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STRUCTURAL TRANSFORMATION, PRODUCTIVITY GROWTH AND EMPLOYMENT IN NIGERIA

WILSON RUME ERUMEBOR
625886

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Department of Economics
SOAS, University of London

ABSTRACT

Structural transformation involves the movement of labour from low-productivity to high-productivity sectors. This movement is often accompanied by the expansion of modern high-productivity sectors, creating jobs and increasing productivity and the income level of the populace in a country. Over the past three decades, Nigeria has experienced significant labour shifts from agriculture to the services sector, with minimal changes in manufacturing. As at 2021, 81% of Nigeria's labour force was employed in sectors with low labour productivity – agriculture and non-tradable services. Labour is moving away from agriculture but rapidly towards the non-tradable services sector, which has accommodated the most labour since the 2000s. Using a mixed-method approach involving regression analysis, shift-share analysis, and semi-structured interviews, this study examines the effects of the movement of labour on per capita income, productivity, and employment in Nigeria from 1990 to 2021. In addition, the study explores how Nigeria can achieve income and productivity growth and employment generation through structural transformation. From the regression and shift-share analyses, the findings reveal that labour has primarily moved towards low-productivity non-tradable services sector, which has not significantly contributed to income and productivity growth. Conversely, tradable services, which received less labour, positively impacted income and productivity growth in Nigeria. The semi-structured interviews show that the manufacturing sector's potential for driving structural transformation in Nigeria was hindered by its reliance on imported intermediate inputs and weak export capacity. This study makes important academic contributions to the study of structural transformation by decomposing the manufacturing sector into modern and subsistence, based on firms' access to resources, level of productivity and interactions with markets. This categorisation provides a new lens for viewing manufacturing firms, offering an alternative to the debate of formal vs informal firms, particularly because of the overlapping features between formal and informal firms, especially in a country like Nigeria. The idea that productivity differs within manufacturing broadens the discussion beyond the mere transition of informal firms to formal status. It emphasises the importance of enhancing the productivity of subsistence manufacturing firms, which also includes small formal firms. The scope of industrial policy should include enhancing the capacity of subsistence manufacturing firms, which are important for employment creation in Nigeria. These firms would benefit from initiatives to improve access to finance, domestic markets and better technology to raise their productivity. For modern manufacturing firms, industrial policy must leverage export opportunities such as the African Continental Free Trade Area Agreement and enhance the production of intermediate inputs to increase domestic value addition. Additionally, effective structural transformation requires that the tradable services sector is supported by ensuring skills training of Nigeria's youthful population, especially digital skills. This is crucial for improving productive employment, productivity and income growth in Nigeria.

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LIST OF ACRONYMS AND ABBREVIATIONS

3MTT	-	3 Million Technical Talent
4IR	-	Fourth Industrial Revolution
ABSA	-	Amalgamated Banks of South Africa
ADF	-	Augmented Dickey-Fuller
ADP	-	Advanced Digital Production
AfCFTA	-	African Continental Free Trade Area
AfDB	-	African Development Bank
AGO	-	Automotive Gas Oil
AI	-	Artificial Intelligence
AIC	-	Akaike Information Criterion
AIDC	-	Automotive Industry Development Centre
ARDL	-	Autoregressive Distributed Lag
ATA	-	Agricultural Transformation Agenda
AU	-	African Union
AUC	-	African Union Commission
BIP	-	Backward Integration Policy
BLP	-	Better Life Programme
BPD	-	Barrels Per Day
BPE	-	Bureau of Public Enterprises
CBN	-	Central Bank of Nigeria
CcHUB	-	Co-creation Hub
COVID-19	-	Coronavirus Disease
CSEA	-	Centre for the Study of the Economies of Africa
CUSUM	-	Cumulative Sum
DFID	-	Department For International Development
ECA	-	Excess Crude Account
EFInA	-	Enhancing Financial Inclusion & Advancement
EOI	-	Export-Oriented Industrialisation
ERGP	-	Economic Recovery and Growth Plan
ESA	-	Economic Stabilization Act
ETD	-	Economic Transformation Database
FCT	-	Federal Capital Territory
FGN	-	Federal Government of Nigeria
FinTech	-	Financial Technology
FMARD	-	Federal Ministry of Agriculture and Rural Development
FMITI	-	Federal Ministry of Industry, Trade and Investment
FMoCDE	-	Federal Ministry of Communications and Digital Economy
FTZ	-	Free Trade Zone
GDP	-	Gross Domestic Product
GES	-	Growth Enhancement Scheme
GGDC	-	Groningen Growth and Development Centre
GP	-	General Practitioner
GR	-	Green Revolution
GSK	-	GlaxoSmithKline
GVC	-	Global Value Chain

HCI	-	Heavy-Chemical Industry
ICT	-	Information Communication Technology
IFC	-	International Finance Corporation
ILO	-	International Labour Organisation
IMF	-	International Monetary Fund
IOM	-	International Organization for Migration
IoT	-	Internet of Things
ISI	-	Import Substitution Industrialisation
IT	-	Information Technology
LFS	-	Labour Force Survey
LPFO	-	Low Pour Fuel Oil
LPG	-	Liquefied Petroleum Gas
MEG	-	Modern Economic Growth
MFP	-	Multi-Factor Productivity
MGI	-	McKinsey Global Institute
MT	-	Metric Tonne
MTEF	-	Medium-Term Expenditure Framework
NBS	-	National Bureau of Statistics
NCC	-	Nigerian Communications Commission
NCP	-	National Council on Privatisation
NEEDS	-	National Economic Empowerment and Development Strategy
NEPAD	-	New Partnership for Africa's Development
NEPC	-	Nigerian Export Promotion Council
NEPZA	-	Nigeria Export Processing Zones Authority
NESG	-	Nigerian Economic Summit Group
NFDP	-	National Fadama Development Project
NIIDS	-	National Integrated Industrial Development Strategy
NIPF	-	National Industrial Policy Framework
NIRP	-	Nigerian Industrial Revolution Plan
NITEL	-	Nigerian Telecommunications Ltd
OAMEs	-	Own Account Manufacturing Enterprises
OECD	-	Organisation for Economic Co-operation and Development
OLS	-	Ordinary Least Square
OMO	-	Open Market Operation
OPEC	-	Organization of the Petroleum Exporting Countries
OSIC	-	One-Stop Investment Centre
P&G	-	Procter & Gamble
PPPs	-	Public-Private Partnerships
PwC	-	PricewaterhouseCoopers
QUAL	-	Qualitative
QUAN	-	Quantitative
SAP	-	Structural Adjustment Programme
SFEM	-	Second-tier Foreign Exchange Market
SFTZ	-	Shanghai Free Trade Zone
SMEDAN	-	Small and Medium Enterprise Development Agency of Nigeria
SMEs	-	Small and Medium-sized Enterprises
SOAS	-	School of Oriental and African Studies, University of London
SOE	-	State-Owned Enterprises
SON	-	Standard Organisation of Nigeria

SSA	-	Sub-Saharan Africa
TSRIC	-	Telecommunications Sector Reform Implementation Committee
TTC	-	Technical Training Center
UKAID	-	United Kingdom Agency for International Development
UNCTAD	-	United Nations Conference on Trade and Development
UNECA	-	United Nations Economic Commission for Africa
UNHCR	-	United Nations High Commissioner for Refugees
UNIDO	-	United Nations Industrial Development Organization
UNU-WIDER	-	United Nations University World Institute for Development Economics Research
US	-	United States
VIF	-	Variance Inflation Factors
VSI	-	Vertically-Specialised Industrialisation
WDAS	-	Wholesale Dutch Auction System
WDI	-	World Development Indicators
WTO	-	World Trade Organization

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Economic development has been historically linked to structural transformation which entails the movement of labour and economic resources from sectors with low productivity to those with high productivity. This movement towards high-productivity sectors is viewed as the catalyst for overall productivity growth in the economy, given that both the labour-receiving and labour-supply sectors experience significant productivity increases (Lewis, 1954 and Kaldor, 1968). Lewis (1954), in particular, argued that the process of development occurs when the modern/capitalist sector expands through the accumulation of capital, thereby creating jobs and higher wages for workers. In other words, as the capitalists reinvest profits, the modern sector is placed on a self-sustaining growth path leading to the creation of more productive jobs in the economy. Therefore, the movement of labour and economic resources across sectors matters for economic development.

Traditionally, structural change has been likened to the movement of labour from agriculture to manufacturing and later to services. The experiences of several Asian countries in the 1970s and 1980s and some countries in Europe and North America in the 20th and 21st centuries show this pattern. In these countries, the growth of the manufacturing sector was instrumental in raising productivity and income levels. Duarte & Restuccia (2010) examined the performance of 29 countries from 1956 to 2004 and revealed that productivity growth of the industrial sector was crucial for countries to catch up with the United States in terms of aggregate productivity. According to Duarte & Restuccia, productivity catch-up in industry explained 50% of the relative aggregate productivity gains observed during the period. Within the industrial sector, the role of manufacturing in the development process of countries has been documented in economic literature. Scholars (Rodrik, 2015; Felipe, 2018; Duarte and Restuccia, 2010) have argued that the movement of economic activities and labour towards manufacturing is vital for increasing the income level of developing countries for several reasons. Firstly, due to its feature of static and dynamic increasing returns to scale, manufacturing has the potential for productivity catch-up that cannot be matched by some aspects of services (Felipe, 2018). The sector played a major role in the expansion of the East Asian countries in the 1980s and 1990s, raising their levels of income to catch up with those of some advanced economies (Martorano et al, 2017). Secondly, manufacturing has stronger forward and backward linkages. Thirdly, manufactured goods have a higher income elasticity of demand than agricultural goods (Sposi et al., 2021).

While the manufacturing sector has remained central in the study of structural transformation, several countries, including resource-dependent countries, have not followed this pattern of structural transformation where labour moves from agriculture to manufacturing and later to services. More recently, especially in the last three decades, many countries have experienced a transition from agriculture to services without significant expansion of the manufacturing sector. This is the experience of many African countries, Australia and New Zealand and some Asian countries such as Pakistan and India (Gollin & Kaboski, 2023). Ultimately, structural transformation is not a straightforward process but a complex one that varies significantly depending on a country's unique economic, social, and political context. For instance, even within manufacturing, several studies have explored the dual nature of the sector, suggesting that not all manufacturing has the features of capital accumulation and economies of scale as argued by Kaldor (see De Vries et al., 2012 and Kesar

& Bhattacharya, 2020). These studies observed a form of dualism (formal vs informal) in the manufacturing sector. Such dualism, as argued by De Vries et al., was growth-reducing in India and for Kesar and Bhattacharya, it raises concerns about a country's economic development via the path of structural change. According to Allen & Schipper (2016), there are overlapping features between formal and informal firms. This categorisation, therefore, masks the challenges faced by small formal manufacturing firms in a country. Taking into consideration the complex nature of manufacturing can provide a better understanding of the pathways of structural transformation and the needs of specific firms in a country.

For services, an increasing number of studies (Dasgupta et al., 2017; Gollin, 2018; and Rodrik & Sandhu, 2024) have explored the viability of this sector to drive structural change in an economy. Although the role of the services sector in the structural transformation process is less understood when compared with agriculture and industry, these authors have argued that services can be a major driver of productivity growth in developing economies. Before exploring the perspectives of scholars on the role of services in the development process, it is important to note that just as in manufacturing, services is also not homogeneous. While tradable services[1] sector exhibits higher productivity levels with limited employment intensity (UNCTAD, 2016), non-tradable services[2] is characterised by low productivity and is a major source of jobs in developing countries, besides agriculture. Given that the services sector has experienced significant expansion in the last decades, it has become crucial to examine the impact of this expansion on key economic indicators such as productivity growth, income growth and employment.

On the impact of the sector, Fan et al. (2021) found that productivity growth in services such as retail and hospitality significantly improved living standards in India from 1987 to 2011. Rodrik & Sandhu (2024) noted that the future of developing countries is in services and countries must work to raise productivity in non-tradable services to create economic growth and equity. This is because the manufacturing of today, as they argued, requires higher skills which limit the sector's ability to create jobs as it did in the 1980s and 1990s. The authors further emphasised that technology catch-up has been slower in labour-absorbing services than in manufacturing, and the priority of developing economies should be to implement productive development policies such as training and incentivising job creation for firms in this sector. On the other hand, Baymul & Sen (2018) showed that the transition towards services raises inequality in structurally developing countries - countries where the services sector has the largest share of employment followed by agriculture. This is because of the large productivity difference within the services sector i.e., between tradable and non-tradable services. What is clear, however, is that services is a diverse sector with large productivity differences and varying employment intensity. This calls for further interrogation of the impact of the components of services on overall economic development indicators across countries.

1.2 Statement of Problem

Nigeria is Africa's largest crude oil producer and the most populous country on the continent. It is one of the continent's largest economies. Nigeria's resource endowment and political history of military governments and democratic transitions have long shaped the country's socio-economic outcomes.

[1] Tradable services include information and communication, finance and insurance, professional and technical services.
[2] Non-tradable services include wholesale and retail trade, hotels and restaurants, and other community, social and personal services.

According to Akinyoade & Enweremadu (2015), from 1960 when the country gained independence up till 1999, the development experience of Nigeria can be examined in four phases – Agricultural Led Development: 1960-1966; Oil Boom and State-led industrialisation: 1966-1982; Oil Shock and Structural Adjustment Programs: 1982-1993 and Predation and Massive Economic Decline: 1993-1998. In all of these eras, one common trend was the heavy-handedness of the government in controlling key factors of production. In addition, there was the reliance on crude oil for government revenues, which meant that a decline in crude oil prices triggered several economic shocks, making the economy vulnerable to exchange rate fluctuations and macroeconomic instability (Akinyoade & Enweremadu, 2015). As such, the authors observed that despite the huge resource endowment, Nigeria has experienced low economic growth and living standards since 1960[3].

But since the return to democracy in 1999, Nigeria's economic growth fortunes improved significantly, especially from the 2000s up to 2015. During this period, Nigeria experienced high real Gross Domestic Product (GDP) growth, averaging 7.3%[4]. Much of this growth was driven by the services sector, which contributed 62.3% to output expansion. Essentially, Nigeria transitioned to a service-led economy in terms of GDP, although crude oil still played a significant role in foreign exchange earnings and government revenue. During this period, the share of labour in the services sector increased significantly from 18% to 41%; the share of labour in agriculture declined from 75% to 50%, while that of manufacturing increased marginally from 5% to 6%[5]. The expansion of the services sector was led by reforms such as privatisation, liberalisation and commercialisation in the early 2000s, which led to the massive inflow of private investments in areas such as telecommunication, trade and financial services. As noted by Okonjo-Iweala & Osafo-Kwaako (2007), about 116 enterprises in sectors such as power, telecommunications, transport, petrochemicals and insurance were privatised between 1999 and 2006. Telecommunication, in particular, benefited from this privatisation as large global companies acquired key assets and invested in the Nigerian telecoms market. As a result, the sector became one of the fastest-growing sectors in Nigeria and attracted over US$68 billion worth of private investments from 2001 to 2019 (NCC, 2022 and FMoCDE, 2020).

Despite this transition towards services since the 2000s, Nigeria has not made significant improvements in broad economic indicators such as productivity growth, per capita income and employment outcomes. Agu and Evoh (2011) referred to the 2000s as a decade of jobless growth, given that economic growth, during this period, did not result in more wage employment opportunities. Ajakaiye et al. (2015) noted that Nigeria has a low employment elasticity, which was estimated at 0.11, suggesting that the high growth experienced did not lead to appreciable gains in employment. While the unemployment and underemployment rates trended upwards from 13.5% in 2000 to 29% in 2015, the number of Nigerians living in poverty increased from 68.7 million in 2004 to 104 million in 2016, according to data from the National Bureau of Statistics (NBS, 2020). What followed the year 2015 were periods of economic recessions and recovery. The economy experienced two recessions, one in 2016 and another in 2020 due to falling crude oil prices and the COVID-19 pandemic, respectively. This was followed by a slowdown in 2022 driven by the war in Ukraine. Accordingly, the unemployment and underemployment rates increased further to 56.1% in December 2020 (NBS, 2021b) while the World Bank (2021) estimated that 8 million Nigerians have fallen into

[3] These issues are discussed in detail in Chapter 3.
[4] Author's calculation from data from the Central Bank of Nigeria. See reference: Central Bank of Nigeria (CBN), 2021 for datasheet.
[5] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al, 2021 for datasheet.

poverty as a result of higher inflation and lower purchasing power. The NBS (2023) estimated that 133 million people in Nigeria, representing 63% of the population, were multi-dimensionally poor in 2022.

One major issue that emerged from the above narrative is that while economic activities and labour moved towards the services sector, economic outcomes did not improve significantly. Several studies (McMillan et al., 2014; Ajakaiye et al., 2015, Rodrik, 2015 and Bloch et al., 2015) have argued that the reason for this lack of economic improvement in some developing countries including Nigeria is due to the type of structural change these countries have experienced over the years. For Rodrik (2015), the movement of economic activities and labour towards the services sector is a feature of many developed countries, but in several African countries, this movement occurred at a lower income level. Several authors have described this as premature de-industrialisation (Dasgupta & Singh 2006; Palma, 2014 and Rodrik, 2015).

Specifically for Nigeria, there appears to be a lack of empirical studies examining the extent to which the movement towards services has influenced economic development. Therefore, this study aims to fill this gap. To deeply explore this, it is essential to consider the productivity differences between various components of the services sector (tradable vs non-tradable) and the extent to which each component has influenced key indicators such as employment, productivity, and income growth. A preliminary review of data on labour share in Nigeria shows that much of the expansion of services since the 2000s was driven by non-tradable services (particularly trade), which exhibit relatively lower productivity compared to tradable services. In 2018, non-tradable services accounted for 35% of total employment, while tradable services had a share of only 9%[6]. The disaggregation of services by levels of productivity is important in understanding productivity, employment and growth dynamics, particularly because the services sector accounts for over 50% of Nigeria's real GDP. This could provide a useful perspective on why the services sector may have had a limited impact on key economic indicators in Nigeria. This relation has not been explored within the context of structural change and economic development in Nigeria.

The role of the manufacturing sector in job creation, productivity growth, income generation and building economic resilience has been extensively examined in several developing countries, particularly in East Asia, where labour moved towards this sector. In Nigeria, however, the manufacturing sector has not similarly attracted substantial labour and economic resources over the years. Available data show that from 1990 to 2010, the share of manufacturing in total employment declined from 12% to 4%, before increasing to 7% in 2018[7]. Its share in exports was 2.9% in 2022 (NBS, 2023b) while the sector remains susceptible to currency devaluations, which often lead to high operating costs and low revenue growth of manufacturing firms due to weak consumer disposable income (Wolf, 2023). The sector remains largely underdeveloped and is yet to attain its potential despite Nigeria's large market and vast mineral resources and agricultural endowment, along with the new opportunities for export. Bloch et al. (2015) noted that the poor performance of the manufacturing sector is a key factor in the lack of inclusive economic growth in Nigeria. In addition, the sector's employment structure showed that 73% of workers are self-employed (NBS, 2018) while 85% of the total manufacturing firms in the country in 2020 operated in the informal economy[8]. These

[6] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al, 2021 for datasheet.
[7] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al, 2021 for datasheet.
[8] Author's calculation from data from the Small and Medium Enterprise Development Agency of Nigeria. See reference: SMEDAN, 2021.

data suggest that, just like services, the sector is highly fragmented with varying levels of productivity. The data also suggest that given the sector's current structure, the movement of labour towards the sector may not have the desired impact on overall productivity and income growth in Nigeria. As such, it becomes important to examine why the sector has been unable to drive structural change in Nigeria and to explore the nature of Nigeria's manufacturing sector in terms of capital accumulation, productivity and employment. The Nigerian experience of structural change is such that the movement towards a service-led economy in the last two decades occurred at the expense of the manufacturing sector. With over 80% of Nigeria's labour force employed in sectors with low labour productivity – agriculture and non-tradable services – in 2018, the kind of jobs needed to generate income growth and lift many Nigerians out of poverty are not available in large numbers (Erumebor, 2023a). This suggests that the opportunities for structural change towards manufacturing and tradable services are still huge and raises a key point: the direction of labour and the nature of the labour-receiving sector matter for economic development.

1.3 Objectives and Research Questions

This study aims to explore how Nigeria can achieve income and productivity growth and employment generation through effective structural transformation. This study also aims to examine the effects of the movement of labour across sectors on per capita income, productivity, and employment in Nigeria from 1990 to 2021. To achieve this objective, three main research questions centred on the "what", the "why" and the "how" are considered. They include:

1. What has been Nigeria's experience with structural transformation and productivity growth?
2. Why has the manufacturing sector been unable to drive structural change in Nigeria?
3. How can Nigeria achieve an effective structural transformation through the rapid expansion of crucial sectors?

In addressing these questions, the study adopts a mixed-method approach involving regression analysis, shift-share analysis, and semi-structured interviews. The research design follows a macro-micro analysis. As explained in Brannen (2005), the study uses a QUAN>QUAL[9] combination where the qualitative approach was adopted after the quantitative approach. Both methods were dominant and highly resourced. This sequential approach enabled the researcher to select participants for the interview based on the knowledge of the outcomes of the quantitative aspect of the study. The regression analysis involves the use of the Ordinary Least Square (OLS) regression - Autoregressive Distributed Lag (ARDL) to estimate the broad impacts of sectoral expansion and the movement of labour on indicators such as per capita income, employment and productivity growth in Nigeria. It offers empirical explanations on the extent to which sectoral changes have impacted economic development in Nigeria. The shift-share analysis provides insights into the sectoral drivers of labour productivity growth in Nigeria, examining whether the service-led structural change in Nigeria has been growth-enhancing or not. Furthermore, the micro aspect of the study involves the use of semi-structured interviews to explain why the manufacturing sector has been unable to drive structural change in Nigeria and explore the characteristics of firms in the sector in relation to capital accumulation, productivity and employment. In addition, this aspect explores the opportunities for

[9] QUAN is Quantitative and QUAL is Qualitative

effective structural transformation and examines the implications for industrial policy in Nigeria, which is a tool to improve the manufacturing sector.

On a broad level, the findings of this study suggest that categorising sectors according to productivity levels is important in the study of structural transformation. Each category within a sector – whether tradable vs. non-tradable services or subsistence vs. modern manufacturing – exerts varying impacts on income, overall productivity growth, and employment. For instance, some aspects may have stronger impacts on employment, but their impact on productivity and income growth may be limited, and vice versa. This nuanced understanding of the dynamics within each sector highlights the need to tailor policy approaches to the specific characteristics and potential of different subsectors to effectively drive economic development.

Furthermore, the role of governments in the structural transformation process should not be limited to implementing industrial policies that build local capacities for exports. While this was deemed important in this study, an emphasis was also made on demand-led policies to enhance firms' capabilities in Nigeria. This demand can come from consumers, government and firms. First, Nigeria has several advantages, such as a large population and market, which makes it attractive for consumer demand for manufactured goods. Second, growing government budgets (demand), at the federal and state levels, present an opportunity for local firms to enhance capacities, provided that the government can patronise local firms in purchasing certain items where Nigeria can build these capacities. Third, Nigeria's huge agricultural and mineral resource endowments offer a basis for firms' demand for intermediate inputs, most of which are currently met by imports. Thus, an industrial policy that fails to cater for the local sourcing of intermediate inputs will limit the benefits of the manufacturing sector to the rest of the economy. Finally, this study highlights several opportunities for structural transformation through the export of goods and services by local firms in Nigeria. The demand for skilled workers in advanced economies, the implementation of the African Continental Free Trade Area (AfCFTA) Agreement and Nigeria's growing diaspora market are huge opportunities that local firms can explore to grow their capacities over time. One area for further research is the need to explore options to enhance the productivity of labour-intensive services within the Nigerian context.

1.4 Study Structure

Chapter Two reviews Africa's experience of structural change, highlighting the role of service-led structural change on the continent. Given this transition towards services, the chapter examines whether labour and capital have gone the wrong way in Africa. In doing this, the chapter explores the experience of Africa vis-à-vis that of East Asia and examines why Africa did not experience a manufacturing-led structural transformation. The chapter also examines the critical issue - what brings about the wrong type of structural transformation - and draws on the framework of Chang & Andreoni (2020) on how the right kind of structural transformation can be promoted institutionally.

Chapter Three offers deeper insights into sectoral output and the movement of labour across sectors in Nigeria, providing a historical review of economic growth and sectoral shares of output and employment in the country. A detailed review of productivity trends and dynamics across sectors was conducted. The chapter also explores the rise of tradable services in Nigeria, presents a case for effective structural transformation in Nigeria and concludes with a conceptual framework of the study.

Chapter Four focuses on the methodology, providing a rationale for the use of mixed methods and explaining each method in detail. In the section on regression analysis, data explanation, model specification, robustness checks and descriptive statistics were discussed. Furthermore, the chapter continues with an explanation of the shift-share method which decomposes labour productivity growth into productivity growth within sectors and growth emanating from the movement of labour across sectors. The chapter concluded with a discussion of the semi-structured Interviews, highlighting the rationale behind the selection of interviewees, the scope of the interviews and compliance with relevant ethical and professional standards.

In Chapter Five, the findings from the regression analysis and shift-share method were discussed. Specifically, the chapter provided a quantitative exploration of changes in sectoral output and employment shares and their impact on per capita income, unemployment and productivity in Nigeria. This chapter examined the first research question of the study.

Chapter Six begins by substantiating the findings from the previous chapter on why Nigeria's manufacturing sector contributed poorly to productivity growth, employment and output in Nigeria over the years, reflecting the sector's inability to drive structural change in Nigeria. The chapter explores the nature of manufacturing in Nigeria and why this matters for structural transformation. It also explored the opportunities for the growth of specific areas of manufacturing and tradable services in ensuring an inclusive structural transformation of the Nigerian economy. It concludes by reflecting on how the findings of the thesis align with or challenge existing empirical and theoretical literature.

Chapter Seven proposes a framework for structural transformation in Nigeria and discusses the implications of the findings for industrial policy, the conclusion of the study, limitations of the study and avenues for further research.

CHAPTER TWO: STRUCTURAL TRANSFORMATION, PRODUCTIVITY AND EMPLOYMENT: A FOCUS ON AFRICA

2.1 Introduction

Structural Transformation is rooted in the idea that the movement of labour and resources from sectors with low productivity to those with high productivity is associated with economic development. In most literature, this has been likened to the movement of labour and other resources from agriculture to manufacturing and services over time. The historical development patterns of many countries in the Global North and more recently those in East Asia provide evidence of this transition (Herrendorf et al., 2013). However, this process of structural transformation is not as straightforward as it might seem, especially when viewed through the lens of the Lewis Theory of Development. According to Lewis (1968), productivity can vary within a sector and this is what determines structural transformation. For instance, in the agricultural sector, there are capitalist and non-capitalist structures which have varying degrees of productivity. The emphasis of Lewis was productivity and reinvestment of capital, which are key features of the capitalists' arrangements, regardless of the sector in which they operate. Kaldor (1968) focused more on manufacturing and its role in the development process. Kaldor argued that the features of increasing returns to scale and strong forward-backward linkages with a huge scope for technology transfer, investment accumulation and knowledge spillovers make manufacturing an important sector in the development process. These perspectives underscore the idea that while certain sectors possess unique characteristics that can spur development, the internal structures and dynamics are equally crucial to the process of structural transformation. This narrative is further supported by the experiences of many African countries where, over the past three decades, labour has shifted towards low-productivity services. As Rodrik (2015) points out, the movement towards low-productivity services occurred at the expense of the manufacturing sector, suggesting that structural transformation in many African countries has taken a negative turn, becoming growth-reducing rather than growth-enhancing.

The question therefore remains - what kind of structural transformation can deliver economic development in African countries and what are the features of this transformation process? This chapter provides an in-depth review of Africa's shift towards services, its implications and sustainability and explores why the continent did not experience manufacturing-led structural transformation seen in East Asia. The chapter identifies the elements of effective structural transformation within the African context.

The chapter is structured as follows. It begins with an overview of the movement of labour and output towards services in Africa, followed by a review of the literature on countries that have leapfrogged towards services. The next section turns to the unique role of manufacturing in economic development, drawing on both classical and contemporary literature. Section 2.5 assesses whether Africa's shift towards services is sustainable. Section 2.6 focuses on the drivers of the wrong type of structural transformation. It examines the conditions under which industrial policy succeeded in East Asia and concludes by exploring why Africa did not experience a manufacturing-led transformation. The final analytical sections adopt Chang and Andreoni's framework on industrial policy to explore

how Africa can pursue the right kind of structural transformation. The chapter concludes by highlighting the essential elements of an effective structural transformation for the continent.

2.2 Structural Transformation in Africa: The Movement of Labour and Output toward Services

Structural transformation is often referred to as the movement of labour and output from low to high-productivity sectors. The transition of workers from agriculture to manufacturing has been the hallmark of long-term economic development. This pattern was evident in Asia where industrialisation was crucial in raising income levels and lifting many households out of poverty. Sawada (2023) noted that countries in Asia experienced a rapid decline in the shares of agriculture in employment and output while there was a corresponding increase in the shares of manufacturing and services. In countries such as China and South Korea, this transition of workers to manufacturing was rapid and became a key driver of sustained economic growth (Commission for Growth and Development, 2008).

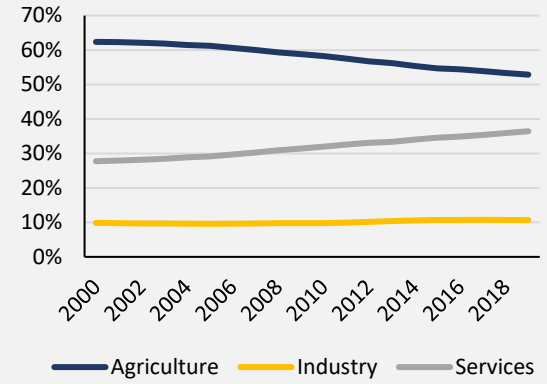
While the pace of industrial development varied across Asia, Chang & Zach (2019) noted that the region's development - the Asian miracle - was driven by industrialisation. According to the authors, South Korea, for instance, had huge success in labour-intensive manufacturing industries in the 1960s and heavy and chemical industries in the 1970s. The country's share of manufacturing value added in real Gross Domestic Product (GDP) increased from 12% in 1960 to 28% in 2011 (World Bank World Development Indicators (WDI), 2025a). More broadly, East Asia became the world's largest industrial region, with its share of global manufacturing value added increasing from 1.6% in 1970 to 25.3% in 2015 (Chang & Zach, 2019). The transition towards manufacturing had a profound impact on development outcomes. Not only did per capita income increase significantly, but social indicators also improved. In China, for instance, poverty rates fell from 92% in 1982 to 13.4% in 2010, while literacy rates rose from 66% to 95% during the period. Over this period, more than 816 million people were lifted out of poverty (World Bank, 2025 and World Bank WDI, 2025b). Essentially, structural transformation towards manufacturing played a crucial role in helping countries in the region move up the development ladder.

Africa's experience appears to be different from that of East Asia. From the 1960s when many African countries gained independence to the 1990s, Africa's per capita income growth was low and uneven, growing at 1-2% annually in the 1960s and 1970s before turning negative (-0.4%) in the 1980s and 1990s (UNECA, 2016). During this period, Africa also lost global market share in exports. Sub-Saharan Africa's contribution to developing countries' exports fell from 12.5% in 1970 to just 5% in 1990 (Greene, 1992). Despite various industrial policy initiatives, the continent's share of global manufacturing declined from 3% in 1970 to less than 2% in 2013 and to 0.7% in 2016 (Ndung'u et al. 2022 and Zamfir, 2016). Almost two-thirds of Africa's merchandise exports are still concentrated in agricultural, fuel and mining products (Marti and Ssenkubuge, 2009). Unlike several Asian economies that experienced significant growth in manufacturing from the 1970s onwards, the share of manufacturing in Africa's real GDP fell from 18% in 1981 to 14% in 2000 (WDI, 2025a), suggesting that industrialisation failed to gain momentum or was already in decline before the year 2000. Rodrik (2016) notes that industrialisation in Africa has fallen since the mid-1970s and there has not been a recovery up to the year 2015.

From the year 2000 to 2018, Africa experienced sustained and high economic growth. Africa's growth during this period was associated with a change in economic structure in favour of services. As Africa's real GDP grew, the share of agriculture value-added in total value-added declined by 1.9 percentage points between 2000 and 2018; industry value-added fell by 1.7 percentage points and services value-added grew by 10.6 percentage points (WDI, 2021). Although the three major sectors experienced output growth in both real and nominal terms during this period, the shares of industry and agriculture declined while that of services increased significantly. In terms of employment shares, data from the WDI (2021) show a similar trend with output. As expected, the share of workers employed in the agriculture sector declined from 62% in 2000 to 53% in 2019. During the 20-year period, employment share in industry increased marginally from 10% to 11%, while the share of workers in the services sector rose from 28% to 36% (WDI, 2021).

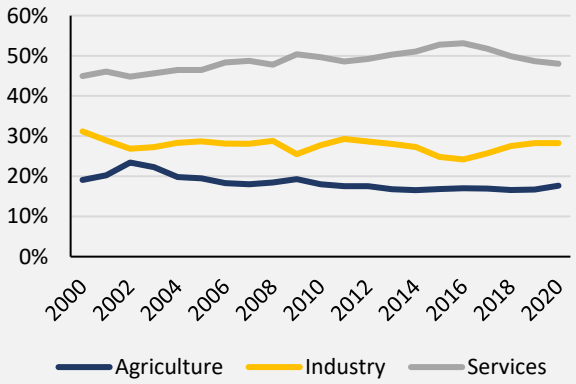
Figure 1: Shares of Sectoral Employment in Total Employment and Shares of Value-added in Total Value-added in Africa

Figure 1a: Sector employment in total employment



Source: Created by the Author using data from World Development Indicators

Figure 1b: Sector value added in total value added



Source: Created by the Author using data from World Development Indicators

The data on value-added and employment shares confirm the shift of labour and economic output from agriculture to services over the past two decades. This aligns with findings by McMillan and Harttgen (2014), who analysed 19 African countries from 2000 to 2010. Their study showed four key trends. First, the share of the labour force engaged in agriculture declined by an average of 10.61 percentage points. Second, the share of the labour force engaged in manufacturing expanded by an average of 2.15 percentage points. Third, the share of the labour force engaged in services increased by an average of 8.23 percentage points. Fourth, the share of the labour force engaged in mining did not change.

Based on this data, one can argue that Africa has yet to witness the type of structural transformation seen in East Asia and as described by Kuznets (1955), Lewis (1954) and Kaldor (1966). During the period of rapid growth, the continent saw stagnation in its industrial sector, as improvements in services overshadowed industrial development. In many African countries, the manufacturing sector has been steady or declining. Looking at a sample of 27 major African economies, the share of manufacturing in real GDP fell to 12% in 2010 from 15% in 2000 (McKinsey Global Institute (MGI), 2012). The ILO (2020) estimated that only 6% of jobs created between 2000 and 2018 were in the manufacturing sector, which accounts for just 6.2% of employment. The majority of employment on the continent is still to be found in agriculture and is characterised by mainly subsistence activities (ILO, 2020). In most

African countries, manufacturing has been flat or declining over the past decade. Dasgupta & Singh (2006), Palma (2014) and Rodrik (2015) call this premature de-industrialisation, with Rodrik citing that Africa is too poor to be experiencing such de-industrialisation.

There are significant regional disparities in structural performance across the continent over time (See Table 1). Specifically looking at manufacturing value-added as a percentage of GDP, Southern Africa showed an upward trend from 12% in 1960-69 to almost 18% in 1990-99, the highest among all the regions on the continent. This share, however, declined to 14.9% in 2010-2014 (Mijiyawa, 2017). The same trend was also experienced in Northern Africa, but with lower manufacturing output shares. Across all regions of the continent (except Eastern Africa, which had the lowest share relative to other regions), there has been a decline in the average share of manufacturing in GDP since the 2000s. According to Mijiyawa (2017), the declining trend witnessed in the 2000s was a testament that African industries were ill-prepared to face the fierce competition that arose as a result of globalisation.

Table 1: Manufacturing Value Added Share in real GDP in Africa and across Africa's Sub-Regions

Region	1960-69	1990-99	2000-2014
Northern Africa (Algeria, Djibouti, Egypt, Libya, Morocco, and Tunisia)	11.9%	14%	11.2%
Western Africa (Benin, Burkina Faso, Cap Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo)	8.7%	10%	8.9%
Central Africa (Angola, Burundi, Cameroon, Central African Republic, Chad, Congo Democratic Republic, Congo Republic, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe)	6.5%	10.2%	8.2%
Eastern Africa (Comoros, Eritrea, Ethiopia, Kenya, Somalia, Sudan, Tanzania, and Uganda)	7.4%	7%	7.8%
Southern Africa (Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland , Zambia, and Zimbabwe)	12%	17.5%	14.8%

Source: Mijiyawa (2017)

The rise of Africa's Services sector

One striking feature of Africa's growth process is the rise of the services sector. Between 2000 and 2015, the services sector contributed about 3 percentage points a year to annual GDP growth, compared to 1.1 percentage points for industry and 0.6 percentage points for agriculture (AUC/OECD, 2018). According to UNCTAD (2015), the sector accounts for about 50% of the continent's output and several African countries are services-oriented economies. Recent data on output from the World Bank WDI (2025c) showed that in 40 out of 46 African countries for which data is available, services accounted for the highest share of gross value added in 2023. Growth in services was driven by two main factors: an increase in private sector investments and improved consumer demand. The increase in investment was principally driven by government reforms of privatisation and commercialisation in key sectors like banking and telecommunications which opened up these sectors for private capital. Rising consumer demand levels as a result of an increase in earnings from natural resources and remittances also fuelled the growth of key services such as retail and hospitality.

In many African countries, areas such as banking, telecommunications, financial technology (fintech), and other forms of digital technology experienced significant growth. The digital economy is playing a key role in shaping the daily lives of citizens and influencing business performance across African countries. Aided by rapid mobile and internet penetration, platforms and tools such as mobile money, Zoom, Uber, WhatsApp, Twitter, Facebook and Spotify are widespread across the continent. Across Africa, sharing services are growing, with the increasing adoption of platforms such as AirBnB, LittleCab in Kenya, WumDrop in South Africa, Bolt, Uber among others. Already, within the last decade, Africa has seen the rise of startups operating in the services sector, many of which are driven by young Africans. These businesses have become the frontiers of technology on the continent and have gained the attention and capital of venture capitalists and investors from across the world. Maher et al. (2021) describe Africa as a continent that has made great strides towards becoming a launch pad for innovative high-tech companies. These startups have provided digital payment systems to improve connectivity, payment solutions and financial inclusion across the continent. They adopt technologies in bridging gaps in areas such as education, agriculture and healthcare, thus, creating opportunities for further growth and productivity.

MGI (2012) noted that services like wholesale and retail trade, restaurants, and hotels absorbed the most surplus agricultural workers as their share in total employment almost doubled in two decades, reaching 20.1% in 2010, up from 11.4% in 1990. According to MGI, between 2002 and 2010, Africa's retail and hospitality sectors created more jobs than any sector apart from government and social services while the number of stable wage-paying jobs grew from 10 million to 15 million. Still within the retail subsector, home-based enterprises (HBEs) are essential, contributing to employment and income generation, particularly in informal settings. HBEs consist of diverse business activities including the sale of basic foodstuffs, clothing, take-away food and hairdressing services (Oosthuizen et al, 2016). In sub-Saharan Africa, an estimated 40% of households depend on HBEs as a key income source, and they are associated with increases in household consumption of between 11% and 27% in urban areas and as high as 32% in rural areas across six African countries - Burkina Faso, Cameroon, Ghana, Mozambique, Rwanda and Uganda (Fox & Sohnesen, 2012). While these businesses provide employment opportunities and also serve as major sources of income for the populace in both urban and rural areas, they often have limited contribution to overall productivity growth in countries.

Although the growth of the services sector has created jobs and opportunities for citizens, what Africa experienced in these past two decades is the expansion of the sector at the expense of agriculture and industry, in relative terms. According to Rodrik (2015), migrants from rural areas on the continent are moving into petty services rather than manufacturing and this is despite the growing foreign direct investments, which are yet to result in a resurgence in industry. The implication is that structural change has been growth-reducing in recent decades, unlike in 1950-75 (Rodrik, 2015). This finding contrasts with that of McMillan et al. (2014), who showed that since the 2000s, structural change contributed positively to Africa's overall productivity growth. In both studies, however, there were challenges associated with obtaining data from many African countries, which influenced the research outcomes.

Enache et al. (2016) adopted the framework of McMillan and Rodrik for selected African countries by looking at the pace, intensity and consistency of African countries over four decades. They identified two broad growth patterns: Pattern 1 captured African countries such as Botswana, Nigeria, South

Africa, Mauritius and Egypt that recorded early transition of labour out of agriculture; a slowdown in the pace of structural change in the 1990s and 2000s and wholesale & retail trade was not the main labour absorbing sector in the 2000s. The second group of countries (Zambia, Tanzania, Ethiopia, Senegal, Malawi, Ghana, Kenya) experienced late transition of labour out of agriculture; fast pace of structural change in the 1990s/2000s and wholesale & retail trade was the main sector that absorbed labour in the 2000s. This implies that although there are varying performances across African countries, perhaps one common trend is the movement of labour from agriculture to, mainly, services. On a country level, Andreoni et al. (2021) documented the structural change experienced in South Africa and noted that the growth experienced in services came mainly from lower-value and lower-productivity services, including activities such as retail, security, cleaning, etc. They pointed out that the growth recorded in high-value services such as financial services and communication services has been associated with fewer employment gains and limited support for the productive industries. Similarly, in Ghana, the movement of labour from agriculture to services saw the rise of low and average-productivity services, with productivity of one-tenth and one-half of that of high-productivity services (Atolia et al., 2018). Just like in South Africa, this was also accompanied by a reduction in manufacturing activities.

The differences in structural transformation between Africa and Asia raise an important question: is there a wrong type of structural transformation? To explore this, section 2.3 reviews the literature on countries that have leapfrogged to services. Section 2.4 examines existing literature – starting with classical perspectives that emphasise manufacturing as the engine of growth and followed by contemporary views on the role of manufacturing in structural transformation.

2.3 Review of Literature on the Role of Services in Structural Transformation

With the recent trend of de-industrialisation in advanced and developing economies, the services sector continues to drive economic activities in many countries. In recent decades, the sector has emerged as the largest source of employment and output, even in some Asian countries that embraced industrialisation early on. Vu et al. (2021) examined the employment trends of 12 advanced economies (Canada, France, Germany, Italy, Japan, United Kingdom, United States, Austria, Denmark, Finland, Netherlands and Spain) and revealed a contraction in manufacturing employment since the 1990s. The services sector, on the other hand, recorded an expansion in the share of employment during this period. The authors compiled a list of factors responsible for deindustrialisation, some of which include firms' transition from manufacturing to services, consumer preferences for services as income increases, automation and digital revolution, increased globalisation and import competition from China. In India, the world's most populous country, the services sector plays an integral role in the economy, accounting for more than 50% of the country's real GDP. The sector is the largest recipient of Foreign Direct Investment (FDI) inflows and a major contributor to the country's export earnings, accounting for 4.3% of global services exports in 2022, from 2% in 2005 (Pant et al., 2024). Key aspects such as telecommunication, information and technology services, business outsourcing and professional services dominate the services sector, indicating a rise of a knowledge-driven economy. In Singapore and Hong Kong, financial services have become a growth driver, although manufacturing still plays a significant role in the economy of Singapore. Both countries provide strong financial linkages between Asia and the rest of the world and over the years, the share of the financial sector has risen rapidly.

The role of the services sector in the structural transformation process is less understood when compared with agriculture and industry. This is partly because of the diverse nature of services, with many subsectors consisting of different activities. The services sector can be broadly categorised into tradable and non-tradable services and the levels of productivity vary across the two categories. While tradable services consist of transport and storage, information and communications, financial services and real estate activities, non-tradable services include wholesale and retail trade, hotels and restaurants, and other community, social and personal services (OECD, 2018a). In terms of productivity, tradable services often produce the highest labour productivity, even higher than that of manufacturing (UNCTAD, 2016). This implies that these services generate high-quality employment and also require skilled workers, who are often in limited supply in developing countries. In essence, structural transformation towards tradable services may create high-quality jobs for only a few individuals in the labour force. Non-tradable services, on the other hand, are characterised by low productivity and are a major source of jobs in developing countries, besides agriculture. The majority of informal businesses operate in this category, and it is associated with low wages and high job vulnerability. This means that the ability of businesses in this category to expand rapidly is constrained by incomes (and hence productivity) in the rest of the economy (Rodrik, 2015).

Table 2: Breakdown of the Services Sector

Type of Services	**Sub-Sectors**	**Level of productivity**	**Capacity to absorb large number of workers**
Tradable Services	Information and communication, finance and insurance, other services	High	Low
Non-Tradable Services	Trade, Transport, Accommodation, Food Services, Business Services and Public Administration	Low	High

Source: Created by the Author using information from OECD, UNCTAD

Several authors (Dasgupta et al., 2017; Gollin, 2018) have argued that services can be a major driver of productivity growth in developing economies. Gollin (2018) observed that the characteristics that make manufacturing distinct can also be found in services. Gollin specifically noted that the production of services looks increasingly like that of manufacturing in the following ways: services are often concentrated in urban areas, contributing to agglomeration externalities; it relies on technology and knowledge spill-overs; it is key in attracting foreign direct investment and some components of the services sector are large, formal and organised. Gollin (2018) argued further that manufacturing jobs are often preferred because they offer better protections under labour laws, including working conditions, job security, minimum wages and other regulations. Gollin argued that these characteristics can be found in formal services, reflecting the idea that high-value services are closely linked with manufacturing. This alignment between manufacturing and services is reinforced by Dasgupta et al. (2017), who noted that sectors such as information technology (ICT), financial intermediation services, transportation and other high-value services exhibit similarities with manufacturing. For ICT and finance, technological advancements and the rise of the internet and online platforms have increased their tradability, suggesting that the traditional boundary between manufacturing and services is becoming blurred. While manufacturing remains crucial in raising productivity in low-income countries, high-value services can also play an important role in driving economic transformation (Dasgupta et al., 2017). The authors also recognised that low-value services,

especially hospitality and retail trade, are linked to poor job quality and informal employment, reflecting the dual structure in the services sector.

This evolving role of services is important in examining the future path of economic transformation for developing countries. Gollin (2018) and Dasgupta et al. (2017) expressed the view that manufacturing jobs will likely shrink in the coming decades due to automation, suggesting higher productivity in the sector and cheaper manufactured goods. Therefore, as noted by Gollin, poor countries can import affordable manufactured goods while relying on services, agricultural and mineral products for foreign exchange and export earnings. Furthermore, poor countries can benefit from exporting low-end services such as cleaning, security and construction through emigration. These workers send remittances, which should be seen as a reward for exporting services to developed countries. Gollin concluded that while future growth may rely less on manufacturing, this does not pose a threat to poor countries. Rather, services present a path to growth and development and should be explored. Gollin's views can be criticised on several grounds: many African countries have relied on agriculture and mineral exports but this has not translated into a significant improvement in living standards. These countries remain highly vulnerable to external shocks. Secondly, low-productivity services currently dominate economic activities in many African countries and these countries struggle with high informality, and low income and productivity growth. Thirdly, the high-productivity services subsectors often employ fewer individuals and may not have the same scale effect as manufacturing (ILO, 2019).

While the growing importance of services presents new opportunities for economic transformation, the unique role of manufacturing in driving structural change remains significant. Historically, manufacturing has been central to productivity growth, job creation, and technological advancement in both advanced and emerging economies. The ability of manufacturing to absorb a large pool of labour, generate backward and forward linkages and foster innovation underscores its continued relevance, even as the global economy shifts toward a more service-oriented structure.

2.4 The Role of Manufacturing in Structural Transformation: Classical and Contemporary Discussions

The Lewis Theory of Development

One of the earliest works of structural transformation was that of Lewis (1954), which emphasised that economic development occurs when labour moves from low-productivity to high-productivity activities. Developed by Nobel Laureate Arthur Lewis in the 1950s, the Lewis Theory of Development focuses on the transformation of a primarily subsistence economy into a high productive modern economy. Its relevance has been highlighted by recent growth experiences in China and labour markets in developing countries, making it particularly pertinent to these economies. The theory posits that an underdeveloped economy consists of two sectors: the rural subsistence sector (non-capitalist sector) characterised by zero marginal productivity and the high productive modern sector (capitalist sector) into which labour from the rural sector is transferred. While the model primarily focuses on the process of labour transfer and the growth of output and employment in the modern sector, labour transfer and employment growth are driven by the expansion of this modern sector.

Lewis began his argument by stating that in the non-capitalist sector, there is an unlimited supply of labour particularly from sectors and activities such as agriculture, petty retail trading, gardening, domestic services and messenger work; essentially from low-productivity sectors/activities. This is usually the case in many countries with a large population. As posited by Lewis (1954), the source of labour includes four key areas. First is the household, especially women who are not in the labour market. Second is the growth in population, which he describes as the increase in birth rate over death rate. Third is unemployment caused by increasing efficiency in an economy. This increase in efficiency or the use of technology can result in the loss of jobs of petty traders and other categories of workers who cannot compete with technology. Lastly, immigration was also considered as a major source of labour. One important point to note about the Lewis model is that the unlimited supply of labour only applies to unskilled workers. Skilled workers such as electricians, welders, engineers, biologists, administrators, etc. can be limited in supply.

According to Lewis, the capitalist sector is the part of the economy that uses reproducible capital and pays capitalists for the use of such capital. On the other hand, the subsistence sector does not use reproducible capital. Output per head is lower in this sector than in the capitalist sector because it is not fructified by capital. The central thesis of Lewis's argument is that capitalists reinvest their surplus and create new capital and therefore, the capitalist sector expands and as a result, jobs are created. As more workers are employed in the capitalist sector from the subsistence sector, output per head will increase. As the capitalist sector expands, profits grow relatively and an increasing proportion of national income is reinvested. In addition, Lewis theory noted that the speed of industrialisation is determined by the rate of industrial investment and capital accumulation in the capitalist/modern sector. With the assumption that profits are reinvested into the modern sector, this positions the sector towards a self-sustaining growth path and ensures the creation of more jobs until all the surplus labour in the rural sector is absorbed. This also ensures a rise in modern sector wages and employment.

Lewis maintained that the wages paid by the capitalist is determined by what people earn outside the capitalist sector i.e. the subsistence sector. Because real wages are often lower in the subsistence sector and given the unlimited supply of labour, workers are incentivised to move to the capitalist sector. This trend continues until the surplus labour disappears and subsistence wages rise to match what is obtained in the capitalist sector. This is referred to as the Lewis turning point. Lewis believes that the capitalist class, whom he also referred to as industrialists, seek to invest capital productively and when there is excess cash in an economy, the government should prioritise this class simply because their passion is to make more profit productively, unlike the merchants, peasant farmers or the middle-class. As pointed out by Lewis, poor countries save so little, not because they are poor but because their capitalist sector is so small.

Overtime, Lewis's capitalist and non-capitalist sectors have been likened to agriculture and non-agriculture sectors. But Lewis (1968) corrected this misconception. Lewis clarified that the basis of the dual-sector classification was profit, citing that "the two sectors are a capitalist and non-capitalist sector where capitalist is defined in the classical sense as a man who hires labour and resells its output for a profit…The model is intended to work equally well whether capitalists are agriculturists or industrialists or anything else" (Lewis, 1968, p.2). Although the narrative of rural subsistence and high productivity sector resonates with the characteristics of the agriculture and industrial sectors

respectively, the clarification made by Lewis is important in understanding the measure of structural transformation. Furthermore, Lewis clarified that the supply of labour, as pointed out in his model, does not all come from agriculture but also from inter alia domestic service, the self-employed (especially in handicraft and petty retailing), increased participation of women, natural increase and immigration.

While the Lewis model remains important in understanding economic development in Africa, several events on the continent have undermined the explanatory power of the model and its applicability. First, is the huge illicit capital flows and the repatriation of capital outside the continent. A study by Boyce & Ndikumana (2012) showed that from 1970 to 2010, a total of US$814 billion (constant 2010) was recorded as capital flight from 33 African countries despite the high growth experienced in the 2000s. The study found that this amount was 23.5% higher than official development aid received and 166% higher than foreign direct investment received during the period. The highest outflows were recorded in the decade of the 2000s, implying that capital flight coincided with the resource boom experienced during the period. Boyce & Ndikumana concluded that capital flight results in limited domestic resource mobilisation, and erodes the tax base and public expenditure through illicit transfer of private capital abroad, tax evasion and tax avoidance. More specifically, illicit flows have not only grown at an average rate of 11.9% each year, they have also exceeded the continent's outstanding external debt as at 2008 (Kar & Cartwright-Smith, 2010). The cumulative effect of these is higher government debts, which in turn increase capital flight. Massive outflow of capital limits capital accumulation and is a setback to the reinvestment of profit, which is required for the expansion of the modern sector, as argued by Lewis. Second, Africa experienced rapid expansion of the services sector in the last two decades, coupled with several cases of de-industrialisation, where the industrial sector declined. As Stiglitz (2016) pointed out, unlike in Asia, structural changes in Africa resulted in a lost quarter century and deindustrialisation. This undermines the applicability of the Lewis model in Africa.

Despite the criticism of the Lewis model, it brings to the fore the importance of industrialisation in the development of an economy. Lewis model teaches that for poor countries to achieve development, emphasis must be placed on the productive sectors of the economy that have the capacity to absorb labour from other aspects of the economy, not just from agriculture. Capital and new investments also play a key role in the development process, according to Lewis. In an article that reviewed the work and life of Lewis, Levitt (2008) noted that the Lewis model served as a basis for industrialisation programmes in the 1950s – 1960s which were led by governments across different regions. As a result of this model, many governments and policymakers have viewed industrialisation as a major goal in the process of improving living standards and making their economies competitive in the global economy.

Kuznets' Modern Economic Growth

In 1966, Simon Kuznets published Modern Economic Growth (MEG) which challenged previous assumptions about the role of technology, taste and institutions. Kuznets argued that the high growth rate of an economy is closely associated with changes in the structure of that economy. According to Kuznets (1966), modern economic growth is characterised by six key factors: (i) higher rates of growth in both per capita output and population in developed countries compared to earlier periods; (ii) a significant increase in productivity, with output per unit of input rising rapidly; (iii) a high rate of structural transformation within the economy. Kuznets identified this transformation as a shift from

agriculture to non-agricultural activities, and more recently, from industry to services. This also includes changes in the scale of productive units, shifts in consumption patterns, and adjustments in the balance between domestic and foreign supplies, among other factors. (iv) Changes in social structures, particularly through urbanisation and secularisation, which reflect the broader process of modernisation; (v) increased international economic interdependence, driven by technological advancements; and (vi) uneven economic growth across countries. Kuznets argued that these factors are interrelated, but he emphasised the central role of technology in driving growth. For Kuznets, there was essentially no limit to the potential for economic growth, as he believed the rate of technological change was accelerating, showing no signs of diminishing returns (Fogel, 2001).

