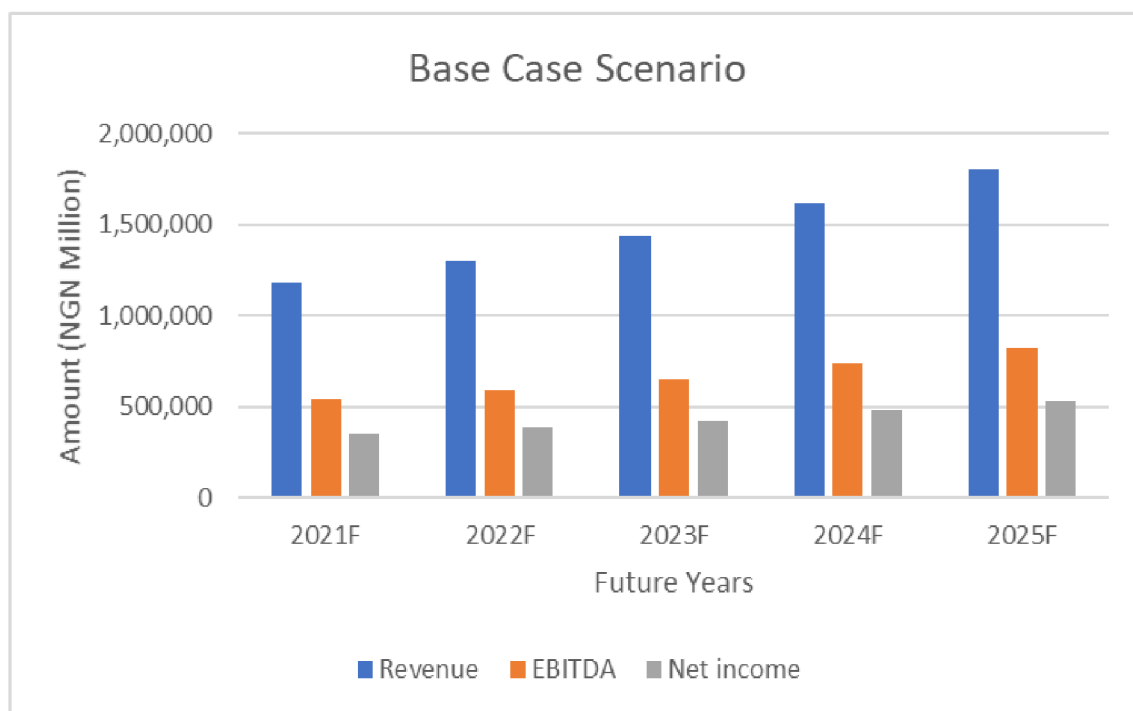
Table 8b: Income Statement Calculation (2021-2025) – Base Case Scenario

Income Statement Forecast					
NGN Million					
Years	2021F	2022F	2023F	2024F	2025F
Revenue	1,183,542	1,305,557	1,435,053	1,616,777	1,808,091
Cost of sales	(422,956)	(465,018)	(512,031)	(578,419)	(645,539)
Gross Profit	760,586	840,539	923,022	1,038,359	1,162,552
Operating Expenses	(215,410)	(243,963)	(272,397)	(299,867)	(336,377)
EBITDA	545,176	596,575	650,625	738,492	826,176
Depreciation & amortisation	(119,710)	(131,056)	(141,771)	(156,382)	(179,473)
EBIT	425,466	465,519	508,854	582,110	646,702
Other Income	4,566	4,566	4,566	4,566	4,566
Financial Income	30,564	30,564	30,564	30,564	30,564
Finance Cost	(43,988)	(43,988)	(43,988)	(43,988)	(43,988)
EBT	416,608	456,661	499,996	573,252	637,844
Tax rate	-16%	-16%	-16%	-16%	-16%
Income tax expense	(66,657)	(73,066)	(79,999)	(91,720)	(102,055)
Net income for the year	349,950	383,596	419,997	481,531	535,789

(Source: author's calculation based on NGX data, 2022)

The table shows calculated income statement for the next five years based on the base-case scenario forecast assumptions. This is based on the companies current earning trajectory growth rate.

Figure 10 Base Scenario – Dangote Income Statement



(Source: author’s estimation based on NGX data, 2022)

The figure shows a base case scenario which is used to calculate an estimated future income statement for the company based on its historical performance. It shows revenue will keep increasing and also the net income which will increase mildly in the future years. In 2021 and 2022 financial year end, net income is expected to be N 349,950 million and N383,596596 million respectively, moderate increase in netcome not as the growth in revenue as a result of increase cost of sales.

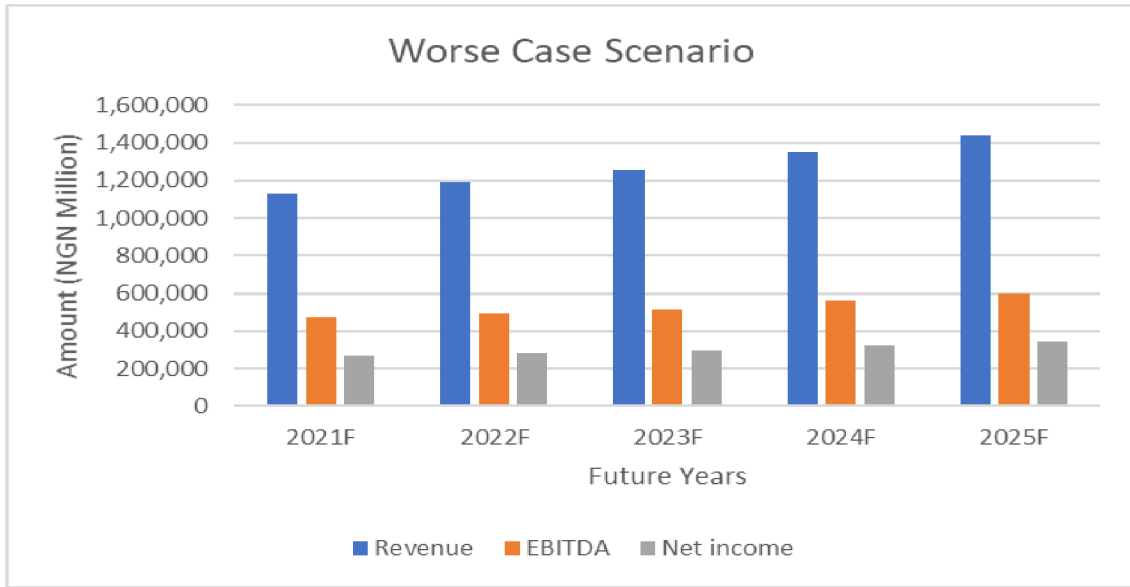
Table 8c: Income Statement Calculation (2021-2025) – Worse Case Scenario