Kuznets drew global attention to the divide between developed and less developed countries, emphasising how many less developed nations were lagging behind in terms of modern economic growth. He identified specific features that hindered these countries from fully exploiting the potential for economic growth. These included low per capita output, large reliance on agriculture or other extractive industries, and generally small-scale production (Kuznets, 1973). Additionally, Kuznets attributed the gap between developed and less developed countries to a greater backlog of technology in the latter. While he acknowledged the importance of technology transfer, Kuznets cautioned that modern technologies – often created in developed countries and designed to be labour-saving – may not be suitable for nations with an abundant labour supply. Moreover, modern institutions may not fit well with the traditional life patterns of developing countries. Therefore, Kuznets argued for the development of tailored political and institutional frameworks that would be compatible with sustainable economic growth in less developed countries.

In his influential article on Economic Growth and Income Inequality, Kuznets (1955) argued that economic growth in developed countries is associated with industrialisation and urbanisation. Kuznets developed the `inverted-U' hypothesis, which suggests that as a country develops, income inequality increases initially but declines as development progresses. Kuznets stressed that urbanisation and industrialisation play a key role in reducing income inequality in developed countries, often by increasing the income share of lower-income groups within the non-agricultural sector. According to Kuznets (1955), developed countries did not experience widening income inequality during the last 50 to 75 years; in fact, some narrowing of inequality occurred within the last two to four decades. In essence, Kuznets argued that increasing industrialisation boosts overall income, with productivity rising more rapidly among the urban population than among the rural population, which is predominantly engaged in agriculture.

Kuznets asserted that developed countries exhibit higher income due to the underlying shifts in industrial structure, the opportunities for internal mobility and the opportunities for economic improvement, whereas underdeveloped countries lag behind due to the absence or limitation of these factors. He noted that as observed in some developed countries, industrialisation can lead to drastic economic and social changes, which could aggravate pressures and conflicts from the lower-income citizens who may be left behind in the process. Kuznets further emphasised that governments in underdeveloped countries must develop political and social systems that address the needs of lower-income populations, especially if industrialisation leads to a widening income gap.

Kaldor's Law

Nicholas Kaldor proposed compelling arguments about the crucial role of the manufacturing sector in driving economic growth. Kaldor pointed out that the rate of industrialisation depends on aggregate demand, which is initially driven by internal demand at the early stages of development and later by exports. For Kaldor, high growth in industrial output implies increased transfer of labour from surplus sectors (low productivity sectors) to high productivity sectors (Kaldor, 1968). Kaldor posited that economic development requires industrialisation because increasing returns in the manufacturing sector mean faster growth of manufacturing output, which is associated with faster economic growth (Schlogl & Sumner, 2020). This is mainly because the manufacturing sector has strong forward and backward linkages with a huge scope for technology transfer, investment accumulation and knowledge spillovers. Kaldor pointed out that industrialisation promotes the growth of services, which are both complementary and ancillary to industrial activities i.e. banking services, transport, trade, etc. Thus, employment in services increases as a result of industrialisation, although the rate of increase may not be less than output growth. Kaldor proposed three laws, which include:

1. **Faster manufacturing growth leads to faster GDP growth.** Kaldor argued that as a result of increasing returns to scale in the manufacturing sector, capital accumulation and investment returns increase.
2. **Manufacturing output is positively correlated with labour productivity in the manufacturing sector.** Based on Verdoorn's (1949) hypothesis, Kaldor confirmed that faster growth in manufacturing output is linked to faster growth in manufacturing labour productivity due to both static and dynamic increasing returns to scale (Mercan et al., 2015).
3. **Total productivity in the economy is positively linked to faster growth in manufacturing output.** The increase in overall productivity, according to Kaldor, will be driven by the movement of labour from agriculture, which displays diminishing returns, to the more productive manufacturing sector.

Kaldor (1966) empirically argued that the slow growth experienced by the United Kingdom relative to other European countries was due to its sluggish manufacturing growth and higher growth of low-productivity services. As Thirlwall (2017, p.5) explains, Kaldor "attributed slow growth to what he called 'premature maturity' by which he meant the exhaustion of the supplies of labour from agriculture to provide labour to the manufacturing industry before a high level of productivity in industry had been reached – in contrast to other European countries".

Kaldor's law has been tested by many economists and has generated decades-long debates on the role of the manufacturing sector in driving economic growth across countries. Pons-Novell & Viladecans-Marsal (1999) tested Kaldor's laws in European economies between 1984 and 1992 and found that his second and third laws were consistent with the growth patterns of European regions, especially when accounting for spatial autocorrelation. Similarly, Mercan et al. (2015) tested the validity of Kaldor's first law in Newly Industrialised Countries from 1965 – 2012 and found that an increase in manufacturing output had a positive effect on economic growth. Magacho (2016) found that some manufacturing sub-sectors present higher increasing returns than overall manufacturing and that the degree of increasing returns in manufacturing does not vary according to countries' GDP per capita. The study, which also examined Kaldor-Verdoorn's law across countries in different stages of development, further revealed that within manufacturing, some sectors, such as Textiles, present

a high degree of increasing returns in the early stages of development, but that these returns diminish as economies grow. Other sectors, such as Metals and Paper, have low increasing returns for countries in the early stages of development, and high increasing returns for more developed economies. Finally, some sectors present high increasing returns independently of the stage of development, such as Electrical, Food and Chemicals, and only Non-metallic has low increasing returns independently of the stage of development.

Several studies have explored the relevance of Kaldor's laws in developing economies. Libanio & Moro (2011) confirmed the existence of significant increasing returns in the manufacturing sector in large Latin American economies from 1980 to 2006, concluding that industrial development is a key driver of economic growth in the region. In African countries, Wells & Thirlwall (2003) found that the Continent's GDP growth was more closely linked with the growth of the manufacturing/industrial sector than the agricultural or service sectors. However, they revealed that all three sectors expanded at the same rate, limiting the overall progress of the continent. They concluded that structural change towards the industrial sector would accelerate GDP growth and standard of living in Africa but the challenge is how the continent can attain such structural transformation.

Despite its influence, Kaldor's law has faced criticism. Stoneman (1976) in *Kaldor's Law and British Economic Growth 1800-1970* found that the law only holds when the data is not checked for autocorrelation. Stoneman concluded that the results become less reliable once estimation methods account for simultaneity. Nevertheless, Kaldor's work emphasised that economic structure matters for a country's economic performance. The experiences of many countries, particularly those in South East Asia and Latin America, support Kaldor's arguments.

In reviewing the contributions from structural economists, the United Nations Conference on Trade and Development (UNCTAD) (2016) summarised several common assumptions. First, economic growth follows a process in which knowledge gained from production leads to economies of scale, fostering further growth and development. Firms, therefore, become more competitive and produce goods at a lower cost, thereby maximising returns. Second, the economies of developing countries are structurally heterogeneous, with the role of different sectors being crucial to growth and development. Lewis's writings highlighted this duality, describing a modern capitalist sector characterised by high productivity and technology adoption, and a traditional subsistence sector with low productivity. Economic growth is driven by the movement of labour from the subsistence sector to the modern sector. Thirdly, the modern sector consists of urban manufacturing. Manufacturing was considered to be the bedrock of many of the structuralists' theses. The sector is viewed as the engine of growth and is associated with higher levels of productivity (see Kaldor, 1957). Lastly, institutions like the UNCTAD (2016) and the International Labour Organisation (ILO) (2020) have defined structural transformation as the movement of labour and economic activities from low productivity to high productivity economic activities while Kuznets' work (1955) describes structural transformation as the movement of labour from agriculture to non-agricultural activities. Both definitions highlight the role of high-productivity services, particularly tradable services, which should be carefully considered when measuring structural transformation.

Contemporary Literature on the Unique Role of Manufacturing in the Structural Transformation Process

While earlier literature viewed manufacturing as the engine of economic growth and a major driver of structural transformation, more recent research has examined whether manufacturing still plays this central role in today's economies. The shift in global production patterns, technological changes and the rise of services have triggered a review of the sector's potential to drive long-term growth and structural change.

As shown in previous sections, Africa experienced a decline in the share of industry in output from 2000 to 2018, while the share of industry in employment remained flat during the period. The data on value-added and employment shares confirm the shift of labour and economic output from agriculture to services over the past three decades. As Rodrik (2015) puts it, Africa's per capita income is too low for the continent to be experiencing de-industrialisation. But Sen (2023) countered the argument that developing countries experienced premature de-industrialisation, where the share of manufacturing employment peaks at low-income levels and declines thereafter. Sen showed that for structurally underdeveloped countries (i.e. countries where agriculture still accounts for the largest share of employment), the share of manufacturing in employment showed no sign of reaching its peak, suggesting more room for growth and labour transition towards this sector. Although Sen noted that the path of structural transformation for these countries may differ from that of high-income countries and countries in East Asia, Sen concluded that manufacturing is the best option for structural transformation for structurally underdeveloped countries. This aligns with the views of Lin (2011) and Monga (2017), who noted that developing economies with low-skilled labour should leverage opportunities in manufacturing and industrialisation to address developmental challenges of unemployment and poverty.

In emphasising the importance of manufacturing, Hauge & Chang (2019) noted that, except for a few oil-rich countries and financial havens, no country has achieved high and sustainable living standards without developing its manufacturing sector. They noted further that the sector is crucial in fostering innovation, and is strongly linked to services such as industrial research and development, product design and other engineering-related services. In an empirical analysis of structural change in advanced and developing countries, Szirmai (2012) found that manufacturing is still an important driver of growth in developing countries, although the study noted the increasing role of services in GDP and employment. The author argued that since 1950, successes in economic development across countries have been driven by industrialisation, except for software services in India. The study found a positive correlation between the manufacturing share of commodity value-added (defined as manufacturing value added as a percentage of total commodity production, which includes agriculture, mining, manufacturing, construction and utilities) and per capita income. Countries with a high share of agriculture in commodity value-added tend to be poorer, while industrialised countries are prosperous, highlighting the crucial role of manufacturing in raising per capita income.

Szirmai (2012) highlighted the continued existence of key features such as opportunities for capital accumulation, economies of scale, linkages and spillover effects and technological progress that make manufacturing stand out. The author, however, observed that some of these features, particularly scale effects and technological progress, are emerging in the services sector with the rise of ICT technologies since the 1990s. This suggests, therefore, that services might play an increasing role in

economic growth, but manufacturing will still be important going forward. As stated in Szirmai & Verspagen (2015), manufacturing has a positive impact on growth, but it has become a harder route to growth since 1990.

In a study that used panel data for 63 middle and high-income countries, excluding major exporters of fuels from 1990 to 2011, Marconi et al. (2016) observed that manufacturing is crucial for economic growth and productivity, especially in middle-income countries. They also confirmed that manufacturing exports are positively associated with economic growth, with a greater impact in middle-income countries. Their study further found that middle-income countries with a devalued exchange rate tend to experience output growth as their goods become competitive in the international market. They concluded that Kaldor's first and second laws hold and that manufacturing sector growth is important for economic growth, productivity and development, particularly in middle-income countries.

Haraguchi et al. (2017) examined the relevance of manufacturing in all countries from 1970 to 2013 and concluded that the shares of manufacturing in value added and employment have not declined since 1990 in developing countries. While the result was different for developed countries, they found that manufacturing is still the driver of economic growth in developing countries based on Kaldor's formulation and that the sector's features have not changed in the last 40 years (1970 – 2013). Looking forward, they noted that low-income countries have opportunities for industrialisation, especially in textiles and apparel, a sector where China has reached its peak in terms of output and employment shares. This is similar to the findings of McMillan & Albert (2022), which showed that African countries have the opportunity to increase employment in the ready-made garment sector, which is difficult to mechanise and is the least capital-intensive subsector within manufacturing.

2.5 Is Africa's Shift from Agriculture to Services Sustainable?

The emergence of services as a major driver of growth in advanced economies and some developing countries has raised the debate about the sustainability of manufacturing-led growth and the role of services in influencing development outcomes. However, unlike advanced economies and several countries in Asia where manufacturing played a crucial role before the expansion of services, the movement of labour in Africa has largely bypassed industrialisation. This raises an important question: is Africa's shift towards services sustainable?

The movement of labour in Africa since the 2000s has been towards non-tradable services while there has also been a significant expansion of tradable services output in some countries. Even though the services sector has played an increasingly important role in employment and GDP, the continent continues to struggle with challenges such as poverty, rising unemployment, and a high informal economy, as many countries remain vulnerable to external shocks. As noted by Cornia (2020), despite the acceleration of GDP growth in the last twenty years and talks about Africa's Renaissance, much of the region continues to face a high incidence of poverty, especially in rural areas. The situation across many African countries is such that the majority of the citizens, particularly the low-income earners are left behind or not included in the growth process. The number of Africans estimated to live in extreme poverty has increased to 433 million in 2018 from 284 million in 1990 (Schoch and Lakner, 2020). According to Cornia (2018), 90% of countries that will not be able to reach Sustainable Development Goal number 1 (complete poverty eradication) by 2030 will be from Africa.

The dominance of low-productivity services in Africa might limit long-term growth unless accompanied by improvements in human capital, technology adoption and institutional support. Non-tradable services sector which absorbed much of the labour from agriculture is often less productive and largely informal and is therefore constrained to expand rapidly (Rodrik, 2015). This, perhaps, explains why despite the growth experienced in the 2000s, the continent continued to grapple with the challenges of unemployment and underemployment, with a huge skills gap across major sectors. Bhorat et al. (2018) revealed that the skills gap is more easily narrowed in moving from agriculture to manufacturing than to high-value services. Issues of poor investment in education to boost human capital accumulation are a key constraint to plugging this gap and supporting overall inclusion. As explained in Rodrik (2016), for farmers to acquire programming skills, this will require long years of education, training and institution building. However, relatively, little effort will be required to turn a farmer into a production worker.

For tradable services, a key challenge with a structural shift towards high-productivity services is their inability to absorb the large pool of low-skilled labour on the continent (ILO, 2019). While several African countries experienced increased investments in high-productivity services such as IT, telecommunications and finance, these sectors are highly skill-intensive and, unlike manufacturing, often lack the capacity to absorb large numbers of low-skilled labour. Overall, Baymul & Sen (2018) found that structural transformation towards the services sector increases inequality in structurally developing countries - countries where the services sector has the largest share of employment followed by agriculture - mainly due to the large productivity difference within the services sector i.e., between tradable and non-tradable services.

With these limitations, the case for manufacturing as a driver of economic growth becomes even more compelling. **First**, manufacturing can create large-scale decent jobs for low-skilled and semi-skilled workers. As noted by Szirmai (2012), the sector still has the ability to generate backward and forward linkages with other sectors, which creates opportunities for value addition, supply chain development and industrial deepening. **Second**, manufacturing is important for export diversification and foreign exchange earnings. Many African economies rely on commodity exports, which makes them susceptible to global price movements (KPMG, 2015). A strong manufacturing base enables countries to reduce vulnerabilities to commodity price movements and move towards high-value manufactured goods with much greater market stability.

Third, the manufacturing sector is critical for building resilience against external shocks. The COVID-19 pandemic and the war in Ukraine exposed the fragility of Africa's reliance on imported intermediate inputs and manufactured goods, highlighting the importance of developing domestic manufacturing capacity. The supply chain disruption associated with both events had a huge negative impact on the economies of many African countries through rising inflation and exchange rate volatility. Countries with stronger manufacturing sectors can better mitigate supply chain disruptions and maintain production in times of crisis. **Fourth,** manufacturing remains essential for learning and industrial upgrading (Andreoni & Gregory, 2013). Establishing and expanding manufacturing firms often involves acquiring technical skills, knowledge transfer and innovation - all of which are important to long-term economic growth. Without a strong manufacturing base, African countries risk falling behind in the

global knowledge economy, where advanced manufacturing and digital technologies are shaping future growth patterns.

Finally, manufacturing has strong linkages with other sectors. The adoption of new technologies, process improvements, and better management practices within manufacturing often leads to efficiency gains in agriculture and services. Strengthening Africa's manufacturing value chain is essential in improving the productivity of other sectors of the economy. While the rise of services offers opportunities for Africa's development, it should be seen as a complement to, rather than a substitute for, manufacturing.

That said, it is important to recognise that not all manufacturing activities are highly productive. Not all manufacturing exhibits the characteristics of capital accumulation and economies of scale as argued by Kaldor (see De Vries et al., 2012 and Kesar & Bhattacharya, 2020). Studies such as De Vries et al. (2012) and Kesar & Bhattacharya (2020) have highlighted the presence of dualism within the manufacturing sector, where formal and informal firms coexist with wide productivity gaps. In India for instance, a large share of the workforce is employed in informal manufacturing firms, including own-account manufacturing enterprises (OAMEs) that do not hire regular workers, and establishments that employ at least one regular worker (Kesar & Bhattacharya, 2020). While the line between formal and informal firms is often blurred, this categorisation by Kesar & Bhattacharya reveals that amongst informal firms, productivity levels differ. OAMEs, which account for 85% of informal manufacturing firms, mostly engage in petty production, have low capital intensity and are less likely to adopt technology. The establishments, on the other hand, are more productive and dynamic (Kesar & Bhattacharya, 2020). Kesar & Bhattacharya found that despite India's high economic growth, traditional enterprises could not transition into larger firms due to limited capital. Their study concludes that OAMEs largely exist to satisfy the subsistence needs of households and draw household resources such as labour, tools and physical space, thereby reinforcing the persistence of dualism in the informal manufacturing sector.

De Vries et al. (2012) examined the challenge of dualism in the manufacturing sector and concluded that it was growth-reducing in India. For Kesar and Bhattacharya (2020), it raises concerns about a country's economic development via the path of structural change. Alessandria et al. (2021) noted that productivity variations within manufacturing and services underscore the importance of facilitating within-sector labour transition for effective structural transformation. This transition, which could be from informal to formal firms, or from state-owned to private firms, represents a key challenge and opportunity for industrial policy, requiring targeted interventions that account for sectoral differences and firm-level constraints. Despite the challenge of dualism, the manufacturing sector's potential for job creation and structural transformation remains unmatched, especially given Africa's current experience with low-productivity services.

To conclude, labour in Africa has shifted mainly from low-productivity agriculture to low-productivity services. This movement has not been accompanied by significant gains in poverty reduction and income growth. While high-productivity services such as ICT, finance, insurance and telecommunications have the ability to contribute to overall productivity and income growth through relatively higher wages, their capacity to generate large-scale employment remains limited. A key takeaway is that the rise of services does not render manufacturing irrelevant to Africa's development.

Manufacturing remains critical for creating decent, mid-to-high productivity jobs, diversifying foreign exchange earnings and sustaining long-term productivity growth. However, to unlock and maximise these benefits, African countries must address the productivity gaps within the manufacturing sector by improving infrastructure and access to finance and markets. The concerns about artificial intelligence taking over manufacturing are real, but often overstated in the African context. Adoption of advanced manufacturing technologies remains low - only 12.2% of African manufacturing firms have adopted Advanced Digital Production (ADP) technologies (UNIDO, 2021). This suggests that there is still considerable room to expand labour-intensive manufacturing while gradually integrating advanced technologies.

Given Africa's large and growing population, manufacturing presents a viable path for employment creation and structural transformation rather than services alone, as argued by Gollin (2018). A balanced growth model that leverages the strengths of both manufacturing and high-productivity services offers a more sustainable approach to driving economic growth, improving income and productivity, and strengthening economic resilience across the continent.

2.6 What Brings About the Right or Wrong Type of Structural Transformation?

Structural transformation is widely recognised as a critical pathway to sustainable economic development. As discussed in the previous sections, the movement of labour and output in sub-Saharan Africa diverged from the path followed by many advanced economies and countries in East Asia. While manufacturing was the key driver of structural transformation in East Asia, labour and output transitioned from agriculture to low-productivity services in Africa.

Understanding why countries in East Asia achieved industrialisation offers a useful lens through which to assess why African countries have not industrialised, and how to reverse this trend. This also raises some important questions: what brings about the wrong type of structural transformation? Is it a policy failure to promote productive and labour-absorbing sectors effectively, particularly a failure of industrial and agricultural policy? Is it the result of a misguided structural transformation policy that focuses on the wrong sectors? Or perhaps, a combination of the two? These questions are central to understanding the challenges facing African economies in achieving the right structural transformation. They also point to the need for a critical review of the literature on industrial policy and the conditions under which it succeeds or fails. By identifying the conditions, policies and institutional arrangements that enabled successful structural transformation in East Asia, African countries can better understand their trajectories and outline steps towards a more productive and sustainable transformation in the future.

To address these questions, subsection 2.6.1 explores the literature on industrial policy and the conditions under which it succeeds, including the role of the state, strategic choices on the sequencing of sectors promoted, size failure, global production dynamics and demand conditions. Drawing on these insights, subsection 2.6.2 outlines key reasons why African countries have not experienced a manufacturing-led structural transformation as seen in East Asia.

2.6.1 Understanding the Conditions for Successful Industrial Policies

Industrial policy was crucial in the transformation of East Asian countries, which achieved the fastest industrialisation in human history (Chang, 2006). Chang defines industrial policy as "a policy aimed at

affecting particular industries (and firms as their components) to achieve the outcomes that are perceived by the state to be efficient for the economy as a whole" (Chang, 2006, p109). Industrial policy consists of a wide range of interventions, including the establishment of state-owned enterprises (SOEs) in high-risk industries, export promotion strategies, infant industry protection, use of tariffs, regulation of firm entry and exit, temporary subsidies, etc. Chang notes that while there are many examples of failed industrial policy, including in countries that eventually succeeded, governments should not ignore the usefulness of industrial policy. Rather, what is important is the need for better design, implementation and oversight. Chang identified five crucial factors for successful industrial policy, which include setting realistic targets, strong links with export strategy, effective discipline of rent recipients, a competent and autonomous bureaucracy, and a balanced but engaged relationship between the state and the private sector. These factors will be discussed across the following themes: the role of state institutions, strategic choices on the sequencing of sectors promoted, size failure, productive hierarchies in global value chains and demand conditions.

The Role of Institutions in Industrial Policy Success

The developmental state paradigm is one of the most important conditions for the success of industrial policies (Chang et al., 2013). Under this arrangement, the state ensures that capital and other resources are strategically allocated in the economy and embarks on effective macroeconomic policies to achieve its objectives. According to Öniş (1991), the developmental state is a strong and disciplined state that is responsible for regulating capital, leveraging its bureaucratic autonomy. In addition to exercising its power, the state promotes public-private partnerships, which are essential in the negotiation and renegotiation process of national goals and policies (Öniş, 1991). Evans (1995) describes this relationship as "embedded autonomy", which enables the state to obtain information from private firms in designing, re-designing and implementing industrial policies. An autonomous state without strong engagement links with private firms would lack both the necessary information and the capacity to depend on decentralised private actors for implementation (Evans, 1995). The developmental state was crucial in some East Asian countries, where the state guided market forces in achieving broader economic goals (Öniş et al., 1991). These states combined strong bureaucratic capacity with a clear developmental agenda, facilitating industrial upgrading and structural transformation. While recognising the importance of continuous dialogue between the state and the private sector, Chang et al. (2013) cautioned that governments must not be overwhelmed by the interests of the industrial class and guard against the danger of capture.

Wade (2003) described the targeted state intervention in East Asia as government leadership and government followership. While government leadership involves a situation where the government takes the initiative on what sectors or products should be supported, followership entails adopting proposals from private firms about new products or technology. Essentially, the state monitors market signals, adjusts its policies where necessary and promotes competitive pressure. Wade cited the followership role of Taiwan's Industrial Development Bureau, which provided industrial extension services to firms, encouraging managers to upgrade quality and machinery, adopt new processes and switch from importing parts and components to patronising local producers. Wade noted that governments in East Asia alternated between leadership and followership roles, reinforcing the idea that successful industrial policies require both strategic state direction and market responsiveness.

The effectiveness of industrial policy depends on macroeconomic management and underlying political settlements (Wade, 2015). Political settlements refer to the balances that are created between the state, private sector, workers and other stakeholders in the society. Political settlement is crucial in the structural transformation process as it creates incentives for political and economic elites to support productive activities rather than rent-seeking or patronage. According to Wade (2015), political settlements influence wages, income distribution and states' ability to raise taxes and provide public goods. Khan's work on political settlements sheds light on the need for appropriately designed support policies to develop skills and organisational capabilities to create competitive industries. Khan (2013) argued that an important ingredient for successful industrial policy in East Asia was having a developmental state that allows for the implementation of ambitious industrial policy interventions. For instance, in South Korea and Taiwan during the 1960s, firms were required to meet specific export targets, which were monitored by the state. Access to credit subsidies and tax incentives was conditioned on meeting these targets (Mazzucato & Rodrik, 2023). The state, in this instance, had the power and capabilities to discipline subsidy recipients and enforce performance conditions.

Contrasting this with South Asia, Khan (2018) noted that countries in South Asia "inherited powerful clientelist political organisations from British colonial times and these organisations could later be used by business organisations to protect their subsidies for a share of the rents" (Khan, 2018; p49). Khan, however, noted that while all countries may not have effective developmental states, industrial policy must take into consideration the specific political settlement in the country to attain the desired objectives. At the firm level, Khan cited the Bangladesh garment industry as an example where partnerships in areas of skills development and knowledge exchange improved the organisational capabilities of firms despite the presence of a clientelist political settlement. It becomes, therefore, important for policy to acknowledge and cater for the interdependence of knowledge, skills and organisational capabilities (Khan, 2018).

Strategic Choices on the Sequencing of Sectors Promoted

Strategic choices around the sequencing of sectors promoted during structural transformation have significant implications for long-term economic development. These choices varied across countries and were influenced by factors that are sometimes unique to each country. In Taiwan, for instance, the low level of technology relative to advanced countries and high wages, which were a challenge for labour-intensive sectors, prompted the creation of strategic industries in the early 1980s to address these bottlenecks. These strategic industries included machinery, automobile parts, electrical machinery and information technology and were chosen using the following criteria: large linkage effects, high market potential, high technology intensity, high value-added, low energy intensity and low pollution (Yang, 1993). Previously, the government had supported heavy industries during its third development plan to enable long-term growth (Amsden, 2011). In Thailand, the criteria for selecting promoted industries such as automobiles, chemicals, shipbuilding, etc. in the 1950s included the following: ability to conserve foreign exchange, strong linkages with other industries, utilisation of domestic raw materials and the need to gain technological knowledge (Amsden, 2011). From a development finance perspective, Amsden compiled a list of industries that received funding support in five decades across select countries (See Table 3).

Table 3: Strategic Industries, Selected Countries by Decade

	Decade[1]				
Country	1950s	1960s	1970s	1980s	1990s
Brazil (BNDES)	chemicals, basic metals & prod.	basic metals & prod., basic metals & prod.	basic metals & prod., chemicals	basic metals & prod., chemicals	pulp & paper, chemicals
India (AIFIs), 1949	food products, textiles	chemicals, textiles	chemicals, machinery	chemicals, textiles	chemicals, basic metals & prod.
Indonesia (CICB), 1952	na	na	chemicals, textiles	chemicals, textiles	chemicals, textiles
Korea (KDB)	na	textiles[3], ceramics	machinery, basic metals & prod.	machinery, basic metals & prod.	chemicals, basic metals & prod.
Malaysia (MIDF)	chemicals[2]	basic metals & prod., wood & wood prod.	food products, textiles	basic metals & prod., food products	basic metals & prod., non-met. min. prod.
Mexico (NAFINSA)	basic metals & prod., food products	transportation equip., basic metals & prod.	transportation equip., basic metals & prod.	basic metals & prod., machinery	basic metals & prod., machinery
Turkey (TSKB)	textiles, food products	ceramics, textiles	transportation equip., textiles	transportation equip., textiles	na

1. The two main manufacturing industries for each decade receiving the largest share of credit (largest listed first). Industry definitions vary by country.
2. This is the only category (besides ''other'') listed for these years by the source cited.
3. 1969 only

Chemicals: This category may include petrochemicals, chemical products, and fertilisers. For Korea in the 1990s, ''chemicals'' also includes rubber, plastic, and petroleum products.
Basic metals and products: Sometimes this category is broadly defined and includes ''metallurgy'' or ''metalworking.'' More often, it is more narrowly defined and includes only ''steel'' or ''iron and steel.''
Textiles: Sometimes this category includes ''clothing and apparel.''
Machinery: This category may or may not include electrical machinery.
Transportation equipment: Sometimes this category is listed as ''transportation vehicles.'' It is always listed separately from ''transportation,'' which generally includes infrastructure projects.
Ceramics: This category may also include stoneware, glassware, and ceramic products.
Wood and wood products: This category is broadly defined to include all lumber and wood products.
Non-metallic mineral prod: This category includes all non-metallic mineral products.

Sources: Bank Indonesia (1996); Industrial Development Bank of India (various years); TSKB (various years); Banco Nacional de Desenvolvimento Econonico e Social (various years); Korea Development Bank (various years); Bank Negara Malaysia (various years).

Source: Amsden, 2011

Chang et al. (2013) reviewed China's industrial policies and revealed that prior to the Sixth Plan (1981-1985), industrial policies were inward-looking in the Five-Year Plans. As with other countries, strategic industries were selected based on their importance to national security and economy and their growth potential. For national security and economy, selected industries included defence, coal, electric power and grid, telecommunications, petroleum and petrochemical, civil aviation and shipping while alternative fuel cars, biotechnology, environmental and energy-saving technologies, alternative energy, advanced materials, new-generation information technology, and high-end equipment manufacturing in 2007 were selected based on their growth potential (Chang et al., 2013). Selected industries were offered specific support, including subsidised loans from development banks, local content requirements, subsidies, and trade protectionism from foreign competition (Chang et al., 2013).

In deciding the sequencing of sectors to be promoted, there is no consensus in the literature on which sectors to support first, given that the experiences of countries that implemented industrial policies differ. Lin & Monga (2010), for instance, argued that in the early stages of development, countries focused on labour-intensive industries such as garments, textiles, electronics and toys and later upgraded to more capital-intensive industries. Yang (1993) noted that in Taiwan, labour-intensive industries were preferred by the government because they were "comparatively advantageous" in the 1960s. However, several authors, including Amsden (2011) and Liu (2019), revealed how the experiences of countries were different. While the textile industry was one of the most heavily subsidised sectors in South Korea in the 1960s, Taiwan's heavy industries were targeted as early as 1961-64, even though some labour-intensive industries were also supported (Amsden, 2011). In South Korea's case, Chang (2011) stated that the country's exports were tungsten ore, fish, seaweed, and basic textiles and garments in the 1950s, which were products in comparative advantage-conforming industries. However, in the 1970s, the country deliberately developed capabilities in the Heavy-Chemical Industry (HCI) - an area where it did not initially have a comparative advantage - through active industrial policy and long-term investment. This transition enabled South Korea to sustain its

export growth at a much faster rate (Chang, 2011). As highlighted above, a combination of factors, including national priorities, post-war development agenda, resource endowments, the need to build competitive strengths beyond their resource endowments and national defence strategies, influenced the choice of industries.

Recent research by Liu (2019) offered an approach to industrial policy design and sequencing. Using South Korea and China as case studies, Liu emphasised that rather than target the most distorted sector in an economy, the government should first begin with sectors with high distortion centrality. This includes upstream sectors i.e. sectors that are heavily interconnected with other industries – they supply strongly to non-targeted sectors and demand few inputs in return. Liu's insights are particularly relevant to the strategic sequencing of industrial promotion. For instance, in South Korea's 1970s Heavy-Chemical Industry (HCI) drive, the government promoted industries producing metal products, machinery, electronics, petrochemicals, automobiles and ships. These sectors were identified not only because of their potential for technological upgrading but also because they could generate widespread productivity gains across the economy (Liu, 2019). Liu concluded that industrial policy should begin with sectors that have high distortion centrality rather than the most distorted sector because "economic gains are higher if more subsidies are given to high-distortion-centrality sectors" (Liu, 2019; p45). These diverse views on sequencing suggest the need for flexibility in industrial promotion strategies rather than adopting a fixed approach.

A key consideration in industrial policy is how to balance Import Substitution Industrialisation (ISI) and Export-Oriented Industrialisation (EOI) strategies. Amsden (2011) noted that in many countries in Latin America, import substitution preceded export-led industrialisation in almost all industries. The state in these countries ensured that firms were able to scale capacity for the domestic market before making entry into the export market. This was the case in Brazil for the auto industry and intermediate and heavy industries (Shapiro, 1997) and chemicals, automobile and metal industries in Mexico (Casar, 1994). In many East Asian countries, import substitution and export expansion were mutually reinforcing to drive industrialisation and ensure firms were internationally competitive (Hauge, 2020). In South Korea and Taiwan, while the governments implemented ISI policies such as high tariffs, import restrictions, and other measures to reduce dependence on foreign goods and protect domestic firms, there were also elements of export-oriented policies. Both governments offered assistance to firms that met export performance targets (Hauge, 2020). In Taiwan, manufacturing firms exporting received export credits, marketing information and exemption from income tax (Lin, 1993 and Wade, 1990). Similarly, in South Korea, firms received subsidised bank loans, tariff rebates for imported inputs used for exports and export marketing support from the state trading agency (Chang, 2011). While rapid export growth is central to economic development and was one of the key reasons industrial policies succeeded in East Asia more than in Latin America, developing countries will need to protect strategic industries to build domestic capabilities (Chang, 2011). Chang noted that the ISI vs EOI debate should be set aside and countries must find an optimal mix of free trade, export promotion and infant industry protection policies across sectors and over time to improve industrial structure.

The Challenge of Size Failures

Another important condition for successful industrial policies is the ability to scale industrial capacity to competitive levels – a challenge often described as size failure. As portrayed by Lee et al. (2015)

and Chang et al. (2013), small firms are constrained by factors such as limited investment in research and development (R&D) as well as inadequate infrastructure, worker training and machinery. These factors prevent small firms from scaling, necessitating the need for government support to solve these problems. Interventions can include training workers, subsidising input, credit guarantees and training subsidies (Chang et al., 2013). Chu (2009) noted that industrial policy tools, such as R&D grants, subsidies and preferential taxations, were crucial to the success of Taiwanese firms. These firms rose to become global firms, transitioning to original brand manufacturers (OBM) (Chu, 2009 and Amsden, 2011). The approach was different in South Korea, where the government supported national champions with specific incentives and policies such as long-term, low-interest loans to lessen risks for *chaebol*. Although there were fewer large businesses relative to South Korea's *chaebol*, Taiwan was able to close the technological gap with the West (Chu, 2009).

In investigating how small firms can transition to OBM, Lee et al. (2015) examined South Korea and highlighted several risks associated with stifling competition of small and medium-sized enterprises (SMEs). They include aversion of former buyer firms, charging of predatory prices by competitors to edge out these SMEs and legal action of the incumbents to limit the sale of their products. Their research presented five stages that successful SMEs go through such as entry, gradual catch-up (increased learning and productivity), path-creation, rapid catch-up, and post-catch-up (sustaining their current position against possible challengers). They noted further that if entrepreneurs do not prepare to manage the challenges in each stage, their businesses are likely to collapse. Industrial policy, therefore, becomes important in nurturing new entrants and minimising business failures through R&D grants, subsidies and dispute resolutions between new entrants and incumbent firms. Also, a strong point is that policies must take into consideration sectoral differences and the unique operating environment and associated risks.

Productive Hierarchies in Global Value Chains

Since the 1990s, the rise of Global Value Chains (GVCs) has brought about a new form of division of labour and specialisation among countries and firms (Khoi, 2014). The ability of firms to integrate into and upgrade within GVCs was crucial in the structural transformation process of several countries. Several authors have argued that GVCs create opportunities for countries to integrate into the global economy and raise the income of citizens (Taglioni & Winkler, 2016 and United Nations, 2015). Asia-Pacific economies are major players in the GVC space. According to the United Nations (2015), the region accounted for about 45% of global GVC-related exports of final products in 2013. China accounted for half of the region's final exports. In terms of imports, the region only imported 26% of global GVC final products. While China specialises in the export of electronics, advanced manufacturing and automobiles (Gereffi et al., 2022), Malaysia focuses on processed agricultural products and intermediate electronics. Countries such as Bangladesh and Cambodia specialise in apparel and footwear (United Nations, 2015).

According to the United Nations (2015), key drivers of GVCs include (a) cost efficiency: costs of inputs, economies-of-scale, institutional costs and benefits, and infrastructure accessibility and costs (b) market access: access to intermediate-import markets (backward linkages), access to intermediate-export markets (forward linkages), proximity to final demand, trade agreement and conditions related to social and environmental factors (c) low international trade costs: technological advances in communications, transport and logistics; and trade and investment liberalisation and regulatory

reforms. Over the past few decades, trade costs have played an important role in the expansion of GVCs. As companies seek to decrease the marginal cost of production, they are increasingly locating production stages in economies with lower production costs. Several elements of trade cost include infrastructure-related services such as transportation, logistics, (ICT), streamlined customs clearance and financial and insurance services (United Nations, 2015). From the experiences of Asia-Pacific economies, the United Nations cited key factors for successful GVC participation to include fast and efficient border processes, regional trade agreements that enhance GVC participation, trade facilitation and infrastructure.

On industrial policy and GVCs, Milberg et al. (2014) argued that industrial policy used to facilitate ISI and EOI may no longer be effective given the changing industrial landscape associated with the rise of GVCs. Milberg argued that industrialisation through vertical specialisation (VSI) needs to account for the influence of lead firms, which control access to major markets and intermediate goods trade. For Hauge (2020), although the literature on industrial policies decades ago did not use the term "GVCs", participation in GVCs has long existed since the 1950s. Hauge cited Chang et al. (2016), who noted that global brands such as Nike outsourced their shoe production to South Korea and Taiwan from the late 1970s to the late 1980s. Therefore, the idea that GVCs require a rethink of industrial policy is not solid. This implies that there are numerous lessons to be learnt from the traditional ISI or EOI policies. Hauge proposed three recommendations: governments in developing countries must negotiate with foreign investors in supporting domestic industrialisation; policies must focus on import substitution but not solely on increasing exports, and successful industrialisation may require building local capacities to compete with multinational corporations.

Odijie (2019) advocated for local firms to initially target the domestic markets to build capabilities before targeting higher-value GVCs. In line with this, Whitfield et al. (2021) argued in favour of substantial localisation, which involves building local capabilities and supply chains. The creation of industrial clusters rather than export processing zones is more likely to help local firms and industries grow. They concluded that industrial policy remains crucial in enabling "small and medium local firms to create dynamic industrial clusters, as well as to create synergies between domestic and export markets" (Whitfield et al. 2021; p72). Given the different perspectives, the key challenge is balancing participation in GVCs with building local capabilities and upgrading within the domestic value chain.

Demand Conditions

There is a growing body of literature that highlights the importance of demand-led structural transformation in developing economies. Much of this research is rooted in Engel's law, which states that as income rises, the percentage of income spent on food decreases and more resources are channelled to other goods or services. This suggests that changes in income can lead to the reallocation of labour and resources across sectors – as demand for manufactured goods increases, workers could move from agriculture towards the sector. Gollin (2023) and Gollin & Kaboski (2023) noted that in poor countries where there is a huge demand for food and agricultural products, improvements in agricultural productivity and the agricultural sector become important in the growth process. For Chang and Andreoni (2020), governments can play an important role in dousing firms' uncertainty, enabling investment and productivity growth. One of the ways to reduce this uncertainty is to guarantee demand. The authors highlighted several industrial policy tools to achieve this: (1) infant industry protection to reduce demand uncertainties and support the growth of domestic firms

(2) restrict competition by granting monopoly rights to certain firms, restricting entry into certain industries and facilitating cartels in specific industries (3) offer preferential treatment to domestic firms in government procurement. As highlighted by Chang (2006), Japan, Korea and Taiwan adopted infant industry protection. For Wolf (2023), demand growth is essential in improving investment, enhancing the capacity development of firms and supporting late-industrialisation. Landini et al., (2020) discussed the role of demand in the development of green industries in developing economies. They argued that changes in domestic demand which they referred to as "demand windows" are crucial in enabling catch-up in three areas – wind, biomass and hydropower. Their article makes several important findings, one of which is that protectionist measures are necessary for demand windows to be effective. Additionally, deliberate and targeted policies, such as the use of public procurement and incentives for consumers, have been instrumental in enabling domestic demand to influence the catch-up process.

To conclude, the industrial policy used by countries in East Asia varies and countries cannot be put along the same spectrum (Chang, 2006). For instance, infant industry protection was heavily adopted by Japan, Korea and Taiwan. However, Singapore did not implement such a policy. Countries such as Japan and Taiwan promoted small and medium-sized enterprises (SMEs) while SMEs were weakly promoted in Korea and Singapore. Some common areas include centralisation in policymaking and promotion of exports (see Table 4). In highlighting the lessons countries can learn from East Asian countries, Chang (2006) noted the importance of government commitment to unprofitable industries with great potential, clear communication of the time limit for government interventions, investment in research and development and recognising that successful industrial policy does not always require large budgetary outlays. In fact, Chang noted that an overreliance on budget outlays can constrain policy imagination and overlook more effective tools such as credit allocation, trade policy and performance-based support.

Table 4: Summary of industrial policies in four East Asian countries

	Japan	Korea	Taiwan	Singapore
Policy				
Infant industry protection	Very strong	Very strong	Very strong	none
Export promotion	Strong	Very strong	Very strong	Strong, but mostly indirect
SOEs in manufacturing	Not used	Used in some critical industries	SOEs ran most key upstream industries	SOEs ran some key capital-intensive industries
Large private-sector firms	Strongly promoted (especially enterprise groups)	Strongly promoted (especially enterprise groups)	Discouraged (most large firms were SOEs)	Not promoted (large firms were either SOEs or TNCs)
SMEs	Promoted by encouraging large firms to upgrade their subcontractors	Weakly promoted (some SME-specific funds)	Promoted through strong public investment in R&D and infrastructure	Weakly promoted (some SME-specific funds)
Private-sector corporate restructuring	Some involvement	Very deep Involvement	Deep Involvement	Some Involvement
TNCs	Strongly discouraged	Strongly discouraged outside selected sectors	Discouraged outside selected sectors	Strongly promoted, but in a targeted manner
R&D	Private-sector-led	Private-sector-led	Government-led	Government-led
Policy implementation				
Centralisation in policy making	Strong	Very strong	Very strong	Strong
Government-private sector relationship	Two-way cooperation, systematic	Top-down direction, less systematic than in Japan	Mixture of antagonism, benign neglect, and central control	Local private sector unimportant
Role of private-sector associations	Very important	Important, but controlled by the government	Important, but controlled by the government	Local private sector unimportant

Source: Chang (2006)

2.6.2 Why Africa Did Not Experience Manufacturing-led Structural Transformation

African countries have not experienced the kind of structural transformation seen in East Asian countries, where industrialisation was crucial in raising productivity and living standards. For many African countries, labour and economic resources moved from agriculture to services, while the industrial sector did not record significant improvements over time. The previous section explored the conditions under which industrial policies can succeed. Key issues such as the role of the state, strategic choices around the sequencing of the sectors promoted, size failure, productive hierarchies in global value chains and demand conditions were examined in relation to the experiences of East Asian countries. Drawing on these insights, this section examines why Africa did not experience

manufacturing-led structural transformation. Is it a failure to promote productive and labour-absorbing sectors effectively, especially a failure of industrial and agricultural policy, or is it the result of a misguided structural transformation policy emphasising the wrong sectors or possibly a combination of the two?

To begin, the challenge was not that Africa did not implement industrial policies in the 1960s when many African countries gained independence. There were several industrial policies, plans and programmes developed within countries and at the continental level. Broadly, policies to support industrial development were implemented in three phases: state-led import substitution, structural adjustment programmes, and investment climate reforms (Newman et al., 2016). Following the independence of many African countries in the late 1950s and early 1960s, many African governments began to look inward as they embarked on their developmental journey. Newly formed African governments established state enterprises that engaged in the production and export of goods and services. Similarly, many African countries developed national development plans which emphasised industrialisation through government investments and import substitution policies. For instance, Nigeria's first National Development Plan (1962 – 1970) as well as its second (1970 – 74) emphasised increasing government investments in import-substituting industry. Similarly, Algeria's First 3-year Plan (1967-1969) focused on heavy public sector investments in manufacturing, agriculture and crude oil industries. In addition to nationalising privately owned enterprises, countries such as Ethiopia and Mozambique introduced policies designed to increase the role of public companies in economic activities and these companies were protected from competition through domestic regulations and control of imports (Newman et al., 2016). It is important to note, however, that while import substitution was a major tool through which industrialisation could be attained, African governments also promoted export diversification, particularly the export of industrial products (Mkandawire and Soludo, 1999). Several countries on the continent established national oil companies, and industrialisation was supported and financed by the commodity boom in the 1970s. Essentially, some initiatives attempted to boost the growth of the industrial sector across countries on the continent.

Even in the decades of the 2000s, there were renewed efforts at the country and continental level to grow the industrial sector. At a continental level, the formation of the New Partnership for Africa's Development (NEPAD) in 2001 as well as the African Productive Capacity Initiative (APCI) in 2004 signified the commitment of African governments to ensure industrial development on the continent. Although NEPAD focused primarily on improving agricultural production and infrastructure, it also had several manufacturing objectives, especially in promoting diversification of production and exports and developing the agro-industries, manufacturing, mining, mineral beneficiation and tourism (Marti & Ssenkubuge, 2009). Key operational initiatives include a focus on national and regional comparative advantages, mobilising active private sector participation, identification of priority sectors such as food processing, textiles and garments, automobile equipment, among others, and practical steps to attract investments into these sectors. In addition, the African Union adopted an Action Plan for the Accelerated Industrial Development of Africa driven to industrialise Africa. The Plan emphasised value addition and processing of Africa's agricultural and mineral resources.

At the country level, many African governments developed national industrial policies and some common themes toward industrialisation include promoting exports through the setting up of Special Economic Zones, targeting specific sectors, linking industry to national resources, engaging the private

sector and attracting foreign direct investments (Stiglitz et al., 2017). In South Africa, the National Industrial Policy Framework (NIPF) was developed in 2007 with four key objectives including facilitating diversification and promoting value-addition; ensuring movement towards a knowledge economy; promoting job creation through a labour-absorbing industrialisation path and promoting broad-based industrialisation path with emphasis on regional development (Zalk, 2014). Zalk noted that the implementation of industrial policy led to some improvements in key areas such as automotive and clothing and textiles, however, the economy still faced several challenges. In Ethiopia, the formulation of the Industrial Development Strategy in 2003 was instrumental in improving the state of the manufacturing sector and overall living standards in the country. Ethiopia's industrial strategy recognised the private sector as a key economic driver and also prioritised macroeconomic stability, financial access, dependable infrastructure, and skilled and effective human resources. While Uganda established a National Industrial Policy in 2008 that promoted the development of infrastructure, skills and entrepreneurship, Tanzania, in 2010, introduced an Integrated Industrial Development Strategy to improve the business climate and address constraints to industrial growth (Newman et al., 2016).

Africa's Industrial Policy Experience: What Went Wrong?

While progress was made in developing the industrial sector in several countries such as Ethiopia, South Africa and Morocco, the continent still has not experienced industrialisation on a large scale, as seen in East Asia, where manufacturing was the primary driver of structural transformation. Some key factors on why Africa did not experience this type of structural transformation are discussed below.

Decline in Production and Export Sophistication: The decline in the diversity and sophistication of production and exports was a key factor that contributed to the weak growth of the industrial sector on the continent. UNIDO (2019) found a U-shaped relationship between per capita income and production specialisation. In other words, they noted that as the income of countries increases, their production and export structures become more diversified. These countries tend to introduce new product lines and create new activities within key sectors. Unlike many Asian countries that upgraded their production to focus more on products that were beyond their comparative advantage, many African countries did not do so. For instance, Chang (2011) recounted how South Korea's transition to developing the Heavy-Chemical Industry (HCI) in the 1970s played a crucial role in improving the country's industrial structure and exports. However, across many African countries, their products were less sophisticated.

Newman et al. (2016) showed that Africa's production for several decades became less diverse and less sophisticated as the continent's output grew. Their findings pointed out that many African countries produced goods that were characteristic of countries at lower levels of income than theirs. Looking at the export baskets of a few countries reveals some insights. In Nigeria, for instance, crude oil accounted for 96% of total exports at the end of the 1970s (Okezie & Amir, 2018). Over 50 years later, crude oil accounted for 81% of total exports in 2023 (NBS, 2025a). In Ghana, cocoa and gold, which are major exports, contributed 76% to total exports in 1970 and 66.6% in 2023 (Boame, 1998 and Ghana Statistical Service, 2024). If the share of crude oil were included in Ghana's exports, the combined contribution of the three commodities would rise to 81% in 2023. The implication of this is that as global manufacturing demand evolved towards goods that are sophisticated following the

increasing use of technology, African countries did not keep up with the pace and, thus, were left behind.

Limited Export Growth: The discussion of ISI and EOI strategies becomes important in examining why Africa did not attain a significant change in its industrial structure. The problem with many African countries was not that import substitution was flawed, but that it was not complemented by a strong focus on export growth. The independence of many African countries in the late 1950s and 1960s ushered in a wave of nationalism. Many countries were inward-looking and pursued ambitious industrial policies in the form of ISI strategies (Whitfield, 2019). Import bans, high tariffs and other non-tariff barriers were implemented across several countries to protect domestic firms. However, implementing trade protectionist policies without growing exports rapidly to earn foreign exchange created balance of payments difficulties, which led to higher inflation and foreign exchange crises, as countries struggled to meet short-term payments and debt service obligations. Many African countries had a weak export capacity to sustain their industrial growth.

As Chang (2011) mentioned, rapid export growth was an important reason for the success of industrial policies in East Asia relative to Latin America. Comparing the export performance of SSA and East Asia & Pacific, the value of exports in both regions was US$11 billion and US$30.8 billion in 1967, respectively (WDI, 2025d). However, by the year 2000, exports value of East Asia & Pacific had reached US$2 trillion. Meanwhile, SSA's exports grew to US$119.5 billion. That of Latin America grew from US$17 billion in 1967 to US$477 billion in 2000. According to Greene (1992), virtually all SSA countries exported primary commodities. Greene noted that SSA's share of total developing country exports fell from 12.5% in 1970 to 5% in 1990, as exports in other regions grew faster. To borrow Chang's analogy, one can argue that weak export growth was a key reason why Sub-Saharan Africa did not experience success in its industrial policies relative to East Asia. Many SSA countries could not find an optimal balance of free trade, export promotion and infant industry protection policies across sectors and over time to improve industrial structure.

Greene (1992) highlighted key factors that limited export growth, including a heavy concentration of exports in primary commodities; foreign exchange shortages attributed to restrictive exchange practices, which limited access to intermediate goods and spare parts; macroeconomic difficulties which increased countries' debt burden and limited spending on infrastructure; poor investment in agriculture which resulted in low yields of major crops relative to other regions and the inability of SSA countries to penetrate new geographical markets due to limited competitiveness of domestic products. Unlike countries in East Asia, there was a slow introduction of new product varieties and production technologies in the agricultural sector, which led to lower production yields when compared with other regions. As Whitfield (2019) puts it, industrial policies were mostly inward-looking and focused on the creation of state-owned enterprises but did not adequately support the growth of private firms. In essence, African countries had a small domestic capitalist class with low capabilities.

Neoliberal Policies of Excessive Focus on Trade Liberalisation in the SAP Era: The role of the Structural Adjustment Programme (SAP) in shaping Africa's industrial trajectory cannot be overemphasised. Although manufacturing output increased in the immediate post-independence period, mainly driven by state-led and protectionist policies, declining commodity prices in the late

1970s triggered economic crises in many African countries and thus hindered industrial growth in the region (Signé, 2018). To respond to these challenges, African countries, supported by the World Bank and the International Monetary Fund (IMF), implemented the Structural Adjustment Programme (SAP) in the 1980s and 1990s. The SAP came with privatisation of state-owned enterprises, financial liberalisation and trade liberalisation, along with foreign aid. The main elements of SAPs were neoliberal features, including macroeconomic stabilisation policies, private sector and free market development, exchange rate devaluation, removal of subsidies, privatisation, liberalisation and reducing public support for social services (Heidhues & Obare, 2011). During the SAP era, the approach to industrialisation was by enacting policies aimed at fostering the competitiveness of local industries and boosting exports through trade openness and the price mechanism. The use of conventional industrial policies became minimal.

Mkandawire & Soludo (1999) argued that the SAPs failed to deliver the promised recovery and growth, and several important gaps and weaknesses of the programs were increasingly recognised. They asserted that industrial policies to transform industries and boost exports were largely absent, while liberalisation in Africa moved at a much faster pace than in Asia and was too fast to allow for orderly industrial restructuring. The policy conditionalities imposed on African countries were too focused on trade liberalisation and did not factor in the preconditions (market for inputs, access to finance, infrastructure, etc.) that were needed for liberalisation to work (Stiglitz, 2008). Heike (1994) found that even in countries such as Ghana and Senegal that experienced growth in the early stages of the SAPs, output and industrialisation declined afterwards, with rising unemployment and falling real wages. Similarly, as recounted by Newman et al. (2016), manufacturing output grew from 1985–90 in countries such as Ghana, Nigeria, and Tanzania, but the growth was short-lived as many manufacturing firms could not survive the pressure from imported goods and rising production costs arising from foreign exchange liberalisation.

Inadequate Infrastructure: Inadequate infrastructure has been a major challenge facing the continent since the 1960s. Africa has had significant gaps in road, port and power infrastructure (Signé, 2018). The continent lags behind other regions in the area of infrastructure quantity, affordability, and quality, according to the African Development Bank (AfDB) (2018). For example, the AfDB (2018) noted that in 2014, the share of Africa's population with access to electricity was estimated at 47%, much lower than the 97% recorded in Latin America and 89% in Asia. Within the continent, there are regional inequalities, as access to electricity stood at 98% in North Africa and 26% in East Africa. The AfDB (2018) notes further that the continent's estimated infrastructure needs amount to US$130 – 170 billion a year, with a huge financing gap of US$68 billion – $108 billion. Africa's fast-growing population and increasing economic activities, as well as urbanisation rates, were factors that raised the demand for infrastructure on the continent. These factors, coupled with public expenditure challenges, led to a growing mismatch between the demand and the supply of infrastructure in the region (Estache, 2006). Despite achieving a stellar economic growth performance in the 2000s, the pace of growth and capital accumulation was not sufficient to significantly close the infrastructure gap on the continent. Poor infrastructure limits the competitiveness of industries and affects overall growth, especially in an era of liberalised trade where locally produced goods compete with cheaper imports from countries outside the continent.

Low Integration into Global Value Chains (GVCs): While GVCs are important in driving structural transformation by enabling countries to specialise in high-value production stages and integrate into global markets, Africa's participation in GVCs remains low. Examining local firms in Ethiopia, Whitfield & Staritz (2020) highlighted a significant capabilities gap among these firms trying to enter the apparel GVCs. They noted that high capabilities were required to enter the lowest node of the apparel GVCs, but intense competition from Asian firms drove down prices, leaving firms with limited resources to invest in building export capabilities. Consequently, firms faced low profit margins and high learning costs, which created a learning trap where local firms either failed to remain in GVCs or refrained from entering GVCs. Although industrial policy attempted to address these constraints by providing worker training in sewing, building plug-and-play apparel industrial parks and improving transport logistics to the Djibouti port, local investors faced financial constraints and high production costs, which limited the success of these interventions. By mid-2018, only two apparel firms and one input supplier were in the process of starting production in the Hawassa industrial park (Whitfield & Staritz, 2020). Key factors such as the limited effort from local investors to build capabilities, low wages and poor working conditions, high cost of transportation, limited availability of local inputs, foreign exchange scarcity, and absence of skilled labour further weakened the productivity and competitiveness of domestic firms (Mitta, 2023 and Whitfield & Staritz, 2020). The failure to effectively integrate into GVCs and upgrade within them has limited the role of manufacturing as a driver of structural change in Africa. Unlike East Asia, where strategic GVC participation is instrumental in industrial upgrading, Africa's challenges of low capabilities, weak infrastructure, existing trade barriers and poor policy execution have limited the continent's participation in GVCs.

Limited Support to Small and Medium-sized Enterprises (SMEs): SMEs play a critical role in enabling structural transformation, particularly in low-income countries. They form the backbone of the African economy, representing more than 90% of businesses and employing more than 60% of workers, many of whom are women and youth (ITC, 2018). Despite their importance, the mortality rate of these businesses is very high. For instance, in Kenya, 80% of small businesses die within five years of operation (Kenya National Bureau of Statistics, 2016). According to the OECD (2020), 70% to 80% of small businesses in South Africa fail in the first year and only about half of the survivors last for the next five years. While large firms exhibit high productivity but limited contribution to employment, small firms absorb employment but do not experience productivity growth (Diao et al., 2020). One major factor that has limited the performance of small businesses is poor access to finance. According to Runde et al. (2021), only between a third and a fifth of SMEs in sub-Saharan Africa have a bank loan or line of credit. Women-led small businesses also face severe challenges in accessing finance due to laws and customs on land ownership rights, leaving them with fewer options to offer collateral for potential investments (Runde et al., 2021). Several other challenges, such as inadequate infrastructure, poor electricity supply, lack of certification programmes, poor technology adoption, weak supply chains, have limited the growth of small businesses in African countries as well as their ability to contribute to structural change in African countries.

The Role of the State in Africa's Industrialisation: The state played a central role in the industrialisation of East Asia. However, replicating this experience in Africa was considered impossible by many. The Berg report advanced arguments that industrial policy was either unnecessary or, where effective, merely supported market forces (World Bank, 1981). In Africa's case, it advanced the argument that African states were too weak and prone to capture by vested interests and suggested

that market forces alone, through trade liberalisation, fiscal austerity and privatisation, could drive development.

For Mkandawire (1999), this was a clear misdiagnosis of the situation, particularly in relation to the development state narrative in East Asia. Mkandawire argued that there were examples of African countries that expressed ideologies of the developmental state and produced high growth rates in the early years after independence. According to Mkandawire, part of the problem was the absence of a group of large domestic capitalists with sizeable capital, organisational resources and entrepreneurial skills. This meant that there was limited capacity among the indigenous business class to form alliances with the state, mobilise resources, acquire technology and drive development. Instead of growing the capacity of local firms, the state emphasised attracting foreign capital by granting generous concessions.

In addition, Mkandawire (1999) believed that efforts by the Bretton Woods Institutions to undermine the state's capacity and weaken the relationship between the state and the private sector were at the core of the problem. These efforts were driven by liberalisation policies that were implemented without consultation of the business class, cessation of development finance, high interest rates, and privatisation without special privileges to local firms and the International Financial Institutions' central role and interests in shaping public policies. Therefore, these policies stripped state structures needed to drive critical development reforms. Mkandawire concluded that for Africa to develop, policies must prioritise raising the capacity of national capitalists for capital accumulation rather than relying on foreign capital. Likewise, investment in education and training institutions is required to build state capacities, given the long-term developmental needs of countries on the continent.

Furthermore, political instability, including coups, conflicts and social unrest, has affected industrial growth and overall development of the continent. Because industrialisation requires long-term commitment, unstable political leadership and social conflicts raise uncertainties and limit long-term investments. A recent example is Ethiopia, which made industrial progress through state-led industrialisation reforms in the 2000s and 2010s. However, this progress was affected following the outbreak of civil conflict in 2020. This reflects how conflicts can limit industrial growth and slow down structural transformation efforts in a country.

Africa and East Asia have gone through different development paths, where the latter has made significant progress in terms of per capita income growth, poverty reduction and overall contribution to the global economy. For African countries, industrialisation has yet to occur in the way it did in East Asia. The challenge of structural transformation in Africa reflects a combination of policy failure and misguided choices. While many African countries implemented inward-looking industrial and agricultural policies, export-led growth was not aggressively pursued. Import substitution strategies were not complemented by product upgrading and export diversification. Many African countries were stuck, and are still stuck, with exporting primary commodities while countries in East Asia upgraded to sophisticated products and services. As such, African economies remain highly vulnerable to external shocks from volatile commodity prices. As Mkandawire (1999) puts it, the development strategies for resource-rich economies in Africa were that industrialisation would be attained by exporting minerals or other primary products and using the proceeds to diversify the export base. However, this strategy had implications for the stability, flexibility and social structures of African

economies (Mkandawire, 1999). If African countries had progressed to exporting refined petroleum products rather than crude oil or processed cocoa rather than raw cocoa beans, their economic fortunes would have improved significantly.

The economic crisis in the early 1980s and the Bretton Woods Institutions' Structural Adjustment Programmes (SAP) that followed weakened industrial capacities by focusing on trade liberalisation, without addressing critical infrastructure, limited access to finance and many other conditions needed for liberalisation to work (Stiglitz, 2008). Unlike in East Asia, where strategic state-led policies drove industrial upgrading and export growth, many African countries struggled to find a balance between trade liberalisation and protecting infant industries. As Mkandawire (1999) argued, myopic views of Bretton Woods Institutions of the state and rapid liberalisation policies without extensive consultations with the private sector undermined state structures and capacities to implement crucial reforms. This resulted in stalled industrialisation and partly enabled structural shifts from agriculture to low-productivity services.

African countries must learn from their past to avoid repeating mistakes. Continued reliance on primary commodity exports will not result in the desired change that the continent needs. Governments must make deliberate efforts to grow manufactured goods exports by implementing targeted support for domestic firms. This support can vary from incentivising product diversification away from the traditional comparative advantage-confirming industries to protecting infant industries, investing in infrastructure and streamlining trade procedures and processes to reduce trade costs. On GVCs participation, while GVCs are important, firms in Sub-Saharan Africa risk being locked into low-value GVC segments due to weak capabilities (Odijie, 2019). One major lesson for industrial policy in late industrialisers or countries in Africa is that industrial policy needs to enable access to foreign knowledge by establishing meaningful linkages with foreign and lead firms and also creating learning channels for local firms. In addition, broader issues of macroeconomic management, infrastructure and skills are crucial for the success of industrial policy in these countries.

2.7 How can the Right Type of Structural Transformation be Promoted in Africa Institutionally?

Many countries have returned to the use of industrial policy to support businesses in different sectors. In 2023 alone, for instance, there were over 2,500 industrial policy interventions globally, led by China, the United States and the European Union (Ilyina et al., 2024). Wade (2015) argued that in developing countries, the increased adoption of industrial policy has been driven by intense competition in manufactured goods production and exports by China and increased investment in green industries. Overall, Ilyina et al. (2024) account that industrial policy interventions in recent times have focused less on enhancing competitiveness but on the green transition and economic security. This section draws on the framework of Chang & Andreoni (2020) to examine how African countries can implement the right type of structural transformation institutionally. It concludes with a discussion of the linkage between technology and Industrial Policy in relation to Africa.

Chang and Andreoni's New Framework for Industrial Policy

Since the global financial crisis in 2008, many leading economies have increasingly adopted industrial policy after having neglected such a policy stance in the 1980s and 1990s (Chang & Andreoni, 2020).

In addition to advanced economies, middle-income countries, resource-dependent countries and several African countries have placed industrial policy at the centre of their efforts to address poverty and ensure economic diversification. A common problem, Chang & Andreoni argued, is that the debates and practice of industrial policy have often neglected aspects that are fundamental in ensuring the effectiveness of industrial policy. These aspects include commitments under uncertainty, learning in production, macroeconomic management (especially demand management) and conflict management.

On the first aspect, Chang & Andreoni (2020) stated that production requires irreversible commitments, which could be in the form of investment, skills and technology. Given that the world is more volatile and uncertain, once such commitments are made, it is difficult to make changes without incurring huge costs. Although firms can implement measures such as increasing market control through predatory pricing, forming cartels and increasing controls over their suppliers to reduce uncertainty, industrial policy will need to assume an important role in dousing such uncertainties. Key actions, such as infant industry protection, government guaranteeing demand for local firms and offering preferential treatment through procurement to firms, are crucial. While government actions may come at a cost – stifling competition and innovation – policymakers need to constantly review the situation and make adjustments to reduce such costs.

The second aspect has to do with learning in production. According to Chang & Andreoni (2020), industrial policy seeks to promote learning, which entails the development and accumulation of productive capacities. The development of these capabilities is crucial in raising productivity, employment and income. They observed that recent debates on industrial policy have separated learning from production, especially because the discourse on production has been disassociated from innovation. As such, government policies since the 2000s have failed to recognise that learning in production is the key ingredient in industrial success. These policies were implemented with the view that innovation can be generated from research and development and not from production. Industrial policy, therefore, must emphasise investment in "knowledge-generating activities that are more closely linked to production activities, such as worker training and publicly provided technological consulting services for small and medium-sized enterprises" (Chang & Andreoni, 2020; p 332).

On the third aspect of macroeconomic management, the core argument of both authors is that industrial policies have historically been supply-side focused. Demand management and macroeconomic policies such as interest rates, exchange rates and balance of payment management greatly influence industrial development. Therefore, it is important to align macroeconomic policies and industrial policies. This relation, according to the authors, has been less studied.

Finally, conflict management emphasises the role of the state in managing conflicts that arise during industrial development. Generally, government policies tend to create winners and losers, but this is more prominent for industrial policies because of their selective and targeted nature. Managing conflicts is therefore crucial in industrial policies and governments can adopt anticipatory actions, which may include a clear pronouncement of policy priorities and programmes through medium-long term development plans, which can reduce conflicts in industrial policies. In addition, a welfare state that implements social insurance programmes for workers can promote inclusion in the structural change process (Chang & Andreoni, 2020).

There are several learnings for African countries from Chang & Andreoni's framework that can guide the implementation of industrial policies to achieve effective structural transformation. **First,** on commitment under uncertainty, the governments of African countries must recognise that industrialisation requires long-term and irreversible commitments, and therefore, the role of governments is crucial in dousing uncertainties. To address this concern, African governments should provide infant industry protection through tariffs, subsidies and targeted incentives for domestic firms to improve their capacities. The African Continental Free Trade Area (AfCFTA) Agreement, which creates a single market on the continent, presents a unique opportunity for African governments to develop and implement strategic industrial policies that enhance the competitiveness of local industries within the AfCFTA framework. The provision of infrastructure, including ports, electricity and roads as well as streamlining border and port procedures, is crucial to improve production and reduce trade costs. Industry protections, when in place, must be monitored and the government must set performance-based criteria and regularly evaluate the impact of such support to avoid stifling competition and innovation in the long run. The government can also guarantee demand by supporting domestic firms through public procurement policies.

Second, investment in training programmes to improve the skills of workers is important in ensuring learning through production rather than relying solely on R&D or foreign technology transfer. African governments can promote public-private partnerships to offer technical assistance to small business owners and create research hubs that are aligned with local production activities. A good example is South Africa's Automotive Industry Development Centre (AIDC), which provides industry-specific skills training and production support to local suppliers, fostering learning through production. From 2008 to 2017, the AIDC facilitated the training of 248 individuals while partnering with institutions to drive growth and innovation in the sector (AIDC, 2018).

Third, African countries continue to face challenges in aligning industrial policy with broad macroeconomic objectives. The performance of key macroeconomic variables remains heavily linked to commodity prices. According to the World Bank (2013), Sub-Saharan Africa's resource sector, including petroleum, ores, base metals and gold, accounted for 75% of exports. This meant that many countries on the continent, particularly the resource-rich countries, are vulnerable to commodity price movements. Christensen (2016) pointed out that declining commodity prices affect every sector of the economy of African countries through different channels: macroeconomic, fiscal, exchange rate and bank lending transmission channels. Christensen noted further that the fall in commodity prices in 2014 triggered a decline in exports, outputs, investments and increased fiscal deficits, with widespread impacts on both the household and corporate sectors. Commodity reliance, therefore, creates a challenge of first, ensuring macroeconomic stability and second, ensuring alignment of industrial policy with macroeconomic objectives. For resource-rich economies in Africa, macroeconomic policies should aim to guarantee a competitive and stable exchange rate as well as insulate key aspects of the economy from external shocks. One way to do this is to create lower benchmark prices for key export commodities in national budgets to improve fiscal savings. In addition, interest rate policies need to ensure affordable credit to drive industrial development while managing inflation. While a competitive exchange rate is a subsidy for exports, it must be complemented by targeted support to firms in strategic sectors of the economy.

Fourth, industrial policies create winners and losers, making conflict management crucial for successful industrial policies. While conflicts are inevitable, policies need to be designed in an inclusive manner to minimise potential conflicts. Jensen and Whitfield (2022) highlighted the tense relationship between the managers of the Hawassa Industrial Park and the Hawassa municipal government authorities in Ethiopia. After the completion of the park, migrant workers relocated to the community. This led to a rise in informal settlements due to the high cost of amenities such as housing as well as low wages earned by workers. The municipal government was concerned about the rising informal settlements and the long-term impact on the community. This created tensions between the park's management and local authorities. As Jensen & Whitfield (2022) noted, solving the problem was challenging, especially because the municipal government did not recognise the long-term benefits of the park for the town. This highlights the importance of managing the interests of stakeholders and maintaining effective engagement with local authorities in ensuring the success of industrial policy.

Furthermore, communicating policy priorities and programmes through medium-to-long-term national development plans, sectoral or industrial plans can raise trust from stakeholders and minimise conflicts. In Nigeria, for instance, the Backward Integration Policy in the 2000s was a key policy document that provided a clear plan for the country to increase cement production and attain self-sufficiency. The policy required companies to invest in cement production, offering tax incentives and tariff protection. The cement industry's success under the BIP is often cited as one of the most successful examples of industrial policy in Nigeria. Similarly, Ethiopia's Growth and Transformation Plan I & II and the Industrial Development Strategy in 2003 were instrumental in improving the state of the manufacturing sector and overall living standards in the country. As a result, industrial productivity grew significantly over the years while output growth averaged more than 10% from 2002-2010 (Stiglitz et al., 2017).

While long-term plans are necessary for African countries, the state's commitment to implementing the policies and provisions of the plan, regardless of a change in political administration, is crucial. Oshikoya et al. (2019) reviewed the development planning experiences of Nigeria and Indonesia and highlighted some lessons for developing countries. They noted that countries need to institutionalise the process of development planning, and where possible, enshrine the planning process within the law. A major consideration must be given to the country's political structure and interests, as these are important in ensuring continuity and increasing the likelihood of success. Plans must be linked to annual budgets, ensure balanced regional development and an active monitoring and evaluation process. Recognising that what works in East Asia may not work in Africa, policymakers must be flexible and adopt an experimental approach to industrial policies. Constant learning, monitoring and evaluation of policies are required to avoid past mistakes and adapt to changing domestic and global conditions. In addition, government ministries, departments and agencies that are responsible for industrialisation must be given the political power and resources to make and implement industrial policies and programmes. They must be equipped with the best minds and expertise to design, implement and adjust policies effectively. In some countries, the Presidency may play a central role in coordinating industrial policy due to its strategic position and ability to link agencies. This can ensure policy coherence, resolve inter-ministerial conflicts and align industrial policies with broader national development objectives.

The provision of welfare programmes such as social safety nets and skills training is important in cushioning vulnerable groups and preventing potential disruptions that could arise in implementing industrial policy. This becomes important for African countries, given that the majority of citizens live below the poverty line. Although the poverty rate in Africa fell from 56% in 1990 to 40% in 2018, the number of Africans estimated to live in extreme poverty increased to 433 million in 2018 from 284 million in 1990 (Schoch and Lakner, 2020). Poverty in the region remains very high and was made worse by COVID-19. According to the World Bank (2021a), vulnerable groups, such as the poor, informal sector workers, women, and youth, suffered disproportionately from reduced opportunities and unequal access to social safety nets. The Bank estimated that about 40 million people could fall into extreme poverty as a result of the pandemic. These statistics highlight that governments, when implementing industrial policy, must take into consideration the needs of local communities and prioritise inclusion, which is necessary for minimising conflicts.

Technology, Manufacturing and Industrial Policy

Technology remains fundamental in influencing productivity and the movement of labour across sectors. In examining how technology is shaping manufacturing, Walter et al. (2024) noted that recent technological breakthroughs are triggering a fourth industrial revolution (4IR) which covers technologies such as artificial intelligence (AI), 3D printing and modelling, big data, cloud computing, the internet of things (IoT) among others. They noted that manufacturing firms are increasingly adopting 4IR as installed industrial robots grew from 0.5 million in 2000 to 3 million by 2020. The adoption of AI in manufacturing is rising rapidly, which is expected to disrupt activities in the sector. According to the authors, these technologies could have displacement and reinstatement effects. While displacement effects imply that automation will replace workers in the sector, reinstatement effects mean that automation raises productivity and creates demand for new labour for non-automated tasks. Several studies, such as Dauth et al. (2021), Acemoglu & Restrepo (2020) and Graetz & Guy (2018), examined the effect of automation on jobs across countries. For instance, Dauth et al. (2021) found that the adoption of industrial robots in Germany is associated with the displacement of workers, but newer high-quality jobs are created in services. Younger workers were affected by this automation, while newer tasks require skill upgrading for these young workers and labour market entrants.

In the United States, Acemoglu & Restrepo (2020) found that the adoption of an industrial robot per thousand workers leads to a decline in local employment-to-population ratio by 0.39 percentage points and wages by about 0.77% - although the aggregate effects are smaller owing to the benefits associated with robot adoption via trade linkages. By industry, while changes in employment were negative in manufacturing, sectors, such as finance, agriculture, education and health showed positive employment effects. The results also show negative employment effects for individuals in routine manual occupations such as machinists, assemblers, material handlers, and welders. Similarly, the result showed negative wage and employment effects for workers with education levels such as high school, high school degree, some college, and college or professional degree. Finally, Graetz & Guy (2018) used panel data for 17 countries from 1993 to 2007 and found that increased adoption of robots raised annual productivity growth. In addition, robot adoption did not result in a significant reduction in total employment, but it reduced the share of low-skilled workers in total employment. On the African continent, the adoption of advanced technologies amongst manufacturing firms remains low. According to UNIDO (2021), only 12.2% of manufacturing firms in Africa are adopting

Advanced Digital Production (ADP) technologies. Manufacturing firms on the continent face several challenges in adopting 4IR technologies. These challenges include the limited availability of such technology, the absence of skills in the local market to operate new technologies, limited access to finance due to the large cost involved in obtaining new technologies and the time, cost and difficulty in setting up new technologies (Walter et al. 2024).

These findings have several implications for industrial policy across countries, particularly those on the African continent. The fact remains that technology is here to stay and will continue to have an impact on all aspects of life as well as on all sectors of the economy. The impact of technology on sectors will vary. While most technologies are expected to enhance productivity, it is important to note that not all technology replaces labour, and there are still opportunities for the development of labour-intensive industries within the manufacturing sector. Factors that limit the adoption of better technology (cost, access, skills, etc) may also enable the use of labour in the production process in many African countries. Industrial policies will need to provide support for labour-intensive industries such as textiles, food and beverages, leather, wood and furniture, which, in the short term, may continue to offer advantages of cheaper labour with limited opportunities for automation. Similarly, small manufacturing firms that service local markets may be slow to adopt automation and will remain relevant for job creation. This is explored further in Chapter 6 of this study, where the nature of subsistence manufacturing firms is discussed.

Ultimately and in the long term, governments and companies in African countries must realise that whether or not better technology is adopted by firms on the continent, the impact will be felt through the importation of mass-produced goods from outside the continent. African companies may also miss out on the productivity gains that come from technology adoption. Therefore, deliberate efforts are required to build an industrial base that embraces advanced technologies. Governments must remove bottlenecks inhibiting access to better technology by firms, in addition to providing incentives for firms to adopt technology in the production process. Such incentives can include tax reliefs, access to affordable finance and training and skills development in the areas of technology. This, however, should not be limited to manufacturing but extended to the services sector. A supportive technology ecosystem that fosters innovation, collaboration between industry and research institutions, and access to cutting-edge infrastructure is essential for enhancing productivity and competitiveness in the economy.

2.8 Elements of an Effective Structural Transformation Within the African Context

Structural transformation remains a critical component of economic development. According to Timmer & Akkus (2008), it involves four main features which include a falling share of agriculture in economic output and employment; an increase in the share of urban economic activities in industry and modern services; the migration of rural workers to urban settings and a demographic transition in birth and death rates. The core argument of structural transformation, according to structuralists such as Lewis, Kaldor and Kuznets, is the development of modern and high-productivity sectors, which in the process raises income levels, employment and in turn, overall living standards. As noted by Lin et al. (2012), no country has developed without industrialising, except for a few oil-exporting countries. They noted that a change in GDP per capita is strongly correlated with growth in the value-added of the manufacturing sector.

Within the ambit of structural transformation, it is not just a growth in manufacturing value-added that is needed. The growth has to be high and consistent to the point where it results in a structural change, and it must be accompanied by a shift in labour towards manufacturing, which raises productivity level. This is what many African countries have lacked in the last few decades. Although several African countries have experienced a shift in the economic and labour structure, this shift, as Rodrik (2015) shows, is towards low-productivity services and it occurred at the expense of the manufacturing sector. In essence, for many African countries, structural transformation has gone the wrong way; and has been growth-reducing (Rodrik, 2015). The puzzle of how to significantly reduce poverty and unemployment in Africa largely depends on the need for the right structural transformation that can spur productivity and income for the majority of citizens (McMillan et al., 2014). Based on the review of the literature, this study discusses three elements of successful structural transformation within the African context.

First, is the rapid and consistent expansion of the productive sectors of the economy, such as manufacturing and tradable services. As pointed out by Kaldor (1966), the manufacturing sector exhibits increasing returns and is associated with faster economic growth. The features of the sector, which include a strong forward-backward linkage with a huge scope for technology transfer, faster productivity growth, investment accumulation and knowledge spillover, make it crucial for economic growth and inclusion. Higher capability in manufacturing is an important factor distinguishing rich countries from poor countries (Chang, 2007). Africa's manufacturing sector holds great potential and could drive the much-needed structural change in the economy. Authors such as Ghani & O'Connell (2014) have emphasised the importance of the services sector for African economies, arguing that growth escalators of African countries may not follow the same trend experienced in Asia. They pointed out that with the rapid globalisation of services, African countries can explore alternative opportunities to find niches beyond manufacturing. They argued further that African countries can specialise and scale up, similar to the experience of the East Asian countries. It is important to note, however, that the current state of African countries, where the services sector has increasingly become important relative to manufacturing, has not yielded a reduction in poverty and unemployment. For Lin (2011), developing economies with low skills and labour-intensive industries still produce sizeable opportunities for growth in manufacturing, especially given the transition of large middle-income countries such as China or Indonesia, which is freeing up substantial quantities of industrial employment. Industrialisation, therefore, remains important for Africa and its potential is virtually unlimited, especially in an increasingly globalised world (Monga, 2017).

With the African Continental Free Trade Area (AfCFTA) Agreement, which involves the creation of a single market on the continent, the majority of goods produced on the continent will be exempt from tariffs. This, along with rising demand for consumer goods, the rise of special economic zones, and improvements in transport and infrastructure, presents an opportunity for industrial development in Africa. Signé (2018) notes that given the AfCFTA's market size of 1.2 billion people and over US$3.4 trillion of cumulative GDP, a successful implementation could spur manufacturing sector growth on the continent. The fact that growth has been driven by commodity booms and external transfers, questions its sustainability. But with these new opportunities, there is a strong potential for growth to be driven by the manufacturing sector, thus, improving its quality and sustainability. Effective structural transformation will therefore require smart industrial policies aimed at increasing the productivity of both small- and large-scale manufacturing, considering its crucial linkage with other

sectors and the rest of the economy. Within manufacturing, government policies must encourage industries in which a country can build competitive advantages, and attract private capital to harness such industries.

Second, raising agricultural productivity is important in the process of structural transformation. In the context of African economies where agriculture still accounts for the highest share of labour and is still a major source of livelihood for farmers and rural dwellers, successful and inclusive structural transformation will imply that the sector becomes even more important, although its share in output should decline. This is because improving agriculture raises productivity in the rural economy, creates jobs, and food and raises the income levels of farmers (Timmer & Akkus, 2008), the majority of whom still live below the poverty line in many countries on the continent. In addition, the role of agriculture in providing input for the manufacturing sector is central to the transformation of economies. As pointed out by Lewis (1954), it is agriculture that finances industrialisation. Lewis (1965) noted further that agriculture will have to be seen as important before any progress on development can be achieved. Within the argument of successful structural transformation therefore, not only should agriculture provide adequate labour to the industrial sector, but the sector should also experience high level of productivity to support the supply of inputs to the industrial sector and raise income levels of farmers. The centrality of agriculture in addressing income inequality and productivity gaps between rural and urban areas requires significant attention in the structural transformation process of African countries.

Closely linked to agriculture is the need for aggressive rural development. Urbanisation is an integral aspect of structural transformation and was regarded by Kuznets (1966) as a feature of modern economic growth. But in many African countries, including Nigeria, urbanisation has not been associated with structural transformation. Rather, as described by Gollin et al. (2016), urbanisation for oil-exporting countries like Nigeria involves “consumption cities”, where the majority of workers are engaged in the non-tradable sectors as opposed to production cities for non-resource-dependent countries. For African economies which are at the early stages of development, rural-urban migration has become a major challenge. This is particularly pertinent, given the limited number of available jobs in urban areas, rising living costs and pressure on urban infrastructure. Lewis (1965) argued that the expansion of fewer cities is compounded by first, errors of policy of industrial location and second, the concentration of development expenditures in a few large towns, thus making them more attractive than rural areas. The implication of this is that rapid urbanisation creates pressures on infrastructure, raises the cost of living and widens income inequality and other forms of inequality, whether in education, health care, infrastructure, etc. This trend is still being witnessed in many African countries and has, in addition to limited opportunities, created a large number of urban poor individuals who are often left out of the growth process.

While structural transformation requires rural-urban migration and the development of the modern sectors in urban areas, the development of rural areas through the provision of infrastructure, transportation, internet connectivity, schools, electricity, water supply and recreational parks is equally important. The ageing nature of farmers in rural areas across many African countries limits their mobility to urban areas and this also lends credence to large-scale rural development. In addition to raising overall rural productivity, developing rural economies will also be beneficial to skilled workers, particularly those who can work remotely and are looking to live in rural settings. Ensuring

the poor and low-income earners are connected to structural transformation and to the policy initiatives that seek to address the distributional outcomes of rapid transformation is key to social and economic inclusion (Timmer & Akkus, 2008). Just as the structural transformation towards manufacturing should not mean the neglect of the agricultural sector, urbanisation, also, should not occur at the detriment of rural development.

Third, inclusive structural transformation requires that individuals be provided with opportunities for skills accumulation. This is important for African countries that have significant challenges of unemployment and poverty. Rodrik (2013) notes that technological changes are rendering manufacturing more capital and skill-intensive, and this will create new challenges for developing countries. Authors like Lanz & Maurer (2015) have argued that manufacturing is undergoing a process of servicification where it is increasingly becoming difficult to differentiate between manufacturing and services. For example, car production requires a range of services from software design to marketing, all of which can be provided by the manufacturer. The implication of this trend, therefore, is that workers in the manufacturing sector will need to improve their skills to stay competitive and enhance productivity. Similarly, the tradable services sector, which requires skilled workers have played an important role in economic growth in several African countries like Nigeria. In addition, the prospects of tradable services are huge on the continent, considering the global digital acceleration facilitated by COVID-19.

Given these factors, investment in human capital becomes a key element of effective structural transformation in African countries. The significant annual increase in labour force entrants across African countries, especially tertiary education graduates, suggests the availability of labour that can be trained and imparted with skills. A large pool of these graduates can benefit from the growth of both manufacturing and tradable services through the acquisition of skills suitable for these sectors. Specifically for tradable services, the rise of innovation and start-ups in countries like South Africa, Kenya, Ghana, and Nigeria is a clear sign that African companies are carving a niche in the technology space across the continent and this will require massive human capital investment to sustain this growth. India, for instance, benefited from the sizeable population of skilled workers, allowing it to sustain job creation in tradable services (Dobermann & Caselli, 2018).

In conclusion, many African countries have experienced a reorganisation of their economic structures in the last two decades. Labour, capital and other resources have moved towards the services sector, which now accounts for over 50% of the real GDP of many African countries. ILO (2020) pointed out that the manufacturing sector, which was instrumental in the Asian countries' catching up with advanced economies, has not attracted much of the required capital and labour in Africa, over time. The increase in the number of people living below the poverty line, coupled with rising unemployment, raises several concerns about whether this reorganisation that African economies have witnessed has gone the right way. Rodrik (2015) raised this concern, adding that structural change in Africa has not been growth-enhancing.

Drawing from the peculiarities of African countries and also from the experiences of East Asian countries, structural transformation has great potential for Africa. The continent has a vibrant and large young population, which could form an integral resource for manufacturing, as portrayed by Arthur Lewis (1954). Secondly, the recently signed African Continental Free Trade Area (AfCFTA)

Agreement offers tremendous opportunities and incentives for the production of locally manufactured goods, a majority of which will be exempted from tariffs. In addition, Africa has a large agricultural sector, relative to the size of the economy. The sector could serve as a source of input for the industrial sector. Lastly, growth in China has been slowing in recent decades, and this presents a huge opportunity for many African countries to meet global demand, provided the right policies and incentives are implemented to support the manufacturing sector. Lin (2011) and Monga (2017) concluded that developing economies with low skills and labour-intensive industries still produce sizeable opportunities for growth in manufacturing, and industrialisation, which are important for Africa and their potential is virtually unlimited, especially in an increasingly globalised world. Whether African countries can achieve structural transformation will rely heavily on how governments can leverage these advantages, formulate and implement policies that can attract and retain significant investment in manufacturing and other high productive sectors. This should form the core of development strategies on the continent.

Structural transformation has to be inclusive for it to have a meaningful impact on economic and social inclusion. By inclusive structural transformation, this study emphasises not only the movement of labour towards high-productivity sectors but also highlights the elements and nature of the transformation process. This section highlighted three elements of a successful structural transformation in African countries, based on a comprehensive review of the literature. They include the rapid expansion of the productive sectors of the economy, particularly manufacturing and tradable services; the increase in agricultural productivity and the provision of opportunities for skills accumulation for Africans. The challenges of poverty and unemployment are huge on the continent. As argued by McMillan et al. (2014), resolving these development problems will require the right structural transformation that can improve productivity and income for the majority of Africans.

CHAPTER THREE: A REVIEW OF NIGERIA'S EXPERIENCE OF STRUCTURAL TRANSFORMATION

3.1 Introduction

Nigeria is Africa's most populous country. With a nominal GDP of US$362.8 billion in 2023 (World Bank, 2024), Nigeria has one of the largest economies on the continent. Despite being one of Africa's largest economies, Nigeria is classified as a lower-middle-income country, with a nominal per capita income of US$1,621.1. The country's poverty rate remains high at 63.5% in 2023 and life expectancy at birth is just 52.7 years (World Bank, 2024). While these statistics indicate that Nigeria has yet to achieve significant improvements in living standards, they also highlight the vast potential for structural transformation and substantial economic growth and development.

Since Nigeria transitioned to a democratic dispensation in 1999, economic growth has been driven by the services sector with intermittent contributions from crude oil during commodity booms. This transition was accompanied by the privatisation and deregulation of sectors such as power, telecommunications and downstream petroleum (Okonjo-Iweala and Osafo-Kwaako, 2007). During this period, Nigeria experienced a shift in output and employment from agriculture to services while manufacturing grew marginally. In terms of employment, the share of services employment increased from 18% in 2000 to 44% in 2018, while that of manufacturing grew marginally from 5% to 7% during the same period[10].

Clearly, Nigeria has not undergone the kind of structural change seen in the East Asian countries, where manufacturing played a crucial role in creating jobs and driving economic expansion. The limited growth of Nigeria's manufacturing sector may be the missing link in the pursuit of sustained economic development. Although the services sector has seen exponential growth in terms of both output and employment, much of this expansion has been driven by non-tradable services, particularly trade, which tends to have lower productivity than tradable services. Non-tradable services accounted for 35% of total employment in 2018, while tradable services made up just 9%[11]. Understanding the productivity levels within different segments of the services sector is crucial for assessing productivity growth and employment dynamics in Nigeria. This breakdown helps clarify the specific contributions of various components of the services sector to key economic indicators, such as income growth, productivity growth and employment.

This chapter provides deeper insights into sectoral output and the movement of labour across sectors in Nigeria. It offers a historical review of sectoral shares of output and labour using data and relevant literature and explores opportunities for inclusive structural transformation in Nigeria. The chapter begins with a historical analysis of economic growth in Nigeria and reviews Nigeria's experience (or the lack of) of structural transformation since the 1990s. The next section examines productivity growth, its drivers, the productivity dynamics of major sectors in Nigeria and the role of these sectors in the country's development process. The chapter proceeds with an analysis on whether the rise of tradable services in Nigeria can be viewed as a success story of service-led structural change. The

[10] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[11] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

chapter continues with the case for effective structural transformation in Nigeria and concludes with a conceptual framework of the study.

3.2 Economic Growth in Nigeria: A Historical Analysis

Since gaining independence in 1960, Nigeria has experienced periods of recession, slow growth, and high GDP growth. In the early years after independence, there was widespread optimism among national leaders and citizens, leading to a strong nationalist movement. Development strategies during this time were inward-looking, centered on import-substitution industrialisation in the 1960s, which continued into the 1970s (Fourchard, 2003). Between 1960 and 1966, economic growth was primarily driven by the agricultural sector, which was the backbone of the economy, contributing an average of 59% to real GDP. Agriculture provided food and jobs for the population, intermediate inputs for the emerging industrial sector, and accounted for a significant portion of government revenue and foreign exchange earnings (Chete et al., 2014). The country's three main regions thrived: the West produced coffee, timber, and cocoa; the North focused on groundnuts, hides, and skins; and the East specialised in oil palm production.

The outbreak of the Nigerian Civil War from 1967 to 1970 was a catastrophic event that had severe consequences on the economy. The war resulted in food shortages, destruction of public infrastructure and limited attention to industrial development. Consequently, the decade of the 1970s focused on reconstruction and rehabilitation of damaged infrastructure, resettlement of displaced citizens, welfare improvement and agricultural development. Increased exploration of crude oil in the 1970s raised government revenues and increased the government's role in the economy in key areas such as physical infrastructure, education, healthcare and industrial development. Public firms during this period engaged in the production of goods and services. According to data from the Central Bank of Nigeria (CBN) (2021), the oil sector's contribution to real GDP which averaged 2% in 1960 – 1966 rose to over 20% in the 1970s, making the sector a major growth driver. As at 1980, the oil sector became the largest sector in the economy, valued at ₦14 billion, higher than agriculture (₦10 billion) and manufacturing (₦5.16 billion) using GDP at current prices (CBN, 2021).

The increasing dominance of crude oil led to a decline in the competitiveness of agriculture. Several authors have referred to this as the Dutch Disease phenomenon (see Fardmanesh, 1991; Olusi & Olagunju, 2005). At the end of the 1970s, the oil sector accounted for about 30% of real GDP and oil export was US$25 billion, representing 96% of total exports (Okezie & Amir, 2018). Despite the increased significance of oil revenues, fiscal deficit expanded further following the dramatic increase in public spending, which rose from 13% of real GDP during 1970-1973 to 25% in 1974-1980 (Okezie & Amir, 2018). As pointed out by Ajakaiye (1996), public investment soared and was often inappropriate with huge recurrent cost implications. Similarly, Ross (2003) pointed out that the ability of the Nigerian government to efficiently utilise public funds wisely and limit corruption was low, resulting in economic hardship and poverty for many citizens.

Following the decline in crude oil prices in the early 1980s, Nigeria experienced an economic recession that persisted from 1982 to 1984. Annual real GDP declined consecutively by 6.8%, 10.9% and 1.1% in 1982, 1983 and 1984, respectively, with sectors like manufacturing, crude oil and construction leading

the decline[12]. Oyejide and Raheem (1993) recounted the significant decline in income and wages that accompanied the recession. For instance, between 1980 and 1984, the index of real urban wages fell by 50% while rural households suffered a real income decline of over 20%. In addition, lower government revenues meant that several government projects were abandoned, while budget deficit soared to ₦6.2 billion in 1982 from a surplus of ₦1.5 billion in 1979 (Owosekun, 1985). Furthermore, Owosekun noted that the balance of payment deficits rose to ₦1.4 billion in 1982 as external assets declined by 54.2 % and 58.3% in 1981 and 1982 respectively.

The tougher economic situation in the country led the government to adopt several programmes in the 1980s to restore stability in the economy. First, was the Economic Stabilization Act (ESA) of 1982 and the Structural Adjustment Programme in 1986. The Stabilization Act was enacted with the goal of addressing the deteriorating balance of payment position and ensuring a recovery of the economy. The Act emphasised three main policy measures: exchange rate control, fiscal policy control and monetary policy control (Owosekun, 1985). The Act increased the number of goods in the import prohibition lists, increased tariffs to discourage imports of some goods, raised interest rates and reduced travel allowances to conserve foreign exchange. Despite these interventions, several public institutions had salary arrears, raw material shortages persisted and many manufacturing firms sacked their workers. These were in addition to the risks that Nigeria would default on its external debt repayments which were mounting rapidly (Owosekun, 1985). Challenges associated with corruption, lack of effective policies, institutional weaknesses to implement the much-needed reforms and political instability arising from military coups were factors that impeded the recovery of the economy.

The Structural Adjustment Programme (SAP), on the other hand, was externally induced and supported by the World Bank and IMF. The SAP was implemented to restructure and diversify the Nigerian economy to specifically reduce dependence on the crude oil sector and imports; to achieve fiscal and balance of payment viability; to lay the basis for sustainable non-inflationary growth and to reduce the dominance of unproductive investment in the public sector, improve the sector's efficiency and enhance the growth potential of the private sector. According to Heidhues & Obare (2011), key elements of the Programme were neoliberal features, including macroeconomic stabilisation policies, private sector and free market development, exchange rate devaluation, removal of subsidies, privatisation, liberalisation and reducing public support for social services. More specifically for Nigeria, the Programme called for the adoption of measures to stimulate domestic production and broaden the supply base of the economy; the adoption of a realistic exchange rate policy through the establishment of a Second-tier Foreign Exchange Market (SFEM); the rationalisation and restructuring of the tariff regime to aid the promotion of industrial diversification and the rationalisation, commercialisation and privatisation of public sector enterprises (Anyanwu, 1992).

During the implementation of SAP, Nigeria's economic and social performance was mixed across different variables and across time. Data from the CBN (2021) showed that real GDP grew by an average of 6.1% in 1987 – 1990, the early years of the Programme. There was a strong recovery of crude oil, manufacturing, construction and trade, while agricultural output experienced slower growth relative to the pre-SAP period. Local sourcing of intermediate inputs as a result of high cost of imports fuelled the growth of key sectors, particularly the industrial sector. However, this growth was short-

[12] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

lived as there was a reversal, particularly in the early 1990s. Real GDP growth fell to 0.2% in 1991 – 1995 with the crude oil and manufacturing sectors recording negative growth during the period (see Table 5). Erumebor (2010) noted that with the SAP, Nigeria's imports increased significantly by 203.8% from 1990 – 1994 even as import costs rose due to a devaluation of the currency via the introduction of the SFEM. Erumebor further observed that the overdependence on imports of intermediate inputs, following the inability of local firms to meet the increasing demands of industry coupled with the high influx of finished goods into the economy led to the demise of many local firms that could not compete favourably with foreign goods. On inflation, Anyanwu (1992) noted that many of the measures under the Programme resulted in chronic inflation. These measures included external debt management strategies, the introduction of SFEM, the removal of subsidies on petroleum products and fertiliser, privatisation and commercialisation, trade liberalisation, and interest rate deregulation. Anyanwu further argued that a fall in the value of the local currency and the dependence of local industries on imported inputs were largely responsible for the rising prices of goods and services in the economy which eroded incomes of citizens. In the late 1990s, Nigeria experienced improved economic expansion following the return to democracy in 1999 as well as the optimism and confidence that came along with the political transition.

Table 5: Real Output Growth Rate of Major Sectors and overall GDP Growth (%)

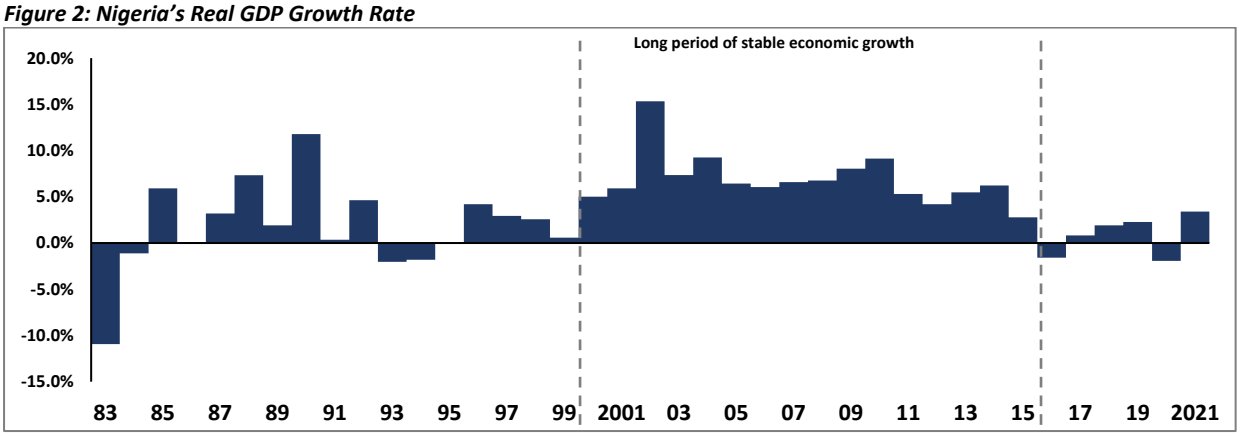
	1982 - 1986	1987 - 1990	1991 - 1995	1996 - 2000
Agriculture	5.1	3.9	2.8	4.0
Crude Oil	-0.2	9.6	-1.3	2.9
Manufacturing	-11.0	6.0	-4.6	0.6
Construction	-16.4	7.2	3.7	4.3
Trade	0.3	5.6	1.9	1.9
Real GDP Growth	**-2.6**	**6.1**	**0.2**	**3.1**

Data Source: Created by the Author using data from National Bureau of Statistics

The 2000s were characterised by rapid economic growth with the expansion of economic activities across major sectors. The decade represents a period of more stable economic growth in Nigeria's history. From 2000 – 2014, real GDP growth averaged 7.1%, achieving a peak of 15.3% in 2002 and the lowest rate of 4.2% in 2012, according to data from the Central Bank of Nigeria (2021). The transition to a democratic government in 1999 ushered in a wave of reforms aimed at transforming the country's economy to become private sector-led and competitive. Okonjo-Iweala & Osafo-Kwaako (2007) grouped these reforms into macroeconomic, structural and institutional & and governance reforms. The goal of the macroeconomic reforms was to ensure stability of the Nigerian economy, improve budgetary planning and execution and ensure sustained economic diversification and non-oil growth. One measure to achieve these goals was through the creation of the Excess Crude Account (ECA) in 2003. Unlike previous periods where economic growth was linked with fluctuations in crude oil prices, thereby creating an unstable growth pattern, the creation of the ECA brought some stability in output growth and government finances. With this approach, the government created a crude oil benchmark price used for budgeting and the excess revenues are paid into the ECA. Leke et al. (2014) noted that the implementation of the ECA resulted in less volatility in government spending and GDP, limiting the transmission of external shocks to the rest of the economy. As a result, gross excess crude savings rose from US$6.35 billion in 2004 to US$17.68 billion in 2005 (Okonjo-Iweala & Osafo-Kwaako, 2007). From 2003 to 2006, external reserves grew by more than fivefold, from US$7.5 billion at the end of 2003 to

about US$38 billion in July 2006 (Okonjo-Iweala & Osafo-Kwaako, 2007). In addition to the creation of the ECA, several macroeconomic policy measures such as the adoption of the Wholesale Dutch Auction System, negotiation of a debt relief of US$16 billion in 2005, development of Medium-Term Expenditure Frameworks (MTEF), among others, enabled stability in the foreign exchange market and created a fiscal space needed to support growth.

Figure 2: Nigeria's Real GDP Growth Rate



Data Source: Created by the Author using data from Central Bank of Nigeria

Structural reforms were also important in facilitating economic growth in Nigeria in the 2000s. At the core of this were privatisation, liberalisation and commercialisation policies which opened up key sectors to private investments. According to Okonjo-Iweala & Osafo-Kwaako (2007), about 116 enterprises were privatised between 1999 and 2006. These included government enterprises that were inefficiently run, in sectors such as power, telecommunications, transport, petrochemical, insurance, and hotels. Key to these reforms is the liberalisation of the telecommunications sector, which improved mobile connectivity and led to the inflow of significant investments from large global telecommunication brands such as MTN, Airtel, among others. The sector emerged as one of the fastest-growing sectors in Nigeria and attracted over US$68 billion worth of private investments from 2001 to 2019 with 195.5 million active lines in 2021 from 500,000 landlines in 2001 (NCC, 2022 and FMoCDE, 2020). In addition to structural reforms, the government also embarked on governance reforms, such as a review of the procurement system to allow for more efficient public spending and prosecuting corrupt officials to improve the quality of public institutions.

It is important to note that the non-oil sector played a significant role in driving economic growth in the 2000s. For instance, in 2007, the non-oil sector's growth of 9.6% was higher than the overall real GDP growth of 6.2% (Ajakaiye & Fakiyesi, 2009). While this was a good feature of the economy, consistent increase in crude oil price in the 2000s and early 2010s provided a large fiscal space for public finances and supported the accretion of both external reserves and excess crude oil account. But with the global financial crisis, which resulted in a fall of crude oil price to about US$50 per barrel in January 2009 from US$147 per barrel as at July 2008, according to data from the Organization of the Petroleum Exporting Countries (OPEC), the strength of Nigeria's economy was tested. First, many commercial banks in Nigeria which were exposed to the oil and gas sector, experienced an increase in non-performing loans, triggering a banking crisis. These banks were rescued with the injection of ₦620 billion of liquidity into the banking sector to stabilise the system and return investors' confidence (Bamanga, 2010). Second, the Nigerian stock market experienced a decline, with the all-share index

losing 67%, while market capitalisation lost 62% of its value between March 2008 and March 2009 (Ajakaiye & Fakiyesi, 2009). Third, exchange rate and external reserves faced significant pressures due to massive outflows of foreign portfolio investments. Chauvin & Geis (2011) cited that the combination of lower oil revenues and capital outflows led to a 28% depreciation of the Naira against the US Dollar between June 2008 and June 2009 while external reserves fell to US$43 billion by July 2009, a 30% decline relative to September 2008.

As noted by Sanusi (2010), since the 1970s, the Nigerian economy has moved along with the boom-bust cycles of the oil industry; government expenditures are dependent on oil revenues, which have dictated the pace of growth of the Nigerian economy. For instance, the consistent decline in the price of crude oil, which began in 2014 had a devastating impact on the performance of key economic indicators. This resulted in a foreign exchange crisis as the Naira depreciated against the dollar due to demand pressures and a limited supply of foreign exchange. According to the World Bank (2017), Nigeria's Naira vis-à-vis the US Dollar depreciated from ₦197/USD to ₦282 after the liberalisation of the Naira in June 2016, and subsequently to ₦305/USD by September 2016. The World Bank noted further that foreign exchange shortage created round-tripping opportunities and distortions in the economy. With the heavy reliance of the economy on imports, coupled with lower non-oil exports, Nigeria experienced an economic recession in 2016 as real GDP declined by 1.5% in the year. This represents the first full year of recession in 25 years (World Bank, 2017).

COVID-19 was yet another major event which triggered internal and external shocks to the Nigerian economy. On the external side, there was the implementation of inter-state and international travel bans, restrictions on mass gatherings, and school closures, as governments across the world sought to contain the spread of the virus. In addition, there was a significant decline in crude oil prices by more than 60% between February and May 2020 due to lower demand from the implementation of lockdown (Lain & Vishwanath, 2021). Within Nigeria, the government implemented a lockdown, which entailed the restriction of non-essential economic activities across major states in the country. Andam et al. (2020) estimated that the lockdown resulted in a 34.1% GDP loss, the majority of which came from the services sector. A 13.1% loss was recorded in the agricultural sector. A combination of both internal and external factors led the Nigerian economy into a recession, the deepest since the early 1980s, with services and industry hit especially hard (Lain & Vishwanath, 2021). Specifically, in the third quarter of 2020, Nigeria recorded its second recession in five years with a negative real GDP growth of -3.62%, having posted a real GDP decline of 6.1% in the second quarter (NBS, 2021a). Global Alliance for Improved Nutrition (GAIN) (2021) noted that COVID-19 disruptions created supply shocks, which led to an increase in food prices in the country. The World Bank (2021) estimated that rising food prices were eroding household purchasing power, and pushed 8 million additional Nigerians into poverty in 2021.

In addition to COVID-19, the war in Ukraine was yet another event that weakened Nigeria's growth prospects and triggered a foreign exchange crisis. Following the war, global supply chains for several agricultural and mineral resources such as wheat, corn, and crude oil were disrupted. According to Asante-Addo et al. (2023), the war led to shortages and higher prices of commodities and items such as fertiliser, maize, rice, wheat, cooking oils, etc. This exposed Nigeria's vulnerable agricultural sector, weakened the country's currency and led to foreign exchange shortages and high inflation rates (Asante-Addo et al., 2023). As noted by Erumebor (2023a), the combined effect of a tough

macroeconomic environment coupled with a weak industrial base negatively impacted the country's trade balance, job creation and social outcomes. The NBS (2023) estimated that 133 million people in Nigeria, representing 63% of the population, were multi-dimensionally poor in 2022.

3.3 An Exploration of the Movement of Labour and Output Across Sectors in Nigeria

Like many other African countries, Nigeria's economy has undergone significant shifts in its composition over the past five decades. Data from the Central Bank of Nigeria (CBN, 2021) highlight the following trends since the 1980s: First, there has been a consistent increase in the share of the services sector in overall output. Second, the share of agriculture initially grew and has remained stable since 2002. Third, the manufacturing sector's share in output has declined, and fourth, the industrial sector (non-manufacturing) initially remained stable but has seen a decline since 2003.

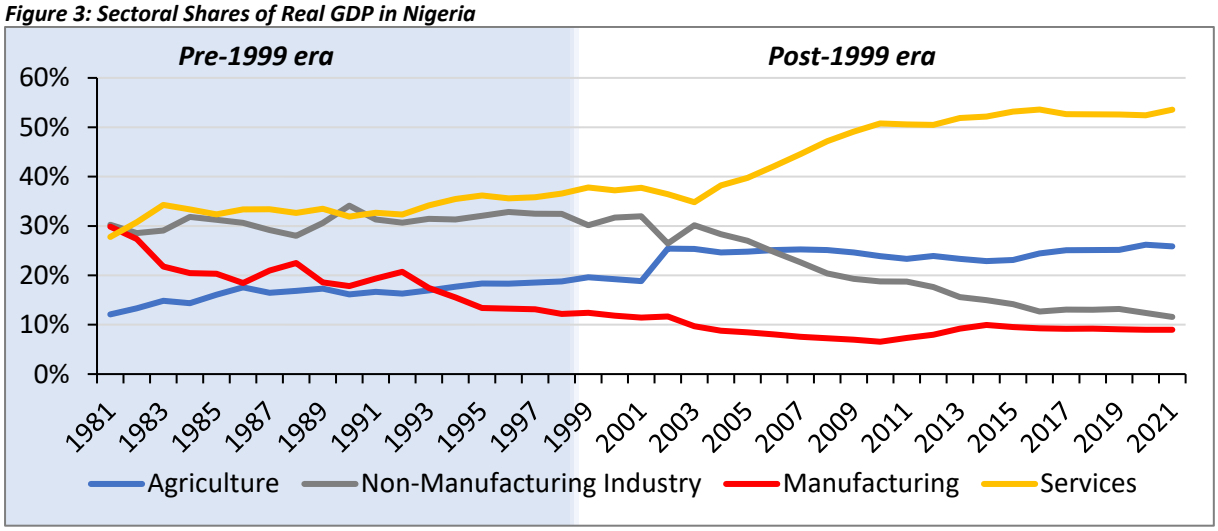
This section examines Nigeria's experience of structural change, focusing on the country's performance across two key measures: sectoral output shares and employment shares. The review of Nigeria's structural transformation is divided into two periods: pre-1999 and post-1999. The year 1999 marks a pivotal point in Nigeria's economic and political history, as the country transitioned to a democratically elected government, which implemented significant political and economic reforms aimed at liberalisation and private sector growth.

Pre – 1999 Era

Before Nigeria transitioned to a stable democratic government in 1999, following decades of intermittent military rule, crude oil played a central role in shaping the composition of the country's economic activities. According to Centre for the Study of the Economies of Africa (CSEA) (2013), the oil boom in the 1970s resulted in a significant increase in the share of the industrial sector (including crude oil), which also supported the rest of the economy through infrastructure investments. The collapse of oil price in the late 1970s was accompanied by a decline in the share of the oil sector to 24% in 1982, which subsequently rose to 27% in 1999 as oil output recovered (CSEA, 2013). As elaborated by Oyejide & Raheem (1993), the attempts for Nigeria to diversify the economy's productive base and reduce reliance on crude oil following the economic crisis in 1982 often resulted in an agriculture-led growth model, given the sector's potential in Nigeria. This is because political leaders in Nigeria viewed agriculture as a strategic sector in addressing the conditions of the poor and improving exports and food security. Given this, the government implemented several support policies and programmes such as the Green Revolution (GR), Better Life Programme (BLP) for rural women, National Fadama Development Project (NFDP), among others, which aimed to enhance output of the sector (Iwuchukwu & Igbokwe, 2012). Consequently, the share of agriculture in real GDP rose from 12% in 1981 to 20% in 1999 (CBN, 2021). For the services sector, its share in output has been upward trending since the 1980s, although at a much slower pace when compared with the post-2000 era. Reforms in the financial sector led to the expansion of the services sector. According to Ikhide (1996), the privatisation of public institutions under the SAP, decentralisation of the Nigerian Stock Exchange in the late 1970s, granting of licenses to more banks and financial institutions, the shift from direct to indirect system of monetary control which paved the way for open-market operations

(OMO) in 1993 resulted in an expansion of the services sector in 1980s and 1990s. Its share in real GDP rose from 28% in 1981 to 38% in 1999[13].