Income Statement Forecast					
NGN Million					
Years	2021F	2022F	2023F	2024F	2025F
Revenue	1,131,833	1,191,925	1,250,554	1,346,387	1,438,386
Cost of sales	(427,114)	(448,383)	(471,212)	(508,611)	(542,312)
Gross Profit	704,719	743,542	779,342	837,775	896,074
Operating Expenses	(228,635)	(246,568)	(262,387)	(276,645)	(296,364)
EBITDA	476,084	496,974	516,955	561,130	599,710
Depreciation & amortisation	(137,117)	(143,488)	(148,555)	(157,156)	(171,544)
EBIT	338,967	353,486	368,399	403,974	428,166
Other Income	4,566	4,566	4,566	4,566	4,566
Financial Income	30,564	30,564	30,564	30,564	30,564
Finance Cost	(43,988)	(43,988)	(43,988)	(43,988)	(43,988)
EBT	330,109	344,628	359,541	395,116	419,308
Tax rate	-18%	-18%	-18%	-18%	-18%
Income tax expense	(59,420)	(62,033)	(64,717)	(71,121)	(75,475)
Net income for the year	270,689	282,595	294,824	323,995	343,832

(Source: author's calculation based on NGX data, 2022)

The table shows calculated income statement for the next five years based on the worse-case scenario forecast assumptions. It shows that even with a reductions in the forecast projection ratios the company will still make profit in future years but it will be as great as it current growth rate.

Figure 11 Worse Scenario – Dangote Income Statement



(Source: author’s estimation based on NGX data, 2022)

The calculated income statement for the worse-case scenario as shown above in the table and figure 11 shows the company’s revenue growth might be slowed down in the future as a result of changing economics in the business environment and policies regarding tax incentive and acceptance by the communities where the company intend to expand into. Growth will be slowed if the present economic situation continues into the future and rising cost will see revenue increase moderately to N1,131,833 million and N1,191,925 million in year end 2021 and 2022 respectively.

4.5.1 Forecasted Balance Sheet Statement

Based on the formular from the methodology

$$\text{Days inventory outstanding (DIO)} = \frac{\text{average inventory}}{\text{cost of goods sold}} * 365 \dots\dots\dots (3)$$

$$\text{Days sales outstanding (DSO)} = \frac{\text{average account receivable}}{\text{revenue}} * 365 \dots\dots\dots (4)$$

$$\text{Days payable outstanding (DPO)} = \frac{\text{average account payable}}{\text{cost of goods sold}} * 365 \dots\dots\dots (5)$$

Zero growth rates were taken for financial assets, other current assets, fixed assets, current deferred tax, short term loan, other current liabilities, long term loan, other non-current liabilities, share capital, reserves. This means the last amount in the financial record for 2020 was maintain into the future years.

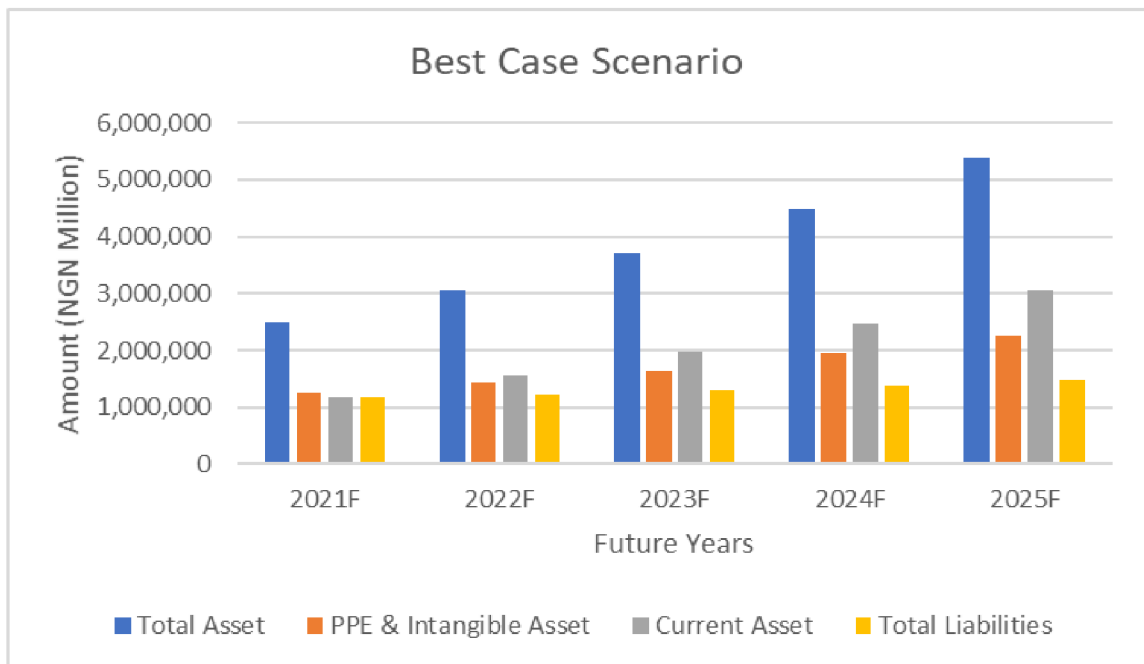
Table 9a: Balance Sheet Statement Calculations (2021-2025) – Best Case Scenario