Figure 3: Sectoral Shares of Real GDP in Nigeria



Data Source: Created by the Author using data from Central Bank of Nigeria

The manufacturing sector on the other hand experienced a decline in its share of overall output from 1981 to 1999. More recent data released by the National Bureau of Statistics and the Central Bank of Nigeria after the rebasing of Nigeria's GDP in 2014 confirmed this trend[14]. The data show that Nigeria's manufacturing sector accounted for as high as 30% of real GDP in 1981, higher than the share of manufacturing in several East Asian countries in the 1980s (see Chintayarangsan et al., 1992). The data also show a trend of declining share of manufacturing after the adoption of the Structural Adjustment Programme in 1986, in line with the argument of Rodrik (2016) that many African countries experienced de-industrialisation at low-income levels. While the manufacturing sector suffered from poor infrastructure, and lack of adequate power supply, which made manufactured goods uncompetitive, the challenges associated with the sector became amplified after the adoption of SAP in 1986. Erumebor (2010) argued that manufacturing firms in Nigeria were not prepared to withstand the competition that came as a result of liberalisation during the SAP era, as the domestic industries faced unfavourable competition with the influx of cheap finished products and the dumping of sub-standard goods from industrialised and other developing nations. Anyanwu (2000) specifically cited constraints such as low rate of technology adoption, high inflation, high cost of finance and low rate of capacity utilisation caused by lack of adequate funding and power outages. Aluko et al. (2004) summarised that with the liberalisation under the SAP era, Nigeria relied on imports, at the expense of developing its domestic industries. In summary, among the four major sectors, three (agriculture, non-manufacturing industry and services) experienced increasing shares in GDP from 1981 to 1999 while that of the manufacturing sector declined. CSEA (2013) concluded that during the 1980s and 1990s, there was hardly any attempt by the government to diversify the Nigerian economy.

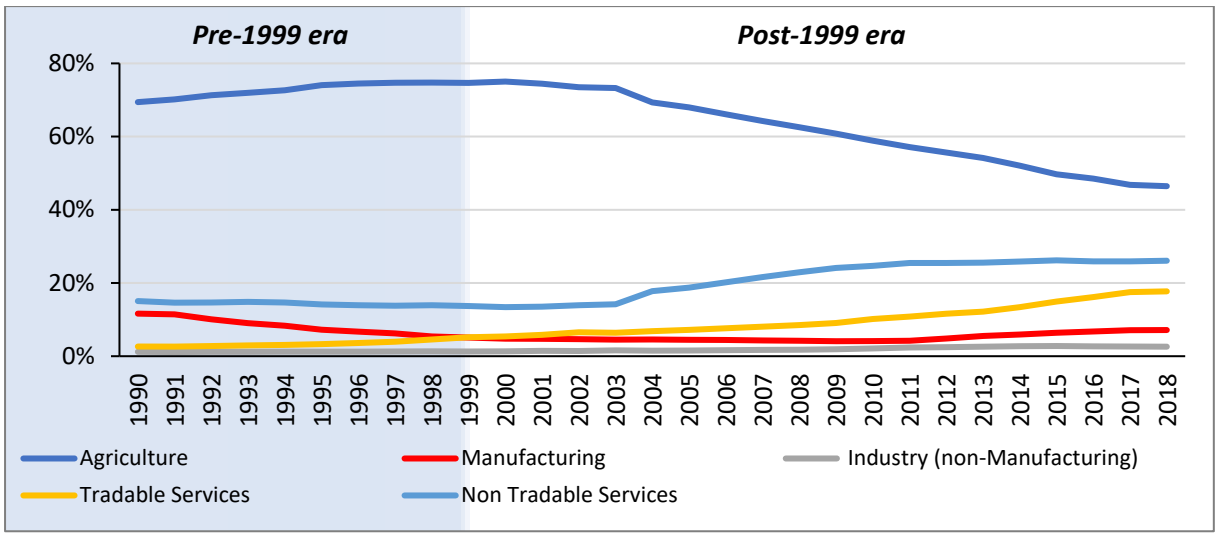
[13] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.
[14] The National Bureau of Statistics released the 'GDP by Production Backcasting Series from 1981 to 2017' following the rebasing of GDP in 2014. Historical GDP data were updated to reflect omitted sectors and methodological changes.

Labour Shares

The movement of labour across the sectors followed a similar trend to sectoral output shares. Agriculture, which accounted for the largest share of labour, saw a significant increase in the number of workers from 1990 to 1999, alongside an increase in output. The sector's share in total employment rose from 69% in 1990 to 75% in 1999 (see Figure 4), underscoring its critical role in the economy, though this growth came at the expense of sectors like manufacturing and non-manufacturing industries. The sharp rise in agriculture's labour share to 75% suggests a trend of de-industrialisation in Nigeria during the 1990s. This trend contradicts the arguments of traditional structuralists like Arthur Lewis, Simon Kuznets, and Nicholas Kaldor, who posited that as income levels rise in the early stages of development, labour should shift from agriculture to the manufacturing sector.

Even for Timmer (2014), who strongly supports improving agricultural productivity in the industrialisation process, acknowledges that the share of agriculture in both employment and output is expected to decline during structural transformation. However, as Timmer notes, substantial investments in agriculture are necessary to reduce the productivity gaps between agricultural and non-agricultural sectors, particularly in the early stages of economic growth and transformation. Such investments are crucial to addressing rising food prices, improving food security, and reducing poverty. Additionally, agriculture is often regarded as the least productive sector in the economy (see Restuccia et al., 2008), with much of its activity in Nigeria being subsistence-based. For instance, Adeyinka et al. (2013) found that in 1996, 99% of agricultural workers in Nigeria were self-employed, with only 1% engaged in paid work. When juxtaposed with the trends in agricultural employment and output in Nigeria, one can infer that the type of structural change experienced in the 1980s and 1990s had negative effects on growth, productivity, and the living standards of farmers. Fashanu & George (2020) found that between 1981 and 2000, structural change was growth-reducing, with growth rates declining by -1.68 points between 1981 and 1990, and by -11.76 points between 1991 and 2000.

Figure 4: Sectoral Employment Shares of Total Employment in Nigeria



Data Source: Created by the Author using data from the Economic Transformation Database

In the 1990s, the decline in manufacturing as a share of total employment was significant, mirroring the trend in output shares. The share of manufacturing in total employment fell from 12% in 1990 to 5% in 1999 (see Figure 4). This decline coincided with the weak performance of the sector during the

decade. The manufacturing sector's real output grew by only 1% from 1990 to 1999, lagging behind the growth rates of services (3%), agriculture (4%), and overall GDP (2.3%) during the same period[15]. Despite Nigeria's vast potential for manufacturing, Eberhardt & Teal (2010) argued that without a robust industrial policy, Nigerian firms are unlikely to compete in large-scale, labour-intensive manufacturing activities. They emphasised that an effective industrial policy should provide a framework to support the growth of micro and small firms, noting that firms with over 100 employees face severe challenges more than microenterprises. Therefore, Nigeria must prioritise labour-intensive manufacturing to create better jobs and enable the sector to absorb labour from other sectors.

Post 1999 era

From 2000 to 2014, Nigeria experienced sustained economic growth. During this period, the economy grew at an average of 7.1% with the services sector accounting for 61% of output expansion[16]. Average growth rate of the services sector was 9.5%, higher than that of overall real GDP growth. Within the services sector, there was a significant expansion in sectors such as telecommunications, which grew by 93%; accommodation and food services by 23.6% and arts, entertainment and recreation by 20.8%[17]. As a share of real GDP, the services sector became important, accounting for 55% of Nigeria's rebased GDP in 2014, from 37% in 2000 (see Figure 3). Oh (2017) pointed out that with the 2014 rebasing of Nigeria's GDP – which was dominated by crude oil prior to the rebasing – there was a major growth in the services sector, particularly for sub-areas such as telecommunications, banking, and the informal economy, some of which were initially unaccounted for, in official statistics. According to Oh, the growth of the services sector was supported by favourable government policies and an increase in Foreign Direct Investment (FDI), which led to increasing real GDP shares of sectors such as wholesale and retail trade (17.6%), real estate (8.4%), and telecommunications and information services (8.3%).

Reforms aimed at improving the business environment and rising per capita income played a key role in expanding the retail sub-sector, a crucial component of the services sector. Although the retail sector is dominated by informal players such as open markets, hawkers and small shops, there has been significant growth in modern retail stores, attracting investment from global consumer goods manufacturers and retailers (Leke et al., 2014). Fiorini et al. (2013) attributed the growth in the retail sector to an increase in migration from rural to urban areas, rising per capita consumption in large cities and the growing presence of women working outside the home. In addition to the formal players, there was an increase in activities of the less productive traditional services sub-sectors (such as transport and trade) (PwC, 2018). With regard to trade, Oh (2017) pointed out that the informal markets are the main outlets for most products in West Africa, targeting individuals who fall in the low-income segments. Key problems of the informal economy, such as the weak ability of businesses to scale, poor governance structure across informal businesses and limited support from the government, constrained the services sector from creating better jobs for the populace.

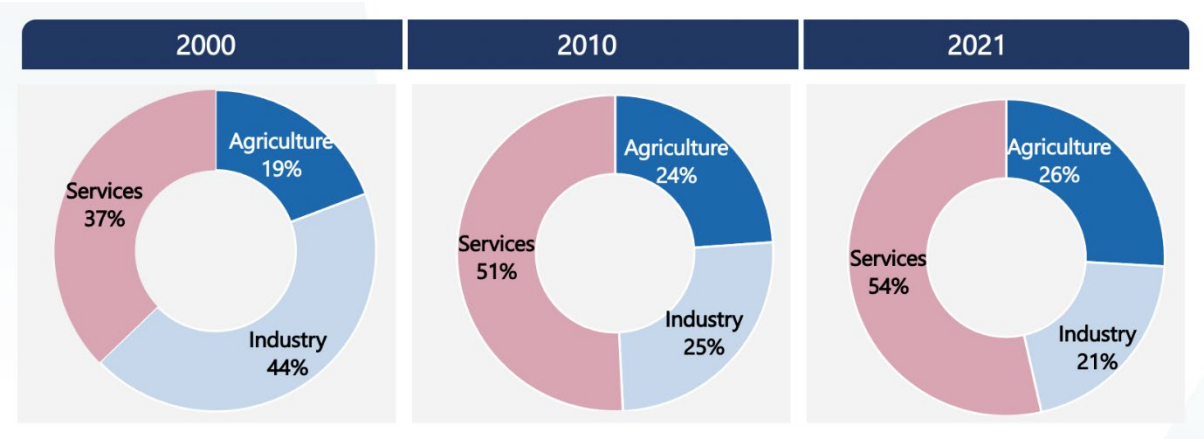
In the banking sector, the Central Bank of Nigeria initiated a recapitalisation exercise aimed at strengthening the capital base of commercial banks, boosting confidence in the banking sector and

[15] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.
[16] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.
[17] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

maximising shareholders' value. As part of this exercise, commercial banks were required to maintain a minimum capital base of ₦25 billion with full compliance expected by the end of December 2005. Banks were encouraged to consolidate through mergers and acquisitions, while the CBN adopted a risk-focused and rule-based regulatory framework (Central Bank of Nigeria, 2005). As a result, many banks raised funds from the capital market, which further deepened the market's expansion and transformed Nigeria's banking sector (Pat & Odia, 2011). Barros & Caporale (2012) found that the sector benefited from the consolidation process, with banks becoming more efficient through mergers, acquisitions, and increased foreign ownership. Overall, factors such as rising demand for services and macroeconomic stability contributed to the emergence of a thriving services sector in Nigeria.

As Nigeria's GDP shifted toward the services sector, the shares of both manufacturing and non-manufacturing industrial sectors declined. From 2000 to 2010, the manufacturing sector's real output grew at an average rate of only 1.9%, significantly lower than the overall real GDP growth of 7.8%[18]. As a result, its share of real GDP dropped from 12% in 1999 to 7% in 2010[19]. This reflects a pattern of de-industrialisation, similar to that seen in many African countries, despite the Nigerian government's efforts to promote industrialisation through initiatives such as free trade zones, industrial policies, the One-Stop Investment Centre (OSIC), and the Bank of Industry. Bloch et al. (2015) noted that from 1990 to 2010, the manufacturing sector was the second-smallest contributor to growth, accounting for only 5%. While the services sector and the broader economy diversified during this period, the manufacturing sector did not, with most of its output still concentrated in food and beverages (64%) and textiles and apparel (10%) by 2010. Chete et al. (2014) highlighted the decline of Nigeria's textile industry as a prime example of the country's de-industrialisation. From 2000 to 2008, approximately 820 textile firms shut down. The sector, which had employed nearly 700,000 people in the mid-1980s with 175 mills in operation, saw employment fall to just 40,000 by 2004, with only 10 factories remaining functional (Chete et al., 2014).

Figure 5: Composition of Nigeria's real GDP



Data Source: Created by the Author using data from the Central Bank of Nigeria and National Bureau of Statistics

The poor performance of the manufacturing sector can be attributed to two main factors. First is the poor implementation of industrial policies and second is the tough business environment which

[18] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.
[19] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

affects the competitiveness of the sector. On the first point, the need to develop the industrial sector has been expressed in both national plans and standalone industrial plans enacted since the 2000s. In the Vision 2020:20 plan which aimed at making Nigeria among the 20th largest economies in the world by the year 2020, industrialisation strategy was a key component in achieving this long-term goal. The industrial goal was to achieve global competitiveness in the manufacturing sector by establishing linkages between industrial activity and the primary sector, domestic and foreign trade and by leveraging the comparative advantages of each region in the country (Chete et al., 2016). Emphasis was placed on cluster development with four key facilities such as industrial parks; industrial clusters; enterprise zones and incubators (Federal Government of Nigeria (FGN), 2009). Other development plans, such as the National Economic Empowerment and Development Strategy (NEEDS) and the Economic Recovery and Growth Plan (ERGP), also emphasised the development of the manufacturing sector both in terms of its contribution to GDP and exports.

In addition to these national plans, there have been several standalone industrial plans and policies such as the Backward Integration Policy (BIP), the National Integrated Industrial Development Strategy in 2007 and the Nigerian Industrial Revolution Plan (NIRP) in 2014. The BIP, which commenced in 2002, specifically aimed to reduce imports of certain items, including cement, beverages, tomato paste, textiles and other products (Itaman & Oluwafemi, 2019). With the policy, firms that were involved in importation of these goods and those committed to investing in the real sector were incentivised through tax breaks, concession on tariffs or levies, import quotas to build local production capacities in order to reduce importation and conserve foreign exchange. Under the BIP, 15 import licenses were granted, with a deadline for investment in local production (Leke et al., 2014). The core philosophy of the NIRP was to harness Nigeria's competitive advantage, broaden the scope of the industrial sector and accelerate the expansion of the manufacturing sector. Developed to make Nigeria the preferred destination for manufacturing in West Africa, the NIRP, on a global scale, aimed to ensure Nigeria becomes a top 10 player in at least 10 key manufacturing categories in the next 5 to 10 years. Priority sectors included Food, Beverages & Tobacco; Chemical and Pharmaceuticals; Basic Metal, Iron and Steel; Textiles, Apparel, Carpet & Leather; Domestic and Industrial Plastic & Rubber, among others (FGN, 2014).

Following the implementation of some of these plans, there was an improvement in the manufacturing sector within a short period from 2010 to 2014. The Backward Integration Policy, in particular, had positive impacts on the food and beverage and cement industries in Nigeria. As noted by Leke et al. (2014), the installed capacity of cement production in Nigeria increased from 5 million metric tonnes in 2000 to 28.5 million metric tonnes in 2013, while cement imports fell drastically during this period. McCulloch et al. (2017) noted that Nigeria was able to achieve a significant level of backward integration in the cement sector as over 95% of inputs were sourced locally. They cited several successes of backward integration policies in the food processing segment with large firms such as De United Foods Industries Limited, Flourmills of Nigeria Plc and Dangote Sugar sourcing a significant share of their inputs locally. A combination of these factors, coupled with a stable macroeconomic environment and higher oil prices, led to a growth of the manufacturing sector's output especially from 2010 to 2014, when the impact of these policies materialised. The sector grew by an average of 14.1%, higher than overall real GDP growth of 6.1%, according to data from the CBN (2021). Significant improvements were recorded in sub-sectors such as Cement, Food, Beverage and Tobacco and Textile, Apparel and Footwear.

While there was progress in the cement industry, key areas such as sugar production and textiles experienced challenges despite government plans and interventions. Salihu (2025) noted that political support for reforms was strong in the cement industry but less so for the Cotton, Textiles, and Garment (CTG) policy due to the lack of collective action from industry players, most of whom were small and medium-sized firms. These firms lacked the expertise to manage textile production efficiently. In addition, textile firms do not enjoy trade protection and compete with domestic and foreign goods (Salihu, 2025), amidst high production costs. Odijie (2023) explored the failure of the Nigerian Sugar Master Plan, which aimed to increase domestic sugar growing and refining through import restrictions and the provision of incentives to investors. Odijie cited issues such as unresolved land disputes between investors and dispossessed farmers and the smuggling of refined sugar despite import protection, which played a significant role in the ineffectiveness of the policy. Similarly, Karkare et al. (2022) highlighted key factors such as the absence of strategic coordination to resolve binding constraints, smuggling, poor technological acquisition and capability development that inhibited the growth of the pharmaceutical industry in Nigeria. These experiences highlight that industrial policies in Nigeria have not always worked but where they do, factors such as effective implementation, political will, stakeholder engagement and industry coordination are crucial in driving successful outcomes.

According to FGN (2014), the following factors have influenced the implementation of industrial plans in Nigeria – inadequate implementation and governance structures to execute initiatives; priority sectors were not strategically selected; limited emphasis on institutional reforms needed to drive industrialisation; lack of coordination among government agencies; the absence of continuity of policy and programmes and no clear linkage between industrial planning, trade policy, and investment promotions\policy. Since 2014, the manufacturing sector has faced persistent challenges, with its GDP contribution declining from 10% in 2014 to 9% in 2021, while output growth averaged just 1.5% during the period. Despite policy interventions like the NIRP, the sector's progress remains constrained by structural weaknesses, policy inconsistency and weak implementation of industrial policies.

In addition to poor implementation and lack of continuity of industrial plans, the challenging doing-business environment eroded the competitiveness of the manufacturing sector in Nigeria. With increasing globalisation and trade liberalisation since the early 2000s, Nigerian firms have had to face fierce competition with goods imported from developed and fast-developing countries, especially China. Local firms were not ready to compete mainly due to the rising cost of production, exchange rate devaluation and other challenges in the business environment. According to Agu & Evoh (2011), deficient energy supply and limited access to credit by private firms were key factors that affected the expansion of the manufacturing sector in Nigeria. Similarly, Chete et al. (2014) attributed acute shortages of infrastructure such as good roads, portable water and power supply as major impediments for manufacturing firms in Nigeria. They noted specifically that electricity outages and voltage fluctuations damaged machinery and equipment, causing many firms to rely on generators, which raised production costs and limited competitiveness. In essence, Nigeria's business environment since the 2000s has not been suitable for industrial development, hence, the limited expansion of the manufacturing, amidst fast-growing services and agricultural sectors.

Nigeria's real agricultural output grew at an annual average rate of 6.9% from 2000 to 2021, according to data from the Central Bank of Nigeria (2021). The sector's share of real GDP increased from 19% in 2000 to 26% in 2021. Growth of the agricultural sector has been driven by crop production, which accounts for an average of 89% of agricultural output from 2000 to 2021[20]. Oseni et al. (2014) pointed out that the expansion of the agricultural sector can be attributed to a growing population and the farming of larger expanses of land by commercial farmers. With an average population growth rate of 3.1%, the demand for food in Nigeria continues to increase while the agricultural sector has numerous underexplored areas, especially in the fishery and livestock sub-sectors, which account for less than 10% of total agricultural output.

Over the years, there have been efforts by the Nigerian government to improve productivity in the sector, such as the introduction of the Agriculture Transformation Agenda (ATA) in 2011, which emphasised the importance of commercialisation among smallholder farmers and the development of Commodity Value Chains. Under the ATA, the government established the Growth Enhancement Scheme (GES) to register smallholder farmers and provide targeted input subsidies (E-Wallet); supported farmers with inputs such as fertiliser and seeds; recapitalised the Bank of Agriculture and provided credit guarantees to farmers. While these and many other initiatives led to investment inflow into the sector, the growth of real agricultural output slowed from an average of 11.2% in 2000 – 2010 to 4.1% in 2011 – 2015 (Central Bank of Nigeria, 2021). The sector also faced severe challenges of high input costs due to exchange rate depreciation, high levels of wastage due to poor infrastructure and storage facilities and limited access to finance. According to the Federal Ministry of Agriculture and Rural Development (FMARD) (2016), the net effect is limited job growth in the sector and high importation of food, which intensifies pressure on the exchange rate.

The majority of players in the agricultural sector in Nigeria are smallholder farmers who operate at the subsistence level, making the sector an important source of rural employment and income (Oseni et al., 2014). This raises concerns about the level of productivity within the sector. Table 6 shows that although agricultural labour productivity, in monetary terms, improved from N226,834 to N649,396, the sector is the least productive sector, relative to other sectors. Leke et al. (2014) argued that although productivity level has improved in the sector relative to the 1990s, it remained below that of peer economies. According to the authors, yields of cereal are less than a third of those in China, Indonesia, and Brazil. In addition, farmers in Nigeria adopt an average of 6 kilograms (kg) of fertiliser per hectare of arable land, compared with 550 kg in China, 180 kg in Indonesia and India, and 18 kg per hectare in Ghana. Factors such as lack of knowledge about agricultural best practices by smallholder farmers, limited access to capital, declining plot sizes, weak property rights and contract enforcement continue to limit agricultural productivity in Nigeria (Leke et al., 2014). These challenges, coupled with heightened insecurity, farmer-herder clashes and kidnapping of farmers, have continued to plague the sector, limiting output, productivity, and investment and affecting food security in the country (Okafor & Chikalipah, 2021; Kralovec, 2020).

[20] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

Table 6: Gross Value Added at Constant 2015 Prices and Employment Statistics in Nigeria

	Agriculture	Manufacturing	Industry (Non-Manufacturing)	Services	Total
Year 2000					
Real Value Added (N'million)	5,959,171	4,060,914	7,524,844	13,243,668	**30,788,597**
Share of real GDP	19%	13%	24%	43%	**100%**
Number of workers ('000)	26,271	1,684	467	6,590	**35,012**
Labour Productivity – Output per worker in thousand Naira	227	2,411	16,113	2,010	879
Share of workers in total workers	75%	5%	1%	19%	**100%**
Year 2018					
Real Value Added (N'million)	21,501,513	8,682,777	9,605,525	55,117,528	**94,907,343**
Share of real GDP	23%	9%	10%	58%	**100%**
Number of workers ('000)	33,110	5,084	1,858	31,224	**71,276**
Labour Productivity – Output per worker in thousand Naira	649	1,708	5,170	1,765	1,332
Share of workers in total workers	46%	7%	3%	44%	**100%**

Data Source: Created by the Author using data from the Economic Transformation Database

Labour Shares

In the 1990s, there was an increase in the share of workers employed in agriculture. However, this trend was reversed in the 2000s and 2010s. The sector's share in total employment trended downwards, from 75% in 2000 to 46% in 2018 (see Table 6). Nonetheless, agriculture has also attracted a significant number of workers over the years and is Nigeria's largest employer of labour. The declining share of workers in the sector since the 2000s was as a result of the significant movement of workers to the services sector. This suggests that agriculture is still an important sector in terms of output and employment in Nigeria. For the services sector, it emerged as the second largest employer of labour, accounting for 44% of total workers in 2018 up from 19% in 2000 (see Table 6). The sector has benefited from the implementation of privatisation, liberalisation and investment reforms since Nigeria attained a stable democratic regime in the year 1999. As noted by Fashanu & George (2020), the services sector was a major job creator, accounting for 70% of the total formal jobs created in the fourth quarter of 2014 and 80.4% of the total formal job created in the second quarter of 2016. Informal employment, however, remains a challenge in the sector, limiting job quality and overall economic productivity.

In the manufacturing sector, there was a modest increase in its share of employment, from 5% in 2000 to 7% in 2018 (see Table 6), despite achieving an average output growth of 4.8% during the period (CBN, 2021). PwC (2018) found that a 1% increase in manufacturing output led to a 0.3% increase in manufacturing employment between 2010 and 2014, which is lower than 0.5% for services. PwC concluded that manufacturing has not been a major driver of employment largely due to the small size of Nigeria's formal manufacturing sector. This finding aligns with Ajakaiye et al. (2015), who showed that the employment elasticity of manufacturing is 0.30, based on annual data from 1981 to 2014. Their study also concluded that, while manufacturing is the sector with the highest productivity levels in Nigeria, it has lagged in terms of its contribution to overall output and employment elasticity.

3.4 Understanding the Sectoral Dynamics of Productivity Growth and Job Creation in Nigeria

Structural transformation involves the movement of labour and economic activities from low-to-high-productivity sectors, making productivity a crucial factor in this process. This section examines how labour productivity in Nigeria has evolved over time, identifying which sectors are considered high and low-productivity sectors in Nigeria. To explore these questions, this study adopts a new dataset on sectoral employment and value added at constant 2015 prices by sector to calculate labour productivity in Nigeria. The data covers the period from 1990 to 2018 and was compiled by the Groningen Growth and Development Centre (GGDC)/UNU-WIDER Economic Transformation Database (ETD)[21]. This measure of productivity is the most frequently computed productivity statistic, compared to multifactor productivity (MFP) measures, largely due to greater data availability (OECD, 2001).

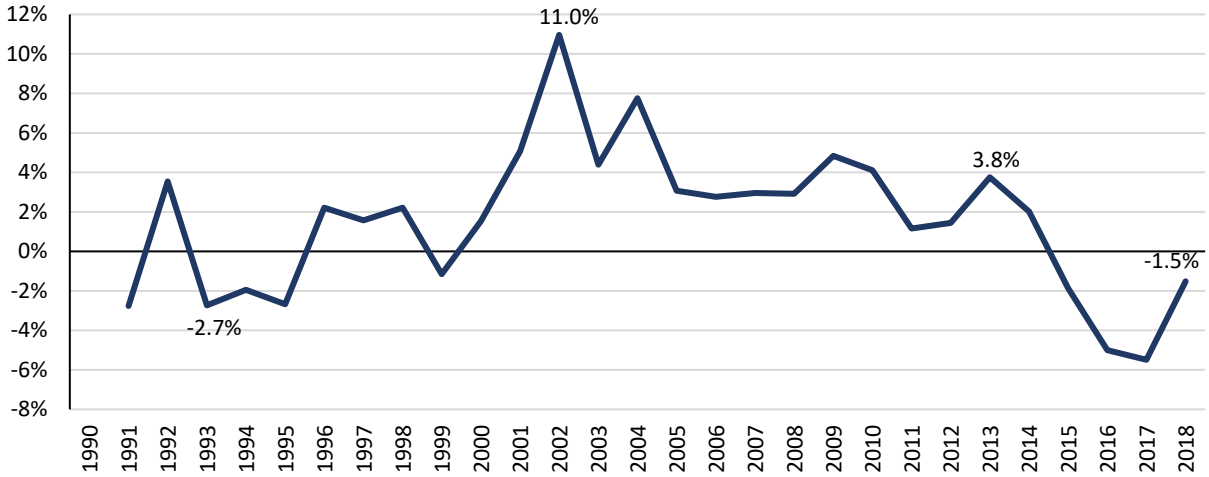
Labour productivity, measured by value-added per worker, assesses the relationship between output and labour input, providing insights into the efficiency and quality of human capital utilised in the production process (ILO, 2015). In Nigeria, labour productivity, measured in the local currency (Naira) and constant 2015 prices, remained stagnant at ₦0.88 million in 1990 and 2000 but increased to ₦1.4 million in 2010. It further declined to ₦1.3 million in 2018. This shows that within about 3 decades, productivity, in nominal terms, grew by 51%[22]. Using the same database, productivity growth was 99.4% and 97% in Malaysia and Indonesia, respectively, during the same period. When compared with other fast-growing developing countries, Nigeria's output per head, which has been below US$10,000 since the 2000s, remains low. Leke et al. (2014) showed that Nigeria's output per worker was 57% less than the average of seven large developing economies such as Russia, Mexico, Malaysia, Brazil, Turkey, South Africa and Indonesia. They attributed Nigeria's low productivity to a lack of adequate employment opportunities in urban areas, such that when Nigerians migrate to the cities, they are faced with unemployment and underemployment or find jobs in the informal sector, where wages are low. In their view, urbanisation, which played a crucial role in transforming the economies of many countries, is typically linked with rising GDP per capita, but this linkage is weak in Nigeria. For Oshikoya et al. (2019), external factors such as globalisation and technological advancement, which have driven down production costs in advanced and fast-developing countries as well as domestic factors such as the decline of Nigeria's manufacturing sector and poor skills development, were responsible for the low productivity experienced in Nigeria.

To explore the dynamics of productivity growth in Nigeria from 1991 to 2018, the performance of productivity will be analysed in different periods. Over the last three decades (1991 – 2018), average labour productivity growth at constant 2015 prices was 1.5%, although performance varied over time[23]. In the 1990s, the average productivity growth was -0.2%, reflecting the negative output growth experienced in the early 1990s, which coincided with the political upheavals experienced during the period (Obadan & Odusola, 2000). As shown in previous sections, the 1990s, often referred to as the lost decade, were characterised by low economic growth, political instability and an unstable macroeconomic environment. In the 2000s, the rapid output expansion led to a significant improvement in labour productivity. From 2000 to 2009, labour productivity growth averaged 4.6%,

[21] The Economic Transformation Database (ETD) is referenced as: de Vries, et al. (2021). "The Economic Transformation Database (ETD): Content, Sources, and Methods". WIDER Technical Note 2/2021.' DOI: 10.35188/UNU-WIDER/WTN/2021-2.
[22] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[23] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

representing the highest growth since time series data on labour productivity became available. Although productivity growth was higher than in the 1990s, it grew at a declining rate, falling from a peak of 11% in 2002 to 2.5% in 2010 – 2014, responding to the fall in crude oil prices[24]. Productivity growth in the 2010s was driven by factor accumulation, with only minor contribution of productivity increases (Thompson, 2019).

Figure 6: Labour Productivity Growth Rates in Nigeria (%)



Data Source: Created by the Author using data from the Economic Transformation Database

Between 2000 and 2014, output expansion was accompanied by an increase in the number of workers in the economy. While real output increased by 197% during the 15-year period[25], the number of workers in the economy expanded by 70%[26], suggesting an increase in labour productivity. However, when the number of jobs created is compared with the entrants into the labour market, the latter exceeds the former, thus raising unemployment rate during this period. This implies that factors that affect labour force participation such as population growth, age structure, gender dynamics, the number of graduates from tertiary institutions become important, in examining the ability of the economy to create jobs and reduce unemployment rate, which is fundamental for inclusion. As for the period 2015 to 2018, the slowdown of GDP growth rate in 2015, coupled with the economic recession experienced in 2016 played a crucial role in the downward trend of labour productivity growth in Nigeria. Annual average productivity growth from 2015 to 2018 was -3.5% (see Table 7), reflecting the output decline of 1.6% in 2016 and the slower recovery of 0.8% and 1.9% in 2017 and 2018, respectively[27]. As output declined in 2016 and grew slowly in post-2016, the number of fully employed workers in the economy declined, while those who were underemployed increased. These categories of workers, described as individuals working below their potential, often earn lower wages, work in tougher working conditions and mostly in the informal sector. The decline in the number of formal jobs and the increase in the underemployed workers point to the deterioration of the average quality of the workforce and falling productivity amidst a tougher macroeconomic environment since 2016.

[24] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[25] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.
[26] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[27] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

Table 7: Labour Productivity Growth in Nigeria (%)

	1991 – 1999	2000 – 2009	2010 – 2018	2015 – 2018	1991 – 2018
Labour Productivity Growth	-0.2%	4.6%	-0.2%	-3.5%	**1.5%**

Data Source: Created by the Author using data from the Economic Transformation Database

On a sectoral level, productivity performance has been mixed. Since historical data on productivity for Nigeria became available, the industrial sector (non-manufacturing) has been a high-productivity sector, although the productivity of this sector has been declining over time. A breakdown of this sector includes construction, mining and utilities, but the mining sector accounted for an average of 79% of real output from 1990 to 2018[28]. For the mining sector, it showed the highest labour productivity within the industrial sector. This is unsurprising given that it is capital-intensive and dominated by large firms. This view was confirmed by Dieppe & Matsuoka (2020). One important point to note, however, is the linkage between the movement in the price of crude oil and productivity in the mining industry. Higher commodity prices, particularly in the early 2000s, resulted in large increases in the value of output, which triggered an upward movement in labour productivity. While mining productivity rose steadily from 1990 to 2009, productivity in the non-manufacturing industry has declined since 2004, reflecting the poor performance of productivity in the construction industry. Post 2009, a slowdown in construction output vis-à-vis the increase in workers employed in the sector, coupled with lower crude oil prices led to falling productivity in the non-manufacturing industry.

Figure 7: Labour Productivity Trend in Nigeria

Figure 7a: Labour Productivity N'million

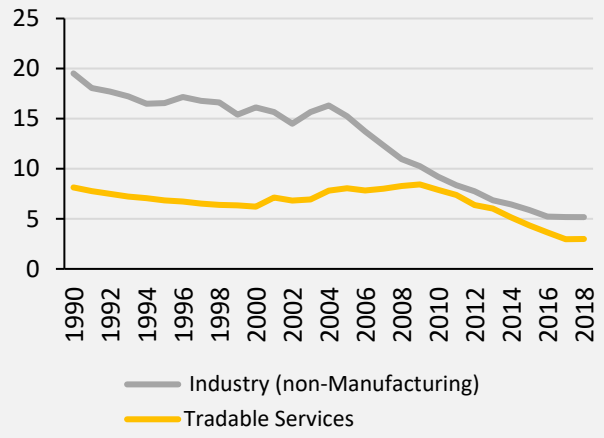
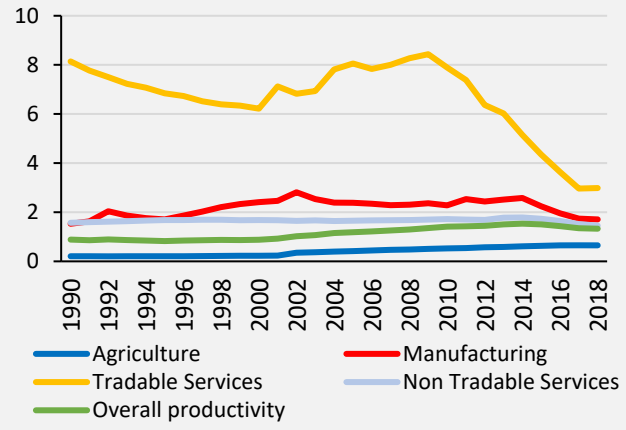


Figure 7b: Labour Productivity N'million



Source: Created by the Author using data from the Economic Transformation Database

After the non-manufacturing industrial sector, the sector with the highest level of productivity in Nigeria is tradable services. According to the OECD (2018a), the tradable sector produces goods and services that could be traded and the growth of firms operating in the sector is not limited to the size of the local market. Firms in this sector are exposed to global competition which is necessary for innovation and scale. For the services sector, the ability to export its services plays a key role in determining whether it is tradable or non-tradable. As pointed out by Jensen (2013), the geographic concentration of production can be adopted to differentiate between services that are tradable and

[28] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

those that are less likely to be traded, i.e., those that require face-to-face interaction. Jensen cites software publishing, sound recording, motion picture production, and securities and commodities trading as activities with high geographic concentration and that are tradable. This study provides a breakdown of tradable services sector in Nigeria to include information and communication, finance and insurance and professional, scientific and technical activities. Since the 2000s, these sub-sectors have been major beneficiaries of government reforms which supported their growth, competitive strength and the inflow of large foreign firms. They have been the major driver of Nigeria's economic growth, posing a higher productivity level than manufacturing, although their productivity level has been on a downward trend since 2010. For instance, productivity growth of tradable services averaged -10.7% since 2010, a decline from an average of 3.6% recorded from 2000 – 2009. The downward trend of productivity of tradable services reflects the slower growth in real output of the sector, particularly in information and communication sector, as the impact of liberalisation reforms in the sector fades. Average real output growth of the sector fell from 28.1% in 2000 – 2009 to 7.4% in 2010 – 2018[29].

In the manufacturing sector, there have been four episodes of productivity trend since the 1990s. First is the steady increase in productivity from 1990 to 2002. Second is the decline in productivity from 2002 to 2010. Third is the increase from 2010 to 2014 and fourth is the decline from 2014 to 2018. In the 1990s, the upward trend in productivity of the manufacturing sector was driven by a decline in the sector's output while the number of workers declined at a faster rate. In addition to the negative growth in output, the poor state of the sector was reflected in the decline in capacity utilisation, which fell from an average of 41.1% in 1986-90 to 35.4% and 31.8% during the period of 1991-95 and 1996-98 (Anyanwu, 2000). Anyanwu noted further that the sector was constrained by the low rate of technology adoption, high inflation, high cost of finance and low rate of capacity utilisation caused by lack of adequate funding and power outages. These challenges persisted in the 2000s as the manufacturing sector grew at a marginal rate and its share of GDP declined further while sectors such as services and agriculture expanded significantly.

The growth of the sector and labour productivity improved from 2010 – 2014. The sector also contributed to overall GDP growth, accounting for about 14.3% of GDP expansion, only second to Trade (20.1%) (Leke et al. 2014). This growth, which was accompanied by an increase in workers in the sector, was driven by improved macroeconomic stability and higher real income, which was followed by an expansion of key manufacturing sub-sectors such as Cement, Food, Beverage and Tobacco and Textile, Apparel and Footwear as a result of the Backward Integration Policy discussed in the previous section. Between 2015 and 2018, labour productivity in the sector declined as Nigeria experienced an economic recession triggered by falling crude oil prices. Manufacturing output growth averaged -0.8% during the period, with the sector grappling with perennial problems such as high input cost, and poor power supply among others. The sector's poor growth trajectory for the most part of the last three decades and its low contribution to GDP point to the fact that Nigeria is yet to experience structural transformation towards manufacturing, despite the sector's potential.

Non-tradable services and Agriculture are among the low-productivity sectors in Nigeria. Non-tradable services sector includes wholesale and retail trade, hotels and restaurants, and other community,

[29] Author's calculation from data from the Central Bank of Nigeria. See reference: CBN, 2021 for datasheet.

social and personal services. Majority of activities in non-tradable services are provided locally and are therefore present across different regions (OECD, 2018a). Another feature of this sector is the presence of informal activities on a large scale. Productivity of this sector has remained above that of agriculture and aggregate productivity but below manufacturing, tradable services and industry (non-manufacturing). Since the 2000s, non-tradable services sector has been a main driver of economic output expansion in Nigeria, with significant output growth in sectors like transportation and wholesale and retail trade. For instance, Oh (2017) noted that retail and wholesale trade accounted for about 17.4% of Nigeria's GDP in 2014 and increased by an average annual rate of 7.7% between 2010 and 2013. Oh further pointed out that local middlemen and petty traders account for a significant share of trading activities, while the informal market is a primary outlet for products targeted at lower-income segments. Essentially, non-tradable services sector was a major contributor to the change in the structural composition that Nigeria experienced in the last two decades. Despite the output expansion of non-tradable services, productivity growth of the sector increased marginally by 0.3% on average, from 2000 to 2013[30]. This is due to the significant increase in the number of workers in the sector as output expanded. As the data revealed, the sector is labour-intensive and is the second largest employer of labour in Nigeria after agriculture, accounting for 35% of total workers in 2018, an increase from 17% in 2000. Although the sector remains critical for job creation, its large informal nature and low productivity suggest the existence of low wages and poor job quality relative to sectors such as tradable services and manufacturing. This, therefore, raises concerns on inclusion and inequality in the sector.

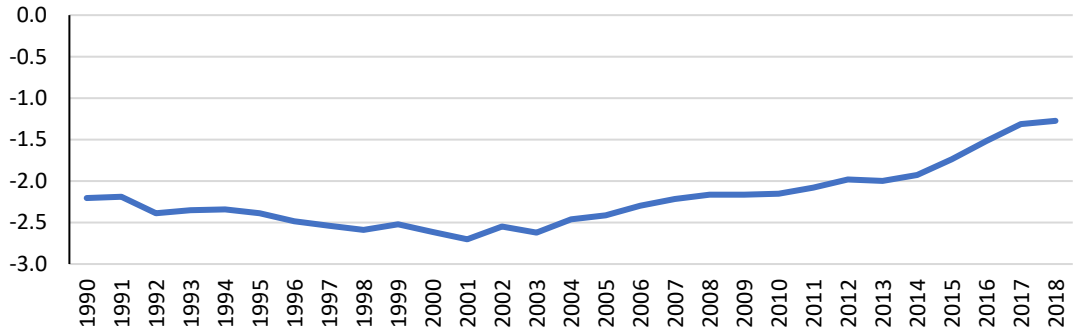
Agriculture is the least productive sector in Nigeria. Productivity of the sector is lower than both aggregate productivity and the productivity of other sectors in the economy, in line with findings by (Restuccia et al. 2008). While productivity of the sector has increased over time as a result of both rising output and the number of workers employed, it is critical to also examine the performance of agricultural productivity in relation to the rest of the economy. As argued by McMillan et al. (2014), the gap between agricultural and non-agricultural productivity increases at first and subsequently declines, creating a U-shaped curve as income increases. They attributed this convergence to the expansion of existing sectors and the emergence of new sectors due to capital accumulation and movement of labour towards the modern sector as argued by Lewis (1954).

From examining the data on agricultural and non-agricultural productivity in Nigeria, there appears to be a movement towards convergence (see Figure 8). From 1990 and 2000, the productivity gap expanded following a stagnation in agricultural productivity and a steady rise in the productivity of the non-agricultural sector. The movement towards convergence began in the year 2001 when labour productivity in non-agriculture, which was 12.6 times that of agriculture in 2001, narrowed to 3 times in 2018. However, the reasons for the convergence are different from those cited above in McMillan et al. (2014). Two main reasons are responsible for this convergence. First is the increase in agricultural productivity and second is the decline in non-agricultural productivity. The increase in agricultural productivity was also accompanied by an increase in the number of workers in the sector. In other words, agricultural output expanded at a much faster pace than the growth in the number of workers in the sector. Phillip et al. (2009) attributed the increase in agricultural productivity to the expansion of planting areas for staple crops. Leke et al. (2014) noted that the increase in agricultural productivity

[30] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

has been mainly due to a marginal increase in crop yields in the 2000s and increased planting of crops such as cassava and yams, which are more valuable than staples such as beans, millet, and sorghum. They noted further that although yields have improved over time, they remain below benchmarks – for instance, cereal yields are less than a third of those in China, Indonesia, and Brazil. Key challenges such as obsolete farming practices of small-holder farmers, poor usage of fertilisers, poor investment in seedlings, low access to agricultural credit, land tenure insecurity and land degradation, poor market access and marketing efficiency, among other factors, continue to affect the rapid expansion of agriculture (Phillip et al., 2009; Nkonya et al., 2010; and Leke et al., 2014).

Figure 8: Productivity Gap between Agriculture and non-Agriculture



Source: Created by the Author using data from the Economic Transformation Database

For the non-agricultural sector, the number of workers grew faster than its output since the year 2002, driving labour productivity downwards. Much of the increase in the number of workers in the non-agricultural sector was largely due to the movement of labour towards the non-tradable sector, which is mostly informal with lower wages. The quality of labour, therefore, as well as better working conditions are important issues that need to be considered in discussing the movement of labour across sectors.

The movement towards convergence of agriculture and non-agriculture productivity has a significant implication on the role of agricultural productivity growth in the structural transformation process of a country. Drawing from the argument of Lewis (1954), although agriculture is important in the industrialisation process, development occurs with the expansion of the modern capitalist sector which reinvests capital and, in the process, attracts labour from the subsistence sector that is characterised by abundant labour and low productivity. By implication, it is industrialisation or rapid expansion of the modern sector that brings about economic development and also the development of the agricultural sector. In line with the view of Lewis, Lin (2012) noted that, as experienced in many developed countries, high industrial growth was responsible for the movement of labour away from agriculture to the non-agricultural sector. For Gollin (2021), the big question is whether agricultural productivity growth can trigger the industrialisation process, especially in sub-Saharan Africa. The recent experience of Nigeria shows that the growth of agricultural productivity has not served as a catalyst for industrial development in Nigeria. This growth has also been associated with an increase in unemployment and poverty in the country. The Nigerian experience is contrary to the views Theodore Schultz (1964), who argued that the growth of productivity in agriculture was an important condition for economies to grow. Schultz noted that poor countries are often faced with food problems and need to produce a significant proportion of their food before resources can be transferred to other sectors (Gollin, 2021). In conclusion, while Timmer & Akkus (2008) argued that

improving agricultural productivity is important in addressing rural poverty in developing countries, such improvement alone, especially with a corresponding decline in non-agricultural productivity as seen in Nigeria, may not steer the country towards economic development.

Why Has Agriculture, Services, and Manufacturing Failed to Scale Up and Rely on Micro and Subsistence Activities?

As shown in the previous section, Nigeria has experienced the movement of labour from agriculture to services, bypassing manufacturing. Despite this transition, productivity remains a challenge. Agriculture is still largely subsistence, as farmers produce low yields across major crops when compared with peer countries. In manufacturing, while progress has been made in areas such as cement and more recently oil refining, the sector has not expanded significantly or developed strong value chains to drive broader industrial growth. The majority of manufacturing firms are small-scale and run by sole proprietors, limiting their ability to benefit from economies of scale or access large markets. Non-tradable services sector, which received the most labour in the last two decades is characterised by low productivity and high informal activities, offering limited opportunities for upward mobility. With these insights, Nigeria has not achieved the kind of structural transformation that would drive sustained increases in productivity, income and the creation of employment opportunities.

To summarise from the literature, key factors responsible for the poor performance of sectors include **(1) Policy and Governance Failures –** poor implementation of industrial plans (Chete et al., 2016; FGN, 2014), lack of continuity of government policies and plans, weak stakeholder engagement and conflict management and weak coordination among government agencies which undermined initiatives like NEEDS and ERGP (FGN, 2014) **(2) Structural Constraints** – inadequate infrastructure (the poor state of roads, poor transport network and inadequate power supply), high production costs, insecurity and a tough business environment that limits economic growth (Chete et al., 2014; Agu & Evoh, 2011; FMARD, 2016; Ajakaiye et al. 2015; Okafor & Chikalipah, 2021). **(3) External Pressure from Trade Reforms –** trade liberalisation post-SAP exposed Nigerian firms to fierce competition from imported goods without the necessary support to compete effectively (Erumebor, 2010; Anyanwu, 2000; Aluko et al., 2004) and **(4) Firm-level Productivity Challenges –** limited access to finance by small businesses, limited access to inputs by farmers, low technology adoption and inadequate investment in human capital, leaving firms stuck at low productivity levels (Oseni et al., 2014; Leke et al., 2014; Oh, 2017). These factors have limited productivity growth and competitiveness of the Nigerian economy.

3.5 Tradable Services in Nigeria: A Success Story of Service-led Structural Change?

Nigeria's tradable services sector experienced remarkable growth from the 2000s, largely driven by government-led reforms of privatisation and improving the investment climate. Before the privatisation reforms, many public enterprises were inefficient, heavily subsidised and operated below capacity (Jerome, 2008). To address these challenges, General Abubakar established the Bureau of Public Enterprises (BPE) in 1998 as the main agency for implementing privatisation reforms, targeting areas such as refineries, petrochemical and bitumen production and tourism. In addition, President Obasanjo, who assumed office in 1999, instituted the National Council on Privatisation (NCP), chaired by the Vice President to oversee the privatisation process (Jerome, 2008). The BPE served as the secretariat of the NCP (Popoola, 2016). Between 1999 and 2006, about 116 state-owned enterprises

in sectors such as power, telecommunications, transport, petrochemicals, and insurance were privatised (Okonjo-Iweala & Osafo-Kwaako, 2007). This shift towards market-oriented reforms opened up opportunities for private investment and competition, driving growth in the tradable services sector.

The telecoms sector offers a clear example of how liberalisation and privatisation led to a remarkable growth of private investment in Nigeria. Prior to the reforms, which intensified when Nigeria transitioned into a democratic-led state, the telecoms sector was in a dire state. Assets were mainly run by the state-owned Nigerian Telecommunications Ltd (NITEL), the monopoly provider of domestic and international telecoms services in Nigeria. Like many other state-owned companies, NITEL and the public telecommunication system in general were largely inefficient, characterised by poor management culture and inconsistent service delivery (Nnam et al., 2013). From 1985 to 2000, over US$5 billion was spent on digitalising and upgrading the telephone network, which had 400,000 connected users for a population of 122 million people (Usman, 2022). Adeyinka et al. (2017) noted that the density of telephone subscriptions was less than 1% in 2000. Overall, the telecoms sector contributed less than 1% to GDP in 2000[31]. In addition to pressure from the Bretton Woods Institution that used liberalisation as a precondition for debt relief, key factors such as the need to diversify government revenue and a realisation of the wealth-generating potential among the business and ruling elites enabled liberalisation reforms in Nigeria. There was a need for change and the pressure came from both internal and external stakeholders.

Barely one week into his administration, President Obasanjo inaugurated a committee on Telecommunications Policy for Nigeria in 1999. As contained in the National Policy on Telecommunications, the President personally presided over the committee's inaugural sitting, while the Vice President subsequently served as the committee's chairman. The committee produced a first draft of the National Policy on Telecommunications, which was subject to review and feedback from both national and international stakeholders. Subsequently, another 22-member Telecommunications Sector Reform Implementation Committee (TSRIC) was instituted to enhance domestic and international acceptability of the policy (FGN, 2000). The Policy, which provided the basic framework for telecommunication reforms in the country, was approved in 2000. One clear lesson from the reforms was that the President and business elites expressed keen interest in delivering a private sector-led telecoms sector in Nigeria.

The National Policy had key short and medium-term goals, including delivering a minimum of 2 million fixed lines and 1,200,000 mobile lines in 2 years, ensuring the divestment of government interest in the state-owned telecommunications entities and creating an environment that attracts private investors to the sector.

The liberalisation of the sector led to the inflow of large companies such as MTN Nigeria, Airtel, and Etisalat. There were huge bids for three licenses, which were auctioned at US$285 million each by Communication Investments, Econet Wireless Nigeria, and MTN (Usman, 2022). These companies have displayed remarkable success over the years. MTN Nigeria and Airtel Nigeria have grown to become among the most valuable companies in Nigeria by market capitalisation (Tokede, 2024). The

[31] Author's calculation from data from the Central Bank of Nigeria. See reference: Central Bank of Nigeria (CBN), 2021 for datasheet.

telecoms sector became one of the fastest-growing sectors in Nigeria and attracted over US$68 billion worth of private investments from 2001 to 2019 (NCC, 2022 and FMoCDE, 2020). Tele-density which was less than 1% in 2000 stood at 101.5% in February 2024, while the number of active subscribers for telephony services increased from 400,000 to 169 million in January 2025 (NCC, 2025). The share of the telecoms industry in Nigeria's real GDP increased from 0.1% in 2000 to 15% in 2024[3233].

In the 2000s, the wave of reforms in the telecoms sector extended to the banking sector by 2004. A major reform introduced by the Central Bank of Nigeria (CBN) was the banking consolidation exercise in 2005. The initiative aimed to strengthen the capital base of commercial banks, boost confidence in the banking sector and maximise shareholders' value. Before this exercise, Nigeria had 89 commercial banks with many banks having a capital base of less than US$10 million each and about 3,300 branches (Soludo, 2004). Meanwhile, one of South Africa's largest banks, Amalgamated Banks of South Africa (ABSA), had an asset base larger than those of all Nigerian banks combined. This underscored the fragmented nature of banking – there were many small banks that could not withstand financial shocks and contribute significantly to the Nigerian and global economy. The consolidation exercise was therefore designed to strategically position Nigerian banks as competitive players in the emerging world, ensure the safety of depositors' funds and enable banks to play active developmental roles in the Nigerian economy (Soludo, 2004).

At the time, banking consolidation was not unique to Nigeria. Similar reforms had been implemented or were being implemented in many countries both within and outside Africa. In the 1990s, there were mergers and acquisitions in the Euro Area driven by market liberalisation and increasing competition. Countries such as Malaysia and South Africa implemented similar reforms in the early 2000s. This global context provided Nigeria with a reform blueprint, increased the acceptance of banking reforms in Nigeria and advanced their implementation.

The Nigerian recapitalisation reform required banks to raise their minimum capital base from ₦2 billion to ₦25 billion, with full compliance by the end of December 2005. To achieve this, many banks were consolidated through mergers and acquisitions, which reduced the number of banks from 89 to 25 in 2005 and later to 24 (Sanusi, 2012). The combined capital base of banks increased from about US$3 billion to US$5.9 billion while about US$3 billion in investment was attracted from abroad (Kama, 2006). Beyond recapitalisation, the CBN adopted a risk-focused and rule-based regulatory framework, and strictly enforced corporate governance principles in banking (Central Bank of Nigeria, 2005; Sanusi, 2012). These measures strengthened Nigeria's banking sector, increased its resilience to financial shocks, and enhanced its ability to support broader economic development. Barros & Caporale (2012) found that the sector benefited from the consolidation process, with banks becoming more efficient through mergers, acquisitions, and increased foreign ownership. The exercise also deepened the capital market as many banks raised funds through public offerings, which further expanded the market and transformed the banking sector (Pat & Odia, 2011). N406.4 billion was raised from the capital market out of which N360 billion was verified by the CBN. The exercise along with financial reforms, produced a banking sector characterised by large and strong banks and an improved payment system and financial infrastructure. Nigerian banks also have a strong presence across the continent (Oh, 2017).

[32] Author's calculation from data from the Central Bank of Nigeria. See reference: Central Bank of Nigeria (CBN), 2021 for datasheet.
[33] See reference: NBS (2025b) for datasheet.

In 2024, the Central Bank announced another round of banking recapitalisation which reviewed upward the minimum capital requirements of banks to N500 billion for international banks, N200 billion for national banks and N50 billion for regional banks. The recapitalisation was triggered by the need for banks to support the federal government's goal of delivering a US$1 trillion Nigerian economy by 2030. The exercise is expected to make Nigerian banks stronger and more resilient, enhancing their capacity to support the growth of the economy. The exercise is expected to result in mergers and acquisitions in Nigeria's banking industry, thereby creating fewer but stronger banks (FSDH Merchant Bank, 2024).

Further to the progress made in the banking sector, there has been a notable transformation of Nigeria's financial and technology landscape since the 2000s. Reforms in the telecommunications and banking sectors paved the way for the growth of Nigeria's technology ecosystem. Following the increase in internet and smartphone penetration and demand for digital services, the financial technology (fintech) landscape has experienced tremendous growth in the last two decades. As noted by Disrupt Africa (2019), between 2014 and 2019, Nigeria's fintech scene attracted over US$600 million in funding. In 2019 alone, the country raised US$122 million, representing 25% of the US$491.6 million raised by African tech startups. Growth in fintech was driven by the CBN's commitment to achieving an 80% financial inclusion target by 2020, the surge in e-commerce activities and an increase in internet and smartphone penetration (EFInA, 2018).

Fintech firms provide services ranging from payment services and infrastructure, savings and wealth management, retail lending and lending infrastructure, digital banking services, personal finance, merchant solutions and platform and services for financial services providers (Kola-Oyeneyin, et al., 2020). The majority of the fintech market consists of firms providing digital retail payment solutions, payment infrastructure and digital retail trading and micro-lending services to individuals and small-scale businesses. Startups such as Carbon and Renmoney provide short-term loans to individuals leveraging credit-scoring algorithms while Migo offers unsecured working-capital loans to SMEs with minimal documentation to solve the challenge of limited access to finance (Kola-Oyeneyin, et al., 2020).