Statement of Financial Position Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Assets					
Non-current assets					
Property, plant and equipment	1,235,252	1,424,360	1,636,858	1,925,981	2,250,182
Intangible assets	7,110	7,439	7,976	9,752	11,765
Financial assets	15,557	15,557	15,557	15,557	15,557
Other fixed assets	61,515	61,515	61,515	61,515	61,515
Total non-current assets	1,319,434	1,508,871	1,721,906	2,012,805	2,339,019
Current assets					
Inventories	120,956	138,985	160,014	188,813	220,118
Trade and other receivables	42,036	48,471	55,703	65,542	76,574
Other current assets	260,839	260,839	260,839	260,839	260,839
Cash and bank balances	758,131	1,105,066	1,507,630	1,959,146	2,492,256
Total current assets	1,181,962	1,553,362	1,984,186	2,474,339	3,049,787
Total assets	2,501,396	3,062,233	3,706,092	4,487,144	5,388,806
Liabilities					
Current liabilities					
Trade and other payables	390,325	448,506	516,366	609,301	710,321
Current deferred tax	59,781	59,781	59,781	59,781	59,781
Short term loan	335,011	335,011	335,011	335,011	335,011
Other current liabilities	85,637	85,637	85,637	85,637	85,637
Total current liabilities	870,754	928,935	996,795	1,089,730	1,190,750
Non-current liabilities					
Long term loan	158,908	158,908	158,908	158,908	158,908
Other non-current liabilities	142,756	142,756	142,756	142,756	142,756
Total non-current liabilities	301,664	301,664	301,664	301,664	301,664
Total liabilities	1,172,418	1,230,599	1,298,459	1,391,394	1,492,414
Equity					
Share capital, premium and mi	59,018	59,018	59,018	59,018	59,018
Reserve	52,681	52,681	52,681	52,681	52,681
Retained earnings	1,217,279	1,719,936	2,295,934	2,984,052	3,784,693
Total equity	1,328,978	1,831,635	2,407,633	3,095,751	3,896,392
Total equity and liabilities	2,501,396	3,062,233	3,706,092	4,487,144	5,388,806

(Source: author's calculation based on NGX data, 2022)

The table shows calculated Balance sheet statement estimated for Dangote Cement for the next five years based on the best-case scenario forecast assumptions. It shows increases in assets and liabilities.

Figure 12 Best Case – Dangote Cement Balance Sheet



(Source: author’s estimation based on NGX data, 2022)

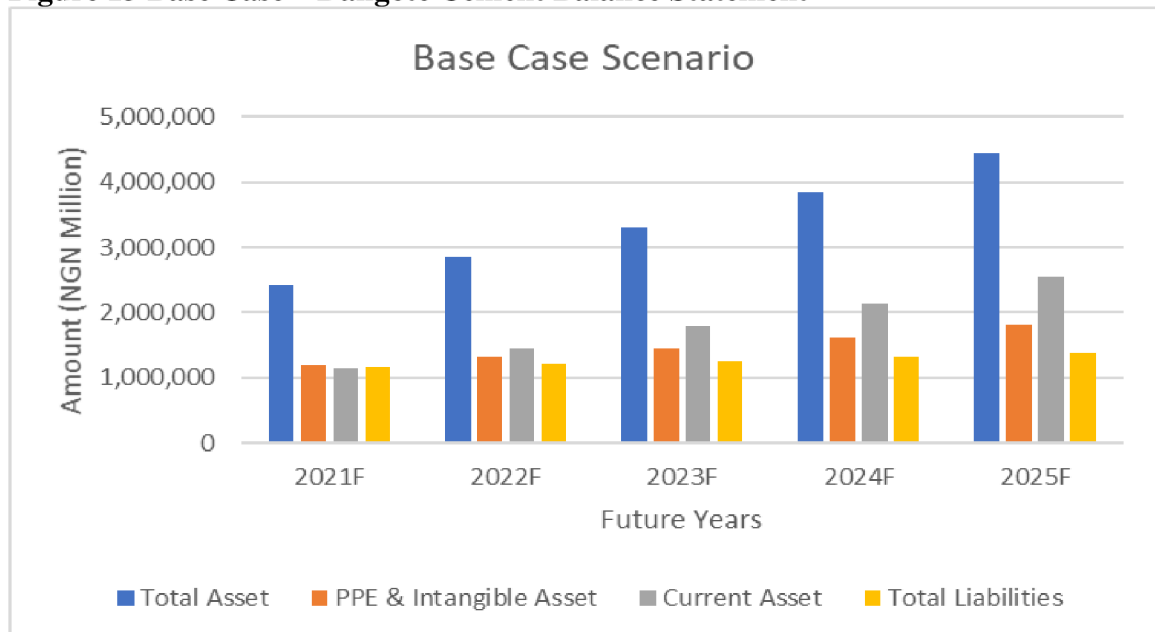
The best case scenario calculation shows that the company will have an increase in its total assets in year 2021 to N2,501,396 million and N3,062,233 in year 2022. Its property, plant and equipments is expected to expand to N1,235,252 million in 2021 and 1,424,360 million in 2022. The total liabilities is to grow to N1,172,418 million in year 2021 and N1,230,5999 in year 2022 even if its maintain its current loan position. Figure 12 shows increasing trend in the balance sheet

Table 9b: Balance Sheet Statement Calculations (2021-2025) – Base Case Scenario

Statement of Financial Position Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Assets					
Non-current assets					
Property, plant and equipment	1,183,542	1,305,557	1,435,053	1,616,777	1,808,091
Intangible assets	6,812	6,818	6,992	8,187	9,454
Financial assets	15,557	15,557	15,557	15,557	15,557
Other fixed assets	61,515	61,515	61,515	61,515	61,515
Total non-current assets	1,267,427	1,389,448	1,519,117	1,702,036	1,894,617
Current assets					
Inventories	122,763	134,971	148,617	167,886	187,367
Trade and other receivables	40,276	44,428	48,835	55,019	61,530
Other current assets	260,839	260,839	260,839	260,839	260,839
Cash and bank balances	727,865	1,012,476	1,328,784	1,664,125	2,044,208
Total current assets	1,151,743	1,452,715	1,787,075	2,147,869	2,553,944
Total assets	2,419,170	2,842,162	3,306,192	3,849,905	4,448,562
Liabilities					
Current liabilities					
Trade and other payables	396,157	435,553	479,587	541,768	604,636
Current deferred tax	59,781	59,781	59,781	59,781	59,781
Short term loan	335,011	335,011	335,011	335,011	335,011
Other current liabilities	85,637	85,637	85,637	85,637	85,637
Total current liabilities	876,586	915,982	960,016	1,022,197	1,085,065
Non-current liabilities					
Long term loan	158,908	158,908	158,908	158,908	158,908
Other non-current liabilities	142,756	142,756	142,756	142,756	142,756
Total non-current liabilities	301,664	301,664	301,664	301,664	301,664
Total liabilities	1,178,250	1,217,646	1,261,680	1,323,861	1,386,729
Equity					
Share capital, premium and mi	59,018	59,018	59,018	59,018	59,018
Reserve	52,681	52,681	52,681	52,681	52,681
Retained earnings	1,129,221	1,512,817	1,932,814	2,414,345	2,950,134
Total equity	1,240,920	1,624,516	2,044,513	2,526,044	3,061,833
Total equity and liabilities	2,419,170	2,842,162	3,306,192	3,849,905	4,448,562

(Source: author's calculation based on NGX data, 2022)

Figure 13 Base Case – Dangote Cement Balance Statement



(Source: author's estimation based on NGX data, 2022)

Table 9b shows calculated Balance sheet statement estimated for Dangote Cement for the next five years based on the base-case scenario forecast assumptions. It also shows increase in assets and liabilities in the future.

Figure 13, in the base-case scenario estimation, total assets will increase to N2,419,170 million in year 2021 and N2,842,162 million in year 2022. The growth is expected to continue into the future base on the current financial ratios of the company. The liabilities is expected to N1,178,250 in year 2021 and N1,217,646 in year 2022. This is the expected projections for the company based on its historical financial performance.

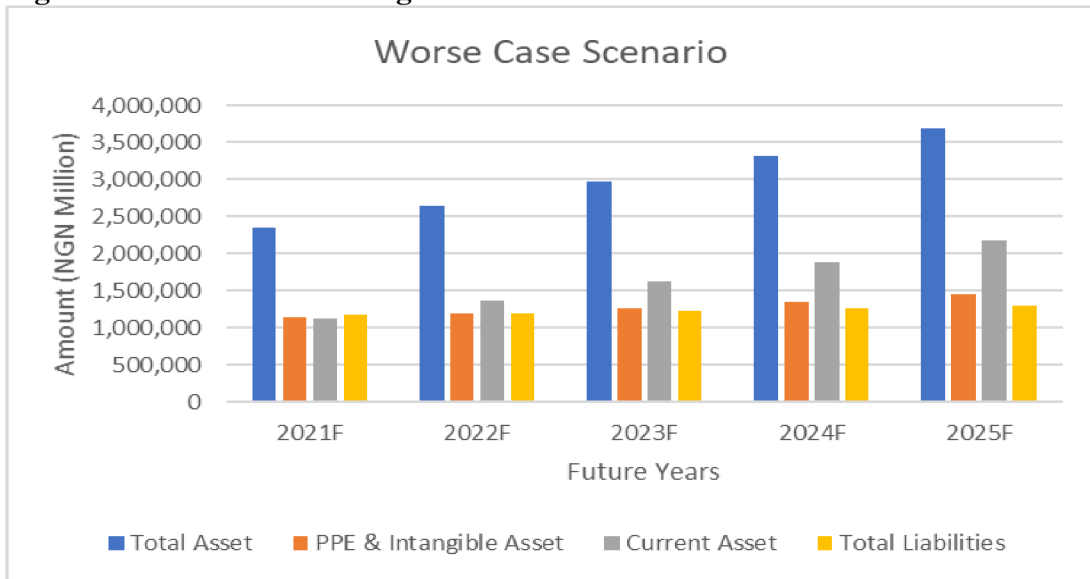
Table 9c: Balance Sheet Statement Calculations (2021-2025) – Worse Case Scenario

Statement of Financial Position Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Assets					
Non-current assets					
Property, plant and equipment	1,131,833	1,191,925	1,250,554	1,346,387	1,438,386
Intangible assets	6,515	6,225	6,093	6,818	7,521
Financial assets	15,557	15,557	15,557	15,557	15,557
Other fixed assets	61,515	61,515	61,515	61,515	61,515
Total non-current assets	1,215,419	1,275,222	1,333,719	1,430,276	1,522,979
Current assets					
Inventories	123,970	130,143	136,769	147,624	157,406
Trade and other receivables	38,517	40,562	42,557	45,818	48,949
Other current assets	260,839	260,839	260,839	260,839	260,839
Cash and bank balances	705,058	939,554	1,188,642	1,436,993	1,706,776
Total current assets	1,128,383	1,371,097	1,628,807	1,891,274	2,173,969
Total assets	2,343,803	2,646,319	2,962,526	3,321,551	3,696,948
Liabilities					
Current liabilities					
Trade and other payables	400,051	419,972	441,354	476,384	507,949
Current deferred tax	59,781	59,781	59,781	59,781	59,781
Short term loan	335,011	335,011	335,011	335,011	335,011
Other current liabilities	85,637	85,637	85,637	85,637	85,637
Total current liabilities	880,480	900,401	921,783	956,813	988,378
Non-current liabilities					
Long term loan	158,908	158,908	158,908	158,908	158,908
Other non-current liabilities	142,756	142,756	142,756	142,756	142,756
Total non-current liabilities	301,664	301,664	301,664	301,664	301,664
Total liabilities	1,182,144	1,202,065	1,223,447	1,258,477	1,290,042
Equity					
Share capital, premium and mi	59,018	59,018	59,018	59,018	59,018
Reserve	52,681	52,681	52,681	52,681	52,681
Retained earnings	1,049,960	1,332,555	1,627,379	1,951,374	2,295,207
Total equity	1,161,659	1,444,254	1,739,078	2,063,073	2,406,906
Total equity and liabilities	2,343,803	2,646,319	2,962,526	3,321,551	3,696,948

(Source: author's calculation based on NGX data, 2022)

Table 9c shows calculated Balance sheet statement estimated for Dangote Cement for the next five years based on the worse-case scenario forecast assumptions. It also shows increase in assets and liabilities in the future.

Figure 14 Worse Case – Dangote Balance Sheet



(Source: author’s estimation based on NGX data, 2022)

Figure 14, worse-case scenario estimated for the company shows also that assets will continue to grow even if there is a slow down of economic policies or policy change by governments in countries where the company have operations. Total assets in such situation will grow moderately to N2,343,803 million in year 2021 and N2,646,319 million in year 2022 in the short run. It is expected that the company will increase its fixed assets by acquiring more assets even if the future projections is bleak. The property, plant and equipment will be N1,131,833million in year 2021 forecast and N1,191,925 million in year 2022. The total liabilities will be N1,182,144 million in year 2021 and N1,202,065 million in year 2022.

4.5.2 Cash Flow Statement Forecast

The cashflow statement was built from the forecasted income statement and and forecasted balance sheet statement (which will be discussed in chapter result). There were no projection ratios ratio for it.