Investment in fintech firms mostly came from foreign investors, including venture capital firms and institutional investors, that witnessed the growth potential of the Nigerian market. These investors have provided fintech firms to scale rapidly and develop innovative solutions for the Nigerian market. This influx of investment has fuelled the rise of successful fintech companies like Flutterwave and Paystack, which have transformed Nigeria's payment landscape. Founded in 2016 as a payment technology company, Flutterwave has processed over 200 million transactions worth over US$16 billion across 34 countries in Africa (Wendy, 2022). The company enables businesses to receive payments in multiple currencies and access collateral-free loans. The company operates an e-commerce store that allows businesses to sell products and accept payments without needing a website or coding skills (Okungbaye, 2022). The company has partnered with major companies such as Mastercard, Visa, and First Bank of Nigeria to enable payments for small businesses across Africa. Valued at US$3 billion, the company is considered one of the most successful fintech companies in Africa (Greenhouse Capital, 2022).

Furthermore, Paystack, which provides online and offline payment solutions for businesses, was acquired by US payment company, Stripe, in 2020, representing one of the largest exits in African fintech history (Reuters, 2020). The deal suggested the huge growth potential of the fintech industry in Nigeria and across Africa. Both companies, along with other technology companies, have raised significant funding from global investors, enabling them to expand operations across Africa and beyond. The rapid growth of mobile money operators like OPay has also shaped the banking and payments ecosystem, improving financial inclusion and access to financial services for both the banked and unbanked population across the country.

In addition to fintech companies, there has been a remarkable growth in the number of technology hubs in cities such as Lagos, Abuja, Port Harcourt, Kaduna, Kano, and others. Lagos-based Co-creation Hub (CcHub), a technology innovation hub, played a key role in shaping the country's technology and innovation landscape. Founded in 2010, CcHub is Nigeria's first pre-incubation space that has supported leading firms like LifeBank, BudgIT, WeCyclers and many others. Foreign companies and institutions have also provided technical and training support to technology hubs and companies to enhance skills development across the country. Companies such as Microsoft, Google and Mastercard have invested in training programmes in key areas such as coding, data analytics, cybersecurity, artificial intelligence (AI) and digital marketing. Recently, in partnership with the government, Microsoft announced a US$1 million investment to provide skills in artificial intelligence for 1 million Nigerians through the Microsoft AI Skilling Initiative. The company is also partnering with the MTN Foundation to train small business owners on digital, productivity and cloud skills. According to Badham (2025), the company has impacted over 4 million Nigerians with free tech skills through the MTN ICT and Business Skills training programme. Similarly, the Nigerian government secured a grant of N2.8 billion from Google to increase artificial intelligence competency in Nigeria. This is part of Google's US$5.8 million investment to improve technology skills and knowledge in Sub-Saharan Africa (Adegboyega, 2024). In addition to foreign firms, some local investors and state governments, for instance, the Lagos State government through the Lagos State Employment Trust Fund have provided skills training for Nigeria's teeming population.

Over the years, government policies has mostly played catchup with the rapid advancements in the technology space in Nigeria. However, there has been progress in recent times. Several policies and regulations such as the Nigeria Startups Act and the Ministry of Communications, Innovation and Digital Economy's Strategic Blueprint for 2023-2027, among others, were introduced to enhance innovation and digital infrastructure and support the growth of the technology sector. As part of the programmes in the Strategic Blueprint for 2023-2027, the federal government introduced the 3 Million Technical Talent (3MTT) programme, which aims to train 3 million technical talent by 2027 (Esene, 2024). The programme has gained widespread support from both local and international firms that have indicated interest in investing in training programmes for young Nigerians. In addition, the CBN introduced the Regulatory Sandbox in 2021 to provide an environment for fintech firms to test innovative products and services under regulatory supervision. The Lagos State government, through Lagos Innovates, also provides support to tech founders by linking them with workspaces, learning tools and incubation centres. While these initiatives create growth opportunities in the technology space, challenges such as inadequate digital infrastructure, inconsistent regulatory enforcement, and limited access to capital for early-stage startups continue to hinder the sector's full potential.

The expansion of tradable services in Nigeria represents a notable success in the country's structural transformation efforts. The sector's share in real GDP increased from 0.1% in 2000 to 22.3% in 2021. Unlike traditional sectors that are constrained by physical infrastructure, tradable services have thrived by leveraging technology. Companies in the sector are at the forefront of innovation, creating new products and services that are improving access to finance and financial products and solving payment challenges across the country and beyond. Several technology firms in Nigeria are now among Africa's unicorns i.e. companies valued at over US$1 billion. The scale of growth of technology firms can be rapid, particularly when they are enabled with funding, and operate in a growing market and adaptive entrepreneurial ecosystem. Such an environment encourages innovation, which enables these companies to not only scale quickly in the domestic market but also within the continent and compete globally. Unlike manufacturing firms, tradable service firms have been able to provide payment and currency exchange services to the growing number of Nigerians in the diaspora. The success of some Nigerian banking, telecoms and technology firms further reinforces the important role of tradable services in driving economic growth, creating high-paying jobs and enhancing the productivity of the Nigerian economy.

The growth of Nigeria's technology ecosystem was organic and not entirely planned by the state, even though initial reforms in the telecoms and banking sectors provided opportunities for technology firms to emerge. A similar pattern is evident in Nigeria's entertainment industry, especially music and film, where innovation and global success have been driven by entrepreneurs, rather than direct government intervention. More recently however, the government has begun to play a more active role in supporting the technology sector through targeted policies and regulatory frameworks aimed at accelerating its growth and boosting its economic impact.

Foreign capital was instrumental in the early expansion of Nigeria's tech sector. These investments enabled companies to innovate, scale rapidly, and improve user experience to meet rising demand. In addition, global tech companies invested in skills development, helping to build a pool of local talent that would otherwise have been sourced internationally. This combination of capital inflows and capacity building allowed Nigerian tech firms to remain competitive, attract further investment and deepen their contribution to economic development. By contrast, the expansion of the banking and telecoms sectors was directly shaped by state-led reforms - liberalisation, privatisation and recapitalisation.

The potential for tradable services to transform other sectors is huge. The sector may not have the job-creating capacity relative to sectors like agriculture and non-tradable services, but its transformative impact on other sectors remains huge. For instance, a digital store with an efficient payment system can enhance trade both within the country and across borders, enabling buyers to connect with sellers. This can stimulate demand for other services such as transport, logistics, warehousing, and delivery while also creating opportunities for financial services like credit and insurance. Innovation in the sector can influence key sectors such as agriculture, education, health and manufacturing. This makes tradable services unique in raising productivity growth in developing countries including Nigeria.

Despite improvements in the sector, challenges remain. While the share of the adult population in Nigeria that is financially excluded decreased from 53% in 2008 to 26% in 2023, about 29 million adult

Nigerians remain formally excluded (EFInA, 2024). With regard to access to financial services, there are demographic and geographical gaps in Nigeria - all states in the northeast of Nigeria report exclusion levels that are above the national average (EFInA, 2024). Challenges such as regulatory uncertainty, infrastructure gaps, high cost of doing business and limited access to venture capital funding limit the growth of technology firms in Nigeria. Nigeria's tradable services sector is also facing the challenge of skills gap, as young Nigerians continue to emigrate due to rising living costs and insecurity in some parts of the country. Many firms find it difficult to retain talent due to competitive demand for tech skills from abroad. This suggests that to further grow the sector and retain talent, broader issues of macroeconomic instability, infrastructure deficit, limited power supply and insecurity must be addressed.

Nigeria's growing young population, increasing access to smartphones and the internet, and improving digital infrastructure and regulations present opportunities for further growth in the tradable services sector. Key areas such as business process outsourcing, cybersecurity and digitising government services, among others, remain largely untapped. In addition, connecting tech hubs with universities and colleges of education is important in improving technology skills for young Nigerians. Universities and colleges of education need to complement existing efforts by creating specialised training centres to close the skills gap (EFInA, 2018). Government policies to enable access to finance, technology and training across the country are required to reduce regional gaps.

While tradable services offer enormous benefits, it is unlikely that the sector alone can serve as the primary engine of employment in a populous country like Nigeria, with over 220 million people. Although the sector's share of employment increased from 1% in 2000 to 9% in 2018, much of this growth has been concentrated in urban areas and among skilled workers. As such, its impact on broader employment outcomes remains limited. The sector's growth should be complemented by labour-intensive sectors such as manufacturing. This is crucial not only for inclusive employment creation but also for enabling the economy to fully harness its productive potential. A more balanced growth path, which leverages the strengths of both tradable services and manufacturing, offers a more sustainable route for structural transformation.

3.6 Making a Case for Effective Structural Transformation in Nigeria

Structural transformation is not an end in itself. It leads to economic development, where the average income in a country increases substantially for a long period as the economic structure changes in favour of the manufacturing sector. This is the core argument of Arthur Lewis and Nicholas Kaldor in their thesis on how low-income countries can achieve development. This section begins by analysing Nigeria's socio-economic challenges and concludes with the case for effective structural transformation.

In Nigeria's case, there has been a shift towards the services sector since the year 2000. This shift has coincided with a decline in the manufacturing and non-manufacturing industrial sectors. Furthermore, it has coincided with an increase in the number of unemployed individuals and a rise in the number of persons living below the poverty line. In other words, there has not been significant improvement in economic and social outcomes over time, and when compared with peer countries that experienced structural transformation.

To begin with, Nigeria's real per capita income growth averaged 1.6% between 1981 and 2020, with a contraction of 5.9% from 1981 to 1999 and an expansion of 8% from 2000 to 2020, according to the World Bank's World Development Indicator (WDI) (2022a). The trend in real per capita income growth has mirrored that of real GDP, with significant declines during periods of economic recession, such as in the early 1980s, 2016, and 2020. In nominal dollar terms, per capita income fell from US$874 in 1981 to US$568 in 2000, rose to US$2,280 in 2010, and then declined again to US$2,097 in 2020 (WDI, 2022b).

As Sanusi (2010) pointed out, Nigeria's per capita income growth has been weak compared to emerging Asian countries such as Thailand, Malaysia, China, India, and Indonesia, which had lower per capita incomes than Nigeria in 1970. One country cited by Sanusi is Indonesia. Oshikoya et al. (2019) compared Nigeria's economic performance with that of Indonesia, a country that shared similar characteristics with Nigeria in the 1960s and 1970s, including a large and diverse population, substantial mineral resources, and a significant agricultural sector. In 1970, Nigeria's nominal GDP per capita was US$120, higher than Indonesia's at US$84. However, Indonesia's rapid industrial growth drastically changed this. By 2016, Indonesia's nominal GDP per capita had risen to US$3,570, 64% higher than Nigeria's, at US$2,176. Oshikoya et al. attributed Indonesia's economic success to deliberate government efforts since the mid-1980s to promote widespread industrialisation through a combination of import substitution and export-oriented policies.

In terms of poverty and inequality, findings by Aigbokhan (2000) revealed that despite achieving some output growth between 1985 and 1997, poverty, inequality and polarisation worsened in Nigeria. Aigbokan noted that this disconnect is largely due to the nature of growth, driven by the oil and mining sectors. The study found that from 1985 to 1997, poverty and inequality were pronounced in rural areas, in the northern geographical zones and among male-headed households, although female-headed households accounted for 13.5% of the sample studied. Similar to Aigbokhan's findings, a more recent study by Mayah et al. (2017) found that Nigeria is among the thirty most unequal countries in the world in terms of income distribution, as the poorest 50% of the country's population accounted for 10% of national income. According to Mayah et al., between 2004 and 2010, the top three deciles accounted for faster growth in per capita consumption than the rest of the population. In addition, the income share of the bottom 40% declined between 1986 and 1996; increased between 1996 and 2004 and trended downwards from 2004. Lastly, Mayah et al. showed that Nigeria's Palma ratio, which compares the income of the top 10% to that of the bottom 40%, increased between 2004 and 2010. Similarly, as observed by Clementi et al. (2016), although there was an increase in real mean and median consumption expenditures between 2004 and 2013; consumption shares of the poorest percentiles of the population declined between 1.3% and 1.6% per annum during the period; while expenditures of the richest percentiles increased by an annual average of 1.7%. During this period, the Gini index increased at an annual average rate of 1.5%. Their study revealed further that Nigeria was experiencing a process of economic polarisation, which involves the shrinking of the middle class and a further accentuation of the North-South divide already characterising the country.

Gender inequality is an important aspect of economic and social exclusion in Nigeria. According to Enfield (2019), women in Nigeria are less likely to be active in the labour market and more likely to be in lower-earning opportunities like agriculture and informal jobs. They also earn less for a given level

of education and experience than men of the same level. Enfield further highlighted that 50% of women in rural areas are married at age 20 compared to 4% of men. The consequence of early marriage is the exclusion of women from the labour market as a result of pregnancies and household responsibilities. The British Council Nigeria (2012) noted that only 7.2% of women in Nigeria own the land they farm, and this limits their access to loans and constrains entrepreneurship and business activity.

Findings from the Nigeria General Household Survey 2018/2019 conducted by the National Bureau of Statistics (NBS) (2019) showed that women are less engaged in agriculture, nonfarm enterprise and wage employment than men and for women who engaged in "no activity", the burden of household duties was a factor that limited their participation in paid work. For instance, 25.6% of females who are not looking for work cited household duties/childcare as the reason, compared to 5.7% for men. This share of women is much higher in the North (32.7%) of Nigeria than in the South (6.2%). Findings of the survey also revealed that the share distribution of household members that fetched water is higher for females (55.5%) than males (48.7%). According to Thompson (2019), women and girls in Nigeria face numerous barriers that limit social inclusion. Thompson highlighted some of these barriers including "restricted access to employment, education, health services, legal rights and public participation, and gendered social norms that position women and girls as wives and caretakers while men and boys are breadwinners and decision makers" (Thompson, 2019, p.5). These barriers imply that women are more likely to be poor than men, and are typically found in the first and second quintile of the wealth distribution (Mayah et al., 2017).

Nigeria's poverty profile reflects the fact that high economic growth experienced in the 2000s, has not significantly reduced the absolute number of people living in poverty. Even prior to the return to democracy in 1999 where economic growth was lethargic, poverty numbers increased. Aigbokhan (2000) showed that in 1985 and 1996, 38% and 47% of Nigerians lived below the national poverty line, respectively, with the majority of the poor residing in rural areas. Although the level of poverty increased by 13% from 1985 to 1993, the rate of increase slowed to 9.3% from 1993 to 1997 (Aigbokhan, 2000). Similarly, the British Council Nigeria (2012) cited that about 54% of Nigerians are poor and the proportion has doubled since 1980. In terms of absolute numbers, Department For International Development (DFID) (2014) stated that approximately 60 million Nigerians are poor, while 60 million more Nigerians are close to the poverty line. Majority of the poor (about 60%) in Nigeria reside in the North and also in rural areas. On the causes of poverty, DFID (2014) noted that poverty is driven by limited job creation arising from a harsh business environment as well as low productivity in agriculture which makes Nigeria reliant on food importation and therefore exposing the poor to rising global food prices. With the outbreak of COVID-19, poverty and inequality in Nigeria are expected to worsen especially because poor individuals, the majority of whom depend on daily labour will be disproportionately affected (International Finance Corporation (IFC), 2020). The World Bank (2021b) estimated that an additional 9 million Nigerians have fallen into poverty due to the pandemic, bringing the total number of poor persons to 91 million in 2021, with the majority residing in the northern part of the country and in rural areas. This raises the risk of social instability in the country.

Unemployment and underemployment are among the biggest challenges facing the Nigerian economy. Agu & Evoh (2011) referred to the 2000s as a decade of jobless growth, given that this

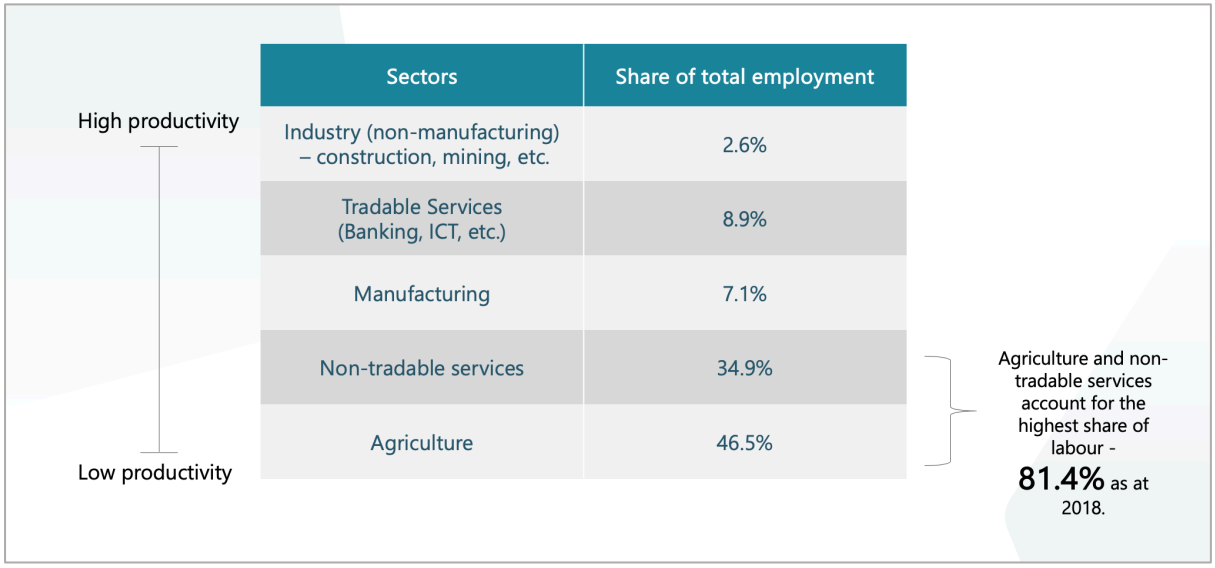
growth did not result in more wage employment opportunities. This view was echoed by Enfield (2019) who noted that only 8% of the adult population are employed in the formal sector – a significant number of individuals in Nigeria are self-employed, working for their families or in informal jobs. For Bloch et al. (2015), Nigeria's impressive growth profile in the 2000s has not resulted in a reduction in unemployment and poverty because growth has been driven by a few sectors with low employment capacity such as real estate, oil and gas and ICT, leaving out employment generating sectors like manufacturing. Ajakaiye et al. (2015) noted that Nigeria has a low employment elasticity, which was estimated at 0.11, from 1981 to 2014, confirming that the high growth experienced did not lead to appreciable gains in employment. Their study cited a number of factors that limit job creation in Nigeria to include low industrial base, infrastructural deficit, poor governance and weak institutions and insecurity.

In addition to the low job-creating capacity of the economy, the growing number of new entrants into the labour force further compounds the situation. From 2016 to 2018, a net total of 59,631 jobs were lost while there was an increase in the number of labour force entrants each year by 4.7 million during the period i.e., 15.1 million individuals were added to the labour force, with the majority seeking their first job (UKAID, 2020). Data from the National Bureau of Statistics (NBS) (2021b) showed that unemployment rate has risen sharply from 6.4% in 2014 to 33.3% in 2020, exacerbated by the COVID-19 pandemic. Furthermore, the majority of workers in Nigeria are working below their capacity and are mostly in the informal sector. As at 2020, Nigeria had an underemployment rate of 22.8%, an increase from 17.9% in 2014 (NBS, 2021b). As pointed out by Jenq et al. (2021), in at least a decade, about 85% of workers in Nigeria have been engaged in household farms or non-farm household enterprises. Only 1 in 10 were wage-employed. They noted further that many farms in Nigeria are characterised by poor commercialisation and limited access to inputs while non-farm enterprises are small-scale, with almost 9 in 10 not employing individuals outside the household. This precarious situation limits the prospects of the underemployed to get out of poverty and contribute productively to the economy.

The persistence of poverty, unemployment, and inequality in Nigeria, on a large scale, can be linked to conflicts, insecurity and different forms of social disorder that arise when the majority of the citizens are excluded from opportunities. However, it can also be argued that such conflicts and social unrest could be exacerbated by the persistence of poverty and inequality. In Nigeria, the recent increase of kidnapping, banditry, theft and terrorism in some parts of the northeast and northwest has resulted in about 2.9 million internally displaced persons (UNHCR, 2021) and heightened tension in the affected region. Such menace will, in turn, have long-term negative implications on economic and social inclusion and further widen the North-South divide in the country, if unaddressed. Herbert & Husaini (2018) found that injustices and the absence of inclusive growth continue to drive grievances in different parts of the country and limit Nigeria's economic development. Conflicts lead to a reduction in per capita income and household income in Nigeria, increasing poverty incidence, poverty gap and poverty severity (Odozi & Oyelere, 2019). In summary, social and economic exclusion fuels conflicts, which in turn, limits economic development. It is important to therefore highlight that with persistent conflicts, Nigeria is less likely to attract the much-needed investments that will drive structural transformation in the long run.

There are several reasons to argue that structural transformation can address Nigeria's socio-economic challenges. **The first is that the current economic structure remains skewed towards the sectors with low productivity** i.e. Nigeria's labour is concentrated in sectors with low levels of productivity. 81.4% of employed individuals work in agriculture and non-tradable services (See Figure 9). This suggests that the current economic structure cannot support rapid income growth and economic development, especially when productivity growth has been declining since mid-2000. Although Nigeria has seen a transition of workers out of agriculture since the 2000s, much of the movement of labour was towards non-tradable services. These movements occurred at the expense of the manufacturing sector which still had a low share of 7% in 2018. It becomes important to enhance the capacity of the mid-to-high productivity sectors to accommodate more labour given their potential to raise income levels and overall productivity of the economy.

Figure 9: Sectoral Productivity and Share of Total Employment in Nigeria in 2018



Source: Created by the Author using data from the Economic Transformation Database

The second reason is that Nigeria's manufacturing sector remains untapped, with huge potential to drive structural change. The expansion of the manufacturing sector is important in driving economic and social inclusion. As shown by Hayashi (2018) and Kruse et al. (2021), the sector's rapid expansion in terms of output and productivity was instrumental for the Asian countries to catch up and converge income levels with advanced countries. In Nigeria, however, the sector was the second smallest contributor to 1990-2010 GDP growth, accounting for just 5% (Bloch et al., 2015). While the services sector and economic output experienced diversification, the manufacturing sector failed to diversify as its activities are driven majorly by the food and beverages sub-sector. Bloch et al argued that this poor performance of manufacturing is a major factor in the lack of inclusive economic growth in Nigeria. They noted that to address poverty and unemployment, Nigeria needs to strengthen the industrial sector and adopt an integrated approach to local economic development.

The manufacturing sector is important for economic and social inclusion. Manufacturing has the potential for productivity catch-up that cannot be matched by some aspects of services (Felipe, 2018). Here, Nicholas Kaldor's third law, which states that total productivity in the economy is positively linked with faster growth in manufacturing output becomes important. Manufacturing displays static

and dynamic increasing returns to scale and the increase in overall productivity will be driven by the movement of labour from agriculture, which displays diminishing returns, to manufacturing. While static return to scale arises from the size and scale of production units, dynamic economies of scale are induced by the accumulation of knowledge and experience during the production process. Essentially, manufacturing has been found to play an important role in improving the conditions of developing countries and ensuring they catch up with developed countries. AlKathiri (2021) found evidence of unconditional convergence in labour productivity for the manufacturing sector and concluded that labour productivity growth is primarily driven by capital accumulation. AlKathiri noted that expansion of the manufacturing sector in developing countries through capital accumulation would close the income gap with developed countries. This corroborates findings by Rodrik (2013) which showed that manufacturing industries display unconditional convergence at a rapid pace partly because they produce tradable goods and can be easily integrated into the global production networks, facilitating technology transfer and adoption.

In a study by Abdu et al. (2021) that examined the drivers of manufacturing firms' productivity in Nigeria, the authors found that manufacturing firms in Nigeria are heavily labour-intensive and these firms exhibit increasing returns to scale, an important feature described by Kaldor (1966). In his first law, Kaldor noted that the faster the rate of growth of the manufacturing sector, the faster the GDP growth rate. According to Kaldor, increasing returns to scale in the manufacturing sector can trigger capital accumulation and higher investment returns. With increasing return to scale, labour productivity and income per capita rise, and there is often no limit on employment established as a result of subsistence wage. Such type of capital accumulation, which is also a feature of the modern sector as portrayed by Lewis (1954), will create a significant number of jobs and provide stable income for workers in Nigeria.

Another reason why manufacturing is important for economic and social inclusion is its feature of stronger forward and backward linkages. While backward linkages refer to the demand-side connections a firm has with other firms, forward linkages include the supply-side connections with existing firms (Hefner & Guimaraes, 1994). Felipe (2018) highlighted the linkages and knowledge spill-overs are strong both within manufacturing, between manufacturing and agriculture and between manufacturing and services. In Nigeria, few studies have reviewed the nature of forward and backward linkages in the manufacturing sector. Ohimain (2014) documented how the implementation of the Backward Integration Policy (BIP) in 2002 spurred tremendous growth in Nigeria's cement industry and made Nigeria self-sufficient in cement production, from being a net importer of the commodity. With the BIP, a significant share of resources was sourced locally creating opportunities in sectors such as mining, agriculture and oil and gas. An estimated 7,000 direct and indirect jobs were created while Nigeria became a net exporter of cement. McCulloch et al. (2017) revealed that Nigeria's industrial sector has a great potential for backward integration, however, constraints such as limited options for sourcing locally, inconsistent policies and poor policy implementation, and low productivity among others affect the successful implementation of policies. A stronger manufacturing sector can spur the development of other sectors, creating opportunities for workers both in manufacturing and non-manufacturing activities, thereby, raising income levels.

Furthermore, manufactured goods have a higher income elasticity of demand than agricultural goods (Sposi et al., 2021). This implies that lower costs of production driven by competition and innovation

would result in high demand for manufactured goods, attracting more investments into the sector. In addition, Engel's law showed that an increase in income is associated with a decline in the share of agricultural expenditure and an increase in expenditure on manufactured goods. This suggests that the potential of manufacturing is not confined by rising income. Felipe (2018) noted that the relatively high-income elasticity of manufactured goods reflects the non-price feature of a good. McCombie & Thirlwall (1994) showed that the difference between price and non-price competition matters in manufacturing. They argued that non-price competitiveness includes factors other than price such as quality, speed of delivery, durability, reliability etc., that influence consumer's choices. As income per capita increases, the demand for such sophisticated goods increases and manufacturing firms therefore need to enhance product and process innovation, moving beyond price competition to maintain market share (Felipe, 2018). For a country like Nigeria with low manufactured goods exports, there is a tremendous opportunity to compete at both price and non-price levels, targeting local, regional and continental markets. Not only will this bring about innovation and skills development, it will also create employment opportunities for individuals both within and outside the manufacturing sector.

Finally, the manufacturing sector in Nigeria has a huge untapped potential and it is therefore prime for capital accumulation and economic growth. Several reasons substantiate this argument of the sector's huge untapped potential – the sector's low contribution to Nigeria's GDP; the skewed contribution of its sub-sectors; and its low share in total exports and high share in imports. Since 2000 - 2021, the manufacturing sector's contribution to GDP has averaged 9%. Relative to the East Asian countries such as Singapore, Indonesia and Thailand that experienced industrialisation in the 1980s and 1980s and where manufacturing was referred to as the engine of economic growth, Nigeria's manufacturing sector is largely under-developed and this presents an opportunity for expansion.

Within the manufacturing sector in Nigeria, the National Bureau of Statistics (NBS) identifies 13 subsectors (NBS, 2022a). A cursory look at the dynamics within the sector shows that output is skewed towards a few of the 13 subsectors. For instance, the three largest sub-sectors – food and beverage; textile, apparel and footwear; and cement accounted for 79.3% of real manufacturing output in 2021, according to data from the NBS. Their average share in the last five years stood at 78%. The remaining 13 sub-sectors collectively accounted for 20.7% of total output in 2021, with some sectors such as oil refining and plastic & rubber products accounting for as little as 0.3% and 3.5%, respectively. Coincidentally, these two sectors are areas where Nigeria can build competitive advantage, with Nigeria being the largest crude oil producer in Africa as well as a major importer of petroleum products on the continent. The low contribution of the 10 manufacturing sub-sectors to overall output presents an opportunity for new investments (both local and foreign investments) into the manufacturing sector, job creation and real income growth.

Furthermore, the performance of the sector in relation to external trade presents a clear case on why Nigeria needs to develop the sector and harness its potential in improving non-oil exports, foreign exchange earnings and ensuring exchange rate stability and external reserves accretion. Data in this section are analysed from the National Bureau of Statistics (NBS) Foreign Trade in Goods Report referenced as NBS (2022b). On exports, the sector's contribution to total exports has remained low over the years. From 2016 to 2021, the share of manufactured goods in total goods exports averaged 5.2%, with a peak contribution of 11% in 2019 and the lowest at 1.7% in 2017. Nigeria's total export is

dominated by crude oil and other oil related products which account for about 90% of total export value. Although year-on-year manufacturing exports trended upwards by 2.5% in 2021 to ₦984 billion (US$2.5 billion), it is yet to reach its peak of ₦2.1 trillion (US$5.7 billion) in 2019 and it remains significantly below manufactured goods import. As regards imports, manufactured goods accounted for an average of 42% of total imports value from 2013 to 2021. The value of manufactured goods imports rose from a share of 10% of total imports in 2013 to 49% in 2017 and 50% in 2021. Essentially, the value of manufactured goods export has consistently remained lower than manufactured goods import, implying a trade deficit in manufacturing, which has increased from ₦4.5 trillion (US$12 billion) in 2016 to ₦9.4 trillion (US$24 billion) in 2021[34]. Efforts to bridge this deficit and the overall balance of payment deficit by the government have resulted in large external borrowings and exchange rate depreciation, which, in turn, hurts the manufacturing sector that is reliant on imported intermediate inputs as well as the rest of the economy through inflation. Drawing from the experiences of the Asian countries, rapid growth of exports, particularly of manufactured goods, creates a virtuous growth circle such that to pay for necessary imports, a country needs to export, otherwise current account deficit will expand (Felipe, 2018). Developing the manufacturing sector therefore has the potential to build economic resilience by reducing Nigeria's reliance on crude oil for foreign exchange earnings and government revenues. This will have an implication on macroeconomic stability, and the overall living standards of citizens.

The third case for effective structural transformation in Nigeria is the prospect of tradable services to raise overall productivity and income for the majority of citizens. Recent studies such as Dasgupta et al. (2017) and Gollin (2018) have shown the importance of tradable services which has higher productivity level than manufacturing. These studies noted that the sector exhibits similar traits to manufacturing i.e. it is often concentrated in urban areas; it relies on technology and knowledge spill-overs; it is key in attracting foreign direct investment and lastly, some components of the services sector are large, formal and organised. In Nigeria, the rise of the services sector has been spearheaded by rapid expansion in telecommunications, financial technology (fintech), and other forms of digital technology. Specifically, the tradable services sector has experienced tremendous expansion in the last two decades with an average real growth of 9% (NBS 2022a). In the ICT space, Nigeria has witnessed a significant increase in the number of technology hubs in cities such as Lagos, Abuja, Port Harcourt, Kaduna, Kano, and others. Many technology firms and start-ups continue to experience significant growth and are increasingly becoming a key source of foreign investment in the country. The World Bank Group (2019) revealed that investment funding for Nigerian start-ups, mostly driven by young entrepreneurs, stood at US$117 million in 2018 from over US$100 million in 2016, with the rise of firms such as Jumia, Andela, Flutterwave, PayStack, among others, whose financial value has grown rapidly.

The expansion of tradable services in Nigeria in the last two decades has also brought about a high demand for skilled workers in sectors such as ICT, finance, telecommunications and professional services. This is one aspect where tradable services can drive income and productivity growth. Growth of the sector is associated with investment in human capital which is a key element of structural transformation in Nigeria. Tradable services may not employ workers as much as sectors such as agriculture and non-tradable services, however, the sector's contribution to skills development and

[34] Computed from NBS data on Foreign Trade 2022

productivity growth in the economy is important. Expansion of the sector creates opportunities for many young Nigerians to earn income and productively contribute to the economy. In addition, the prospects of tradable services are huge on the continent, considering the global digital acceleration facilitated by COVID-19. Young graduates can benefit from the growth of tradable services through the acquisition of skills.

Despite the improvements in tradable services in the last three decades, some challenges remain: many Nigerians still lack access to financial services and the internet and many small businesses cannot access loans from financial institutions. As at 2023, 26% of Nigerian adults were financially excluded (EFINA, 2024) while about 80 million people in Nigeria, which is two-thirds of the adult Nigerian population, cannot access the Internet (Odufuwa et al. 2024). Only 38% of businesses accessed loans from financial institutions in 2022 (Adeyemi et al. 2022). These statistics highlight the need for reforms and investments in the tradable services sector to improve access to the internet and finance, unlocking even more opportunities for the majority of citizens and businesses. Finally, sectors such as finance, ICT, professional services and telecoms have strong linkages with other sectors of the economy and thus, can enable the expansion of other sectors in the economy. These factors make the tradable services sector important in the structural transformation process and in the quest for Nigeria's economic development.

Nigeria's large and young population, mineral and agricultural endowments and the African Continental Free Trade Area (AfCFTA) Agreement offer tremendous opportunities and incentives for the production and export of manufactured goods and services. Essentially, the potential for industrialisation is enormous particularly given the availability of low-skilled labour in developing countries like Nigeria. These factors are discussed extensively in Chapter 6 of this study.

3.7 Conceptual Framework for Achieving Structural Transformation, Productivity Growth and Employment Growth in Nigeria

This section presents a conceptual framework for this study based on the Lewis theory of development and Nicholas Kaldor's Law, both of which emphasised the importance of structural transformation towards the high productivity modern sector in the development of a country. According to the Lewis theory of development, structural transformation is the engine of economic development. Lewis emphasised the importance of the modern sector which has higher level of productivity than the rural sector and also high wages that attract labour. Development occurs when labour moves from the low productive sector to the modern sector. The central thesis of Lewis's argument is that capitalists reinvest their surplus and create new capital and therefore, the modern sector expands and as a result, jobs are created and labour productivity increases. For Lewis, the speed of industrialisation is determined by the rate of industrial investment and capital accumulation in the capitalist/modern sector. As the capitalists reinvest profits, the modern sector is placed on a self-sustaining growth path and ensures the creation of more jobs until all the surplus labour in the rural sector is absorbed (Lewis, 1954).

Nicholas Kaldor's thesis centred on the importance of industrialisation in an economy. Kaldor builds on the argument in Lewis's theory of development which explained the intricacies of the modern and

rural sectors and their inter-relation with growth and development. According to Kaldor, the rate of industrialisation depends on exogenous components of demand and high growth of industrial output implies increased transfer of labour from surplus sectors (low productivity sectors) to high productivity sectors. This transfer of labour triggers overall productivity in the economy as follows – first, productivity increases faster in the labour-receiving-industrial sector due to its increasing return to scale, and second, productivity increases in the labour-supplying sector (low productivity sector) as the sector loses its excess labour (Kaldor, 1968). Kaldor argued that the rate at which labour transfer occurs is what determines the growth rate of productivity of the economy as a whole. Kaldor's main arguments are captured in his three growth laws: (1) the manufacturing industry is the engine of growth in an economy (2) manufacturing output is positively linked with productivity growth in the manufacturing sector due to the static and dynamic returns to scale characteristics (also referred to as Verdoorn's law) and (3) manufacturing growth induces productivity growth in the non-manufacturing sector, by absorbing idle resources from these sectors.

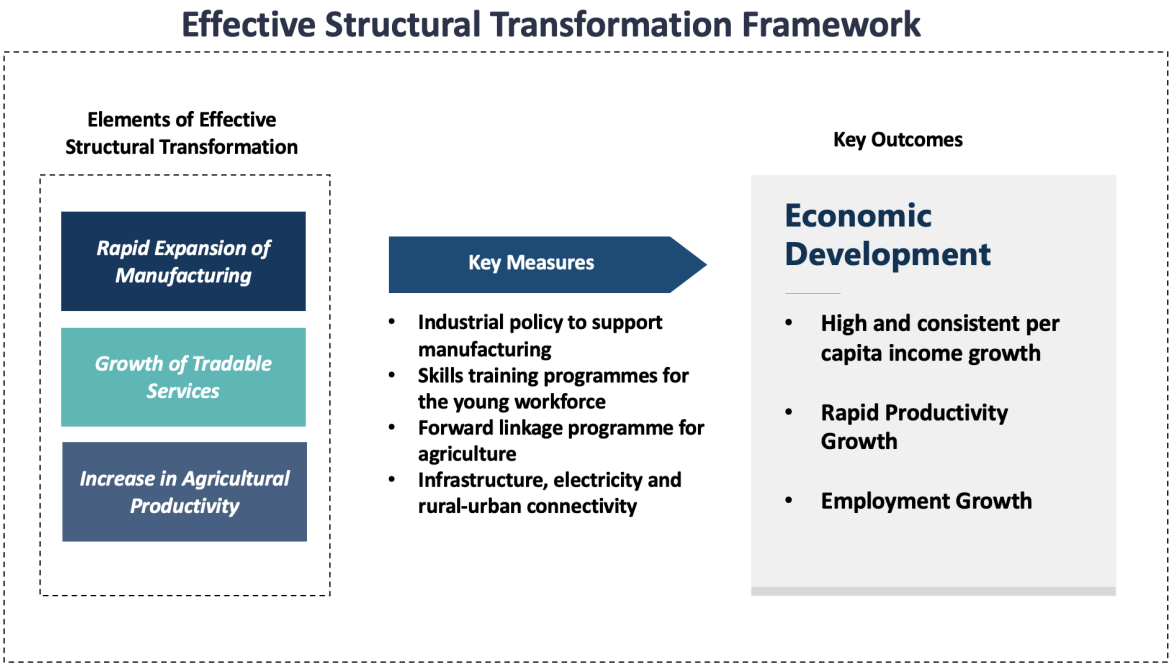
Having reviewed the relevant theories and literature on structural transformation and its linkage with economic development, this study identifies the need for structural transformation towards high-productivity sectors, as a viable means to achieve economic development in Nigeria for a number of reasons. First, Nigeria has surplus labour in agriculture and other low-productivity sectors like non-tradable services. Both sectors accounted for 81.4% of total employment in 2018. With a large pool of the labour force concentrated in the low-productivity sectors, the movement of such labour towards high-productivity sectors could trigger significant increases in productivity across the board. Second, the movement of labour towards the services sector, which Nigeria experienced since the 2000s appears not to have significantly reduced poverty and unemployment rates. But this needs to be interrogated further, given the productivity differences between tradable and non-tradable services. Lastly, Nigeria's manufacturing sector has the potential to accommodate labour from other sectors due to the following factors: local demand for manufactured goods is huge, as the sector accounted for an average share of 58.4% in total imports from 2018 to 2021; manufacturing share in exports averaged 6.8% from 2018 to 2021; several sub-sectors within manufacturing have been underdeveloped as only 3 sub-sectors accounted for 79% of manufacturing output in 2021[35]. Whether Nigeria can achieve successful structural transformation will depend largely on the development of sound and locally tailored policies to incentivise local production and exports.

This section discusses a conceptual framework for an effective structural transformation in Nigeria. This study recognises three elements of effective structural transformation, key measures, and outcomes. The elements represent "what" needs to be transformed, the measures are the "how" to ensure transformation and the objectives are the "why" – the desired outcomes to be achieved through the transformation. These elements include (1) rapid expansion of manufacturing (2) growth of tradable services and (3) increase in agricultural productivity. While rapid industrialisation entails faster growth of the manufacturing sector, the expansion of tradable services sector, which is also a high-productivity sector, has created a huge demand for skilled workers in areas such as finance, telecoms and ICT. This therefore makes important the need for constant skills training. Raising agricultural productivity ensures that agriculture provides relevant input for the industrial sector, prioritising mechanisation, investments and access to inputs and other resources in the agricultural

[35] Author's calculation from data from the National Bureau of Statistics. See reference: NBS, 2022b for datasheet.

sector. Some key measures include the provision of basic amenities such as infrastructure, power, transportation, internet connectivity and health and education in rural areas as well as improving rural-urban connectivity by providing easy access to markets for both industries and farm outlets located in rural areas to spur rural productivity.

Figure 10: Effective Structural Transformation Framework



Source: Created by the Author

The goal of structural transformation especially for a developing country like Nigeria should include high and consistent income growth, productivity growth and the creation of jobs for majority of inhabitants in the country.

Income and Wage Growth: Agriculture is the least productive sector in an economy and wages in the sector are among the lowest, relative to other sectors (Herrendorf & Schoellman, 2018). As noted by Lewis (1954), one of the primary reasons for labour to move from the subsistence sector to the modern sector is because of higher wages offered in the latter. Such higher wages raise general income levels as found by Martorano et al. (2017), and were responsible for the catch-up of Asian countries with advanced countries. In a study on India, Hasan & Molato (2019) found that between 2000 and 2012, structural change was associated with improvement in average wages for males and females and that expansion of the formal sector and employment are crucial for development. Higher wages and income level are therefore key ingredients through which structural transformation influences development outcomes.

Productivity Growth: Structural transformation splits the economy into different aspects, such as rural and urban, agriculture versus industry and services, in order to understand how productivity can be enhanced (Oyelaran-Oyeyinka & Lal, 2015). Within each of these aspects, productivity levels vary and the movement of labour also plays a key role in productivity growth or decline. McMillan & Rodrik (2012) point to the fact that developing economies are characterised by large productivity gaps

between aspects of the economy. Even within manufacturing and at the firm level, productivity gaps exist and are indicative of the allocative inefficiencies that reduce overall labour productivity. The major challenge for policymakers in developing countries, therefore, is to implement policies to bridge these productivity gaps across the different aspects of the economy and ensure sustained productivity growth over time. Duarte & Restuccia (2010) reviewed productivity trends of 29 countries from 1956 to 2004 and found that productivity growth in industry played a crucial role for countries to catch up in aggregate productivity to the United States. They concluded that productivity catch-up in industry explained about 50% of the relative aggregate productivity gains observed during the period. Essentially, one way to achieve economic development is to nudge structural transformation in the right direction, especially toward the high productive sectors, which can trigger overall productivity increases in the economy. When labour moves toward the high productivity sector, overall productivity will increase, as argued by Kaldor (1968), raising aggregate income level and improving development outcomes.

Employment Growth: Structural transformation has the potential to create jobs mainly due to the expansion of sectors with higher productivity levels. As a result, the share of workers employed in these sectors increases over time. The creation of such jobs ensures that individuals are productively engaged and contribute positively to the economy.

This study makes a case for an effective structural transformation approach. It argues that the process of the movement of labour towards manufacturing is necessary but must be complemented by the expansion of tradable services and raising agricultural productivity to ensure economic development. Viewing structural transformation through this lens ensures a clear understanding of the linkage between processes, outcomes and goals and it provides an opportunity for more specific policies to drive social and economic inclusion.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

This chapter examines the methodological framework of this study, covering the research methods, data sources, data collection and analysis and research ethics. Research methodology comprises theoretical perspectives, tools and techniques of data collection, and methods of data analysis (Indira Gandhi National Open University, 2015). The methodology must articulate the method of study, research design and method of data collection (Bhome et al., 2013). According to Acharyya & Bhattacharya (2019), research methodologies provide researchers with the means to examine whether causal relationships exist between observations. Additionally, these methodologies equip researchers with the tools to evaluate and predict the outcome of an event and produce knowledge from the occurrence of events. According to the authors, qualitative and quantitative research methods are two main approaches within the confines of research methodologies. While the qualitative approach seeks to understand causal relations through logical reasoning based on different accounts of observed facts, the quantitative approach examines these relationships by measuring and analysing data.

This study explores how Nigeria can achieve income and productivity growth and employment generation through structural transformation. The previous chapter reviewed economic literature on Nigeria and examined the country's economic growth, productivity trends and the movement of labour across sectors. The findings revealed that Nigeria has not undergone rapid industrialisation or the kind of structural transformation observed in the East Asian countries in the 1970s and 1980s. Notably, Chapter Three highlighted that in the 2000s, Nigeria achieved a significant expansion in the services sector, led by non-tradable services, one of the sectors with the lowest level of productivity. This expansion coincided with rising unemployment and poverty rates in the country. Meanwhile, the manufacturing sector, a crucial driver of structural transformation, grew modestly, with its share in real output, employment and exports remaining at single digits over the past decade. These experiences underscore the need to examine the extent to which the movement of labour across sectors has influenced key indicators such as income, productivity and employment and to explore strategies for effective structural transformation in Nigeria.

To achieve the objective of this study, three main research questions are explored. These questions centre on the "what", the "why" and the "how" of Nigeria's structural change. The research questions are as follows. (1) What has been Nigeria's experience with structural transformation and productivity growth? This question is further divided into two sub-questions: (1a) To what extent has the expansion of sectors and the movement of labour across sectors influenced per capita income growth and unemployment rate in Nigeria? (1b) What are the sectoral drivers of labour productivity growth and to what extent has the expansion of high-productivity sectors influenced productivity growth in Nigeria? (2) Why has the manufacturing sector been unable to drive structural change in Nigeria? (3) How can Nigeria achieve a successful structural transformation through the rapid expansion of crucial sectors? (3a) What factors/policies/conditions can foster the rapid expansion of select sectors in terms of output, investments and job creation in Nigeria?

The first research question entails providing an empirical assessment of the role of key sectors in driving productivity, employment and income growth in Nigeria from 1990 to 2021. Specifically,

question 1a quantifies the impacts of the movement of labour across sectors and the expansion of sectors on per capita income growth and unemployment rate in Nigeria. While previous chapters have shown that productivity levels vary significantly across sectors, with notable differences between tradable and non-tradable services, this chapter further investigates the extent to which the manufacturing sector and each component of services have influenced broad economic aggregates in Nigeria. The emphasis of question 1b is on productivity growth in Nigeria, examining the extent to which the expansion of manufacturing and tradable services has impacted labour productivity in Nigeria. In addition, the application of the shift-share method allows for an in-depth exploration of the productivity dynamics of key sectors and their impact on labour productivity growth in Nigeria. This analysis is crucial for understanding whether Nigeria's service-led structural change has been growth-enhancing or growth-reducing. The analysis also provides empirical evidence for the on-going debate about the role of the services sector in the development trajectory of emerging economies. The second research question looks into the reasons why Nigeria's manufacturing sector has not significantly contributed to economic output, employment and overall productivity growth overtime. Exploring this question is crucial in identifying barriers to industrialisation and productivity, given the important role of manufacturing in an economy as highlighted in Chapters Two and Three. Finally, the third research question sheds light on practical steps that are required from stakeholders, mainly the policymakers, to ensure effective structural transformation in Nigeria.

Given the complexity of the topic, this study uses mixed methods to address the research questions and achieve the overall objective of the study. Mixed methods allow for complementing one approach with another, using the findings of one method to inform the other. Johnson & Onwuegbuzie (2004) noted that the use of mixed methods ensures that researchers are creative, expansive and inclusive in conducting research. This study adopts both macro-to-micro and quantitative-to-qualitative approaches to explore structural transformation in Nigeria. The macro/quantitative analysis investigates the causal relationships between the movement of labour/sectoral expansion and economic indicators such as real income growth, productivity growth and employment in Nigeria. These relationships are explored in the first research question: What has been Nigeria's experience with structural transformation and productivity growth? The micro/qualitative aspect builds on the findings of the macro/quantitative aspect, employing semi-structured interviews to gain insights into the dynamics within sectors such as manufacturing and tradable services. These insights are crucial in addressing the second and third research questions: Why has the manufacturing sector been unable to drive structural change in Nigeria? How can Nigeria achieve a successful structural transformation through the rapid expansion of crucial sectors? (see Table 8).

The subsequent section of this chapter discusses the mixed-methods approach in detail, highlighting its relevance and application to the research questions identified in this study. The third section focuses on the empirical analysis of structural transformation and employment, productivity, and income growth. The fourth section examines structural transformation and productivity growth through the shift-share method. The fifth section details the semi-structured interview and the final section concludes the chapter.

Table 8: Research Questions and Methods

	Research Question	Method
1.	What has been Nigeria's experience with structural transformation and productivity growth? *1a. To what extent has the expansion of sectors and the movement of labour across sectors influenced per capita income growth and unemployment rate in Nigeria?* *1b. What are the sectoral drivers of labour productivity growth and to what extent has the expansion of high-productivity sectors influenced productivity growth in Nigeria?*	**Regression and Shift-share Analyses:** The use of regression model to test long-run relationships between sectoral employment shares and per capita income, productivity growth, and employment. Use of the shift-share method to distil productivity growth into two components: within-sector component and structural change component and examine which aspect drives productivity growth.
2.	Why has the manufacturing sector been unable to drive structural change in Nigeria?	Semi-structured interviews with industry stakeholders.
3.	How can Nigeria achieve a successful structural transformation through the rapid expansion of crucial sectors? *3a. What factors/policies/conditions can foster the rapid expansion of select sectors in terms of output, investments and job creation in Nigeria?*	Semi-structured interviews with industry stakeholders.

Source: Created by the Author

4.2 Mixed Method Approach

This section details the approach to be used in this study. To achieve the objective, this study adopts a mixed-method research approach. Mixed methods provide a detailed and better understanding of the research issue than the use of one method (Creswell, 2007). It involves developing better and more context-specific instruments in research. Greene et al. (1989) identified five purposes of mixed methods, which include triangulation, complementarity, development, initiation, and expansion. Three of these purposes are particularly important for this study – complementary, development and initiation. While the complementary feature emphasises the use of qualitative and quantitative methods to measure overlapping but different aspects of an issue, development entails the use of results from one method to inform the other method. Initiation looks at the discovery of new frameworks, analysing results from different perspectives to increase the breadth and depth of the inquiry. For Johnson & Onwuegbuzie (2004), the most fundamental task is that research methods should be linked with research questions to enable researchers to obtain the relevant answers to the questions (see Table 8). This approach, according to Johnson & Onwuegbuzie, ensures that the researchers are creative in conducting research and allows for the complementary use of both quantitative and qualitative methods in a mixed-method approach. To effectively adopt mixed methods, however, it is important for researchers to clearly understand the relevant features of quantitative and qualitative research (Johnson & Onwuegbuzie, 2004).

In this study, both the quantitative and qualitative methods are adopted sequentially. The quantitative approach was first applied to estimate the linkage between sectoral output/employment expansion and indicators such as productivity growth, employment and income growth. This analysis examined the role of the independent variables in explaining variations in productivity, income and employment growth, investigating the extent to which the movement of labour across sectors and changes in sectoral outputs influenced the economy over time. The shift-share approach is also used to determine the component of labour productivity growth attributable to within-sector productivity and structural change as well as the extent to which each sector influences overall productivity growth in Nigeria.

Examining the extent to which the movement of labour across sectors influences specific economic phenomena may not sufficiently reveal detailed information about the nature of the labour-receiving sectors and their capacity to accommodate more labour in the future; hence the need for mixed methods. As Brannen (2005) points out, combining results from different approaches ensures the generation of complementary insights towards a common objective. Brannen also noted that patterns from quantitative analysis can be better understood and explained by the qualitative results. Sammons et al. (2005) showed that the use of mixed methods complements the strengths of each method and reduces the weaknesses associated with one method.

With specific reference to this study, the quantitative approach was complemented by the qualitative approach, which involved the use of semi-structured interviews. These interviews and the insights obtained from the participants further expanded the findings of the quantitative approach by obtaining stakeholders' perspectives on the regression outcomes. The qualitative approach offered in-depth and micro-level insights on productivity, employment and income growth, particularly from a sectoral perspective. Not only did the qualitative approach examine the nature of sectors such as manufacturing and tradable services and their expansion opportunities, but it also revealed key lessons to be learnt from the implementation of sectoral and industrial policies to facilitate effective and inclusive structural transformation in Nigeria. In this case, semi-structured interviews were used to obtain the views of the participants. As explained in Brannen (2005), this research design follows a QUAN>QUAL combination where the qualitative approach was adopted after the quantitative approach. The capital letters represent the dominance of each method. In this study, both methods were dominant and well-supported in terms of resources. This sequential design allowed the researcher to select participants for the interview based on the knowledge of the outcomes of the quantitative aspect of the study. In particular, agriculture, manufacturing and tradable services firms were prioritised owing to the specific nuances of both sectors as revealed in the regression and shift-share analyses. This was discussed further in sections 5.1 and 5.2.

4.3 Modelling Structural Transformation and Employment, Productivity, and Income Growth

The linkage between the movement of labour and resources from low to high-productivity sectors and key economic indicators is central to this study and is examined in this section. Specifically, this section looks at the movement of labour across sectors and the expansion of sectors and their impacts on a set of economic indicators such as per capita income growth, unemployment and labour

productivity[36]. It reveals the impact of service-driven structural change that Nigeria experienced on these economic indicators.

To establish these relationships, this study adopts an ordinary least square regression method - Autoregressive Distributed Lag (ARDL). ARDL model allows for static and dynamic effects of variables and also tests for long-run relationships between variables. Initiated by Pesaran & Shin (1999) and developed by Pesaran et al. (2001), the ARDL approach has three main advantages – it is suitable for small sample sizes; it avoids the problem of order of integration associated with the Johansen likelihood approach and it provides unbiased estimates of the long-run model. ARDL can be applied to both non-stationary time series as well as to time series with mixed order of integration as long as the variables are in order zero I(0) and order one I(1) or a mixture of both.

For this study, the ARDL approach is most suitable given that the time series data are integrated at different orders as well as the need to capture the short and long-run effects of a change in the structure of the economy. In carrying out the regression, tests such as unit root, multi-collinearity, normality, serial correlation LM, and heteroskedasticity are carried out. The optimal lag lengths are determined within the model.

Data Explanation

Data used in the study are annual data obtained from various sources. Table 9 provides some details about the data. Historical time series data covering 1990 to 2021 from the National Bureau of Statistics, Central Bank of Nigeria and the World Bank are collected and analysed. This is the case for variables such as per capita income growth, sectoral output shares and growth rates and unemployment rate.

Table 9: Data Explanation and Sources

	Variable	Measurement	Data Source
1.	Per capita real income growth at constant prices	Growth rate	World Bank World Development Indicator
2.	Unemployment rate	Share of unemployed individuals in the labour force	World Bank World Development Indicator/National Bureau of Statistics
3.	Share of real GDP for Agriculture, Manufacturing, Industry (non-Manufacturing), Services, Tradable Services and Non-tradable Services.	Share of GDP at 2010 constant prices	Central Bank of Nigeria (CBN)
4.	Share of employment for Agriculture, Manufacturing, Industry (non-Manufacturing), Tradable Services and Non-tradable Services.	Share of employment	Groningen Growth and Development Centre (GGDC)/UNU-WIDER Economic Transformation Database (ETD)
5.	Sectoral Output Growth for Agriculture, Manufacturing, Industry (non-	Real output growth rate for each sector	Central Bank of Nigeria (CBN)

[36] Henceforth, and for measurement purposes, these three indicators – income growth, productivity growth and falling unemployment rate – are collectively referred to as economic development. This was done to avoid repetitive usage of the three indicators, which are dependent variables in the models. Where economic development is used it is broad sense (to include poverty, inequality, etc), a footnote is provided to clarify the context.