Table 10a: Forecasted Cash flow Calculations (2021-2025) Best Case Scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Cash flows from operating activities					
Net Income	438,008	502,657	575,998	688,118	800,641
Depreciation & amortisation	100,236	114,494	128,971	147,770	178,352
Finance income/expense	13,424	13,424	13,424	13,424	13,424
Change in inventories	(12,686)	(18,029)	(21,029)	(28,799)	(31,305)
Change in trade and other receivables	(6,842)	(6,435)	(7,231)	(9,839)	(11,033)
Change in other current assets	0	0	0	0	0
Change in trade and other payables	40,937	58,180	67,860	92,935	101,020
Change in current deferred taxes	0	0	0	0	0
Change in other current liabilities	0	0	0	0	0
Net cash generated from operating activities	573,077	664,291	757,993	903,608	1,051,100
Cash flows from Investing activities					
Change in PPE & Intangible asset	52,643	(303,932)	(342,006)	(438,669)	(504,567)
Acquisition of investment	0	0	0	0	0
Change in other fixed assets	0	0	0	0	0
Change in non-current liabilities	0	0	0	0	0
Net cash used in investing activities	52,643	(303,932)	(342,006)	(438,669)	(504,567)
Cash flows from Financing activities					
Interest expense	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Change in short and long term debt	0	0	0	0	0
Share issuance	0	0	0	0	0
Change in other equity item(retain earning,reserves)	0	0	0	0	0
Net cash used in financing activities	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Cash and cash, equivalents at end of year	612,296	346,935	402,564	451,515	533,110

(Source: author's calculation based on NGX data, 2022)

Table 10b: Forecasted Cash flow Calculations (2021-2025) Base Case Scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Cash flows from operating activities					
Net Income	349,950	383,596	419,997	481,531	535,789
Depreciation & amortisation	119,710	131,056	141,771	156,382	179,473
Finance income/expense	13,424	13,424	13,424	13,424	13,424
Change in inventories	(14,493)	(12,208)	(13,645)	(19,269)	(19,482)
Change in trade and other receivables	(5,082)	(4,152)	(4,407)	(6,184)	(6,510)
Change in other current assets	0	0	0	0	0
Change in trade and other payables	46,769	39,397	44,034	62,181	62,867
Change in current deferred taxes	0	0	0	0	0
Change in other current liabilities	0	0	0	0	0
Net cash generated from operating activities	510,278	551,112	601,173	688,066	765,562
Cash flows from Investing activities					
Change in PPE & Intangible asset	85,176	(253,077)	(271,441)	(339,301)	(372,055)
Acquisition of investment	0	0	0	0	0
Change in other fixed assets	0	0	0	0	0
Change in non-current liabilities	0	0	0	0	0
Net cash used in investing activities	85,176	(253,077)	(271,441)	(339,301)	(372,055)
Cash flows from Financing activities					
Interest expense	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Change in short and long term debt	0	0	0	0	0
Share issuance	0	0	0	0	0
Change in other equity item(retain earning,reserves)	0	0	0	0	0
Net cash used in financing activities	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Cash and cash, equivalents at end of year	582,030	284,611	316,308	335,341	380,083

(Source: author's calculation based on NGX data, 2022)

Table 10c: Forecasted Cash flow Calculations (2021-2025) Worse Case Scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Cash flows from operating activities					
Net Income	270,689	282,595	294,824	323,995	343,832
Depreciation & amortisation	137,117	143,488	148,555	157,156	171,544
Finance income/expense	13,424	13,424	13,424	13,424	13,424
Change in inventories	(15,700)	(6,173)	(6,626)	(10,855)	(9,781)
Change in trade and other receivables	(3,323)	(2,045)	(1,995)	(3,261)	(3,131)
Change in other current assets	0	0	0	0	0
Change in trade and other payables	50,663	19,921	21,382	35,030	31,565
Change in current deferred taxes	0	0	0	0	0
Change in other current liabilities	0	0	0	0	0
Net cash generated from operating activities	452,870	451,210	469,565	515,489	547,453
Cash flows from Investing activities					
Change in PPE & Intangible asset	119,777	(203,290)	(207,053)	(253,714)	(264,246)
Acquisition of investment	0	0	0	0	0
Change in other fixed assets	0	0	0	0	0
Change in non-current liabilities	0	0	0	0	0
Net cash used in investing activities	119,777	(203,290)	(207,053)	(253,714)	(264,246)
Cash flows from Financing activities					
Interest expense	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Change in short and long term debt	0	0	0	0	0
Share issuance	0	0	0	0	0
Change in other equity item(retain earning,reserves)	0	0	0	0	0
Net cash used in financing activities	(13,424)	(13,424)	(13,424)	(13,424)	(13,424)
Cash and cash, equivalents at end of year	559,223	234,496	249,088	248,351	269,783

(Source: author's calculation based on NGX data, 2022)

In the 3 scenarios (best, base and worse) as shown in Tables 10 a,b and c, the company will continue to generate positive cashflows which is a positive incentive for inventors that want to invest in the company. It shows that in the future the company will continue to pay dividends from its earnings.

The cashflow of Dangote Cement shows that the company will continue to generate substantial cashflow from the many factories built. The company have been aggressive in its growth strategies, and it is expected that this will be maintained for at least five years into the future. It is projected that the volumes in products sold by the company will continue to increase as the company expands. The net cash flows from operating activities is expected to grow to NGN 573,000 millions year 2021 if the projections are met (best-case scenario) up from N382,203 millions recorded by the company in year 2020. According to on the company expansion drive, the cashflows used in investing activities will continue to increase as recorded in the financial projections. In it current financial projectory, the company is expected close year 2021 with a net cash flow of N582,030 in year 2021.

4.6 Valuation Analysis Calculations

4.6.1 Unlevered Free Cash Flow (UFCF)

The unlevered free cashflow is extracted from the forecasted cash flows of Dangote Cement for the future years of 2021-2025. The UFCF is the cash available to the company before taking account of its financial obligations. The financial obligations are interest payments and capital expenditures.

The unlevered free cash flow was calculated using excel and the result is shown below

Table 11a: Unlevered Free Cashflow Calculations (2021-2025) – Best case scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Unlevered Free cashflow	623,841	358,480	414,108	463,060	544,655
Free cashflow(operating+investing cashflow)	625,720	360,359	415,988	464,939	546,534
Earning Before Interest and Tax (EBIT)	522,736	597,908	683,189	813,561	944,402
Effective Tax Rate	-14%	-14%	-14%	-14%	-14%
Operating Tax	(73,183)	(83,707)	(95,647)	(113,899)	(132,216)
Tax Paid	(71,304)	(81,828)	(93,767)	(112,019)	(130,337)
Interest cover from debt	1,879	1,879	1,879	1,879	1,879

(Source: author's calculation based on NGX data, 2022)

Table 11b: Unlevered Free Cashflow Calculations (2021-2025) – Base case scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Unlevered Free cashflow	593,306	295,887	327,584	346,617	391,359
Free cashflow(operating+investing cashflow)	595,454	298,035	329,732	348,765	393,507
Earning Before Interest and Tax (EBIT)	430,032	470,085	513,420	586,676	651,268
Effective Tax Rate	-16%	-16%	-16%	-16%	-16%
Operating Tax	(68,805)	(75,214)	(82,147)	(93,868)	(104,203)
Tax Paid	(66,657)	(73,066)	(79,999)	(91,720)	(102,055)
Interest cover from debt	2,148	2,148	2,148	2,148	2,148

(Source: author's calculation based on NGX data, 2022)

Table 11c: Unlevered Free Cashflow Calculations (2021-2025) – Worse case scenario

Cash Flow Forecast					
NGN Million	2021F	2022F	2023F	2024F	2025F
Unlevered Free cashflow	570,231	245,503	260,096	259,359	280,790
Free cashflow(operating+investing cashflow)	572,647	247,920	262,512	261,775	283,207
Earning Before Interest and Tax (EBIT)	343,533	358,052	372,965	408,540	432,732
Effective Tax Rate	-18%	-18%	-18%	-18%	-18%
Operating Tax	(61,836)	(64,449)	(67,134)	(73,537)	(77,892)
Tax Paid	(59,420)	(62,033)	(64,717)	(71,121)	(75,475)
Interest cover from debt	2,416	2,416	2,416	2,416	2,416

(Source: author's calculation based on NGX data, 2022)

The unlevered free cash flow was derived with excel calculations where

Free cash flow = Addition of cashflows from operating activities + addition of cashflows from investing activities

Earning before interest and tax (EBIT) = Company's EBIT + the other income element in the income statement

Effective tax rate = The effective tax rate of the current year, 2021

Operating tax = Multiplication of EBIT and effective tax rate

Tax Paid = The actual tax payment paid in the income statement

Interest cover from debt = The difference between tax paid amount and operating tax

4.6.2 Cost of Equity

Cost of equity is the return that a company anticipate getting from an investment or project. The formula used to calculate the cost of equity is the Capital Asset Pricing Model (CAPM)

$$CAMP = R_f + \beta (R_m - R_f) \dots\dots\dots (8)$$

Where CAMP = Capital Asset Pricing Model

R_f = Risk free rate

R_m = Long term market return

RRI was used to calculated the long term market return, R_m .

RRI

RRI is an excel function that calculates the interest rate on an investment (or load) over a period given its present value, future value and total number of periods.

Using Excel

RRI – (nper, pv, fv) where nper = number of periods (in this thesis, number of years)

Pv = The present value (in this thesis ASI as at 1984)

Fv = The future value (in this thesis the ASI value as at January 2022)

Also,

$$RRI = \left(\frac{FV}{PV} \right)^{\frac{1}{NPER}} - 1$$

$$RRI - (38, 100, 47055.25) = 17.58\%$$

To calculate the RRI, the Nigeria All Share Index first published in 1984 with a base value of 100 was applied. The All-Share Index closing figure as at January, 2022 which was 47,055.25 was used.

Applying the formula in excel, the below result was estimated

Table 12a: CAPM Calculations

DANGOTE CEMENT PLC			
CAPM			
	Best Case Scenario	Base Case Scenario	worse Case Scenario
CAPM	16.61%	16.61%	16.61%

(Source: author’s calculation based on NGX data, 2022)

Table 12b: Valuation Analysis Note

Valuation Analysis notes	
Equity (E)	890,970 The total equity for the current year (2020)
Debt (D)	493,919 The addition of the short and long term debt for the current year (2020)
Equity+Debt	1,384,889 Total equity + total debt for the current year (2020)
Cost of Debt(Kd)	9.78% average effective interest rate on funds borrowed by the company in 2020 (financial statement 2020)
Cost of equity(CAPM)	18.35%
Risk free rate (Rf)	10.3% Nigeria Government 10 year bond interest rate (CBN 2022)
Beta	1.1062 Dangote Cement Beta gotten from Financial times(2022)
Market return(Rm)	17.57% RRI was used to calculated the long term return of the Nigeria Stock Market

(Source: author’s calculation based on NGX data, 2022)

4.6.3 Weighted Average Cost of Capital (WACC)

The WACC is the discount rate that is used to discount the company’s cashflow. The

$$WACC = \frac{E}{E + D} * Ke + \frac{(D)}{E + D} * Kd * (1 - T) \dots\dots\dots (7)$$

- Where WACC = Weighted Average Cost of Capital
- D = Debt
- E = Equity
- Ke = Cost of Equity
- Kd = Cost of Debt

The tax rate used for the calculation is 14% the same as the forecasted income statement tax for the year 2021. 14% for the best cast scenario, 16% for the base case scenario and 18% for the worst-case scenario.

Applying the formula, the below result was estimated

WACC = 15%

Table 13: WACC Calculations

DANGOTE CEMENT PLC			
WACC			
	Best Case Scenario	Base Case Scenario	Worse Case Scenario
WACC	15%	15%	15%

(Source: author’s calculation based on NGX data, 2022)

4.6.4 Discounted Cash Flow Model (DCF)

The DCF model calculation is used in this work to determine the value of Dangote Cement business. It estimates the value of an investment in a company based on the calculated future cashflows. The financial modelling was calculated in excel.