	Manufacturing), Services, Tradable Services and Non-tradable Services.		
6.	Labour productivity growth	Growth rate of real GDP divided by number of workers	Author's computation from data produced by CBN and ETD

Source: Created by the Author

Specifically for unemployment rate, which was used as a dependent variable in the model, the data was obtained from the National Bureau of Statistics (NBS) Statistical Fact Sheets, NBS Labour Force Surveys (LFS) and the National Rolling Plan documents. As common with most labour force data, one major limitation is the different definitions of unemployment, which influences how it is measured across countries and within a country at various intervals. For instance, the NBS in 2023 revised the LFS methodology, introducing changes to how key labour force indicators are measured (NBS, 2023a). The new methodology redefined the unemployed as individuals who are not in employment, actively searching and available (did nothing for pay or profit), whereas, the previous methodology defined the unemployed as individuals who worked below 20 hours or did not work but are searching for and available for work in the reference week (NBS, 2023a). With this revision, unemployment rate in Nigeria was significantly lower than previously reported. Since the revision, the NBS has begun to publish quarterly data on informal employment, wage employment, and employment in subsistence agriculture. However, due to the limited availability of time series data using the new methodology, this study adopts annual time series data on unemployment rate before the revision. This will also prevent the problem of structural break in the unemployment data, which can arise as a result of the methodological change.

One limitation of unemployment data is that it does not capture information on the nature of unemployment and the trend of the unemployed population (ILO, 2015). Unemployment could be cyclical or structural and falling unemployment rate does not necessarily imply that jobs are being created in an economy. Finally, in addition to these limitations of unemployment data, Labour Force Surveys in Nigeria, prior to the revision of the methodology in 2023, did not disclose the share of self-employed workers or those employed in the informal economy[37]. Because the previous definition of the unemployed captures not only individuals who do not work and are searching for work but also those who work for less than 20 hours a week, some aspects of underemployment are reflected in the unemployment rate adopted by the study. The absence of historical time series data for underemployment allows for the use of unemployment rate in this study. These limitations present a challenge for policymakers and econometricians to examine the impacts of policy actions on the different segments of the labour market, particularly the informal economy, which constitutes a significant part of the Nigerian economy. Table 10 presents select statistics on Nigeria's Labour Force using the new methodology.

Table 10: Select Labour Force Statistics in Nigeria (2023 Q3)

Variable	Rate
Unemployment Rate	5%
Underemployment Rate	12.3%

[37] See access to National Bureau of Statistics (NBS) (2021b) Labour Force Survey in Reference

Self Employed	87.3%
Informal Employment	92.3%
Informal Employment (Excluding Agriculture)	88.7%
Wage Employment Rate	12.7%
Urban Unemployment	6%
Rural Unemployment	4%

Data Source: National Bureau of Statistics

For data on labour productivity and sectoral employment shares, this study adopts a dataset developed by the Groningen Growth and Development Centre (GGDC)/UNU-WIDER Economic Transformation Database (ETD)[38]. Released in July 2021, the ETD provides data on three variables - gross value added at current prices (millions, local currency), gross value added at constant 2015 prices (millions, local currency) and the number of persons engaged (thousands) for the following sectors: Agriculture, Mining, Manufacturing, Utilities, Construction, Trade services, Transport services, Business services, Financial services, Real estate, Government services and Other services. The database covers 51 countries, including Nigeria from 1990 to 2018. In terms of the credibility of the data, a comprehensive review of the dataset for Nigeria shows similarities with data from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics. For instance, data on sectoral labour shares revealed that the manufacturing sector accounted for 7% of total employment in 2017 in the ETD. This share is the same as reported by the NBS in Q3 2017 (NBS, 2018). Data on gross value added in the ETD are also similar to those of the CBN. Data on labour productivity for each sector were obtained by dividing the gross value added at constant 2015 prices for the sector by the number of persons engaged in that sector. While the strengths of the labour productivity data in the ETD include comparability with other countries and availability of sectoral aggregates, one limitation is the under-coverage of informal employment and value-added, which leads to an underestimation of output and employment figures.

Model Specification

This section examines the first research question, which explores Nigeria's experience with structural transformation and productivity growth. Firstly, it examines the extent to which the expansion of sectors/the movement of labour across sectors influenced per capita income growth and unemployment rate in Nigeria. This question is explored in Equations 1, 2 and 3. Secondly, the section looks into the extent to which the expansion of high-productivity sectors has influenced productivity growth in Nigeria. This question is explored in Equation 4.

Research Question 1a: To what extent has the expansion of sectors and the movement of labour across sectors influenced per capita income growth and unemployment rate in Nigeria?

To address this research question, the following equations will be explored:

Functional form:

CPCGDPG = *f*(SERVGROWTH, NTSEMP) …….. (1)

[38] The Economic Transformation Database (ETD) is referenced as *de Vries, et al (2021). "The Economic Transformation Database (ETD): Content, Sources, and Methods". WIDER Technical Note 2/2021.' DOI: 10.35188/UNU-WIDER/WTN/2021-2*

CPCGDPG = *f*(MANGROWTH, TSGROWTH, INDNMEMP) …….. (2)

Where:
CPCGDPG is the growth rate of real per capita income
SERVGROWTH is the growth rate of output of the services sector
NTSEMP is the share of non-tradable services in total employment
MANGROWTH is the growth rate of output of manufacturing
TSGROWTH is the growth rate of output of tradable services
INDNMEMP is the share of industry (non-manufacturing) in total employment.

Equation 1:

$$CPCGDPG_t = \beta_1 + \beta_2 SERVGROWTH_t + \beta_3 NTSEMP_t + \varepsilon_t$$

Equation 2:

$$CPCGDPG_t = \beta_1 + \beta_2 MANGROWTH + \beta_3 TSGROWTH_t + \beta_4 INDNMEMP_t + \varepsilon_t$$

Where:
ε is the error term

Results from Equation 1 emphasise the impact of the services sector and its subcomponent (non-tradable services) on per capita income growth in Nigeria. This provides an empirical explanation of the impact of the expansion of the services sector on real income growth. The inclusion of the share of non-tradable services in total employment (NTSEMP) in the equation is important because treating services as a homogeneous sector masks the productivity dynamics within the sector, which is important in explaining economic development. This was discussed extensively in the literature review.

For Equation 2, one major contribution of this study is to distinguish economic sectors by levels of productivity and examine their impact on key economic indicators. Core to this approach is the argument of the structuralists, who emphasised the importance of the movement of labour towards sectors with high productivity as a major driver of job creation, income growth through higher wages and overall economic development (See Chapter 2). Given this and following the classification of sectors in Nigeria along the lines of productivity in this study, Equation 2 examines the extent to which an expansion of manufacturing, tradable services and industry (non-manufacturing) impacted real income growth in Nigeria.

Robustness Check

Unit Root Test
The result of the Augmented Dickey-Fuller (ADF) unit root test is presented in Table 11. The Schwarz Criterion was used with a maximum lag of 7. The two versions of the ADF unit root tests – intercept and intercept & trend – were carried out. From the result, only TSGROWTH and MANGROWTH were integrated of order zero, I(0), implying that these variables are stationary at level and thus no need to

apply differencing. This means that the null hypothesis is rejected at level because the probability is less than 5%. The remaining variables in the model are integrated of order one, I(1), i.e. they became stationary at first differences.

Table 11: Unit Root Test

Variable	Order Level	Probability @Constant	Prob. @trend and intercept
CPCGDPG*	1	0.0000	0.0000
SERVGROWTH	1	0.0000	0.0000
NTSEMP	1	0.0100	0.0495
MANGROWTH	0	0.0088	0.0276
TSGROWTH	0	0.0029	0.0156
INDNMEMP	1	0.0052	0.0246

*Probability at I(0) for constant was 0.01 and 0.0508 for trend and intercept, respectively.

Correlation

The independent variables in each equation were tested for correlation. In Equation 1, there is a weak and negative correlation between the independent variables – the growth of services output (SERVGROWTH) and the share of non-tradable services in total employment (NTSEMP). The correlation coefficient was -0.014. Similarly, in Equation 2, the correlation outcome showed a weak relationship between the explanatory variables as shown in Table 13.

Table 12: Correlation Outcome for Equation 1

	CPCGDPG	SERVGROWTH	NTSEMP
CPCGDPG	1	0.718	-0.089
SERVGROWTH	0.718	1	-0.014
NTSEMP	-0.089	-0.014	1

Table 13: Correlation Outcome for Equation 2

	CPCGDPG	MANGROWTH	TSGROWTH	INDNMEMP
CPCGDPG	1	0.528	0.677	-0.161
MANGROWTH	0.528	1	0.197	0.258
TSGROWTH	0.677	0.197	1	-0.151
INDNMEMP	-0.161	0.258	-0.151	1

Descriptive Statistics

(See Table 18).

In line with the previous two equations, Equation 3 explores the extent to which an expansion of tradable services and manufacturing impacts unemployment rate in Nigeria. Both independent variables have higher productivity levels relative to agriculture and non-tradable services. The equation, therefore, explains the capacity of these high-productivity sectors in accommodating labour and influencing the overall unemployment rate.

Functional form:

LNUER = *f*(LOGTSEMP, LOGMANGDP) …….(3)

Where:

LNUER is the log of unemployment rate i.e. the share of unemployed individuals in the labour force
LOGTSEMP is the log of the share of tradable services in total employment
LOGMANGDP is the log of the share of manufacturing in total GDP.

The equation is specified below.

Equation 3:

$$LNUER_t = \beta_1 + \beta_2 LOGTSEMP_t + \beta_3 LOGMANGDP + \varepsilon_t$$

Where:
ε is the error term

Robustness Check

Unit Root Test
The result of the Augmented Dickey-Fuller (ADF) unit root test is presented in Table 14. The two versions of the ADF unit root tests – intercept and intercept and trend – were carried out. All the variables were integrated of order one i.e., they became stationary at first differences.

Table 14: Unit Root Test Results

Variable	Order Level	Probability @Constant	Prob. @trend and intercept
LNUER	1	0.0000	0.0000
LOGTSEMP	1	0.0005	0.0032
LOGMANGDP	1	0.0103	0.0149

Correlation
The correlation coefficient shows a negative but moderate correlation between the independent variables – LOGTSEMP and LOGMANGDP, with a coefficient of 0.595. However, testing further for multicollinearity, the Variance Inflation Factors (VIF) showed the absence of multicollinearity as both variables showed a VIF of less than 10. LOGTSEMP has a value of 7.05 while LOGMANGDP has a value of 1.85.

Table 15: Correlation Outcome for Equation 3

	LNUER	LOGTSEMP	LOGMANGDP
LNUER	1	0.9227	-0.7076
LOGTSEMP	0.9227	1	-0.5951
LOGMANGDP	-0.7076	-0.5951	1

Descriptive Statistics
(See Table 18).

Research Question 1b: What are the sectoral drivers of labour productivity growth and to what extent has the expansion of high-productivity sectors influenced productivity growth in Nigeria?

This research question examines the relationship between the expansion of sectors/movement of labour and economic resources across sectors and labour productivity in Nigeria. Results from this regression provide insights into the relationship between the expansion of the manufacturing/tradable services sectors and labour productivity growth in Nigeria. With particular reference to the manufacturing sector, Kaldor's first and second laws emphasised manufacturing as the engine of growth and as a major driver of overall productivity in an economy, due to its increasing returns to scale. Thus, this equation examines whether the growth of the manufacturing output has led to an increase in overall productivity in Nigeria.

Functional form:

LPg1 = *f*(MANGROWTH1, TSGROWTH1) …….(4)

Where:
LPg1 is labour productivity growth
MANGROWTH1 is the growth rate of output of manufacturing
TSGROWTH1 is the growth rate of output of tradable services

This relation is examined in Equation 4.

Equation 4:

$$LPg1_t = \beta_1 + \beta_2 MANGROWTH1_t + \beta_3 TSGROWTH1_t + \varepsilon_t$$

Where:
ε is the error term.

Robustness Check
Unit Root Test
The result of the Augmented Dickey-Fuller (ADF) unit root test is presented in Table 16. The two versions of the ADF unit root tests – intercept and intercept and trend – were carried out. MANGROWTH1 and TSGROWTH1 were stationary at level with probability values less than 0.5%. LPG1 was stationary at order 1.

Table 16: Unit Root Test Results

Variable	Order Level	Probability @Constant	Prob. @trend and intercept
LPG1	1	0.0001	0.0000
MANGROWTH1	0	0.0130	0.0339
TSGROWTH1	0	0.0046	0.0230

Correlation

As shown by the correlation coefficient of 0.202, there is a weak correlation between the explanatory variables, suggesting the absence of the problem of multicollinearity.

Table 17: Correlation Outcome for Equation 4

	LPG1	MANGROWTH1	TSGROWTH1
LPG1	1	0.313	0.439
MANGROWTH1	0.313	1	0.202
TSGROWTH1	0.439	0.202	1

Descriptive Statistics

Table 18 provides the descriptive statistics for the variables to be used in the different equations. All variables except LPG1, MANGROWTH1 and TSGROWTH1 have 32 observations i.e. from 1990 to 2021. During the entire period, average per capita income growth was 1.67% and the maximum income growth was 12.5%, which occurred in 2002 following reforms to open up the Nigerian economy to investments after the country returned to democracy in 1999. Minimum growth was attained in 1993 which was shortly after the aggressive implementation of the structural adjustment programme in the late 1980s. The probability of the Jarque-Bera for the series is 0.52, implying that the data is normally distributed at 5% level of significance. For unemployment, although average unemployment rate is high at 15.6%, the data shows an increasing trend in the last 10 years, as many Nigerians entered the labour force in search of jobs.

With regard to the three variables - LPG1, MANGROWTH1 and TSGROWTH1 - they have an observation of 30. This is because the original series of labour productivity growth (LPG) was not normally distributed. This can be attributed to the massive spike in productivity data in 2020 as a result of the COVID-19 pandemic which created a structural break in the data for labour productivity. While real output declined marginally by 6% in the year 2020, there was a significant decline in the number of employed workers, driven by lockdowns and movement restrictions. This led to a significant increase in labour productivity in 2020. As shown in Table 18, the maximum data point for LPG was 131 which was attained in 2020 and the minimum was -38 achieved a year after, following the recovery from the restrictions and lockdown.

To address this challenge, the series for labour productivity growth was adjusted from 1990 to 2019 i.e. it ended before the 2020 data, which captured the effects of the COVID-19 pandemic. Because LPG1 was used only in equation 3 as the independent variable, other explanatory variables in the equation - MANGROWTH1 and TSGROWTH1 - were also adjusted to cover 1990 to 2019. These changes apply to only equation 3. As a result of this adjustment, LPG1 became normally distributed with a probability value of 1.00. For other equations, the series covered 1990 to 2021. It is important to note that reducing the observation to 30 does not have a major impact on the analysis as this study explores the long-run relationship between variables.

In terms of sectoral growth, the growth of the services sector (SERVGROWTH), and tradable services (TSGROWTH) had lower standard deviations relative to that of manufacturing growth. The low

standard deviations for these series imply that the data are clustered around their respective means. All series used in the model were found to be normally distributed.

Table 18: Descriptive Statistics

	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability (5% level)	Sum	Sum Sq. Dev.	No of Obs.
CPCGDPG	1.7	1.8	12.5	-4.5	3.9	0.5	3.4	1.3	0.52	53.4	470.9	32
LNUER	2.6	2.6	3.6	1.5	0.5	-0.04	2.3	0.6	0.7	83.9	8.2	32
LPG*	3.7	1.7	131.0	-38.0	24.4	4.4	24.7	734.4	0.00	119.7	18527.1	32
SERVGROWTH	5.9	4.3	20.0	-2.2	5.0	0.8	3.3	3.6	0.16	188.4	778.8	32
NTSEMP	25.3	24.8	36.0	16.5	7.9	0.1	1.2	4.1	0.13	808.8	1913.2	32
TSGROWTH	8.0	6.3	18.9	-0.7	6.0	0.6	2.1	2.7	0.26	256.7	1103.8	32
MANGROWTH	2.3	2.2	21.8	-17.5	9.0	0.1	3.1	0.0	0.98	73.0	2516.6	32
INDNMEMP	1.9	1.6	2.9	1.1	0.6	0.4	1.5	4.0	0.14	59.6	12.2	32
LOGTSEMP	0.9	0.8	2.3	-0.3	0.9	0.3	1.8	2.5	0.3	28.6	22.5	32
LOGMANGDP	2.4	2.2	3.0	1.9	0.3	0.6	2.5	2.4	0.3	75.2	2.9	32
LPG1**	0.9	1.7	9.7	-5.3	3.5	0.0	3.0	0.0	1.00	26.8	351.4	30
MANGROWTH1**	2.4	2.2	21.8	-17.5	9.3	0.0	3.0	0.0	1.00	72.4	2489.6	30
TSGROWTH1**	8.1	6.3	18.9	-0.7	6.2	0.5	2.0	2.6	0.27	241.9	1099.5	30

***Variable was not used in equation 4. Rather, LPG1 was used.**

****Data covers 1990 to 2019**

4.4 Structural Transformation and Productivity Growth – Shift-Share Method

One major aspect of how structural transformation impacts an economy is through productivity growth. The importance of productivity growth has been buttressed by structuralists such as Arthur Lewis and Nicholas Kaldor. Both scholars have argued that a major driving force of development is the improvement of productivity in the modern sector, which is often considered highly productive and its expansion attracts more labour and capital. Specifically for Lewis, the subsistence sector was regarded as unproductive and as more workers move from this unproductive sector to the modern or capitalist sector, overall productivity in the economy will increase.

For a developing country like Nigeria, productivity growth, especially in manufacturing remains vital in the development process and this needs to be examined in view of how it can trigger a much faster growth in overall productivity in the economy. This is the argument of Kaldor's third law which states that total productivity in the economy is positively linked with faster growth in manufacturing output. Due to the importance of productivity in structural transformation, research question 1b of this study examines the sectoral drivers of labour productivity growth and the extent to which the expansion of high-productivity sectors has influenced productivity growth in Nigeria. To complement the findings in Equation 4 in the previous section, this section examines whether the type of change witnessed in Nigeria's economic composition has contributed positively to productivity growth in Nigeria.

As presented in the literature review, productivity growth can be driven by within-sector productivity growth and across-sector productivity growth (structural change). The shift-share analysis is a common method for decomposing labour productivity growth into productivity growth within

industries and growth emanating from the movement of labour among sectors (OECD, 2018b). Using this method, labour productivity can be expressed in the following form:

$$\boldsymbol{LP_t = \sum_{\forall j} LP_{jt} * \ ES_{jt}}$$

Where LP is Labour Productivity, j represents the sector and t represents the year. ES is the share of employment of the sector in total employment.

From the above, labour productivity growth can be estimated as follows:

$$LP_t^g = \frac{LP_t - \ LP_{t-1}}{LP_{t-1}}$$

Where LP_t^g represents labour productivity growth in time t.

Growth in Labour productivity can be divided into two components. The first is within-sector productivity and the second is structural change component i.e., productivity as a result of structural change. This can be captured as:

$$\boldsymbol{LP_t^g = \frac{\sum_{\forall j}\left(LP_{jt} - LP_{jt-1}\right) * ES_{jt} + \ LP_{jt-1} * \left(ES_{jt} - ES_{jt-1}\right)}{LP_{t-1}}}$$

The first segment of the equation – **within-sector productivity growth** – captures within-sector labour productivity that arises as a result of capital accumulation, technological change, or reduction of misallocation across plants (McMillan, Rodrik and Verduzco-Gallo, 2014). This segment is weighted by the share of employment in each sector. The second segment – **structural change component** – looks at the productivity changes as a result of the movement of labour from low-productivity sectors to high-productivity sectors. It is weighted by the change in shares of employment across sectors. As revealed by McMillan et al. (2014), where the changes in employment shares are positively correlated with productivity levels, the second segment of the equation will be positive and structural change will increase economy-wide productivity growth. They also noted that high productivity growth in an industry can result in negative implications on the economy if the industry's share of employment falls and the displaced labour moves to sectors with lower productivity.

Several studies (see OECD, 2018b; Uyarer & Volkan, 2016) introduced a third segment known as the dynamic shift effect, which is a further decomposition of the second segment. This third segment captures the extent to which positive or negative efficiency gains relate to the expansion/contraction of different industries. For this study, only the first two segments were computed as done in McMillan et al. (2014). This decision was made because the dynamic effects of the movement of labour are already captured in the second segment, and including the third segment could lead to misleading results (McMillan & Harttgen, 2014). Sectoral productivity data from the Groningen Growth and Development Centre (GGDC)/UNU-WIDER Economic Transformation Database (ETD) covering the

period 1990 – 2018 were used. Results from the shift-share analysis provide insights into the patterns of structural change and how key sectors have contributed to labour productivity growth over time.

4.5 Semi-structured interviews with a focus on manufacturing, agriculture and tradable services

One advantage of using a mixed method is that the researcher can analyse "not only numerical data, which is customary for quantitative research, but also narrative data, which is the norm for qualitative research" (Williams, 2007; P70). Collier et al. (2003) explained qualitative research as a process that provides thick analysis through detailed knowledge of cases. From the previous section, the quantitative approach, which involved the regression and shift-share analyses, explores the extent to which the movement of labour across sectors and sectoral expansion has influenced income, productivity and employment in Nigeria. But the macro analysis does not tell the full story. For instance, a major unaddressed area is understanding the reason for the underperformance of the manufacturing sector and the practicality of enhancing the sector's contribution to structural change in Nigeria. Other areas such as the capacity of manufacturing to accommodate labour, the role of technology in raising productivity and the nature of Nigeria's manufacturing sector in relation to capital accumulation, productivity and employment are better captured with the use of semi-structured interviews. As such, the interviews were carried out to substantiate some of the findings in the regression analysis and shift-share estimation. In addition, the interviews sought to provide micro and sub-sectoral insights on the movement of labour across sectors in Nigeria. This aspect explores the sub-sectors that can accommodate the kind of labour force in Nigeria (majorly low-skilled) and the factors that will drive the expansion of these sub-sectors. The role of technology in driving productivity as well as its impact on the ability of sectors to absorb labour, was also deemed important during the interviews. Finally, the interviewees shared success stories in their respective industries and lessons that can be learnt from past successes to aid future policy making. ,

To achieve these goals, the interviews were structured to capture the views of managers of businesses across the sectors of interest in this study. Although all sectors of the economy are important as they contribute to livelihoods through business activities, it is essential to note that certain sectors hold greater importance, particularly concerning productivity, job creation, and income growth. This study prioritises sectors with great potential to raise overall productivity levels, improve income and create better jobs for the majority of the populace in Nigeria. For instance, with non-tradable services receiving the largest share of labour in the last three decades, one would have expected the sector to significantly contribute to productivity and income growth. However, the sector had a modest and negative contribution to productivity and income growth, respectively (See Chapter 5 for further discussion). Similarly, industry non-manufacturing, which includes mining, crude oil and natural gas, and utilities, has low employment elasticity and weak contribution to productivity growth in the last three decades (See Chapter 5 for further discussion). Given these criteria, insights from the shift-share and regression analysis point to three sectors – manufacturing, agriculture and tradable services – as sectors with great potential to create jobs, raise income and enhance productivity growth in Nigeria. Therefore, the semi-structured interviews focused on obtaining the views of business managers in these sectors in Nigeria. Across these sectors, the interviews covered small, medium and large businesses.

The fieldwork was executed from August 15, 2023, to November 16, 2023 in Lagos, Nigeria. It consisted of semi-structured interviews that featured 16 respondents. These respondents included 12 business owners and managers operating in sectors such as agriculture, manufacturing and tradable services and 4 policy experts (See Table 19). As explained in Williams (2007), this study has a small sample size because the author prioritised having an informative sample of business owners that can provide in-depth insights and experiences of their firms and sectors in relation to employment, productivity, capital accumulation and technology. The interview process involved the selection of specific firms in the manufacturing and tradable services sectors. In addition, the snowballing technique was employed, where interviewees recommended other firms that could provide valuable insights, thereby leveraging their networks to identify and include relevant participants. This approach facilitated access to firms that would have been difficult to reach. It also ensured robust and representative information for the study.

The interviews were conducted in line with the SOAS Research Ethics Policy, which provides a comprehensive framework for researchers at SOAS to maintain ethical standards and research integrity (SOAS Research & Knowledge Exchange Committee, 2022). The Policy outlines five values that researchers must imbibe to ensure research integrity. They include **honesty** in disclosing research methods and methods of data gathering and acknowledging the works of other researchers; **rigour** in adhering to research protocols and communicating results; **transparency** in reporting research methods and findings and in declaring conflict of interests; **care** for all research participants; and **accountability** for all stakeholders including funders, employers, researchers etc. This study complied with these values by disclosing the research methods and the data gathering process for the quantitative and qualitative approaches used in the study (see Section 4.3 for quantitative data and this section for the qualitative approach). In addition, the study adhered to research protocols and displayed care and respect for interviewees before, during and after the semi-structured interviews. The author has no conflict of interest. The author also completed the SOAS's mandatory Epigeum Research Integrity Online Programme, which contained modules on good research conduct; irresponsible research practices; planning, managing and recording research; data analysis, selection and presentation; communication; social responsibility and impact; and scholarly publication and professional responsibilities.

Furthermore, and with specific reference to the semi-structured interviews, this study follows the "Code of Practice for SOAS staff and students: Using Personal Data in Research" (SOAS Research & Enterprise Committee, 2022). The Code of Practice ensures that researchers at SOAS consider issues relating to intellectual property, research ethics and requirements of data protection legislation. Where the research involves the use of personal data, the research must adhere to the UK and EU Data Protection Legislation. An important aspect of the Code of Practice is obtaining informed consent from research participants. Researchers must ensure that participants have complete information about the research process and can voluntarily take part and withdraw from the research process at any time. The Code of Practice emphasises two stages of the consent process: providing information and obtaining consent. In conducting the interviews for this study, the researcher sent emails to the interviewees, attaching the Participant Information Sheet and Consent Form based on SOAS template consent form (See Appendix B for the Participant Information Sheet and Consent Form and Appendix C for the Interview Questions). The form contained a brief description of the research, information about their participation and withdrawal, use of information provided, authorisation and consent. In

line with guidelines in the SOAS Code of Practice, the interviewees provided verbal consent and two-third of the interviewees agreed to have their interviews recorded. The transcripts of the interviews are not included in the document to protect the anonymity of the interviewees. However, they can be shared confidentially upon request.

Table 19: List of business interviewees

	Organisation	Firm Size	Industry	Code	Date
1.	Company A	Large	Manufacturing (FMCG)	Code 1	2023, October 11
2.	Company B	Large	Manufacturing (FMCG)	Code 2	2023, November 3
3.	Company C	Small	Manufacturing (Agro-processing)	Code 3	2023, November 4
4.	Company D	Small	Manufacturing (Agro-processing)	Code 4	2023, November 4
5.	Company E	Micro	Manufacturing (Leather)	Code 5	2023, November 3
6.	Company F	Small	Manufacturing (Leather)	Code 6	2023, November 15
7.	Company G	Small	Agriculture	Code 7	2023, November 4
8.	Company H	Medium	Investment Banking	Code 8	2023, September 13
9.	Company I	Medium	Consulting	Code 9	2023, November 15
10.	Company J	Medium	Finance	Code 10	2023, November 16
11.	Company K	Small	Consulting	Code 11	2023, September 9
12.	Company L	Small	Consulting	Code 12	2023, November 10

4.6 Conclusion

This chapter has explored the importance of a robust methodological framework in economic research, particularly in the context of structural transformation. It has provided a rationale for the use of mixed methods to address the complex issue of structural transformation in Nigeria. The chapter also examined both qualitative and quantitative approaches, ensuring that the research questions are systematically addressed and linked with research methods. Key aspects of the research process, including data collection, processing and research ethics, were discussed in detail.

The regression and shift-share analyses are expected to provide empirical evidence on the extent to which the movement of labour and sectoral expansion have influenced productivity growth, income and employment. Meanwhile, the semi-structured interviews will offer valuable insights into the barriers to industrialisation and practical measures needed for effective structural transformation in Nigeria. This chapter sets the stage for the analysis and discussion of results from the regression, shift-share method and semi-structured interviews.

CHAPTER FIVE: DISCUSSION OF RESULTS – QUANTITATIVE EXPLORATION OF CHANGES IN SECTORAL DYNAMICS ON PER CAPITA INCOME, UNEMPLOYMENT AND PRODUCTIVITY

5.1 Introduction

The movement of labour and resources across sectors is integral to understanding economic development (Gollin and Kaboski, 2023). Nigeria's experience in the last three decades has been a rapid expansion of the services sector in terms of output and employment. Specifically, the sector's share in employment increased from 18% in 1990 to 44% in 2018[39]. Manufacturing's share, on the other hand, initially fell to 4% in 2010 from 12% in 1990 but rose to 7% in 2018. During this period, Nigeria experienced a transition from agriculture to services while manufacturing grew marginally. Within the services sector, much of the expansion was driven by non-tradable services (particularly trade), which has relatively lower productivity levels than tradable services. This aspect of services accounted for 35% of total employment in 2018 while tradable services had a share of 9%[40]. The disaggregation of services by levels of productivity is important in understanding productivity and employment dynamics, particularly because services account for over 50% of Nigeria's real GDP. For manufacturing, which Kaldor (1968) referred to as the engine of growth, this study examines the extent to which the sector influenced per capita income, employment and productivity growth over time. Overall, these relations have not been explored within the context of structural change in Nigeria. In particular, to the best of the author's knowledge, no study has empirically examined the extent to which the changes in sectoral output growth, sectoral output shares and sectoral employment shares have influenced per capita income, unemployment and productivity in Nigeria.

This chapter, therefore, quantifies the extent to which different sectors contribute to per capita output growth, unemployment reduction and productivity growth. Beyond the broad impact of services, it examines the components of services (tradable and non-tradable) and how each component relates to the broader economy. To explore these relations, this chapter has two main sections and a conclusion. **The first section** explores the findings from the regression analysis and the second looks at the findings from the shift-share method. The regression analysis provides empirical evidence on the extent to which sectoral expansion and the movement of labour across sectors have influenced three indicators – per capita income, unemployment and productivity. To examine this objective and aid the analysis, the regression results were discussed in four areas. The first explores the extent to which the services sector influences per capita income in Nigeria. While the second aspect focuses on the relationship between the expansion of the high-productivity sectors (manufacturing, industry non-manufacturing and tradable services) and per capita income, the third explores their linkage with unemployment in Nigeria. Collectively, these three areas examined the first research question of this study, which explores the linkage between the expansion of sectors, the movement of labour across sectors and economic development in Nigeria. In concluding the first section, the fourth aspect explores the productivity question by looking at the extent to which manufacturing and tradable services influenced productivity growth in Nigeria. It confirms the argument by Kaldor (1968) that manufacturing output can drive overall productivity in an economy.

[39] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[40] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

In the second section, the emphasis is on productivity growth using the shift-share method. As described in the previous chapter, the shift-share will decompose labour productivity growth into within-sector growth and growth arising from the movement of labour across sectors (OECD, 2018b). Complementing the regression analysis, results from the shift-share method provide insights into the patterns of productivity growth in Nigeria (within-sector and productivity from structural change) and how key sectors have contributed to labour productivity growth over time. Using this method, this study revealed how important a sector is to productivity growth in Nigeria and sectors that have weighed down productivity growth over time. In essence, where labour moves to matters for structural transformation and the productivity of the labour-receiving sector is crucial in influencing overall productivity growth. This chapter provides empirical evidence on the role of key economic sectors, including the services sector and its components in economic development, focusing on Nigeria. As this aspect remains relatively underexplored in the study of structural transformation in Nigeria, this study contributes to the growing body of literature that examines the evolving role of key sectors in driving economic development.

5.2 Findings of the Regression Analysis

Expansion of the Service Sector and Per Capita Income Growth in Nigeria

The outcome of the regression analysis (Equation 1) showed that in the short run, the output growth of the services sector and the share of non-tradable services in total employment are significant in explaining per capita income growth in Nigeria. Collectively, the Adjusted R2 was 62.6% and the coefficients of service GDP growth and non-tradable service in total employment were 0.82 and -2.37, respectively. The coefficients imply that in the short run, while an increase in services output had a positive relationship with per capita income growth, the movement of labour towards non-tradable services showed a negative relationship with per capita income growth.

Dependent Variable: CPCGDPG
Method: ARDL
Date: 04/14/24 Time: 16:59
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments
Dependent lags: 2 (Fixed)
Dynamic regressors (2 lags, fixed): SERVGROWTH NTSEMP
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
CPCGDPG(-1)	0.286169	0.188864	1.515207	0.1446
CPCGDPG(-2)	0.172203	0.173670	0.991557	0.3327
SERVGROWTH	0.817064	0.170262	4.798855	0.0001
SERVGROWTH(-1)	0.165786	0.223318	0.742378	0.4661
SERVGROWTH(-2)	-0.157024	0.134243	-1.169698	0.2552
NTSEMP	-2.371599	1.075547	-2.205016	0.0387
NTSEMP(-1)	0.830252	1.539608	0.539262	0.5954
NTSEMP(-2)	1.602761	1.034292	1.549621	0.1362
C	-3.086977	1.932141	-1.597697	0.1250

R-squared	0.729462	Mean dependent var	1.553988
Adjusted R-squared	0.626400	S.D. dependent var	3.727993
S.E. of regression	2.278654	Akaike info criterion	4.728372

Sum squared resid	109.0376	Schwarz criterion	5.148732
Log likelihood	-61.92559	Hannan-Quinn criter.	4.862849
F-statistic	7.077891	Durbin-Watson stat	1.754882
Prob(F-statistic)	0.000151		

*Note: p-values and any subsequent tests do not account for model selection.

Table 20: Preliminary Statistics and Basic Tests

Preliminary Statistics and Basic Tests	**Statistics**
Adjusted R2	0.6264
Prob. (F-Statistics)	0.0001
Durbin Watson	1.7548
Bound Test F-statistics (I0Bound)*	3.66 (3.79)
Residual Diagnostics	
Normality Test (Histogram)	0.2461
Breusch-Godfrey Serial Correlation LM Test (Prob. F Stats)	0.4320
Heteroskedasticity Test: Breusch-Godfrey (Prob F Stats)	0.8832

*F-Statistics is lower than I0Bound therefore we do not reject the null hypothesis which states that there is no long-run relationship

Essentially, the results confirm assertions that the movement of labour towards the non-tradable services sector, which occurred mostly in the 2000s and 2010s, had a negatively impacted per capita income growth in Nigeria. As established in the literature, non-tradable services is characterised by low levels of productivity despite accommodating a larger share of the labour force, with its share of employment increasing from 17.5% in 2000 to 36% in 2021[41]. This implies that while this sector has been instrumental in job creation in Nigeria over time, the high level of informality and low and declining labour productivity weaken the sector's linkage with real per capita income growth in Nigeria. The other independent variable – growth of services output – positively influenced income growth in the short term. This result discloses the fragmented nature of services and the effects of each component – tradable and non-tradable – on real income growth. It shows that while the overall effect of services may have been positive, that of non-tradable services is negative. In the long run, the bound test showed an F-statistics of 3.66, which is lower than the lower bound (I0) value of 3.79 at 5% significance level. This suggests that there is no long-run relationship between the variables. See Appendix A for information on the optimal lag length, CUSUM and CUSUM square tests.

Expansion of the High-Productivity Sectors and Per Capita Income Growth in Nigeria

Dependent Variable: CPCGDPG
Method: ARDL
Date: 04/14/24 Time: 01:06
Sample (adjusted): 1991 2021
Included observations: 31 after adjustments
Dependent lags: 1 (Fixed)
Dynamic regressors (1 lag, fixed): MANGROWTH TSGROWTH INDNMEMP
Fixed regressors: C

[41] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
CPCGDPG(-1)	0.233331	0.197774	1.179783	0.2501
MANGROWTH	0.183713	0.055796	3.292606	0.0032
MANGROWTH(-1)	-0.024519	0.073699	-0.332690	0.7424
TSGROWTH	0.298826	0.084832	3.522565	0.0018
TSGROWTH(-1)	0.014685	0.116230	0.126341	0.9006
INDNMEMP	1.336677	6.684812	0.199957	0.8433
INDNMEMP(-1)	-2.238464	6.776786	-0.330313	0.7442
C	-0.130470	1.811260	-0.072033	0.9432

R-squared	0.676946	Mean dependent var	1.434038
Adjusted R-squared	0.578626	S.D. dependent var	3.725680
S.E. of regression	2.418464	Akaike info criterion	4.821778
Sum squared resid	134.5262	Schwarz criterion	5.191839
Log likelihood	-66.73756	Hannan-Quinn criter.	4.942409
F-statistic	6.885088	Durbin-Watson stat	1.669966
Prob(F-statistic)	0.000181		

*Note: p-values and any subsequent tests do not account for model

The performance of the high-productivity sectors in influencing real income growth is mixed in both the short and long run. In the short run, the expansion of the output of manufacturing and tradable services positively impacted real per capita income growth, with coefficients of 0.18 and 0.3, respectively. The share of industry (non-manufacturing) was found to be insignificant in the model. The tradable services sector appears to have a larger impact on real income than manufacturing. This result is unsurprising given that the sector has a much higher productivity level than manufacturing. In addition, the average output growth of the sector during the period (1990 to 2021) was 8%, significantly higher than that of manufacturing (2.3%). Relative to other sectors of the economy, tradable services had the highest average output growth rate during the period. The sector's growth was led by the Nigerian government's reforms to open key sub-sectors such as banking, insurance, telecommunication and ICT for private investments in the 2000s after Nigeria returned to democracy in 1999. For instance, the banking sector was recapitalised in 2005, resulting in a larger and sound financial services industry, which had spill-over effects on other industries such as construction, professional services, real estate and mining. In the telecoms sector, the privatisation of telecoms assets saw the emergence of large telecoms firms in the private sector, creating opportunities for digital penetration and financial inclusion, among other benefits (Ajakaiye et al., 2015 and Okonjo-Iweala & Osafo-Kwaako, 2007). Tradable services' share in GDP increased from 10% in 1990 to 22% in 2021 while its share of employment grew from 1% in 2000 to 9% in 2018[42]. Overall, the growth of tradable services was accompanied by higher productivity levels (and thereby wages), raising income levels. This is in contrast with the expansion of non-tradable services, which had a negative influence on real income growth in Nigeria.

[42] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

Table 21: Preliminary Statistics and Basic Tests

Preliminary Statistics and Basic Tests	Statistics
Adjusted R2	0.5786
Prob. (F-Statistics)	0.0001
Durbin Watson	1.6699
Bound Test F-statistics*	3.79
Residual Diagnostics	
Normality Test (Histogram)	0.4983
Breusch-Godfrey Serial Correlation LM Test (Prob. F Stats)	0.5454
Heteroskedasticity Test: Breusch-Godfrey (Prob F Stats)	0.0738

*F-statistic is 3.79 which is higher than the lower bound of 3.23 but lower than the I1 value of 4.35 at 5% significance level. Therefore we do not reject the null hypothesis which states that there is no long-run relationship. The long run relationship is inconclusive.

The manufacturing sector also positively impacted real per capita income growth in the model. This is despite the sector's downward trend in its real GDP share from 30% in 1990 to 9% in 2021. In terms of real output growth during the period, the sector has underperformed relative to other sectors with an average growth of 2.3%, only higher than that of industry (non-manufacturing). Notwithstanding this poor performance, the sector experienced growth in key areas such as cement, driven mainly by government policies to attract investment as well as growing demand for these products (Leke et al., 2014 and Wolf, 2023). The attraction of new players and investment into the sector may explain the positive linkage between the sector's growth and real income in Nigeria. In the long run, the bound test shows that the relationship between the variables is inconclusive as the F-statistic of 3.79 is higher than the lower bound (I0) of 3.23 but lower than the I1 value of 4.35 at 5% significance level. See Appendix A for information on the optimal lag length, CUSUM and CUSUM square tests.

Expansion of the High-Productivity Sectors and Unemployment in Nigeria

Dependent Variable: LNUER
Method: ARDL
Date: 04/19/24 Time: 14:27
Sample (adjusted): 1991 2021
Included observations: 31 after adjustments
Dependent lags: 1 (Fixed)
Dynamic regressors (1 lag, fixed): LOGTSEMP LOGMANGDP
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNUER(-1)	0.341132	0.184449	1.849471	0.0762
LOGTSEMP	0.197293	0.587369	0.335893	0.7398
LOGTSEMP(-1)	0.091560	0.571541	0.160199	0.8740
LOGMANGDP	0.762144	0.458948	1.660631	0.1093
LOGMANGDP(-1)	-1.019382	0.475103	-2.145601	0.0418
C	2.119246	0.613241	3.455813	0.0020

R-squared	0.903946	Mean dependent var	2.641775
Adjusted R-squared	0.884735	S.D. dependent var	0.509949
S.E. of regression	0.173131	Akaike info criterion	-0.497551

Sum squared resid	0.749359	Schwarz criterion	-0.220005
Log likelihood	13.71204	Hannan-Quinn criter.	-0.407078
F-statistic	47.05406	Durbin-Watson stat	1.939834
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

In estimating the model, a maximum lag length of 1 was chosen using the Akaike information criterion (AIC). The results show that the one-year lag of the share of manufacturing GDP negatively influences unemployment in the short run. The coefficient was -1.02. This implies that an expansion in the share of manufacturing GDP reduces unemployment rate in Nigeria. This is despite the slow growth of the sector in the last three decades, coupled with the declining share of the sector in Nigeria's GDP and employment during this period. In particular, the sector's share in total employment declined from 11.6% in 1990 to 7% in 2021. The results highlight the capacity of the manufacturing sector to create employment if provided with adequate support and incentives aimed at increasing investments and capabilities over time. The share of tradable services in employment was not significant in the model in the short run. In the long run, the F-Statistics of 4.62 is higher than the lower bound (I0) of 3.79 but lower than the I1 value of 4.85 at 5% significance level. Therefore, we do not reject the null hypothesis, which states that there is no long-run relationship. The long-run relationship is inconclusive. See Appendix A for information on the optimal lag length, CUSUM and CUSUM square tests.

Table 22: Preliminary Statistics and Basic Tests

	Statistics
Adjusted R2	0.9221
Prob. (F-Statistics)	0.0000
Durbin Watson	2.37
Bound Test F-statistics	4.62 (3.79)*
Residual Diagnostics	
Normality Test (Histogram)	0.9019
Breusch-Godfrey Serial Correlation LM Test (Prob. F Stats)	0.9448
Heteroskedasticity Test: Breusch-Godfrey (Prob F Stats)	0.2679

*F-Statistics of 4.62 is higher than the lower bound of 3.79 but lower than the I1 value of 4.85 at 5% significance level. Therefore we do not reject the null hypothesis which states that there is no long-run relationship. The long run relationship is inconclusive.

Expansion of the High-Productivity Sectors and Labour Productivity Growth in Nigeria

Dependent Variable: LPG1
Method: ARDL
Date: 04/14/24 Time: 00:47
Sample (adjusted): 1991 2019
Included observations: 29 after adjustments
Dependent lags: 1 (Fixed)
Dynamic regressors (1 lag, fixed): MANGROWTH1 TSGROWTH1
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*

LPG1(-1)	0.501471	0.152135	3.296222	0.0032
MANGROWTH1	0.127960	0.052393	2.442308	0.0227
MANGROWTH1(-1)	-0.037517	0.053545	-0.700670	0.4905
TSGROWTH1	0.202554	0.082535	2.454149	0.0221
TSGROWTH1(-1)	-0.029840	0.079101	-0.377239	0.7095
C	-0.854058	0.868541	-0.983325	0.3357

R-squared	0.632007	Mean dependent var	1.100710
Adjusted R-squared	0.552009	S.D. dependent var	3.347721
S.E. of regression	2.240701	Akaike info criterion	4.633446
Sum squared resid	115.4771	Schwarz criterion	4.916335
Log likelihood	-61.18497	Hannan-Quinn criter.	4.722043
F-statistic	7.900249	Durbin-Watson stat	1.870721
Prob(F-statistic)	0.000187		

*Note: p-values and any subsequent tests do not account for model selection.

The results show that the growth of the manufacturing sector influences overall labour productivity growth in the economy in the short run. This relationship is positive with a coefficient of 0.12. It confirms the argument by Kaldor (1968) that manufacturing output can drive overall productivity in an economy. The coefficient of manufacturing growth is much lower when compared with that of tradable services growth (0.2), mainly due to the relatively slow growth of manufacturing output and productivity in the last 3 decades. However, even with the marginal growth in manufacturing output, there is evidence of increasing returns and capital accumulation. As noted earlier, there was growth and investments in key areas such as cement, petrochemicals, pharmaceuticals and textiles & apparel, and these subsectors have been instrumental in driving the overall performance of the manufacturing sector in Nigeria. From the results, one can infer that if manufacturing output had increased at a much faster rate in Nigeria, its impact on income and productivity would have been more pronounced. The growth of tradable services had a stronger influence on overall labour productivity growth in Nigeria in the short run with a coefficient of 0.202. The sector had a much higher productivity level, relative to other sectors. In the long run, the expansion of manufacturing output and tradable services appear insignificant in explaining labour productivity. The F-statistic is 4.16, which is higher than the lower bound of 3.79 but lower than the I1 value of 4.85 at 5% significance level. The results show that the relationship is inconclusive. See Appendix A for information on the optimal lag length, CUSUM and CUSUM square tests.

Table 23: Preliminary Statistics and Basic Tests

Preliminary Statistics and Basic Tests	**Statistics**
Adjusted R2	0.5520
Prob. (F-Statistics)	0.0001
Durbin Watson	1.8707
Bound Test F-statistics*	4.16
Residual Diagnostics	
Normality Test (Histogram)	0.4389
Breusch-Godfrey Serial Correlation LM Test (Prob. F Stats)	0.2348
Heteroskedasticity Test: Breusch-Godfrey (Prob F Stats)	0.7982

*The F-statistic is 4.16 which is higher than the lower bound of 3.79 but lower than the I1 value of 4.85 at 5% significance level. Therefore, we do not reject the null hypothesis which states that there is no long-run relationship. The long-run relationship is inconclusive.

5.3 Findings from Shift-Share Analysis: Productivity Growth and Structural Change in Nigeria

Discussions from the regression results highlighted the important role of manufacturing and tradable services in positively influencing per capita income in Nigeria. The movement of labour towards non-tradable services showed a negative relationship with per capita income growth in Nigeria. The results also show that tradable services and manufacturing had a strong and positive impact on labour productivity growth in Nigeria. To complement these findings, results from the shift-share method provide insights into the nature of productivity growth in Nigeria (within-sector and productivity from structural change) and how key sectors have contributed to labour productivity growth over time. It explores the contributions of agriculture, manufacturing, industry (non-manufacturing), tradable services and non-tradable services to productivity growth in Nigeria. Before exploring the results of the shift-share method, it is crucial to review the job-creation capacity of sectors in relation to their levels of productivity.

Do the high productivity sectors have the capacity to accommodate labour in large numbers in Nigeria?

Examining the historical data, the three sectors with high productivity level include industry non-manufacturing, tradable services and manufacturing. Data on employment by sector[43] has shown that among these three sectors, tradable services account for the highest share of "added" employment i.e., additional jobs created from 1990 to 2018 (see Table 25). While Andreoni et al. (2021) showed that in South Africa, the growth recorded in high-value services such as financial services and communication services has been associated with fewer employment gains, data on employment in Nigeria show otherwise; however, mixed performance was recorded within tradable services. For instance, while the financial sector displayed fewer employment gains since 2000, professional services, as well as information and communication services, which is driven by telecommunications, had significant employment gains, especially between 2010 and 2018. Overall, the tradable services sector in Nigeria has been a significant source of employment in the economy, adding a total number of 6.1 million jobs from 1990 to 2018, the majority of which were added in the last 8 years. Specifically, from 2010 – 2018, the sector added close to 5 million jobs, only second to non-tradable services which created 10 million jobs and higher than agriculture (3.3 million) (see Table 25). This suggests that with consistent growth in output for longer periods, the tradable services sector has the potential to employ a significant number of the labour force. In terms of the quality of jobs, which matters for inclusion, sectors with high level of productivity often provide better outcomes relative to those with lower productivity.

In a study that looked at the tradable services sector in the United States, Jensen et al. (2005) pointed out that workers in tradable services are usually higher paid and more skilled than those in the manufacturing sector. Jensen noted further that within the services sector, the difference in earnings between tradable and non-tradable services is huge, with tradable services showing higher wages. Jensen (2013) showed that, on average, workers in tradable activities earn over 30% more than those in non-tradable activities in the US. In Nigeria, while there is the absence of data on wages by sector, it is possible to infer that wages are relatively higher in the tradable sector, due to its nature of

[43] Data on employment shares and productivity growth were computed and analysed from the Economic Transformation Database

activities and higher skills requirements. In addition, the sector's share of total employment, which increased from 3% in 2010 to 9% in 2018, suggests a high job-creating capacity during the period.

Table 24: Labour Productivity by Sectors and number of jobs created (in thousands)

Labour productivity rank (1= highest; 5 = lowest)	Sectors	Number of jobs added (2000 – 2009)	Number of jobs added (2010 – 2018)	Number of jobs added (1990 – 2018)
1	Industry (Non-Manufacturing)	480	935	1,509
2	Tradable Services	956	4,967	6,144
3	Manufacturing	272	3,074	1,678
4	Non-Tradable Services	8,892	9,977	19,885
5	Agriculture	4,401	3,297	12,779
	Total Jobs added	**15,001**	**22,250**	**41,995**

Data Source: Created by the Author using data from the Economic Transformation Database

Table 25: Labour Productivity by Sectors and number of jobs created (in percentage)

Labour productivity rank (1= highest; 5 = lowest)	Sectors	Share of jobs added (2000 – 2009)	Share of jobs added (2010 – 2018)	Share of jobs added (1990 – 2018)
1	Industry (Non-Manufacturing)	3.2%	4.2%	3.6%
2	Tradable Services	6.4%	22.3%	14.6%
3	Manufacturing	1.8%	13.8%	4.0%
4	Non-Tradable Services	59.3%	44.8%	47.4%
5	Agriculture	29.3%	14.8%	30.4%
	Total Jobs added	**100.0%**	**100.0%**	**100.0%**

Data Source: Created by the Author using data from the Economic Transformation Database

In terms of job creation, the manufacturing sector in Nigeria has shown weak performance relative to the other sectors. Despite having a high level of productivity and huge potential, the sector has only created 1.68 million jobs (net) in the last three decades 1990-2018, where the majority (3.1 million jobs) were added from 2010 to 2018, while about 1.7 million jobs were lost in the 1990s (see Table 24). As at 2018, the sector accounted for 7.1% of total employment, a decline from 10% in 1990 but a marginal improvement from 5% in 2000. Although capacity utilisation in the sector improved from 56% in 2009 to 60.5% in 2015, it has remained below its peak of 73.3% in 1981 (Oniyide & Ogunjinmi, 2021). McCulloch et al. (2017) pointed out that from a firm level, many manufacturing companies in Nigeria are inward-looking, inefficient and uncompetitive, even those operating in large industries such as beverages, textiles, cement and tobacco. The sector is one of the most affected by inconsistent government policy, inadequate infrastructure, high imports of manufactured goods, power outages and the lack of a clear policy framework among other challenges. The potential for job creation in manufacturing is huge given Nigeria's young and vibrant population; the African Continental Free Trade Area (AfCFTA) Agreement, which offers tremendous opportunities and incentives for the production of local manufactured goods; Nigeria's large agricultural sector, which could serve as a source of input for the industrial sector and the deceleration of growth in China, which presents a huge opportunity for Nigeria and other African countries to meet global demand. However, the

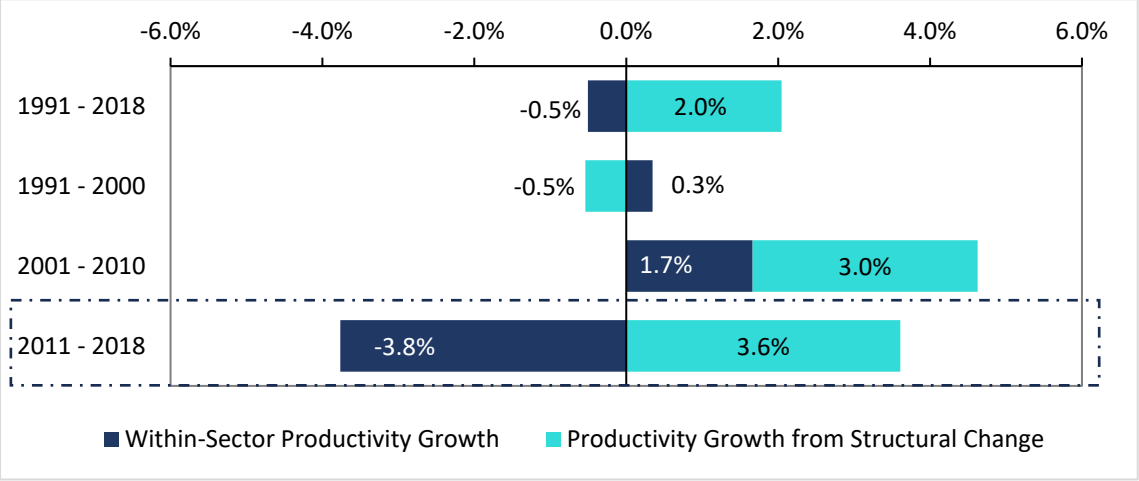
implementation of sound and locally-tailored industrial policy while addressing key constraints to doing business will be important in realising this potential.

The two least productive sectors (agriculture and non-tradable services) accounted for 81% of employment in 2018[44]. Although this represents a decline from 93% and 90% in 2000 and 2010, respectively, their collective shares in employment are still high. These sectors also have the highest level of informality relative to other sectors. The National Bureau of Statistics (2016) estimated the share of informal activities in agricultural output at 92% and non-tradable services at 43.5%. Furthermore, the National Living Standards Survey of 2019 showed that about 56.7% of Nigerians who lived in a household where the head engaged primarily in agriculture were poor (NBS, 2019). These point to the weak capacity of both sectors to create quality jobs with better working conditions, which are needed to ensure economic inclusion and improved living standards.

What do the findings from the shift-share method tell us about the drivers of labour productivity in Nigeria?

According to the results from the shift-share method, from 1991 – 2018, labour productivity growth in Nigeria averaged 1.5%, and was driven by the structural change component which contributed positively to productivity growth during the period. Productivity growth from structural change was 2% while within-sector productivity growth was negative at -0.5% (see Figure 11). This implies that overall, the structural change that Nigeria experienced was growth-enhancing. Dissecting the results by timeframe, it is crucial to point out that productivity growth was highest in the decade of the 2000s (4.6%) and lowest in the 1990s and 2010s at -0.2% respectively (see Table 26). Essentially, productivity growth was highest when both components (within-sector and across-sector productivity) were positive. In the other two periods when productivity growth was negative, one of the two components was negative. This implies that to achieve high and sustained productivity growth, both the within- and across-sector components are important.