The WACC is an important factor in the DCF analysis, it is used together as the discount rate to derive the present value of each individual year cashflow.

$$DCF = \frac{CF1}{(1+r)\Delta1} + \frac{CF2}{(1+r)\Delta2} + \dots + \frac{CFn}{(1+r)\Delta n} \dots\dots\dots(9)$$

Table 14a shows the calculated future cash flows of the company which is used to calculate the company’s present value

Table 14a: Estimated Unlevered Free Cashflow Calculations (2021-2025)

DANGOTE CEMENT PLC															
Unlevered Free Cash Flow															
Period	Best Case Scenario					Base Case Scenario					worse Case Scenario				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Years	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F
UFCF (NGN Million)	623,841	358,480	414,108	463,060	544,655	593,306	295,887	327,584	346,617	391,359	570,231	245,503	260,096	259,359	280,790

(Source: author’s calculation based on NGX data, 2022)

Discount factor

The formular to calculate the the discount factor is

$$Discount\ factor = \frac{1}{(1 + discount\ rate)\Delta n}$$

Where discount rate = WACC (already calculated in Table 13)

n = number of periods into the future

The discount factor when calculated for the different period is shown in table 14b

Table 14b: Discount factor Calculations (2021-2025)

DANGOTE CEMENT PLC															
Discount Factor															
Period	Best Case Scenario					Base Case Scenario					worse Case Scenario				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Years	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F
Discount Factor	0.8710	0.7586	0.6608	0.5755	0.5013	0.8715	0.7596	0.6620	0.5769	0.5028	0.8721	0.7605	0.6632	0.5783	0.5043

(Source: author's calculation based on NGX data, 2022)

The discount factor is used to derive the present value of the cashflows for the company by multiply it to the UFCF, that is

$$PV \text{ of UFCF} = \text{Discount factor} * \text{UFCF}$$

The result calculated

Table 14c: Present value of the UFCF Calculations (2021-2025)

DANGOTE CEMENT PLC															
Present Value of UFCF															
Period	Best Case Scenario					Base Case Scenario					worse Case Scenario				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Years	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F
PV of UFCF(NGN Million)	543,365	271,957	273,633	266,507	273,030	517,084	224,745	216,855	199,976	196,782	497,275	186,702	172,493	149,998	141,616

(Source: author's calculation based on NGX data, 2022)

Enterprise Value

The enterprise value measures the total intrinsic value of the company. It includes the market capitalization of the company, the cash in the balance sheet as well as both the short term and long-term debt. (Kennon, 2021). The value can also be derived by adding the present value of the cashflows calculated in table 14c for all the 5 years and summed together with the terminal value of Dangote Cement.

Terminal value is the estimated present value of the company beyond the explicit forecasted period (2021-2025 for Dangote Cement). The DCF terminal value calculation for this work is the perpetual growth approach which attaches a constant growth rate(g) onto the forecasted cash flows of the company after the explicit forecasted period. It assumes the cash flows value grows at a constant rate forever.

Enterprise value

= *Pv of the explicit UFCF for the forecasted period*
 + *Pv of Terminal value*

Where,

$$\text{Terminal Value} = \text{Perpetuity growth} = \frac{UFCF_{\nabla 5}}{WACC - g} * (1 + g) * \frac{1}{(1 + WACC)^{\Delta 5}}$$

$UFCF_{\nabla 5}$ = Cash flow at the 5th year * (1+long term growth)

(1+g) = 1 + long term growth rate

Where g in this model is taken at 8%. This is comparable to the dividend yield history of the firm which is above 7% and the growth rate of the company

$$\frac{1}{(1 + WACC)^{\Delta 5}} = \text{the 5}^{\text{th}} \text{ year discount rate}$$

The enterprise value is shown in the below table

Table 14d: Enterprise value of the Calculations (2021-2025)

DANGOTE CEMENT PLC			
Enterprise Value			
	Best Case Scenario	Base Case Scenario	Worse Case Scenario
PV of UFCF forecast(NGN Million)	1,628,492	1,355,441	1,148,084
Terminal(NGN Million)	4,329,593	3,152,774	2,292,651
Enterprise Value(NGN Million)	5,958,086	4,508,215	3,440,735

(Source: author's calculation based on NGX data, 2022)

Equity Value

Equity value is the value of a company that is available to the owners or shareholders. The formula to derive the equity of the company is

$$\text{Equity value} = \text{Enterprise value} + \text{cash} - \text{debt}$$

Where

Cash = Cash as shown in the balance sheet as at Year 2020

Debt = Addition of short-term and long-term loan as at Year 2020

This below is the resulting calculation

Table 14e: Equity value of the Calculations (2021-2025)

DANGOTE CEMENT PLC			
Equity Value			
	Best Case Scenario	Base Case Scenario	Worse Case Scenario
Enterprise Value(NGN Million)	5958086	4508215	3440735
Debt(NGN Million)	(493,919)	(493,919)	(493,919)
Cash(NGN Million)	145,835	145,835	145,835
Equity Value(NGN Million)	5,610,002	4,160,131	3,092,651

(Source: author's calculation based on NGX data, 2022)

The current market value of the company (market capitalization) is NGN4.65 trillion which is above the estimated base value of the company , NGN4.16 trillion and below the best value of the company estimated as NGN5.61 trillion. This shows that the company is not over priced by the market and investors.

Share Price

The unit price of the company's share in the Nigerian stock exchange market. In order to determine the price of the company in the three scenarios the equity value was divided by the outstanding shares of the company

The formula is

$$Price\ per\ share = \frac{equity}{shares\ outstanding}$$

The share outstanding of Dangote cement is 16,873,559,250 and in million unit is 16873.55925.

The calculated share price of the company is

Table 14f: Share Price Calculations (2021-2025)

DANGOTE CEMENT PLC			
Share Price			
	Best Case Scenario	Base Case Scenario	Worse Case Scenario
Equity Value(NGN Million)	5,610,002	4,160,131	3,092,651
Outstanding Shares (Million)	16873.559251	16873.559251	16873.559251
Price Per Share(NGN)	332.47	247	183
Price Per Share(US\$=NGN 416.06)	0.80	0.59	0.44

(Source: author's calculation based on NGX data, 2022)

5 Results and Discussion

5.1 Forecasted Income Statement

Based on the historical financial statements of the company, the cost of sales and operating expenses did not increase significantly. It is expected that the same historical performance will be carried into the future performance of the company. The company grew its revenue by 16% in year 2020 to above NGN 1 trillion which is far ahead of its closest competitors- BUA Cement that recorded a 19% in revenue to close the year at NGN 209 billion while Lafarge Cement increased by 8% to NGN 230.6 billion.

The company commissioned an export processing terminal in Port Harcourt, Nigeria and a gas power plant in Tanzania in year 2020, these will also add to the revenue generation for the company. The cost of sales projection estimated in the analysis for year 2021 (in the base-case scenario) is 13% which is a reduction from the 19% in the year 2020 for the company.

It is expected that the company will continue to grow its revenue as shown in table 15. The base case scenario which is built from the company's ratios and already known assumption shows a moderate increase of revenue in year 2021 by 14% and a net income of 27% which is lower than 38% in year 2020 for the company's net income. The worse-case scenario shows that the company will in year 2021 experience a reduction of net income by 2% while income will increase by just 9%. The company is expected to pay the average effective tax in the cement industry for the forecast period.