Figure 11: Breakdown of Productivity Growth in Nigeria



Source: Created by the Author using data from the Economic Transformation Database

[44] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

Turning to the sectoral drivers of productivity growth, in the 1990s, productivity growth, which averaged -0.2%, was driven by the within-sector component. During this period, labour moved towards the agriculture sector, which has the lowest productivity level. The share of agriculture in total employment increased from 69% in 1990 to 75% in 2000 (see Table 27). As agriculture accommodated more labour, productivity growth from structural change was negative at -0.5% during this period. There was also a decline in the share of manufacturing labour, while those of tradable and non-tradable services remained constant. So, the movement of labour towards agriculture and the loss of labour in manufacturing had a negative impact on productivity growth in the 1990s.

Table 26: Breakdown of Nigeria's Productivity Growth (%)

		1991 - 2000	2001 - 2010	2011 - 2018	1991 - 2018
Within-Sector Productivity Growth	Agriculture	0.2	1.9	0.6	0.9
	Manufacturing	0.8	0.1	-0.4	0.2
	Industry (non-Manufacturing)	-0.6	-0.7	-1	-0.8
	Tradable Service	-0.2	0.4	-2.3	-0.7
	Non-Tradable Service	0.2	0.1	-0.7	-0.1
	Sub-Total	***0.3***	***1.7***	***-3.8***	***-0.5***
Productivity Growth from Structural Change	Agriculture	0.1	-0.5	-0.6	-0.3
	Manufacturing	-1.5	-0.2	0.6	-0.4
	Industry (non-Manufacturing)	0.2	0.8	0.5	0.5
	Tradable Service	0.5	1.1	2.6	1.4
	Non-Tradable Service	0.1	1.9	0.6	0.9
	Sub-Total	***-0.5***	***3.0***	***3.6***	***2.0***
Overall Productivity Growth	**Total**	**-0.2**	**4.6**	**-0.2**	**1.5**

Source: Created by the Author using data from the Economic Transformation Database

Table 27: Share of labour by sectors

	Agriculture	Manufacturing	Industry (non-Manufacturing)	Tradable Services	Non-Tradable Services
1990	69%	12%	1%	1%	17%
2000	75%	5%	1%	1%	17%
2005	68%	4%	2%	2%	24%
2010	59%	4%	2%	3%	31%
2014	52%	6%	3%	6%	34%
2018	46%	7%	3%	9%	35%

Source: Created by the Author using data from the Economic Transformation Database

In the 2000s, the structural change component became positive as labour moved away from agriculture towards services. During this period, structural change accounted for 64% of overall productivity growth, which was positive (4.6%). This movement of labour was mainly towards non-tradable services as its share of labour increased from 17% in 2000 to 31% in 2010. The share of tradable services in total employment also increased, though marginally, from 1% to 3% during the

period. Whilst much of the movement of labour was to non-tradable services, it is observed that tradable services contributed significantly to overall productivity growth in the 2000s via the structural change component. Of the 4.6% productivity growth achieved in the 2000s, tradable services accounted for 1.1 percentage points while non-tradable services accounted for 1.9 percentage points. The within-sector component was also positive in the 2000s.

In the 2010s, there was a major shift of labour towards the high-productivity sectors in Nigeria. The share of manufacturing in total labour increased from 4% in 2010 to 7% in 2018. Similarly, the share of tradable services in total employment increased from 3% to 9%. These shifts corresponded with a significant increase in productivity growth from the structural change component to 3.6%, the highest in all three decades covered. However, it is important to note that within-sector productivity declined by 3.8% in the decade, resulting in an overall decline in productivity growth of 0.2% in the decade. This negative within-sector productivity growth can be attributed to the 2016 recession, which reduced investments and led to the output contraction in some sectors. The results also reflect broader structural challenges in Nigeria, such as reliance on crude oil, inadequate infrastructure and low technological adoption. However, the positive productivity growth from structural change suggests that even in a challenging environment, the economy benefited from the movement of labour towards more productive sectors like tradable services and manufacturing.

Discussion

A review of the productivity growth across different periods revealed two main findings. **First,** as shown in the regression results, the movement of labour towards the high-productivity sectors (manufacturing and tradable services), which occurred in the 2010s, contributed significantly to the overall productivity growth in the entire period. This is despite the limited movement of labour to these sectors. For tradable services, its contribution to productivity growth via the structural change component has been positive since the 1990s. This contribution was stronger than that of non-tradable services, except in the 2000s, when its share in employment grew slightly by 2 percentage points. Although tradable services accounted for a much lower inflow of labour than non-tradable services, its contribution to productivity growth was higher and more pronounced, especially in 2011 – 2018. This finding is similar to that of Adeyinka et al. (2013), who revealed that between 1996 and 2009, the positive impact of structural change in the non-oil economy mainly came from the movement of labour from agriculture and trade towards transportation, finance and business services. During the entire period (1991 – 2018), the movement of labour towards tradable services contributed positively to productivity growth in Nigeria, higher than all other sectors captured in the study.

For the manufacturing sector, Nigeria experienced deindustrialisation, where the share of labour in the manufacturing sector declined from 12% in 1990 to 4% in 2010. During this period, the sector's contribution to productivity growth was negative via the structural change component. However, as labour moved towards the sector from 2010 to 2018, its contribution to productivity growth became positive. This suggests that the potential of the sector to drive overall productivity growth and job creation in Nigeria is huge. It is also in line with the findings of the regression analysis, which showed that despite the low growth of the sector, its influence on per capita income, employment and labour productivity was positive. During this period (2010s), manufacturing had a high contribution to productivity growth via the structural change component (0.6%) despite the limited labour inflows to the sector.

From 1991 – 2018, however, the manufacturing sector did not contribute significantly to productivity growth but its trend offers two interesting insights: (i) the decline in the share of manufacturing labour in the 1990s and 2000s had a negative impact on overall productivity growth. The manufacturing sector weighed down productivity growth during this period, especially via its structural change component. During the period, the structural change component of manufacturing showed a negative growth of 1.5% (See Table 26). (ii) the movement of labour towards manufacturing in Nigeria from 2010 to 2018, though marginally, brought about a positive contribution of the sector to overall productivity growth. This period, particularly from 2010 to 2014, coincided with improved output growth of the manufacturing sector and significant improvements were recorded in sub-sectors such as Cement, Food, Beverage and Tobacco and Textile, Apparel and Footwear, owing to the impact of the Backward Integration Policy (McCulloch et al, 2017). What this suggests, therefore, is that deliberate expansion of the manufacturing sector would attract labour and, at the same time, trigger a much higher productivity growth in Nigeria due to the sector's economies of scale. This is one of the core arguments of Kaldor (1968).

Second, the movement of labour towards the agricultural sector in the 1990s, coupled with the declining share of labour in manufacturing, was associated with a negative growth of the structural change component of productivity growth. Similarly, non-tradable services accommodated much of the movement of labour since the 2000s and is the second largest employer of labour after agriculture. The sector contributed significantly to productivity-enhancing structural change in the 2000s but this contribution declined from 2010 – 2018. The massive movement of labour towards this sector, which has lower productivity and a high level of informality, raises concerns about the quality of jobs, wage level and working conditions of workers in the sector. As an example of the level of informality in the sector, data from the National Bureau of Statistics (2018) showed that 66% of self-employed non-farming workers engaged in the non-tradable services sector in 2017. After agriculture, the sector has the highest level of informality in terms of output in Nigeria (NBS, 2016). These features shed light on the outcome of the regression results, which showed that an expansion in the share of non-tradable services in total employment had a negative impact on per capita income growth in Nigeria.

Having reviewed the productivity trend of the Nigerian economy and productivity performance across sectors, several conclusions can be drawn. **First, the level of productivity matters for economic development**. Labour productivity growth in Nigeria has been on a downward trend since 2002, when it peaked at 11%. This is despite the rapid increase in Gross Domestic Product (GDP) in the 2000s. The inability for Nigeria to sustain the high productivity growth for a long period is a key factor in the limited creation of jobs and opportunities for the populace. Generally, the growth rate of labour productivity in the economy arises from growth in individual industries as well as from shifts in the structure of the economy (Oulton, 2020).

Second, the dynamics of productivity of a sector is important for job creation and inclusion. Since 1990, the Nigerian economy has created a net of 42 million jobs, 74% of which were created from 2000 to 2018 (see Table 24). But job creation must be viewed in relation to two factors. The first factor is the number of jobs needed in the economy i.e., the entrants into the labour market. From 2015 to 2018, for instance, about 4.8 million individuals entered the labour market each year while 625,000 net jobs were created (Nigerian Economic Summit Group (NESG), 2019). Where there are not enough

jobs created, unemployment rate is expected to rise, with negative implication on inclusion and poverty reduction. The second point is the quality of jobs, and this implies that the sectors creating these jobs and their level of productivity are important considerations in reducing the number of working poor and in achieving economic inclusion. Sectors such as agriculture and non-tradable services, which account for the largest share of employment in Nigeria, are the least productive. As noted by Erumebor (2023a), this suggests that the kind of jobs needed to generate income growth and lift many Nigerians out of poverty are not available in large numbers. It is important to note that the creation of jobs in the high productivity sectors is not a guarantee of higher wages for the entire workforce. Given this, government policies are required to address issues of discrimination by gender, age, migration status, etc.

Third, structural transformation towards manufacturing could be the missing link in Nigeria's productivity and development puzzle. Even though agriculture remains the least productivity sector, steady increase in agricultural labour productivity in the last three decades has not triggered improved outcomes in manufacturing, nor has it resulted in a reduction in unemployment and poverty rate in Nigeria. This is in view of the fact that farmers are among the poorest in the country. In addition, the increase in labour productivity in agriculture was accompanied by a steady decline in non-agricultural sector productivity. Improving agricultural labour productivity at the expense of the manufacturing sector makes it clear that Nigeria is yet to experience structural transformation towards manufacturing as portrayed by Kaldor and Lewis. With incessant power outages, infrastructure deficit and weak implementation of industrial policies, Nigeria's business environment has not been conducive to the development of the manufacturing sector. This is despite the opportunities for growth in the sector. Lin (2011) and Monga (2017) argue that the abundance of low-skilled workers and labour-intensive industries produce sizeable opportunities for growth in manufacturing and industrialisation, which are important for Africa and their potential is virtually unlimited, especially in an increasingly globalised world. In view of these opportunities and given that manufacturing is one of the high-productivity sectors in Nigeria, achieving structural transformation towards manufacturing will be fundamental in improving overall productivity and generating income for the majority of Nigerians. World Bank (2019) observes a strong tight correlation between productivity and a firm's market access, noting that firms that are less productive focus on local markets while those that are productive explore opportunities in regional and global markets. The formulation and implementation of a sound industrial policy that will provide a framework that supports the transition of micro and small firms into medium and large firms while improving productivity will be essential in Nigeria's quest for social and economic inclusion.

5.4 Summary of Key Findings from the Empirical Analysis and Conclusion

This chapter employed regression analysis and shift-share method to examine changes in sectoral composition of the Nigerian economy. Labour has moved mainly towards services, but the services sector is not homogeneous, given the productivity differences between tradable and non-tradable services. It is therefore important to emphasise how the components of services have influenced economic development in the country. From a productivity standpoint, labour productivity growth in Nigeria averaged 1.5% from 1991 to 2018. This figure is low when compared with that of Ethiopia, one of the largest economies in SSA. During the same period, Ethiopia's average productivity growth was

3.6%[45]. Ethiopia is one of the few countries in Sub-Saharan Africa (SSA) that has experienced increased investment in its manufacturing sector, although the AfDB (2022) argued that the transition of labour towards more productive services and industrial sectors is slow. The AfDB noted further that economic growth in Ethiopia since 2012 has been driven by capital accumulation arising from public infrastructure investments. Nigeria's performance is also poor when compared with those of countries such as Malaysia (2.5%) and Indonesia (2.5%), which have experienced an expansion of the manufacturing sector[46]. Oshikoya et al. (2019) compared Nigeria and Indonesia's economic performance over the years. Their study revealed that despite the similarities of both economies in terms of demography, agricultural endowments and mineral resources, Indonesia's growth was accompanied by structural transformation with the share of manufacturing in real GDP increasing to 21% in 2019 from 13% in 1965. In contrast, Nigeria's manufacturing sector's share of real GDP declined from 33% in the 1980s to 8% from 2010 – 2017. Since the mid-2000s, Nigeria's productivity growth has been on a downward trend driven by the poor performance of within-sector productivity growth. A combination of factors such as falling crude oil price, pressure on the exchange rate, power and infrastructure deficits and a tough business environment have negatively affected the productivity growth of key sectors. The inability of Nigeria to sustain high productivity growth for a long period is a key factor in the limited creation of jobs and opportunities for the populace.

The empirical analysis revealed the extent to which sectoral expansion has influenced key indicators such as per capita income growth, unemployment rate and labour productivity growth in Nigeria. It also examines the contribution of sectors to productivity growth and the dynamics of within-and-across-sector productivity growth in Nigeria. These findings are discussed under three points.

First, the services sector had a positive impact on real per capita income growth in Nigeria over time. This implies that the movement of labour towards services has not been detrimental to the overall growth of per capita income. However, dissecting services by levels of productivity shows that non-tradable services had a negative impact on per capita income growth, while the effect of tradable services was positive. The result implies that the productivity level of a sector matters significantly in explaining the growth of per capita income. It further highlights the importance of viewing sectors through the lens of productivity rather than through the similarity of activities. Furthermore, the shift-share results show that the movement of labour towards the services sector, especially tradable services, sustained productivity growth in Nigeria.

Tradable services had the highest contribution to productivity growth in Nigeria through the structural change component. This suggests that the movement of labour towards the sector was instrumental in driving overall productivity growth in Nigeria, just like it did with per capita income growth. Its share in total employment increased from 1% in 1990 to 9% in 2018[47]. The result, perhaps, challenges the commonly held perception that tradable services cannot accommodate a larger share of the labour force in a country. It also heightens the need for the development of the country's human capital capabilities, investing in its young population and impacting them with the necessary digital skills to thrive and further enhance productivity in tradable services sectors like finance, information and communication technology and professional services. More recently, the federal government of

[45] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[46] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.
[47] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

Nigeria through the Ministry of Communications, Innovation and Digital Economy launched the 3 Million Technical Talent (3MTT) programme which aims to train 3 million technical talent by 2027 (Esene, 2024). Beneficiaries will receive training in areas not limited to software development, UI/UX design, data analysis & visualisation and quality assurance. Such a programme, if properly executed, will further enhance the productivity of tradable services and strengthen its contribution to overall productivity and income growth in Nigeria. This study therefore concludes that the service-led growth that Nigeria has experienced since the 2000s positively impacted per capita income and productivity through tradable services, although much of the movement of labour was from agriculture to non-tradable services.

Second, the expansion of the manufacturing sector positively impacts per capita income and employment in Nigeria in the short run. Although the manufacturing sector has regressed in the last three decades both in terms of its contribution to output and employment, the sector still displayed a positive impact on key economic indicators. The results suggest that even with the limited investment in the manufacturing sector over the last few decades, the sector has a great capacity to create jobs and raise income levels in Nigeria. The study also finds that the movement of labour towards the manufacturing sector in the 2010s made the sector to positively contribute to productivity growth, while the decline in the sector's employment share pre-2010 weighed overall productivity growth. Manufacturing played a significant role in positively influencing real income and employment and its contribution to productivity growth was positive when labour moved towards the sector in the 2010s in Nigeria.

Government policies will be crucial in supporting the growth of manufacturing to maximise its potential in the Nigerian economy. In addition to addressing productivity constraints (such as infrastructure deficit, including limited power supply and exchange rate depreciation and scarcity), which raise input costs and make the sector less competitive, the formulation and implementation of an industrial policy is critical to the expansion of the sector. Such policy should provide a framework that supports the growth of micro, small and medium firms in the sector as well as deepen the local value chains to improve productivity and competitiveness of the sector. This will be essential in Nigeria's quest for job creation and social inclusion.

Third, manufacturing and tradable services are crucial in raising overall labour productivity in Nigeria. The Kaldorian argument that the growth of manufacturing is crucial for labour productivity growth holds in Nigeria. This argument holds not just for manufacturing, but also for tradable services which showed a much higher coefficient of 0.2 than manufacturing (0.12). Similarly, in line with the argument by Lewis (1954), this study shows that the movement of labour towards the high-productivity sectors (manufacturing and tradable services) in Nigeria, particularly in the 2010s, positively impacted productivity growth than the movement of labour towards the low-productive sectors. Even though the low-productivity sectors accounted for a significant share of the inward movement of labour from 1990 - 2010[48], their joint growth-enhancing structural change was 2.2% from 1991 – 2018 (3.8% for high-productivity sectors). This finding, therefore, supports the argument of Lewis and Kaldor that the movement of labour towards high-productive modern sectors triggers an increase in productivity in the economy. However, it is important to note that such movement needs to be sustained for longer

[48] The collective share of agriculture and non-tradable services in total employment rose to 90% in 2010 from 86% in 1990

periods and accompanied by improvement of within-sector productivity, for it to have a lasting positive effect on the economy.

Table 28: Summary of Regression Results: Coefficient (Prob)

	CPCGDPG	LNUER	LPG1*
SERVGROWTH	0.81 (0.0001)		
NTSEMP	-2.37 (0.0387)		
TSGROWTH	0.29 (0.0018)		
TSGROWTH1*			0.2 (0.0221)
LOGTSEMP		0.197 (0.7398)**	
INDNMEMP	1.33 (0.8433)**		
MANGROWTH	0.18 (0.0032)		
LOGMANGDP (-1)		-1.02 (0.0418)	
MANGROWTH1*			0.127 (0.0227)

*Data covers 1990 to 2019

**Not significant

CHAPTER SIX: GRANULAR EXPLANATION OF THE NATURE OF MANUFACTURING, AGRICULTURE AND OPPORTUNITIES FOR TRADABLE SERVICES - QUALITATIVE ANALYSIS

6.1 Introduction

In the previous chapter, the empirical analysis highlighted the importance of the high-productivity sectors – manufacturing and tradable services – in driving economic development in Nigeria (see Table 29). Specifically, the manufacturing sector was found to positively influence per capita income, productivity and the level of employment despite its poor contribution to output and employment shares. The chapter also established that the movement of labour towards manufacturing played an important role in enhancing overall productivity in Nigeria in the 2010s, supporting Kaldorian and Lewis's arguments on the crucial role of the sector in driving development (see Chapter 2). Tradable services displayed a stronger and more positive influence on per capita income and productivity growth in Nigeria. Its contribution to productivity growth was the highest via the structural change channel, although much of the movement of labour was towards non-tradable services. The empirical aspect of this study emphasised that both manufacturing and tradable services had a significant influence on key economic indicators, even though they accommodated a limited share of the movement of labour in the last three decades. Thus, further expansion of these sectors could enhance inclusive structural transformation of the Nigerian economy in the future.

One limitation of the quantitative approach is the inability to offer an in-depth explanation of the "why", the context and issues of the problem or relation being studied. The qualitative approach becomes useful in providing detailed explanations of outcomes, drawing insights from people and firms in the sector of interest (Williams, 2007).

Table 29: Summary of Findings from Regression and Shift-Share Analyses

Sector	Findings from Regression	Findings from Shift-Share
Manufacturing	Positively influenced per capita income growth, (a reduction in) unemployment and productivity growth in Nigeria, despite low growth and weak contribution to GDP and employment.	Significant in driving productivity from structural change in the 2010s when labour moved towards the sector but overall (1990 – 2018) its impact was negative.
Tradable Services	Positively influenced per capita income growth and productivity growth but not significant in explaining employment.	Significant in driving productivity growth in the entire period. It had the highest contribution to productivity growth relative to other sectors.
Non-tradable services	Negatively influenced per capita income growth.	Experienced the highest labour inflows and showed a positive but weak contribution to productivity growth.
Agriculture	-	Movement of labour towards the sector was detrimental to productivity growth.

With the findings from the previous chapter, the outcomes of the semi-structured interviews were discussed and analysed along three themes.

The first is to explain and substantiate the findings in the regression analysis and shift-share estimation. Specifically, why has the manufacturing sector contributed poorly to productivity growth, employment and output in Nigeria over the years, reflecting the sector's inability to drive structural change in Nigeria? This is the second research question of this study. Furthermore, the chapter assessed how manufacturing and tradable services can drive structural change in Nigeria. Theoretical narrations and empirical findings in several East Asian countries suggest a stronger linkage between manufacturing and employment/economic development. But this is not the case in Nigeria, particularly given the sector's historically low contribution to employment and output. The qualitative approach, therefore, involved semi-structured interviews that explored reasons for the weak contribution of manufacturing to economic development in Nigeria.

Second, in addition to substantiating the findings of the regression, the chapter delved deeper into the nature of manufacturing in Nigeria and why this matters for structural transformation. It examined Nigeria's manufacturing sector in relation to capital accumulation, productivity and employment and whether the sector drives structural transformation of the economy given its current structure. The interviews uncovered the heterogeneous nature of the manufacturing sector and examined the unique features of the different categories of manufacturing firms and how they contribute to productivity, income, and employment. By understanding these distinctions within manufacturing, the study sheds light on how segments of the manufacturing sector influence structural transformation and economic development. For instance, within-sector transition may be required in the manufacturing sector to maximise the sector's role in ensuring structural transformation. Furthermore, examining the heterogeneity within the manufacturing sector offered insights into the barriers that different categories of firms face and targeted interventions required to enhance the sector's contribution to growth, employment and productivity. It provided insights into the role of technology in enhancing the productivity of the sector and whether technology adoption limits the sector's capacity to employ workers. Such a micro-level analysis complements the macro-level findings and informs policymakers and stakeholders in developing effective strategies for fostering economic development.

Third, the chapter explores the opportunities for the growth of specific areas of manufacturing and tradable services in ensuring an inclusive structural transformation of the Nigerian economy. It further explores factors that will drive such growth in both sectors in the near term. Agriculture was discussed in the chapter, especially in relation to its linkage with the manufacturing sector. For tradable services, this chapter explored the areas of opportunities, focusing on technology and skills development for the local and export markets. Technology in this chapter was viewed as an enabler of productivity, thus, the discussion centred on how technology relates to other sectors, particularly manufacturing and agriculture. The interview involved 12 firms, including agriculture, tradable services and small, medium and large-scale manufacturing firms operating in Lagos and Ogun State, which are manufacturing hubs in Nigeria. In summary, the interviews provided micro and sub-sectoral insights on the movement of labour across sectors in Nigeria with an emphasis on manufacturing and tradable services. It explores how these sectors can accommodate the kind of labour force in Nigeria and the

factors that will drive their expansion over time. This is in line with the third research question of this study.

6.2 Unravelling The Reason for the Sub-optimal Performance of Nigeria's Manufacturing Sector to Drive Structural Transformation

A major recurring reason cited by the participants of the interview for the underperformance of the manufacturing sector, especially given the sector's low share in total employment in Nigeria, is the high import intensity of the sector. As noted by several respondents, the majority of players in Nigeria's manufacturing sector are exposed to the importation of intermediate inputs for the production of manufactured goods. A respondent who works in a senior role for a large manufacturing company noted that the company spends a significant amount of resources importing intermediate inputs such as sugar and industrial starch, potential by-products of cassava. This is despite Nigeria being the largest producer of cassava globally. The respondent cited the challenge of limited investment in the value chain for products such as cassava, cocoa, sugar cane, maize and several others, despite the rising demand for these products and their by-products by manufacturing firms. These firms, therefore, resort to importing these items even though Nigeria is endowed with huge agricultural resources.

> "Take sugar for example. There isn't any major manufacturing of sugar in Nigeria. Large companies like Dangote Plc and BUA mostly import sugar from Brazil". (Code 2, November 3, 2023)

An examination of the annual accounts of large manufacturing firms in Nigeria that are listed on the stock exchange confirms this assertion. For instance, 58% of 'bought in materials and services' at Nestlé Nigeria Plc in 2022 were imported. In Unilever Nigeria Plc, the share is higher at 65.5% and it was 92.5% for Flour Mills of Nigeria Plc. On the aggregate level, net imports of raw materials in Nigeria increased from - ₦938 billion in 2018 to -₦2.18 trillion in 2023 (see Table 30). Trade deficits were also recorded for agriculture and manufactured goods from 2018 to 2023.

Table 30: Trade balance across key areas in Nigeria (Billion Naira)

	Agricultural Goods	Raw Material Goods	Manufactured Goods	Total
2018	(632)	(938)	(7,262)	**(8,831)**
2019	(690)	(1,225)	(9,862)	**(11,777)**
2020	(824)	(1,278)	(6,231)	**(8,333)**
2021	(1,462)	(1,421)	(9,400)	**(12,282)**
2022	(1,267)	(1,416)	(10,245)	**(12,928)**
2023	(1,037)	(2,177)	(17,621)	**(20,834)**

Source: Created by the Author using data from the National Bureau of Statistics

This implies that Nigeria has an import-dependent manufacturing industry, which has several implications on the performance of the sector and by extension on key socio-economic indicators such as economic growth, exports, employment and poverty. One of such implications of an import-dependent manufacturing industry is underdeveloped local value chains for agriculture, raw materials and manufactured goods. A unique feature of manufacturing is its backward and forward linkages.

Felipe (2018) emphasised that manufacturing has very strong linkages and knowledge spillovers than any other sector in an economy, noting that these linkages are strong, both within manufacturing, between manufacturing and agriculture and between manufacturing and services. Gemmell et al. (2000) noted that not only is agriculture a source of labour and savings for industrialisation, but the sector is also a source of input for the manufacturing sector and is a source of demand for manufactured products such as machinery, fertilisers, chemicals and processed foods. They found that the development of the manufacturing sector in Malaysia was accompanied by an increase in agricultural productivity in the long run. Essentially, the linkage between agriculture and manufacturing is crucial in the economic development process (Tsehay et al., 2022).

The weak state of local value chains, particularly in terms of domestic production of inputs, limits the ability of the manufacturing sector to create both direct and indirect jobs in large numbers and thus, plays a crucial role in the development of the economy. This view was shared by many of the interviewees. According to Code 2 (November 3, 2023):

> "Nigeria's manufacturing sector has an extended value chain and the most important thing is the extent to which local firms control the value chain. If we can source tumeric, sugar, onion powder, and these inputs from within Nigeria, there will be a ripple effect. This is what will give you a greater impact on job creation. The effect is not only on job creation. It is on broader development goals. The sector can have more impact on job creation and overall development when this happens".

Code 2 noted that their company spends significant resources importing inputs that can be easily produced in Nigeria, given the country's huge agricultural endowments. This, therefore, implies that opportunities and jobs that could have been created locally across the manufacturing and agriculture value chains are limited. Key challenges highlighted by the several interviewees include inadequate infrastructure, limited investment in the agricultural sector, poor enforcement of quality standards of goods produced, low productivity, poor power supply, limited land rights, insecurity of farmers, inconsistent policies, and poor policy implementation (see Section 3.3 for detailed discussion of these issues). Nigeria's case is similar to that of Ethiopia, where Tsehay et al. (2022) found that the agro-processing sectors rely on imported intermediate inputs, with a weak backward integration and thus, there is limited impact on employment and other indicators.

The high import intensity exposes the manufacturing sector to exchange rate depreciation, which raises the cost of production in the sector, limiting competitiveness. This is because many manufacturing firms rely on imported intermediate inputs and export minimally to other countries. Since the 2000s, Nigeria has experienced depreciation of the local currency vis-à-vis the US dollar. The Naira, which was exchanged for an average of ₦102.11 to a dollar in 2000 fell to ₦150.3 to a dollar in 2010 and ₦645.18 in 2023 (CBN, 2024). The official exchange rate was ₦1,630 to a dollar on February 27, 2024 (CBN, 2024). For the manufacturing industry, its share in real GDP and exports has remained in single digits since the 2000s, except in 2019 when its share of exports was 10.8% (CBN, 2023 and NBS, 2023b). As at 2022, the share of manufacturing goods in total goods exports was 2.9%, suggesting that the players in the sector have not positively responded to the weak currency, which is a subsidy for exports.

One major reason why manufacturing firms in Nigeria do not significantly benefit from a weaker currency is that as the local currency loses its value, the cost of imported intermediate input increases, eroding any potential competitive advantage. This challenge is compounded by supply-side constraints such as poor power supply, inadequate infrastructure, multiple taxation[49], limited access to affordable finance, among others. Wolf (2023) corroborates this finding, noting that currency devaluations in Nigeria often lead to high operating costs and low revenue growth of manufacturing firms due to weak consumer disposable income. While there are significant opportunities for manufactured goods in the export market arising from rising demand for manufactured goods in Africa and Nigeria's weaker currency, the high import intensity and its accompanying input costs weaken the ability of manufacturing firms to take advantage of these opportunities. Consequently, in 2023, several large manufacturing firms, including GlaxoSmithKline (GSK) and Procter & Gamble announced their plans to exit production in Nigeria citing exchange rate problems (Taoheed, 2023). In addition to currency exposure, firms have become vulnerable to global supply chain disruptions. With the COVID-19 pandemic, there were disruptions to the global supply chains following a series of shutdowns and movement restrictions across countries. As the world recovered from the pandemic, these challenges were exacerbated with the war in Ukraine in 2022. Most manufacturing firms struggled to obtain inputs such as wheat and corn, raising the price of food and other items. In addition, rising shipping costs led to an increase in the cost of production of many manufacturing firms in Nigeria.

In addition to the high import intensity, the manufacturing sector's low export ratio is a key factor that limits the sector's ability to drive structural change. As Chang (2011) noted, rapid export growth was an important reason for the success of industrial policies in East Asia relative to Latin America. In Nigeria, the majority of the large manufacturing firms have very low exposure to exports. In many of these firms, only less than 5% of their total revenue in 2022 comes from exports (see Table 31). This is unsurprising because many of these firms in Nigeria were established to leverage the country's large market, producing to meet the rising demand for food and manufactured goods. This low share of exports is also reflected in the macro data on trade, which shows that manufacturing accounted for only 2.9% of total goods exports in 2022 (NBS, 2023b).

> "As long as the ratio of import to export remains 90-10 or 80-20, manufacturers in Nigeria will not see the benefit of exchange rate devaluation. For most manufacturers in Nigeria, even those that are multinationals across Africa, the volume of exports they do today is not that significant, compared to what they sell within Nigeria. Many of these large firms that do export, target mostly neighbouring countries" (Code 2, 2023, November 3).

Such low contribution to exports, coupled with the heavy reliance on imported inputs, exposes these firms to currency risks and supply chain bottlenecks.

[49] Multiple taxation refers to a situation where firms are made to pay too many taxes to the federal, state, local governments and non-state actors which can include trade unions, traditional rulers, gang members etc. These payments act as a burden for many businesses, particularly NMSMEs.

Table 31: Share of export revenue in total revenue of select large manufacturing firms in Nigeria listed on the Nigerian Exchange

	2021	2022
Flour Mills of Nigeria Plc	2.2%	2.4%
Nestle Nigeria Plc	1.5%	0.8%
Unilever Nigeria Plc	1.1%	1.25%
Dangote Cement Plc	4.9%	3.7%

Source: Annual Accounts of Companies

To address these challenges, a few firms are seeking to increase their exports to other African countries, especially given the opportunities brought about by the AfCFTA. For instance, Flour Mills Nigeria Plc (2023, P. 159) in its annual account for 2022, noted that:

> "The Group is currently involved in the backward integration of Agro Allied products in order to reduce the foreign exchange risk associated with the high dependence on imported raw materials. The Group has also commenced the export of products to neighbouring African Countries in order to get more inflow of the USD"

This new strategy requires that these firms are not constrained to the domestic market but expand their reach to other countries via exports. With this approach, these multinationals, therefore, can expand production, create more jobs in the process and earn foreign exchange. While this is a good strategy to reduce foreign exchange risk, it will also strengthen the role of the manufacturing industry in ensuring macroeconomic stability by boosting external reserves in Nigeria. Erumebor (2023b) cited factors limiting the growth of manufacturing firms' exports to include the poor state of ports and border access roads, underdeveloped rail transport and inland waterways, conflicting roles of government agencies in formulating and implementing trade policies and programmes and inefficiencies at seaports and land borders. Industrial policy must therefore address these challenges and incentivise the expansion of firms' exports to regional and global markets given its potential to strengthen linkages in the domestic economy and support job creation.

To summarise, the manufacturing industry's limited impact on job creation and its weak role in driving structural transformation in Nigeria stems from a combination of structural and policy-related challenges. Key issues such as limited infrastructure, unreliable power supply, weak implementation of industrial policy, complex ports and border procedures and poor access to finance and markets have long constrained the growth of domestic production capabilities (Chete et al., 2016; Chete et al., 2014; FGN, 2014; Agu & Evoh, 2011; FMARD, 2016; Ajakaiye et al. 2015; Okafor & Chikalipah, 2021). While previous literature has documented these broader challenges facing Nigeria's manufacturing sector, limited attention has been given to how these twin dynamics - high import intensity and low export ratio - jointly limit the sector's potential to drive structural transformation. Together, these two factors not only reflect the underlying structural barriers highlighted above but also exacerbate them, thereby limiting the transformative impact of manufacturing in Nigeria's development trajectory. High import intensity undermines value chain development, exposes firms to currency volatility and global supply chain disruptions, and raises production costs. At the same time, weak export performance constrains the sector's ability to scale, compete internationally and benefit from global demand.

6.3 The Nature of Manufacturing in Nigeria and Why This Matters for Structural Transformation

The manufacturing sector is not as homogeneous as portrayed in the conventional literature on structural transformation. The sector is highly fragmented and can be further categorised based on productivity levels. This fragmented nature of the sector implies that the features of increasing returns to scale and linkage with productivity, often associated with manufacturing in the structuralist literature, may be limited. As such, it becomes important to explore the nature of Nigeria's manufacturing sector in relation to capital accumulation, productivity and employment.

This study introduces two categories of manufacturing based on the nature of firms and their interactions with markets. The categories are subsistence and modern manufacturing. ***Subsistence Manufacturing*** refers to under-resourced, low-productive and small-scale manufacturing firms that are run by sole proprietors, servicing local and in-country markets. Subsistence Manufacturing involves firms[50] that engage in the production of goods at a low scale for the domestic market. For many of these firms, there is little evidence of capital accumulation as they make limited investments in new equipment, better technology, and infrastructure, largely due to capital constraints. The Small and Medium Enterprise Development Agency of Nigeria (SMEDAN), the government agency responsible for supporting small businesses defined business categorisation in Nigeria as follows: Nano businesses (1-2 employees or less than ₦3million turnover); Micro Enterprises (3-9 employees or turnover of ₦3million to less than ₦25 million); Small Enterprises (10-49 employees or turnover of ₦25million to less than ₦100million) and Medium Enterprises (50-199 employees or turnover ₦100million to less than ₦1billion). Subsistence Manufacturing are nano, micro and some small firms that are mostly unregistered, productivity is often low and because of limited access to resources such as finance, better technology, information and infrastructure, their ability to grow is limited to the size of the local market. In other words, they exhibit features of the non-tradable sector, even though they are engaged in manufacturing.

One major distinction between subsistence manufacturing and informal manufacturing is that informal manufacturing emphasises the registration status of a firm. However, subsistence manufacturing focuses on the nature of these firms, particularly in relation to capital accumulation, productivity and employment. While registered nano, micro and some small firms are viewed as formal firms, these firms are categorised as subsistence manufacturing firms. This categorisation is important because capital accumulation, productivity and employment are not solely dependent on registration status. Some registered firms exhibit low productivity and lack capital accumulation due to poor management or other business constraints. Although these firms are formal, they employ few individuals as informal firms and are also constrained by limited access to resources such as capital and better technology.

In Nigeria, subsistence manufacturing firms account for over 91% of the total number of manufacturing firms, excluding large firms (see Table 32). The majority of these firms engage in the

[50] The Small and Medium Enterprise Development Agency of Nigeria (SMEDAN), the government agency responsible for supporting small businesses defined business categorisation as follows: Nano businesses (1-2 employees or less than ₦3million turnover); Micro Enterprises (3-9 employees or ₦3million < or less than ₦25 million turnover); Small Enterprises (10-49 employees or ₦25million < ₦100million turnover) and Medium Enterprises (50-199 employees or ₦100million < ₦1billion turnover)

petty production of soaps, bread, candles, packaged water, snacks, dry finger foods such as chin-chin, plantain chips, and other goods.

Table 32: Number of manufacturing firms in Nigeria in 2020 (excluding large firms)

Total number of manufacturing firms	**1,896,738**	
Formal	**278,985**	**15%**
*Nano***	*28,334*	*10%*
*Micro***	*89,339*	*32%*
*Small**	*147,646*	*53%*
Medium	*13,667*	*5%*
Informal**	**1,617,753**	**85%**
Nano	*1,368,329*	*85%*
Micro	*249,424*	*15%*

Source: Created by the Author using data from SMEDAN (2021)

*Some small firms also fall into the category of modern manufacturing

**Includes subsistence manufacturing firms

Within subsistence manufacturing, some small firms target both local and interstate markets within Nigeria. An example of such firms includes shoe and clothes makers in Aba, which is an industrial city in the eastern part of Nigeria, that target large markets in western and northern Nigeria, such as those in Lagos, Kano and Ibadan. Some of these small firms are registered with the government, mostly with the state and local governments, and with trade unions or business associations. They also pay taxes and levies to the states and local governments and also to non-state actors[51]. With limited capital, wages offered by these firms are low and, in most cases, workers are paid below minimum wage; workers lack social benefits such as pensions and health insurance and there is the absence of working contracts. While these firms are fewer than the first category of firms in subsistence manufacturing (nano and micro), their processes are mostly manual and labour-intensive, as they use less machinery in the production process. Thus, productivity growth is limited and their outputs are often of lower quality. Notwithstanding these challenges, these firms have built capabilities over the years by learning by doing and therefore, they have greater potential to scale, enhance productivity and reach larger markets, provided that government policies offer the right incentives and support structures.

Subsistence manufacturing firms contribute significantly to employment in Nigeria. A look at Nigeria's employment structure showed that 73% of workers in the manufacturing sector are self-employed (NBS, 2018). A more recent survey of manufacturing firms in Nigeria by the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) showed that in 2020, the dominant form of ownership structure in manufacturing was sole proprietorship. 95% of the total manufacturing firms operated as sole proprietorships (SMEDAN, 2021)[52]. These data on employment and ownership structure imply that subsistence manufacturing dominates the manufacturing sector in Nigeria, especially in terms of employment and number of firms, suggesting the allocation of too much labour to low-productivity firms. While it would have been useful to explore the employment and ownership structure across the 13 manufacturing sub-sectors, the absence of data makes this a challenge.

[51] Non-state actors include trade unions, traditional rulers, gang members etc who collect levies from businesses either on behalf of the government or in their capacity. They often have significant political influence.

[52] The survey covered only nano, micro, small and medium firms across all 36 states and the Federal Capital Territory in Nigeria.

Table 33: Ownership type in the manufacturing sector in 2020 (excluding large firms)

Total number of manufacturing firms	1,896,738
Sole proprietorship ownership type in manufacturing	1,799,549
Share of sole proprietorship	95%

Source: SMEDAN (2021)

To examine the quality of the workforce as well as the remuneration offered by subsistence manufacturing firms, insights will be drawn from the semi-structured interviews. According to most respondents, subsistence manufacturing firms typically employ low-skilled workers[53] primarily due to cost constraints. Limited financial resources compel these firms to opt for cheaper labour options, and workers are often required to learn on the job. According to Code 3 (2023, November 4),

> "When I started as a nano business in the agro-processing industry, I ran my business from my house. I was the trainer, I was the processor, I was everything. Even when I moved to a factory, I did not employ people who lived far from my factory because I could not afford to pay them well. For small businesses, the owner has to be on the ground to grow the business and many of these businesses have low-skilled workers. They cannot afford to pay skilled workers like the big firms".

The hiring of low-skilled workers is not peculiar to nano, micro and small manufacturing firms. Medium and large firms also hire low-skilled workers and these workers are relatively better paid than in small firms. With respect to remuneration and working conditions, workers in subsistence manufacturing earn a low wage, which is around the minimum wage of ₦30,000 per month (US$46[54]). This translates to ₦360,000 (US$552) per annum, far below the country's per capita income of ₦1,045,058.81 (US$1,720). Also, these workers do not have any health benefits or pensions. This is a typical practice in many small and informal firms in Nigeria. As a result of these features, staff turnover is high in the sector, particularly at the subsistence level as workers are often in pursuit of better wages and working conditions.

For small businesses in the leather industry, the skills problem has a different dimension. The industry is facing a shortage of skilled workers and therefore relies on migrant skilled workers from neighbouring African countries to produce and refine leather products such as bags, shoes, etc. This is prevalent in urban areas. Instead of hiring workers, several small firms contract their production to a group of artisans who specialise in producing leather products such as shoes, bags, belts, cardholders, etc. As revealed by Code 5 (2023, November 3),

> "For our products, we would provide a template and/or design to the local bag makers and we still see flaws in the bags they make. We prefer to give the

[53] The International Standard Classification of Occupations classifies low-skilled work as mainly consisting of "simple and routine tasks which require the use of hand-held tools and often some physical effort". According to the ILO, a low-skilled worker is someone who undertakes low-skilled work. Based on the level of education, low-skilled workers are those with a lower secondary level of education and primary level of education.

[54] Using the 2023 annual average exchange rate of ₦645 to a US dollar. In July 2024, Nigeria's minimum wage was increased to ₦70,000, although this still translates to about US$44 due to significant exchange rate depreciation in the first half of 2024.

> Senegalese in Nigeria to make our products. They are much better than the Nigerians in terms of making leather products but these days, we notice they often prioritise quantity over quality. Finishing of leather products is also a problem. The Senegalese speak French and it is difficult to communicate exactly what we want to them because we speak English".

For firms operating at the subsistence level, improving access to finance and markets and training for low-skilled workers remain crucial in driving growth. As noted by Code 9 (2023, November 15),

> "The growth of small firms in Nigeria is constrained by limited access to finance. When firms lack access to finance, they cannot hire skilled workers and it is difficult for them to finance other operational expenses. Many small businesses therefore cannot transition to become medium and large because of the problem of limited finance".

Issues of insufficient power supply and infrastructure deficits are also common challenges faced by small manufacturing firms in Nigeria (Agu & Evoh, 2011 and Chete et al., 2014).

The other aspect of manufacturing, ***Modern Manufacturing***, refers to better-resourced, structured and more productive firms that produce goods at a medium to large scale, targeting the local market and also the international market where necessary. Modern manufacturing firms have better access to resources such as advanced technology and capital from commercial banks, although this varies as we move from small to medium and large firms. Essentially, capital accumulation is prevalent in these firms and they exhibit much higher revenue per worker, implying higher productivity levels as argued by the structuralists. They include some small firms, and medium and large firms that offer relatively higher wages and better conditions for workers.

Within modern manufacturing, there are differences between small, medium and large firms and these differences manifest in various aspects such as production capacity, number of employees, technology adoption, market share and working conditions. While large firms have a much larger presence in mineral resource-based manufacturing sectors such as cement, oil refining and basic metal, iron & steel mainly due to their capital-intensive nature, their share is relatively lower in the agricultural products-based manufacturing sector where medium and small firms play important roles. For instance, in the cement industry, Dangote Cement Plc, Lafarge Africa and BUA account for about 100% of the market share (Reuters, 2021). The food and beverage industry, on the other hand, is highly fragmented and includes large, medium and small players with varying niches in the market. Overall, Wolf (2023) reviewed manufacturing firms listed on the Nigerian Stock Exchange in 2020 and found that the consumer goods segment accounted for most of the growth of the Nigerian manufacturing sector. Expansion of the sector was driven by demand growth, which was crucial in driving capital accumulation for manufacturing firms listed on the Exchange. The study presents evidence of capital accumulation among large manufacturing firms in Nigeria.

As regards employment, modern manufacturing firms contribute less to overall employment in the manufacturing sector relative to subsistence manufacturing firms. A review of the 2022 Annual Reports of some of the largest manufacturing firms in Nigeria, which are spread across the country,

revealed the number of direct employment in these firms. Unilever Nigeria Plc employed 786 individuals in 2022 while Nestlé Nigeria Plc had 2,320 members of staff. Others include Flour Mills Nigeria Plc (5,190); Dangote Cement (18,693) and Dangote Sugar Refinery Plc (3,066). These five firms collectively employed 30,055 direct staff but created more indirect jobs in 2022. However, it is important to note that these firms are fewer, relative to subsistence manufacturing firms, and as they expand, their employment elasticity tends to reduce. These firms have access to capital and can improve efficiency and service larger markets by adopting advanced technology or improving their production processes. Although there is room for expansion to tap into regional markets, the creation of additional direct jobs in these large firms may be limited as they grow.

There are some pieces of evidence of the use of advanced technology in large manufacturing firms in Nigeria, which has raised productivity levels within these firms. Guma and Akporhuarho (2021) surveyed a Nigerian Breweries factory in Kaduna, a city in North West Nigeria. They found that the firm employs three industrial robots named packer, unpacker, and palletizer to remove, arrange and place empty glass bottles from and into crates. They observed that these robots arrange about 25,000 empty glass bottles per hour, an activity that would otherwise have been completed by over 100 workers in a day. They noted that the factory has not recorded any bottle breakage since the robots were employed. The study concluded that advanced technology adoption has significantly improved the firm's productivity, quality, safety and timely delivery of products to customers. Similarly, Rites Foods Limited, one of Nigeria's fast-growing food and beverage companies, engages in the production of Bigi Cola and many other products that compete with international brands such as Coca-Cola and Pepsi, due to their relatively low price. The company operates a large factory with up-to-date technology and artificial intelligence with little or no human interference. Located in Ososa, Ogun State, South West Nigeria, the factory produces its electricity through solar energy, supported by gas and diesel plants (Emelike, 2021). These experiences buttress the point that large manufacturing firms with access to capital and by extension advanced technology may employ fewer workers directly as they expand, but productivity gains and contributions to income growth may be higher, relative to other firms. Moreover, these firms can generate additional employment indirectly through linkages with input suppliers and service providers. The more a firm adopts advanced technology or sophisticated machines in its process, the more the demand for skilled workers to operate and manage this new machinery and thus, such workers get to receive higher wages. This emphasises the need for upskilling of workers in the manufacturing sector.

> "The moment a machine operator becomes a machine engineer, the worker's wages will improve. Workers need to be upskilled by their firms. I do not think artificial intelligence will take away jobs but simple automation will happen. Machine operators in Nigeria's manufacturing industry are ageing. In the next few years, most of these workers will retire. We must begin to upskill the younger workers to get them prepared for the future" (Code 2, 2023, November 3).

While subsistence manufacturing firms collectively employ more workers as they expand albeit with low contributions to income growth, small and medium-sized modern manufacturing firms are therefore placed in the middle, between subsistence and large firms. Specifically, small and medium-sized modern manufacturing firms need labour as they expand. This is partly due to the limited access to highly sophisticated modern technologies which can be costly to acquire. For many of these

companies, their processes will still require human efforts even if they embrace better technology and machinery. For instance, according to Code 3 (2023, November 4):

> "Large companies can use technology. There is a company in Ogun State that has zero human effort in production. They use robots. The name of the company is Rites {Food Limited}[55]. The only areas where humans are employed are in the repair of the robots, marketing, and a few other areas. But small and medium-sized firms need workers. For my business, if we get all the necessary support to expand, we can conveniently increase the number of employees from the current 23 to 40. Imagine if other firms do the same. The impact on job creation will be huge across the country. It is also important to note that small and medium businesses can employ unskilled labour, which is abundant in Nigeria".

Another business owner in the agro-processing sector also noted that advanced technology is required in manufacturing to improve productivity but its impact on jobs may not be negative.

> "For me, I do not think technology will steal people's jobs. It will only convert jobs from one form to another. As a business, we seek opportunities to use technology where possible. When we started, we used buckets to fetch water needed in our factory but to make things more efficient, we had to get slurring pumps which we are using today. This did not mean we had to sack workers who used to get the water. The role of these workers changed from fetching water to operating the pumps, and ensuring it is well-maintained and working perfectly. But with the pumps, we are more efficient" (Code 4, 2023, November 4).

These narratives about the role of technology are important in understanding the potential impact of industrialisation, especially as artificial intelligence continues to gain momentum. Better-resourced large modern manufacturing firms have the capacity to adopt artificial intelligence in the production process, thereby improving efficiency over time. This also means that the ability of these firms to employ additional direct workers will be limited as they acquire advanced technology that can replace human labour. However, they also create indirect jobs through supply chains, service providers and related industries. In addition, these firms are still fewer in number relative to smaller firms in the manufacturing sector. As noted by UNIDO (2021), in Africa, only 12.2% of manufacturing firms are adopting Advanced Digital Production (ADP) technologies. Walter et al. (2024) found evidence studying several African countries (Kenya, Ghana and South Africa) that not all new technologies being adopted by manufacturing firms are aimed at replacing labour. They observed that these new technologies are ensuring precision and quality consistency and some of these large firms that adopt these technologies are expanding and hiring more workers even as tasks are increasingly automated. While the share of firms adopting ADP technologies varies across countries, UNIDO (2021) noted further that smaller manufacturing firms tend to lag behind larger firms in adopting these technologies. These smaller firms, therefore, will continue to have a blend of analogue technology and labour in the production process. Essentially, not all technology will displace workers. While advanced technology can limit the rate at which firms hire additional direct workers as they would have done

[55] https://www.ritefoodsltd.com/our-factory/#

without such technology, they also create indirect jobs across the value chain. The path to industrialisation, therefore, will require prioritising large firms for productivity gains, and smaller firms for both efficiency gains and job creation.

In addition to increasing efficiency, technology (particularly access to digital tools) has a significant role in ensuring access to a wider market across the country. Interviewees in the large manufacturing firms mentioned that their firms now face competition from smaller manufacturing firms that sell goods via social media platforms such as Facebook, Instagram, etc. These digital tools have enabled smaller firms to access markets that were originally serviced by large firms. Large firms in Nigeria have not effectively tapped into the growing online digital market for manufactured goods. Instead, they rely on traditional media for advertisements. It is important to note that access to better technology for production i.e., new machines and sophisticated processes, requires capital and skills which some medium-scale and many small-scale manufacturers do not have.

To summarise, technology is crucial to boosting the productivity of firms with the use of modern machinery. Large firms have access to capital and advanced technology and as a result, their ability to increase employment may be limited. For medium and small firms, limited access to modern technology suggests that labour will still be in large demand. Technology is not only useful to enhance productivity via the production process but also important in creating market access for small firms in the manufacturing industry.

To examine the conditions of workers in modern manufacturing, workers in large firms have better welfare relative to those in medium and smaller firms. As an example, a review of the annual account of Unilever Nigeria Plc. showed that 97.7% of the company's direct workforce earned above Nigeria's per capita income of US$2,000 in 2022. The majority of these large companies constantly invest in staff training and welfare. For instance, Nestle Nigeria Plc has an in-house training facility, the Nestle Technical Training Centre (TTC), which offers several free training programmes for members of staff to improve their skills and broaden opportunities for career development. Other large firms also embark on such training programmes for their staff. Smaller firms within modern manufacturing struggle to offer better pay and conditions to workers.

> “The workers who earn minimum wage in my factory are those who did not go to school. Most of my workers earn above minimum wage and they also undergo training. Workers can be better paid if production costs are lower. We spend a lot on generating electricity from generators because of inadequate power supply from the national grid. Another major cost area is in logistics – getting goods from the farm. The cost of transportation is high. If the government can address these two problems, workers can be better paid” (Code 5, 2023, November 3).

From a gender and youth perspective, within modern manufacturing, women-led businesses in the agro-processing sector tend to hire women as workers. As noted by Code 3 (2023, November 4), “most of our managerial members of staff are women”. Equally, as Code 4, (2023, November 3) noted,

> “It is just recently I added men to my employment. Most of my workers are women. I have trained a lot of women in food processing and packaging”.

For small, medium and large firms in the manufacturing industry, there is a lack of interest from young individuals to seek employment in the sector. This problem is prevalent in urban areas where there are more of service-related jobs. Where these young individuals are employed, staff turnover is high. All the interviewees from both the small and large manufacturing firms cited the problem of ageing workers in their factories and the lack of interest among young people to engage in factory work. According to Code 4 (2023, November 3),

> "A lot of young people do not want to work in the factory. They are looking for easy jobs like "*TikTok*"[56]".

To further explore this narrative, insights can be drawn from a study by the International Labour Organisation (2022), which showed that since the COVID-19 pandemic, there has been an increase in remote and flexible working patterns across Africa. The study noted that remote work is less likely in lower-wage sectors such as hotels and restaurants, trade and manufacturing than in high-end services. With the pandemic, there was a rapid increase in internet access and increased use of social media among young people for entertainment, social interaction, work and other reasons (Odufuwa et al. 2024). As such, young people living in urban areas are likely to seek opportunities in technology-related fields and areas that encourage flexible work. In addition, the relatively low pay in small manufacturing firms also dissuades young individuals from taking factory work in urban areas. Even when they do take these jobs, their tenure tends to be brief as they continuously seek more promising prospects elsewhere. Within large firms, the concern is more of ageing factory workers, particularly those in the milling industry, which requires high-level skills. These challenges are breeding a new problem of skills shortage in the manufacturing industry, which complicates the challenge of unemployment and underemployment.

The categorisation of the manufacturing sector into subsistence and modern manufacturing is important in determining the nature of manufacturing growth in Nigeria and the overall contribution of the sector to productivity and income growth. Although manufacturing firms are often associated with productivity gains (Lewis, 1954 & Kaldor, 1968), subsistence manufacturing firms lack the capacity/capability to create better jobs, improve productivity and raise income levels. With subsistence manufacturing accounting for the majority of the workers in the sector in Nigeria, manufacturing, in its current form, cannot drive the structural change that the country needs. This dual form of the manufacturing sector can constrain the growth of aggregate productivity, exacerbate income inequality within the sector and limit the sector's contribution to inclusion.

[56] The interviewee is referring to social media-related jobs

Table 34: Features of modern and subsistence manufacturing in Nigeria

	Type of Manufacturing	Firm Size	Capacity to employ more workers as they expand	Contribution to overall productivity growth	Contribution to income growth
Manufacturing in Nigeria	Subsistence manufacturing	Nano firms	High	Low	Low
		Micro firms			
		Small firms		Moderate	Low
	Modern Manufacturing	Small and Medium firms	High	Moderate	Moderate
		Large firms	Low	High	High

Source: Author's Own

6.4 Opportunities for Domestic Demand-led and Export-led Structural Transformation

Demand plays an important role in the process of structural transformation. Insufficient demand can serve as a bottleneck in the development of sectors, especially in countries that are in the early stages of industrial development (Andreoni and Chang, 2019). This is because demand growth can allow domestic firms in developing countries to accumulate capabilities and capture markets that are not yet dominated by multinationals (Landini et al., 2020). They further noted that demand growth can be a source of innovation as it incentivises firms to invest in research and development (R&D).

In Nigeria, there has been an increase in the demand for manufactured goods in the last decade. This demand[57] has grown by an average of 22% from 2018 to 2022. In nominal terms, the demand for manufactured goods has increased from ₦14.5 trillion in 2017 (US$47.3 billion) to ₦37.8 trillion (US$88.3 billion) in 2022 (NBS, 2023b and NBS, 2023c). According to the respondents of the semi-structured interviews, this demand is expected to grow in the next decade and will be driven by rapid increases in population, rising income and government policies to encourage the consumption of locally-made goods. On population, with an estimated population of 220 million in 2023, Nigeria is the most populous country in Africa and the sixth largest in the world. Projections from the US Census Bureau (2024) show that Nigeria's population will rise to 428.4 million by 2050, making the country the third largest, after India and China. Interviewees believe that such a large population comes with increased demand for food and manufactured goods.