Table 15: Gross Revenue, cost of sales and net income percentage growth in Forecast

Year	Best Case Scenario					Base Case Scenario					Worse Case Scenario				
	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F
Revenue Growth	19%	15%	15%	18%	17%	14%	10%	10%	13%	12%	9%	5%	5%	8%	7%
Cost of Sales	12%	15%	15%	18%	17%	13%	10%	10%	13%	12%	15%	5%	5%	8%	7%
Net income	59%	15%	15%	19%	16%	27%	10%	9%	15%	11%	-2%	4%	4%	10%	6%

(Source: author's calculation based on NGX data, 2022)

5.1.1 Forecasted Balance Sheet Statement

Dangote Cement is still expanding and scouting for more investments. It is expected that this will increase its assets. The company plan to expand their operations across the African continent leveraging on the African Continental Free Trade Area (AfCFTA) to penetrate new markets. There is an infrastructure gap across the African continent, and it is expected that cement production in African will continue to grow in the present period.

Ethiopia, the continent second most populous country, has one of the lowest urbanisation rates in the world. The government plans to prioritise transportation and power projects. Dangote Cement is targeting taking over 25-30% of the market share in the country

Table 16: Total asset and total liabilities percentage growth in Forecast Calculations

Year	Best Case Scenario					Base Case Scenario					Worse Case Scenario				
	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F	2021F	2022F	2023F	2024F	2025F
Total asset	24%	22%	21%	21%	20%	20%	17%	16%	16%	16%	16%	13%	12%	12%	11%
Total Liabilities	4%	5%	6%	7%	7%	4%	3%	4%	5%	5%	4%	2%	2%	3%	3%

(Source: author's calculation based on NGX data, 2022)

The year 2020 financial report reveals an increase of 24% in the total assets of the company and a 34% increase in the total liabilities. There is an expectation of higher demand for cement following recovery from the covid depressed period. More infrastructure spending, demand for more concrete roads, and increasing real estate development projects. It is expected that there will be growth in the company's financial balance sheet in the future.

In the base-case scenario it is expected that the company will grow its total assets by 20% and the total liabilities by 4% in year 2021. This is on the projection that the company will maintain its current short term and long-term loan position.

5.2 Dangote Cement Share Price

Dangote Cement has a long-term credit rating of AAA+ by GCR and Aa2.ng by Moody's due to its market-leading position, significant operational scale and strong financial profile evidenced by the company's robust operating and net profit margins relative to regional and global peers, adequate working capital, satisfactory cash flow and low leverage (Dangote 2022).

In December 2020, Dangote Cement initiated the process of the purchase of about 10% of its shares in a shares buyback scheme in order to scale up the long-term shareholder value. This decision reflects the company's believe in the valuation and prospect of the company, they believe the share price is undervalued in comparison to their financial result. What this does is to reduce the equity base of the company and increasing the earnings per share

since there are now fewer shares. The earning per share is also a key metrics used in investment making decisions

Table 17a: Dangote Cement Outstanding Share

Share Capital Analysis	Units
Pre-Buy-Back number of shares	17,040,507,404
Shares bought back from 30th to 31st December 2020 (Tranche I)	(40,200,000)
Shares bought back from 19th to 20th January 2022 (Tranche II)	(126,748,153)
Total number of residual issued and fully paid outstanding shares	16,873,559,251
Number of shares cancelled.	Nil

(Dangote 2022)

The prospect for growth in the share price of the company price is high. Firstly, the share buyback is great for the shareholder because their portions in the share of the company's earnings will be bigger in terms of dividend. Also, the calculated share price of NGN332.47- US\$ 0.8 (the best-scenario case) is the estimated share price the company should be trading on the Nigerian stock exchange market base on this thesis. There is still future growth potential in the share price of the company and a good investment for investors.

The one-year price movement of the company shares shows a growth of 22.89% as shown in the figure below. There is a STRONG BUY recommendation for Dangote Cement based on it potential upside trajectory.

Figure15: Dangote Cement Share Price Trajectory (One Year)



(Trade Economics, 2022)

6 Conclusion

This study aimed to find out the determinants affecting Dangote Cement as a possible investment in the Nigerian stock market by analysing its financial report. The analysis of a company's financial statements performance enables investors to determine its earning capacity, to determine the firm's short-term and long-term solvency and also dividend evaluation. The forecast period use in this study is 5 years which is typical for a normal business with a reasonable amount of time to make the assumptions.

Return on equity investment has always been seen as a powerful tool to grow wealth, outpacing many other assets. Investing in the Nigerian stock market, that is buying shares in a company (Dangote Cement) requires valuation which will tell you whether the stock is overvalued or undervalued. Financial planning is essential to an investor. An investor wants to be able to able to mitigate the future risk and uncertainties with regards to financial trajectories and outlook. The financial modelling helps because it relies on assumptions that are based on the historical data of the company and industry benchmarks. There is plethora of information on Dangote Cement online and some other Nigerian companies that are attractive for investment.

Scenario analysis was used in this work to enable future investors in the Nigeria stock exchange market a view of the impact of unexpected changes in the economy and how it will affect their investment in the country. I believe that investing in the Nigeria stock market is a good investment given the high rate of returns of the market but at the time different outcomes also need to be evaluated. These outcomes might be a change in government policies, business environment in terms of competitions and local indigenes acceptance of the company or tax benefits which the company still enjoy as pioneer status in some countries. This factors and the outcomes were evaluated into the scenarios (best, base and worse) and by identifying these factors investors will be able to evaluate how these will affect their projected profitability and making decisions that will minimize the impact of these factors.

The base-case scenario acts as a reference point for the investor and highly probable outcomes using mostly the ratios from the company financial statement, including the best-case and worse-case scenarios provides a complete understanding of the company's future. Using the three scenarios it eliminates any anomalies in the financial modelling for the company.

The study recommends that the investors should take into consideration investing in the Nigeria stock market given its recent its demutualization of its structure to a public-traded company and the transparency in the exchange.

Finally, recommending Dangote Cement as a possible and profitable investment to global institutions and individuals. There is still an uptrend in the company's share price, revenue growth and asset expansion. Also worth noting is the company's excellent financial performance and growth over the last decade, leading cement producer in different African markets and one of the largest companies in Africa in terms of revenue and market capitalization.

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