The existence of a local market for manufactured goods is essential in enhancing the productivity of firms and building capabilities, which are crucial in the structural transformation process. A few studies have explored the role of demand-led growth as a potential catalyst for structural transformation in Nigeria. Wolf (2023) showed that demand increases were critical in firms' investment decisions in the manufacturing sector in Nigeria. The study, which focused on formal manufacturing firms, argued that demand growth was an essential driver of capital accumulation for manufacturing firms listed on the Nigerian Exchange and increases in labour productivity and employment cannot be sustained without sustained increases in aggregate demand. Wolf noted that the nature of demand matters for

[57] Manufacturing demand in Nigeria = Manufacturing GDP + Net import of manufactured goods

structural transformation. This domestic demand, according to Wolf, comes from both the government through its spending on infrastructure, and from consumers, through the purchases of manufactured goods. While government demand was maintained and supported by borrowing during periods of external shocks as experienced in 2014/2015 and 2020 when crude oil prices declined, consumer demand behaved differently. As a result of the economic crises in 2016 and 2020, consumer demand growth was constrained, mainly due to exchange rate depreciation, high inflation and weak disposable income. The study concluded that the Nigerian government needs to implement redistributive demand policies and ease supply-side constraints, both of which are crucial to ensure structural transformation.

The argument for demand-led structural transformation in Nigeria can be further strengthened when we explore the nature of Nigeria's imports. Since 2017, when data on trade were disaggregated by sectors, the value of manufactured goods import has increased by almost threefold, from ₦9.5 trillion in 2017 to ₦25.6 trillion in 2022 (NBS, 2023b). The share of manufactured goods in total imports averaged 54%, reflecting the scale of Nigeria's dependence on imports. The majority of imported manufactured goods include mineral products (petrol, kerosene, etc), food and beverages, products of the chemical and allied industries, boilers, machinery & appliances & parts thereof, and motor vehicles. As revealed by several interviewees, the heavy exposure of the manufacturing industry in Nigeria to competition with imported manufactured goods is a severe challenge for the industry.

> "At the moment, we are in a place where the market is highly competitive. A lot of products are being imported into the country and these products come in at a very low price. It is difficult to compete with these products. We do not have stable electricity. We cannot produce raw materials on a large scale to compete with these products. This makes our business grow at a very slow pace" (Code 3, 2023, November 4).

This, therefore, presents an opportunity for the Nigerian government to implement industrial and trade policies that support the development of local capabilities in areas where local benefits can be enhanced – job creation, deepened value chain and income growth.

Beyond the domestic demand is the role of exports of both goods and services in driving structural transformation. As noted by Alessandria et al. (2021), an expansion of export demand naturally incentivises firms to increase exports, and this is expected to raise aggregate productivity. Export-oriented strategy played a crucial role in the development of East Asian economies (Song, 2012). Many of these countries transitioned from exporting low-technology manufactured goods to high-value manufactured goods, which raised overall productivity levels and enabled the catch-up with advanced economies. According to OECD (2017), since 1995, China's main exports shifted from low-tech goods such as textiles to high-tech products such as ICT and electronics, electrical machinery and transport equipment.

As revealed by Stiglitz (2021), the instruments available for developing countries to industrialise today are more limited than decades ago. Stiglitz cited international trade agreements that restrict manufacturing subsidies and protection, as well as tariff structures that prevent developing countries from moving up the value-added chain. Some authors have also argued that in the era of globalisation

and the World Trade Organisation, many developing countries cannot use the industrial policy tools adopted in the 1980s and 1990s. However, UNECA (2016) disagreed with this view, noting that there are industrial policy measures that can still be adopted. First, UNECA stated that for some measures, international rules are lenient to developing and least developed countries. Second, some policy measures are domestic and are not subject to international rules. Third, there has not been a consensus on some policy issues in the international community and fourth, there is ambiguity in some rules or their application. Some policies not directly covered by WTO agreements include targeted infrastructural investments, targeted and/or subsidised investments in skills development, tax benefits to encourage investments, such as exemption of corporate income tax for a fixed period, worker training requirements for large firms and exemption of SMEs from certain anti-trust laws, among others (UNECA, 2016). These points suggest that developing countries, including Nigeria, can strategically navigate international trade rules to enhance industrialisation and expand exports beyond the continent.

Specifically for Nigeria, there is an opportunity to enhance exports to countries outside of Africa and increase its role in the global economy, just like East Asia, which grew its share of global manufacturing value added from 1.6% in 1970 to 25.3% in 2015 (Chang & Zach, 2019). While 90% of Nigeria's exports of goods already go to countries outside Africa, the majority of these goods are crude oil and oil-related products (Erumebor, 2023b). To achieve long-term economic growth, Nigeria must prioritise product diversification and industrial upgrading to enhance its competitiveness in global markets and reap the benefits of an expanded local value chain in the manufacturing sector. As stated in Chapter 2, South Korea's transition to developing the Heavy-Chemical Industry (HCI) in the 1970s was instrumental in improving the country's industrial structure and exports (Chang, 2011) but many African countries, including Nigeria, focused on less technologically advanced and lower-value-added products – mainly primary products.

Nigeria can break this pattern by not restricting itself to comparative-advantage conforming industries (agro-processing and petrochemicals) but also developing diverse and sophisticated products to enhance global competitiveness. These key areas include pharmaceuticals, textiles and fabrics, basic metal, steel and aluminium and electrical cables. To enable this transition, the government must take on the hard work of providing targeted incentives to firms, investing in infrastructure, ensuring affordable export financing and supporting research and development and training programmes. By prioritising value addition, technology upgrading and integration into global supply chains, Nigeria can expand its manufacturing exports beyond Africa and strengthen its role in the global economy.

Still on export, the Nigerian diaspora market is a vital opportunity for medium players in the manufacturing sector to tap into the export market. Nigeria has a growing population of Nigerians living in the diaspora. The World Population Review[58] estimates the number of natives living abroad at 1.7 million in 2020. With a growing diaspora population, the demand for Nigerian-made products, including food and non-food items, is expected to increase. Many adult-aged migrants are connected with food and products from their home country for reasons of comfort, identity and culture, satisfaction and to trigger old memories.

[58] World Population Review. Retrieved from https://worldpopulationreview.com/country-rankings/immigration-by-country

During the semi-structured interviews, one of the medium-scale manufacturers noted that the export of their products to other countries was motivated by demand from Nigerians living abroad. According to Code 4 (2023, November 4),

> "We were excited to see that our goods were on the shelves of supermarkets in Russia. Nigerians living abroad patronise our products and this market is expected to grow over the years".

Beyond servicing local markets, small to medium-scale manufacturers can service the diasporan market. This will require compliance with specific standards of the importing countries, along with export promotion strategies. Leveraging this opportunity to grow exports will trigger rapid growth of manufacturing firms and enhance their job-creation capabilities.

In Africa, the African Continental Free Trade Area (AfCFTA) Agreement stands out as a key initiative for promoting regional integration. The AfCFTA aims to provide a single market for Africa, a continent of 1.3 billion people with a combined GDP of US$3.4 trillion (Echandi et al. 2022). Signed by 54 out of the 55 members of the African Union (AU), the trade deal aims to eliminate barriers to intra-African trade – which at 16% is one of the lowest in the world. Through negotiations and implementation of various commitments, the deal will ensure the reduction of barriers to trade in goods and services, aimed at increasing Africa's income by US$450 billion by 2035 (AU, 2023). It involves the gradual elimination of tariffs on 90% of tariff lines over 5 years; 7% of tariff lines are for sensitive products, which will be phased out over time and the remaining 3% may be excluded from liberalisation. As at August 2023, 47 of the 54 signatories, including Nigeria, had ratified the agreement (Tralac, 2023). The AfCFTA presents an opportunity for the growth of intra-African trade and particularly for Nigeria, it is even more promising for the expansion of exports to the rest of Africa.

Exploring Nigeria's position in Africa, Nigeria trades more with countries outside the African continent. Erumebor (2023b) noted that while Nigeria's export is skewed towards crude and its imports towards manufactured goods, 90.1% of Nigeria's exports are to countries outside Africa and 87.1% of its imports are from countries outside the continent in 2022. Essentially, only 9.9% of the country's exports went to other African countries, although actual exports may be marginally higher than 9.9% given that most informal trade is often not captured in national data. This low trade with other African countries, coupled with limited information about the AfCFTA, absence of a coordinated approach to industrial development, limited trade support and inadequate infrastructure, are key challenges that limit industrial development and exports of non-oil produce in Nigeria (Erumebor, 2023b).

Nigeria can leverage the AfCFTA to improve its trade structure and trigger structural transformation towards manufacturing. One reason to be optimistic about the AfCFTA, particularly in relation to Nigeria's exports, is the removal of tariffs on goods that are produced on the continent. This is referred to as the rule of origin. The rule of origin establishes the nationality of the product and determines the conditions under which preferential and duty-free treatment is granted to a range of products. It is an important element that will determine the success of the AfCFTA. To receive preferential treatment, an exporting firm must prove that its goods comply with the relevant rule of origin by providing an origin certification (Echandi et al. 2022). By removing tariffs on agreed-upon goods produced on the continent, African countries would source more intermediate and final goods from

the continent, rather than from countries outside the continent. The AfCFTA, if properly implemented, can improve trade and support the industrialisation of the continent.

On services export, Nigeria has a track record of supplying talent to advanced economies in the area of medicine and healthcare. These skilled professionals are departing Nigeria, seeking better opportunities abroad to improve their livelihoods. Their emigration is primarily driven by personal pursuits (including higher wages and better living standards) rather than by deliberate government initiatives to export talent. As regards the motivation for migration, Soldani et al. (2022) observed that across the OECD countries, labour shortages have been on the increase in many industries, but pronounced in manufacturing, accommodation and food, and health and social work. The OECD (2023) found that between 2021 and 2022, the employment rate of migrants increased in all OECD countries except Poland and 80% of migrants were economically active in 2022. For Nigeria, the rapid growth of emigration is reflected in the growing size of remittances to Nigeria. In 2020, Nigeria was among the top five international remittance recipient countries in Africa with inflows amounting to over US$15 billion (IOM, 2021). The remittances from migrant workers is among the largest sources of foreign exchange for the country, surpassing inflows from crude oil, Nigeria's major export commodity.

While skilled workers continue to emigrate and generate foreign currency inflows for Nigeria through remittances, their emigration is also associated with some costs to the local economy. According to the Nigerian Medical Association, 33,000 of the 75,000 Nigerian doctors registered with the Association have emigrated (Kareem, 2021). Nigeria had about 3.9 physicians per 10,000 population in 2021 (WHO, 2023) far below the recommended minimum threshold of 23 doctors per 10,000 population. Nigeria was the largest source of immigrant medical doctors who entered South Africa from 2011 – 2015 and an annual average of 600 General Practitioners (GPs) emigrated from Nigeria between 2010 – 2016 (WHO, 2017). In a survey of 913 physicians across Nigeria, Onah et al. (2022) found that 43.9% plan to emigrate, citing reasons such as poor remuneration, rising insecurity and inadequate diagnostic facilities as key motivations. Their study found that physicians who are engaged in public health facilities are 2.5 times less satisfied than those in the non-public sector. Likewise, older physicians are 3.5 times more likely to emigrate than younger physicians. The study observed that with the increase in emigration and potential emigration of younger physicians, Nigeria appears to be training physicians for other countries than for her growing population.

Just as higher wages in the capitalist sector incentivise workers to move from the non-capitalist sector, higher wages and relatively better working conditions in advanced countries are the main reasons for skilled workers to emigrate from Nigeria. This trend is also experienced in professions in the tradable services sector, such as ICT, finance and professional services and is likely to continue in the next decade. This is partly because the elderly population in advanced economies is projected to increase by about 118 million by 2050, while the working-age population (ages 20 – 64) will decline by about 53 million (World Bank, 2023). Therefore, in highly skilled professions in Nigeria, local wages and working conditions will have to be improved to retain workers and prevent further shortages, which will have negative implications on productivity and welfare in the local economy. In addition to raising wages and improving working conditions, social benefits such as pensions and mortgages will be needed to retain talent and raise the productivity level in the economy. In areas such as ICT, finance and professional services where remote work is possible, government policies should target the

training of workers and provide an enabling working environment – workstations, technology hubs, infrastructure, power supply – to deliberately train workers who will service the global market. According to Code 1 (2023, October 11), "Nigeria has a huge potential in exporting talents and the government must fund the development of these talents, incubate and nurture them and link them to global markets".

To conclude, Nigeria's growing population and rising demand for manufactured goods and services present an opportunity for domestic demand-led structural transformation. For the export market, there are several windows of opportunity, such as exporting to other African countries, exporting to countries outside Africa and also targeting the Nigerian diasporan market. Firms in Nigeria are already exploring these opportunities but the Nigerian government can provide support structures and frameworks to drive the expansion of firms towards these markets and pursue a broad-scale industrialisation agenda. For highly skilled services, which also have great export potential, local needs must be prioritised and incentives relating to better wages and working conditions are required. Government policies will need to support the growth and development of remote working, to improve service exports, particularly for workers in technology, professional services and finance and enhance their local value-added.

Table 35: Opportunity Areas for Firms and Sectors

Sector	Category	Areas of Opportunities		
Manufacturing	**Modern (Large/Medium)**	Domestic Market	African Export Market	International Market
	Modern (Small)	Domestic Market	African Export Market	Diasporan Market
	Subsistence firms	Domestic Market	African Export Market	
Services	**Tradable Services**	Domestic Market	International Market	
	Non-Tradable Services	Domestic Market		

Source: Author's own

6.5 Growth Areas and Opportunities in Manufacturing: Mineral Resource-based vs. Agricultural Product-based

Nigeria's manufacturing sector remains heavily skewed towards a few sectors. Data from the Central Bank of Nigeria and the National Bureau of Statistics show that three sectors (Cement; Food, Beverage & Tobacco and Textile, Apparel & Footwear) accounted for 79.2% of real manufacturing output from 2020 to 2023. The remaining 10 sub-sectors accounted for 20.8% with Electrical and Electronics emerging as the sub-sector with the lowest contribution. Food, Beverage and Tobacco remains the largest sub-sector in manufacturing, although its share has declined significantly from 69.5% in 2000 – 2004 to 49.2% in 2020 – 2023. Textile, Apparel & Footwear and Cement are the two sectors with the highest gain in sectoral shares from 2000 to 2023. Both sectors added 7.7% and 7% respectively to

their shares in manufacturing output during the period. The biggest contraction in shares was in Food, Beverage and Tobacco (-20.3%) and Oil Refining (-3.4%) (See Table 36).

Table 36: Average contribution of sub-sectors to manufacturing real GDP

	2000 - 2004	2005 - 2009	2010 -2014	2015 - 2019	2020 - 2023
Oil Refining	3.7%	6.1%	5.8%	2.5%	0.3%
Cement	3.2%	4.9%	6.2%	9.0%	10.3%
Food, Beverage and Tobacco	69.5%	65.3%	54.9%	44.8%	49.2%
Textile, Apparel and Footwear	12.1%	11.2%	16.2%	22.3%	19.8%
Wood and Wood Products	2.1%	3.2%	3.1%	3.1%	3.0%
Pulp, Paper and Paper Products	0.7%	0.7%	0.7%	0.8%	0.7%
Chemical and Pharmaceutical Products	0.7%	0.7%	1.3%	2.4%	2.7%
Non-Metallic Products	1.8%	1.7%	2.4%	3.7%	3.4%
Plastic and Rubber Products	0.8%	0.9%	2.0%	3.5%	3.5%
Electrical and Electronics	0.1%	0.1%	0.1%	0.1%	0.1%
Basic metal, Iron and Steel	1.1%	1.2%	2.2%	2.6%	2.5%
Motor vehicles & assembly	0.7%	0.7%	0.7%	0.6%	0.5%
Other Manufacturing	3.5%	3.5%	4.4%	4.7%	4.1%
Manufacturing share of total GDP	**10.7%**	**7.7%**	**8.2%**	**9.3%**	**8.9%**

Source: Created by the Author using data from the National Bureau of Statistics and Central Bank of Nigeria

Agricultural Products-based vs Mineral Resource-based Industrialisation?

As argued in the previous sections, the forward and backward linkage in the manufacturing sector can maximise the creation of both direct and indirect jobs as well as other benefits associated with value addition. How and where this value addition occurs has been a subject of debate in academic and policy circles. This brings to the fore the arguments of mineral resource-based and agricultural products-based industrialisation. Advocates of mineral resource-based industrialisation have argued that Africa has a comparative advantage in industries that leverage its resource endowments. Lee (2021) noted that developing economies should focus on industries with low-entry barriers in the global value chain, mostly mineral resource-based industries and promote local ownership or involvement in these industries, which tend to enhance value-added. Although Lin advocated for the development of labour-intensive industries, he also noted that focusing on resource-intensive production activities allows low-income countries to be competitive in domestic and international markets (Lin & Chang, 2009). Lin (2010) called for the implementation of policies to promote innovation-based upgrading and provide specific support for the resource sector, including entry controls (licensing), preferential loans and subsidies. But mineral resource-based industrialisation is not without challenges. The mineral resource sector is capital-intensive i.e. the scale of investments required to harness and process these resources is usually huge. They also require infrastructure development to extract and transport the resources to the processing unit (Morris & Fessehaie, 2014). This infrastructure could include rail, road, pipelines, etc. In addition, in several countries, entry barriers are relatively higher than agricultural products-based industries due to the requirements of licensing and regulatory compliance.

Agricultural products-based industrialisation focuses on the processing of agricultural products to semi-finished or finished goods. Cramer (1999) documented two principal reasons why low-income countries should focus on agricultural commodity-based industrialisation. They include the need to capture higher value-added from primary commodities and the price and non-price advantages associated with processed commodities. Agricultural commodities tend to have extended value chains and a high scope for domestic linkages. These features strengthen their connection with the creation of jobs and long-run productivity growth. For Fowler and Rauschendorfer (2019) who reviewed the prospects of agro-industrialisation in Uganda, agro-based industrialisation can help upgrade the agricultural value chain and improve trade balance, especially given the growing demand for agro-processed products in Africa. Using cashew production in Mozambique as an example, Cramer (1999) identified some challenges of agricultural commodity-based industrialisation, including industry standards and supply competition, processing issues, raw material supply, research and development and limited training. As Morris & Fessehaie (2014) argued, industrialisation strategy in Africa needs to be country- and sector-specific.

Nigeria has the potential to pursue both mineral resource-based and agricultural products-based industrialisation strategies, given its diverse resource endowment and large market. The country is endowed with mineral resources such as crude oil, and natural gas, limestone, bitumen, limestone, gold, iron-ore, clay, dolomite and many others. Nigeria is also agriculture-rich and has some of the world's most fertile soil. It is the world's largest producer of cassava, yam, sheanut, and leading producer of cocoa, sorghum, ginger, sesame, peanuts and many others. Therefore, the path to industrialisation for a country like Nigeria may not be an either-or approach and would require a combination of strategies to build local capabilities across both industries. For instance, investment in oil refining, a mineral resource-based manufacturing industry, can address crucial problems of fuel and energy insecurity as imported refined products are subject to global supply chain bottlenecks, exchange rate fluctuations and high oil prices. These factors increase the pressure on government finances through the provision of fuel subsidies. The war in Ukraine and its attendant impact on crude oil prices, which rose to over US$100 per barrel, negatively impacted the Nigerian economy, even though Nigeria is a net exporter of crude oil. This is because despite being the sixth largest oil producer among members of the Organization of the Petroleum Exporting Countries (OPEC, 2024), Nigeria has, for decades, relied on the importation of petroleum imports due to weak local refining capacity, limited private investment in the mid-stream sector and poor functionality of government-owned refineries, due to corruption.

This trend of relying on imported petroleum products may change with the commissioning of the Dangote Refinery in 2023 which is the world's largest single-train refinery, located in Lagos, Nigeria. The refinery is one of Nigeria's largest industrial projects with a production capacity of 650,000 barrels per day (BPD). Once fully operational, the US$19 billion facility will produce petrol, diesel, aviation fuel, naphtha, polypropylene and liquefied petroleum gas (LPG) and is expected to meet all of Nigeria's domestic demand for petrol, with a surplus for exports. It also has the potential to eliminate the importation of mineral products, which accounted for 40.1% of total goods imports in 2022 (NBS, 2023b), reducing exchange rate pressure among other benefits. Another example of leveraging mineral resource-based industries is the growth of the cement industry in Nigeria, where implementing a backward integration policy led to increased sourcing of materials locally and processing of these materials. The policy created an estimated 7,000 direct and indirect jobs and

triggered the expansion of sectors such as mining, agriculture and oil and gas as they supplied inputs to the cement industry (Ohimain, 2014).

A classification of Nigeria's real manufacturing output based on mineral resource-based and agricultural products-based showed that the share of mineral resource-based manufacturing increased from an average of 10.6% in 2000 – 2004 to 17.1% in 2020 – 2023 (see Table 37). The expansion of this segment was driven by the cement industry, which grew as a result of the implementation of the Backward Integration Policy in the 2000s. While sub-sectors such as basic metal, iron and steel; and non-metallic products grew during the period, the share of electrical and electronics, motor vehicles and oil refining declined or remained constant, suggesting weak domestic capabilities in these sectors.

Table 37: Share of Mineral Resource-based and Agricultural Products-based manufacturing in total real manufacturing output

		2000 - 2004	2005 - 2009	2010 -2014	2015 - 2019	2020 - 2023
Mineral Resource-based	Oil Refining	3.7%	6.1%	5.8%	2.5%	0.3%
	Cement	3.2%	4.9%	6.2%	9.0%	10.3%
	Electrical and Electronics	0.1%	0.1%	0.1%	0.1%	0.1%
	Basic metal, Iron and Steel	1.1%	1.2%	2.2%	2.6%	2.5%
	Motor vehicles & assembly	0.7%	0.7%	0.7%	0.6%	0.5%
	Non-Metallic Products	1.8%	1.7%	2.4%	3.7%	3.4%
	Collective share of real manufacturing GDP	**10.6%**	**14.7%**	**17.4%**	**18.5%**	**17.1%**
Agricultural Products-based	Food, Beverage and Tobacco	69.5%	65.3%	54.9%	44.8%	49.2%
	Textile, Apparel and Footwear	12.1%	11.2%	16.2%	22.3%	19.8%
	Wood and Wood Products	2.1%	3.2%	3.1%	3.1%	3.0%
	Pulp, Paper and Paper Products	0.7%	0.7%	0.7%	0.8%	0.7%
	Collective share of manufacturing real GDP	**84.4%**	**80.4%**	**74.9%**	**71.0%**	**72.7%**
Mineral and Agricultural Products-based	Plastic and Rubber Products	0.8%	0.9%	2.0%	3.5%	3.5%
	Chemical and Pharmaceutical Products	0.7%	0.7%	1.3%	2.4%	2.7%
	Other Manufacturing	3.5%	3.5%	4.4%	4.7%	4.1%
	Collective share of manufacturing real GDP	**5.0%**	**5.1%**	**7.7%**	**10.6%**	**10.3%**

Source: Created by the Author using data from the CBN and NBS

For the cement industry in particular, the Backward Integration Policy (BIP) which was implemented from 2002 was instrumental to the growth of the industry in Nigeria. The BIP rewarded firms that imported cement to develop local production factories in the country. Firms were given a deadline to invest in local production (Leke et al., 2014). As a result, the installed capacity of cement production in Nigeria increased from 5 million metric tonnes in 2000 to 28.5 million metric tonnes in 2013, while cement imports fell drastically during this period (Leke et al., 2014). As demand grew, cement production grew further to nearly 58.9Mt/yr of cement capacity in 2018 and Nigeria became a net exporter of the product (Edwards, 2018). Like other aspects of manufacturing, the cement industry

imports some of its input such as Automotive Gas Oil (AGO), Low Pour Fuel Oil (LPFO) and gypsum, although the majority of its intermediate inputs are sourced locally. For Dangote Cement Plc., only about 37% of its raw materials were imported in 2022 (Dangote Cement Plc, 2023). Looking into the future, Nigeria still has a huge housing and infrastructure deficit, which suggests that the demand for cement will continue to expand in the medium to long term. In addition, the Federal Government of Nigeria recently announced plans to adopt concrete for constructing roads and other infrastructure, given its durability (Tope, 2023). With this, the demand for cement is projected to increase in the medium term, leading to significant expansion of the sector. This implies that the sector is likely to benefit from domestic demand-led growth that is driven by the federal government, suggesting improved growth prospects for the industry.

Overall, growth in the mineral resource-based segment is often policy-driven, given the significant capital requirements. Therefore, to grow these sub-sectors, the Nigerian government needs to develop a medium-term policy agenda aimed at enhancing local productive capacities in these subsectors. In addition, entry barriers in these industries are high, partly because of the country's legislation that all mineral resources belong to the Federal Government of Nigeria. Firms therefore are required to pay licence and permit fees, in addition to paying taxes. Such entry barriers need to be lowered to attract and retain investors in the mineral resource-based manufacturing industry.

As discussed in the previous section, agricultural products-based industrialisation in Nigeria has great prospects owing to the growing domestic demand for food and processed agricultural products (including leather) in Nigeria and Africa. From the semi-structured interviews, Code 1, favoured the approach of agricultural products-based industrialisation for Nigeria, citing factors such as the low level of skills among the workforce and the extended value chain for agricultural products, which, if explored, can create the kind of jobs that Nigeria needs. According to Code 1 (2023, October 11),

> "I may be biased because of the industry I'm in. When you look at our factor endowments, level of infrastructure, level of labour productivity, the size of the labour force, social stability and the need to balance rural-urban migration, agro-processing industrialisation remains Nigeria's surest path to economic transformation. It is the surest path, but not the only path"

This sentiment underscores not only the profound emotional attachment Nigerians have with the agro-processing sector but also highlights the immense opportunities that are inherent in the sector. Agricultural products-based manufacturing is the largest segment in the manufacturing industry in Nigeria, accounting for an average of 72.7% of total real manufacturing output in 2020 – 2023 (see Table 37). Although its share has declined from 84.4% in 2000 – 2004 led by Food, Beverage and Tobacco, the sub-sectors such as Textile, Apparel & Footwear and Wood & Wood Products experienced an increase in their shares.

The Food, Beverage & Tobacco segment has one of the most extensive sub-categories and value-chain ranging from fruit-based processed food industries to bread, biscuit, noodles production industries; the production of flour, and semolina, starch, glucose, and other starch products manufacturing industries; dairy industries; cocoa processing industries; rice processing industries; meat processing

industries, among many others. Players in these industries include multinationals, large local firms, and medium-sized and small firms.

The sub-sector contributes about 49% to real manufacturing output but its share in total exports is low at 1.5%, while import dependency remains high, partly due to limited productivity in the agricultural sector. Despite efforts by large firms in Nigeria to secure inputs through backward integration, a significant supply gap persists. This suggests that the degree of forward and backward linkage is weak across the subsectors, limiting its impact on employment and income growth. In this sub-sector, there are immense opportunities for government policies to target the strengthening of these linkages to maximise the impact of the sector. The introduction of forward linkage programmes in agriculture, coupled with enhancing mechanisation within the agricultural sector are crucial reforms to enable to expansion of firms in the sub-sector to meet the growing demand, both locally and externally. Furthermore, policymakers need to introduce policies and programmes that support local value chain participation. These policies can include incentives for local sourcing of intermediate inputs by medium to large firms and support structures to build capabilities among players in the agricultural sector.

The Textile, Apparel and Footwear sub-sector represents an area of immense potential. Its contribution to real manufacturing GDP has increased from 12.1% in 2000 – 2004 to 19.8% in 2020 – 2023. According to interviewees who operate in this industry, the demand for leather in Nigeria has been on the increase and will continue to rise in the next few years.

> "Nigeria's leather industry has lots of potential. There is huge demand for leather products in Nigeria and I believe this demand will continue to grow over time. The challenge for businesses like ours is scaling. We need the government to support small businesses operating in the sector" (Code 5, 2023, November 3).

The leather industry is not properly structured as there are lots of fragmented informal players with limited financial capacity and skills to produce quality leather products. With a large skills deficit, some players in the industry in Nigeria rely on migrant workers from Senegal for leather finishing. Furthermore, existing tanneries are few and only produce semi-tan products sold to foreign buyers in Spain, Italy, etc. This is despite the huge local demand for quality leather. Proper reorganisation of the supply chain will attract investment into the industry and create jobs for the populace. Policymakers need to invest in the training of artisans and provide some structure for the industry going forward. More government and stakeholder engagements are needed in the industry, according to interviewees.

To conclude, Nigeria has the potential to develop both the mineral resource-based and agricultural products-based manufacturing industries. While mineral resource-based manufacturing may be useful for energy security and the production of industrial goods that are needed for further manufacturing, agricultural products-based manufacturing industries have a stronger impact on employment and food security.

6.6 Reflections on Structural Transformation in Nigeria: How the Findings in This Study Link with Literature and Theories

Since the 2000s, the Nigerian economy witnessed remarkable Gross Domestic Product (GDP) growth and structural transformation, which showed an economy that leaned towards the service sector. According to data from the Central Bank of Nigeria (CBN) (2021), the Nigerian economy grew at an annual average of 7.3% from 2000 to 2015, with the services sector contributing significantly to economic expansion. In terms of GDP composition, while the share of the services sector increased from 42% in 2000 to 54% in 2015, the industrial sector's share (led by the oil sector) declined from 37% to 23% during the period. During the same period, the share of labour in the services sector increased significantly; the share of labour in agriculture increased, while that of manufacturing declined.

Despite the economic expansion and a growing service economy over the years, Nigeria continues to struggle with low productivity, high unemployment and limited structural change. Using a combination of regression and shift-share analyses and semi-structured interviews, this study explores how Nigeria can achieve income and productivity growth and employment generation through structural transformation. This section reflects on the key insights from the thesis and how they sit within the broader empirical and theoretical literature on structural transformation. The aim is to draw connections between findings on Nigeria's experience of structural change and existing empirical and theoretical literature.

In Nigeria, the majority of workers are employed in sectors with the lowest productivity levels - agriculture and non-tradable services. Although the employment share of both sectors declined from 93% in 2000 to 90% in 2010, their employment share is still high. They accounted for 81% of employment in 2018. This reveals two trends. First, there is a slow transfer of labour from the low-productivity sectors. Second, labour is moving away from agriculture but mainly and rapidly towards the non-tradable services sector, which has accommodated the most labour since the 2000s. With these trends, the jobs that can lift millions of Nigerians out of poverty and raise living standards do not exist in large numbers (Erumebor, 2023).

This finding adds an important dimension to the structural transformation debate in Africa. While structural transformation is often measured by the movement of labour out of agriculture, it is equally important to examine where labour is moving to and the level of productivity in the labour-receiving sector. In the case of Nigeria, the labour-receiving sector is non-tradable services, which is characterised by a high level of informality and low-wage employment. This raises concerns about the quality of jobs, wage level and working conditions of workers in the sector. Unsurprisingly, non-tradable services, despite accommodating the largest share of labour since the 2000s, had a negative impact on per capita income in the regression analysis in this study. This pattern suggests that labour reallocation of labour alone does not imply successful structural transformation - the movement of labour towards low-productivity sectors may lack the quality needed to drive broad-based productivity growth and rising living standards.

One important contribution of this study is to approach services through the lens of productivity. This revealed important differences within the services sector - specifically between tradable and non-tradable services and how each component relates to productivity growth, income growth and

employment generation. Overall, this study revealed that structural change towards services enhanced productivity growth in Nigeria from 1990 to 2018. This positive contribution was mainly due to the movement of labour towards tradable services, which became pronounced in the 2010s. This is similar to the findings of McMillan et al. (2014) who showed that since the 2000s, structural change contributed positively to Africa's overall productivity growth. In this study, the evidence points to a strong and positive impact of the growth of tradable services on per capita income and productivity growth in Nigeria – an effect even stronger than that of manufacturing. Its contribution to productivity growth was the highest via the structural change channel, although much of the movement of labour was towards non-tradable services. Tradable services experienced remarkable growth since the 2000s despite broader structural challenges of inadequate infrastructure limited access to finance and policy inconsistency.

While the literature (see Andreoni et al. 2021, and ILO, 2019) often points to the limited employment capacity of tradable services, the Nigerian experience tells a different story. Although the sector has not absorbed labour on the same scale as non-tradable services, its employment share increased from 1% in 1990 to 9% in 2018 - a significant increase in the last three decades. Among the three sectors with high levels of productivity (industry non-manufacturing, tradable services and manufacturing), tradable services created the highest number of jobs from 1990 to 2018. This suggests that the sector, while not traditionally viewed as labour-intensive, was relevant for employment generation in Nigeria during the period.

Much of the sector's expansion occurred during the period of reforms, privatisation and liberalisation which led to an increase in the sector's share in real GDP from 0.1% in 2000 to 22.3% in 2021. Key sectors such as telecoms and financial services became among the fastest-growing sectors in Nigeria, increasing the sector's capacity to employ labour. The sector also had spill-over effects on other industries such as construction, professional services, real estate and mining, emphasising its importance in Nigeria's development during the period. The significant contribution of tradable services to employment underscores the uniqueness of Nigeria's structural transformation experience and highlights a key contribution of this study – that tradable services played a much more significant role in employment creation than was often acknowledged in the literature.

Although the sector has created jobs in the past, its ability to deliver employment in large numbers, going forward, remains limited given that the sector is more exposed to advanced technology. The sector's earlier expansion was driven by a wave of liberalisation and privatisation reforms in the 2000s, implemented at a time when the industry was still in its infancy. There are growth opportunities in key areas such as business process outsourcing (BPO), digital skills development and skills export. However, whether these segments can absorb large volumes of labour to the extent of significantly increasing tradable services' employment share remains uncertain. What is clear is that the impact of the sector on productivity, income growth and the growth of other sectors will remain significant. Ultimately, this study reinforces the view that while tradable services are important in Nigeria's structural transformation journey, the sector alone cannot serve as the primary source of employment in a populous country like Nigeria, with over 220 million people.

Manufacturing was found to have a positive impact on per capita income, employment level and productivity growth in Nigeria. Although the sector's shares in total employment, exports and output

remained at single digits, this did not limit its contribution to income and productivity growth. The results highlight the capacity of the manufacturing sector to create employment if provided with adequate support and incentives aimed at increasing investments and capabilities over time. As argued by Szirmai (2012), Szirmai & Verspagen (2015), Haraguchi et al. (2017) and Marconi et al. (2016), this study confirms that manufacturing is still important for economic development.

Specifically on productivity, manufacturing had a marginal but positive influence on productivity growth in Nigeria. Its coefficient was lower than that of tradable services. This finding is similar to that of Marconi et al. (2016) who showed that manufacturing is crucial for economic growth and productivity, especially in middle-income countries. Even with the marginal growth in manufacturing output in Nigeria, there was evidence of increasing returns and capital accumulation in the sector. Growth in key areas such as cement, petrochemicals, pharmaceuticals and textiles & apparel was instrumental in ensuring the sector contributed positively to productivity growth. This is despite the existence of structural barriers such as limited infrastructure, poor access to finance, etc.

This study empirically confirms that Kaldor's third law holds in Nigeria - growth in manufacturing output is positively linked to productivity growth in the economy. The Kaldorian argument holds, not just for manufacturing, but also for tradable services (which had a stronger impact than manufacturing) in Nigeria. Similarly, as argued by Lewis (1954), this study shows that the movement of labour towards the high-productivity sectors (manufacturing and tradable services) in Nigeria particularly in the 2010s positively impacted productivity growth than when labour moved towards the low-productivity sectors. Overall, this finding supports the argument of Lewis and Kaldor that the movement of labour towards high-productive modern sectors triggers an increase in productivity in the economy. However, it is important to note that such movement needs to be sustained for longer periods and accompanied by improvement of within-sector productivity to have a lasting positive effect on the economy.

That said, the manufacturing sector faced several challenges that have limited its impact over time – its shares of real GDP and exports remains at single digit. On the reasons why manufacturing in Nigeria could not drive structural change as it did in East Asia, two main factors stood out: high import intensity and low export level. The majority of manufacturing firms in Nigeria rely on imported intermediate input while manufacturing accounted for only 3% of Nigeria's goods exports earnings in 2024. This has meant that the sector is largely vulnerable to exchange rate depreciation and falls into a crisis when the currency depreciates. While currency depreciation should serve as an incentive for exports as argued by Marconi et al. (2016), in Nigeria, however, the heavy exposure to imported input and low exports does not make this happen. This low export ratio could limit the countries' participation in the African Continental Free Trade Area (AfCFTA) Agreement - hence the need for industrial policy to boost exports.

These twin dynamics - high import intensity and low export level - means that Nigeria's manufacturing sector has a weak domestic value chain, particularly in terms of domestic production of inputs, which limits the ability of the sector to create both direct and indirect jobs in large numbers. It also limits the ability of the sector to play a more prominent role in the development of the economy. As noted in section 6.2, these two factors not only reflect underlying structural weaknesses of limited

infrastructure, policy inconsistencies and poor access to finance but also exacerbate them, thereby limiting the transformative impact of manufacturing in Nigeria's development trajectory.

Rethinking Manufacturing: Beyond the Formal & Informal Divide

One of the important contributions of this study is decomposing manufacturing into subsistence and modern. This categorisation is based on capital accumulation, productivity, employment and firms' interaction with markets. While subsistence manufacturing refers to under-resourced, low-productive and small-scale firms - often run by sole proprietors and servicing mostly local or in-country markets - modern manufacturing captures better-resourced, structured, and productive firms that produce goods at a medium to large scale, targeting both local and international markets. This approach differs from the commonly used formal/informal classification as seen in the works of De Vries et al., 2012 and Kesar & Bhattacharya, 2020. What constitutes 'formal' and 'informal' is often unclear in the Nigerian context, as many so-called informal firms pay taxes to local governments or non-state actors and are registered with government agencies or business associations. In reality, many 'formal' micro and small firms are just as constrained and unproductive as informal firms. Both categories, in this study, are treated as subsistence firms. This categorisation matters because capital accumulation, productivity and employment capacity are not determined solely by a firm's registration status or its payment of taxes (see Section 6.3 for detailed discussion).

Diversity within manufacturing

This categorisation has implications for how we understand the role of manufacturing in the structural transformation process. In Nigeria, subsistence firms dominate the sector, accounting for over 91% of the total number of manufacturing firms (excluding large firms). These firms engage in petty production, operate with limited capital, offer low wages and often provide no social benefits to workers such as pensions or health insurance. Their processes are largely manual and labour-intensive and they struggle to attract skilled workers due to financial constraints. In contrast, modern manufacturing firms have better access to capital, skilled labour and technology, which makes them more productive. However, they are fewer in number and contribute less to total employment. Many are found in capital-intensive, mineral resource-based industries such as cement, basic metals and oil refining. For instance, in the cement industry, Dangote Cement Plc, Lafarge Africa and BUA account for nearly 100% of the market share (Reuters, 2021). While these firms have a greater capacity to scale, export and even compete globally, they do not absorb labour at the same scale as subsistence firms.

This distinction is important because it challenges the common view in classical structuralist literature that manufacturing, by default, exhibits increasing returns to scale and drives productivity growth (see Kaldor, 1968). The reality in Nigeria is more complex. Not all manufacturing firms have the potential to drive structural transformation. In fact, unless key constraints - access to finance, skills, infrastructure and markets - are addressed, many subsistence manufacturing firms will continue to remain stuck, offering little in terms of productivity growth or decent work.

Within-sector transformation may be required in manufacturing

This study also highlights that beyond moving labour across sectors, within-sector transformation is equally important. In Nigeria, 73% of manufacturing workers are self-employed (NBS, 2018). This means a large share of workers are concentrated in the subsistence segment of the sector, which is

not the kind of manufacturing that can drive structural transformation. The literature has recently moved in this direction, recognising productivity gaps within sectors (see Rodrik, 2016; McMillan & Zeufack, 2022 and Alessandria, 2021). This study reinforces that argument, using Nigeria as a case where transformation must also be internal, i.e. subsistence firms becoming more productive and transitioning to modern manufacturing.

To achieve this transformation, industrial policy will play a major role. This study also contributes to debates on industrial policy in Africa. The categorisation reveals that subsistence and modern firms face distinct sets of constraints and opportunities, and a one-size-fits-all policy will not be effective. Modern firms will benefit from policies that facilitate international market access, develop local value chains, and support technological upgrading. Subsistence manufacturing, however, requires more deliberate handholding - improving access to finance, better technology, business development support and skills. In doing so, this research aligns with recent literature that calls for targeted industrial policy interventions to achieve the desired goal (Chang, 2011 and Chang & Andreoni, 2020).

This study interrogates to the technology and employment questions in Nigeria's manufacturing context. Much of the existing literature discusses technology in relation to labour substitution, often focusing on the concern that automation will displace workers in the manufacturing sector (Dasgupta et al., 2017; Gollin, 2018; and Rodrik & Sandhu, 2024). This study shows that this view is exaggerated in the Nigerian case. The more urgent challenge is the lack of access to productivity-enhancing technology, finance and skills, especially among subsistence firms. These firms use analogue technologies that often complement, rather than displace, labour. Their access to advanced technology is constrained by limited finance and lack of skilled workers, than by the availability of the technology itself. Even among modern firms that use more advanced technologies, job displacement is not straightforward. While the ability of these firms to create additional direct jobs in large numbers may be limited, productivity gains as a result of using advanced technology often create indirect employment along the value chain. In this sense, the fear that technology is leading to loss of jobs is overstated, particularly in the Nigerian context where technology penetration is still low.

Finally, by showing that both manufacturing and tradable services positively impacted productivity and per capita income growth in Nigeria over the last three decades, the study challenges binary framings in the structural transformation debate. The debate should be less about choosing between manufacturing and services, but about recognising their complementarities and designing policies that harness the strengths of both. This is particularly relevant for economies like Nigeria, where tradable services are already playing an increasingly important role in output and productivity growth.

The emergence of tradable services as a dynamic sector raises an important question about whether alternative pathways to manufacturing-led transformation are emerging. While the literature remains divided on the prospects of services-led transformation, the Nigerian experience shows that certain segments - particularly tech-enabled services - have recorded impressive growth. However, this growth has been uneven and concentrated among a few high-skilled segments. As such, the sector's ability to deliver widespread employment, particularly for low-skilled workers, remains limited. This points to a need for targeted policy interventions to expand the sector's inclusiveness while also strengthening manufacturing. Both sectors have a role to play, albeit in different ways, in Nigeria's structural transformation journey.

CHAPTER SEVEN: IMPLICATIONS FOR INDUSTRIAL POLICY, CONCLUSION, LIMITATIONS OF THE STUDY AND AVENUES FOR FURTHER RESEARCH

7.1 Towards a Successful Structural Transformation Framework for Nigeria

Nigeria's experience of structural transformation has been limited, with labour moving from agriculture to services, leaving out the manufacturing sector. Agriculture's share of 47% of the workforce is still high, and so is the share of non-tradable services, which stood at 35% in 2021. Both sectors have the lowest labour productivity, relative to sectors such as manufacturing, industry (non-manufacturing) and tradable services. The argument for structural transformation centres on the benefits of the movement of labour from these low-productivity sectors to sectors with high levels of productivity, and many works on structural transformation often categorise manufacturing as one of the sectors with high productivity levels. However, this sectoral categorisation is not straightforward as there are variations within sectors that could be important in determining whether structural transformation can take place. In other words, the nature and structure of the labour-receiving sectors become critical in the discourse of structural transformation. This study has explored, in detail, the nature and composition of Nigeria's manufacturing sector and has highlighted the reasons why the sector has not played a crucial role in job creation and overall output growth as experienced in several East Asian countries. Drawing from these findings, this section provides an in-depth analysis on how Nigeria should view structural transformation, highlighting a structural transformation framework for the country.

Before proceeding, it is imperative to take into account several important considerations about the process of structural transformation. First, the transition of labour from low to high-productivity sectors does not imply that the low-productivity sectors are irrelevant in the development process. Second, the nature of the labour-receiving sector matters for structural transformation to impact broader development outcomes. Third, within-sector transformation may also be required, particularly in manufacturing, to maximise the sector's role in ensuring structural transformation. These three considerations will be discussed alongside the proposed framework for structural transformation in Nigeria.

From the previous sections, two drivers of structural transformation in Nigeria have emerged. They include Domestic demand-led and Export-led structural transformation. ***Domestic demand-led structural transformation*** comes out of the fact that Nigeria has a large market, which has made the country a target for multinationals across different sectors. With a fast-growing population, local demand can be a key source of growth for the manufacturing industry. Consumer demand for manufactured goods and services will therefore trend upwards and become important in driving the growth of the economy but how this demand is met becomes crucial. For instance, in Nigeria, "over the past decade, foreign exchange demand for education and healthcare has totalled nearly US$40 billion" (Cardoso, 2024; p5), while the country does not have a world-class healthcare and education system. More importantly, where growing demand is met by imports, the opportunity for structural transformation will be limited.

Domestic demand can also come from firms and governments. On the part of firms, the local sourcing of intermediate inputs can strengthen the development of the manufacturing value chains across key products such as sugar, cassava, corn, maize, oil palm, etc. This will require significant investment in agriculture to improve productivity and unlock opportunities across the value chain. On the part of the government, the demand for locally-made goods will be instrumental in driving the growth of local firms across the country. For instance, in the 2024 budget for the State House[59], the federal government budgeted ₦2.9 billion to purchase SUV vehicles and another ₦2.9 billion to replace operational pool vehicles (Okon, 2023). The majority of these vehicles will be imported, although Nigeria has a growing automobile industry, which can benefit from such demand. Firms that are engaged in the production of cement, vehicles, furniture, stationery, etc, which are frequently imported by the federal, state and local governments, can benefit from government demand, which can support their expansion over time.

Export-led structural transformation emphasises meeting external demand for goods and services with a focus on the African, diasporan and international markets. Within Africa, the AfCFTA is an important trade deal that Nigerian firms must leverage to expand their reach to other African countries. Some modern manufacturing firms, especially large firms, can make easy entrants in other African markets due to their size, access to capital, advanced technology and productivity levels. This will also balance their exposure to macroeconomic risks such as exchange rate depreciation and foreign exchange scarcity. Africa's energy and food demand are huge and rising, therefore, firms operating in mineral and agricultural products-based manufacturing can leverage these opportunities. Modern manufacturing firms can target the regional, diasporan and international markets. The large number of Nigerians living in the diaspora presents an opportunity for these firms to expand production and enhance productivity. Services exports in areas such as medicine, education, ICT and finance are crucial to enhance Nigeria's stance in the global services industry. With a growing population and global shortage of skilled workers, Nigeria can build comparative advantages in these areas.

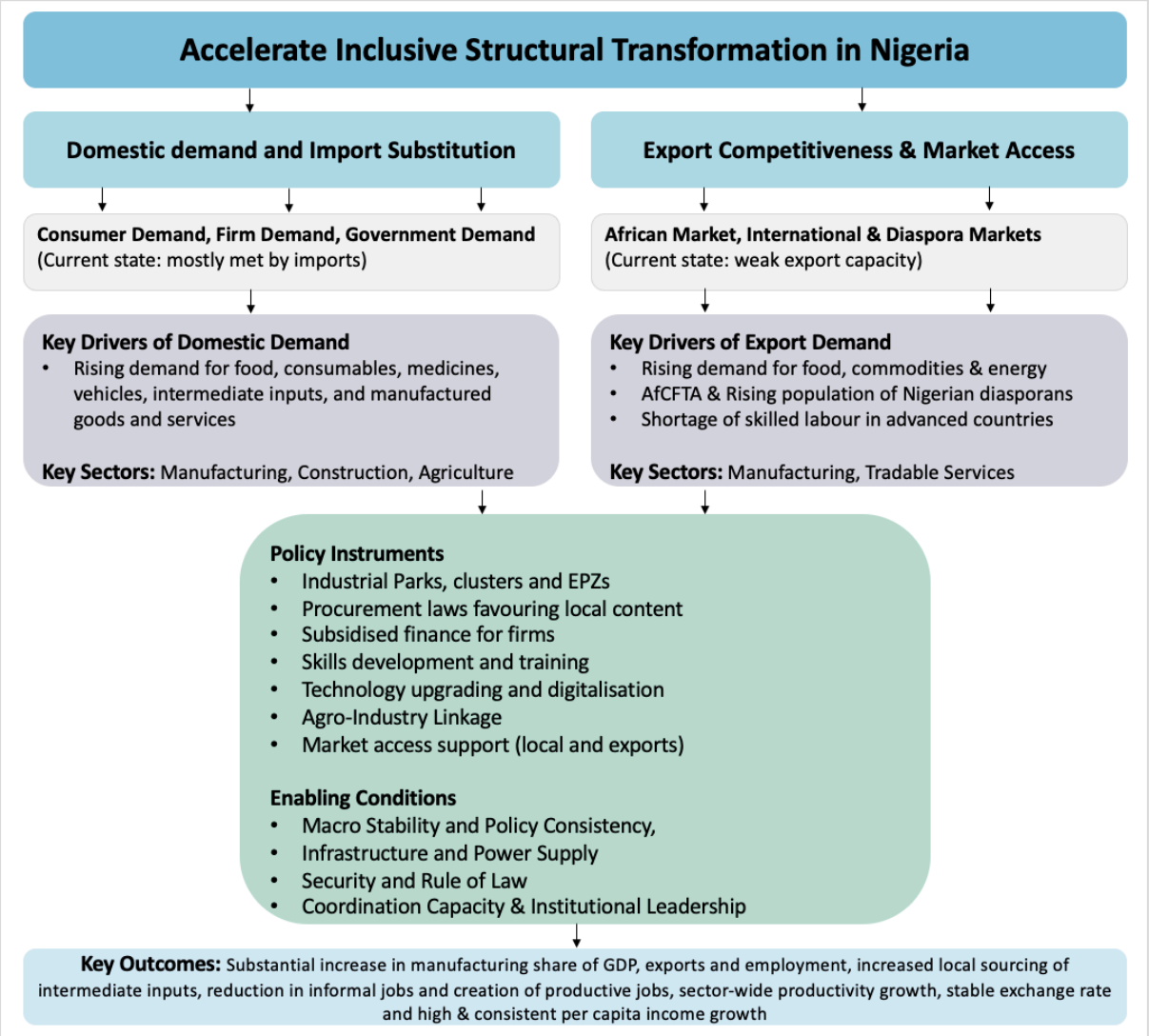
Government policies will need to assume different roles in stimulating demand-led and export-led structural transformation. For consumer and government demand, the use of local procurement laws will be important. The procurement law will need to favour the domestic markets over imports and be implemented across the three levels of government in Nigeria. At the firm level, government policies and interventions will vary, depending on several factors such as the size of firms, employment capacity, potential target market and the current challenges they face.

Within manufacturing, for instance, expansion can occur in three ways. First is the significant growth of modern manufacturing to accommodate more labour from subsistence manufacturing and other sectors. Second, is the rapid growth and transition of subsistence manufacturing firms to become modern manufacturing firms with improved conditions for workers. The third option involves a combination of the first and second. In all of these options, government policy will play an important role in supporting firms' expansion. But to achieve this effectively, it is important to note that the expansion needs for both categories of manufacturing firms are different. For subsistence

[59] The State House is the official seat of the Federal Government, where the Offices and Residences of the President, and the Vice President are located.

manufacturing, improving access to finance and markets as well as training for unskilled workers remain crucial in driving growth. They are also more affected by insufficient power supply, infrastructure deficits and multiple taxation[60], and these challenges limit their growth. For modern manufacturing firms, access to foreign exchange, foreign markets and quality inputs, as well as stable government policies, are important for growth.

Figure 12: Adapted Structural Transformation Framework for Nigeria



Source: Created by the Author

The opportunity for industrial policy to build capabilities and ensure the expansion of the manufacturing sector is crucial. The policy goals for modern and subsistence manufacturing should differ, given the features of firms operating in each category. Modern manufacturing may benefit from policies that encourage international market access as well as the development of local value chains to ensure the local production and sourcing of quality intermediate inputs in large volumes. On the first part, firms in this category may be incentivised to leverage existing export processing zones to

[60] Multiple taxation refers to a situation where firms are made to pay too many taxes to the federal, state, local governments and non-state actors which can include trade unions, traditional rulers, gang members etc. These payments act as a burden for many businesses, particularly NMSMEs.

reach markets in other countries and, by extension, earn significant foreign exchange for the country. Furthermore, firms need to be incentivised to adopt better technology, which can enhance productivity and increase competitiveness. On the second aspect of developing local value chains, the facilitation of mechanisation in agriculture to increase yields across key crops, training of extension workers and supporting the use of quality seedlings and inputs within the agricultural sector will be essential in raising agricultural productivity. The attraction of new direct investments is also crucial. Subsistence manufacturing requires more handholding. Government policies must seek to support the transition of these firms to become larger. Access to affordable finance, technology, skills development and labour policies to raise the minimum wage may be required. For services exports, investment in training and skills development are important.

Notwithstanding these differences, some commonalities exist and government policy must recognise and cater for them. Improved infrastructure such as roads, bridges, constant power supply, security of lives and property, and a stable policy environment cannot be compromised. All of these can be encapsulated in an integrated industrial development approach that recognises local peculiarities.

7.2 Policy Implications

In the last decade, there has been a rise in the adoption of industrial policy in many countries. Ilyina et al. (2024) provided accounts of over 2,500 industrial policy interventions globally in 2023, led by the United States, China and the European Union. In the US, examples include the Inflation Reduction Act which provides subsidies for target industries including clean energy as well as the Produce Semiconductors and Science Act (CHIPS Act), aimed at supporting the semiconductor industry (Agarwal, 2023). Elsewhere in the EU, there is the €160 billion support for digital innovation and climate adaptation. Other countries such as Japan and China are known to provide subsidies aimed at improving local competitiveness (Agarwal, 2023). In developing and emerging economies, there has been an increase in subsidies by governments to support industries. Rising geopolitical tensions, supply chain disruptions, intense global competition and the inability of markets to efficiently allocate resources following the COVID-19 pandemic are crucial factors that have resulted in the rise of industrial policy (Ilyina et al., 2024). For Wade (2015), the rise in industrial policy in developing countries has been driven by intense competition in manufactured goods production and exports by China; the fact that many countries are stuck in the middle-income trap[61] and increased investment in green industries. In all, industrial policy interventions in recent times have focused less on enhancing competitiveness but on the green transition and economic security (Ilyina et al., 2024).

Wade (2015) sounded a warning that policymakers in developing countries need to exercise caution in embracing mainstream economists' negative views about industrial policy. The recent experiences of advanced countries such as the United States and the EU in implementing industrial policy echo Wade's concern. As noted by Wade, the East Asia developmental model may not be viable for all countries but there are opportunities for implementing tailored approaches to build local industrial capacities for late industrialisers. Wade observed that World Trade Organization (WTO) rules impose stricter limitations on policy tools like tariffs, local content requirements, and export subsidies in agriculture, whereas they impose fewer restrictions on measures such as currency devaluations, investment incentives, and trade finance. He concludes that developing countries will need to navigate and capitalise on the use of soft industrial policy instruments but must not ignore these hard measures.

In terms of what industries to support, while Lin (2011) has long argued that countries should focus on areas where they have comparative advantages, Chang (2011) extensively noted that countries should go beyond their comparative advantages and explore new advantages. Chang cited countries such as Japan and Korea that have ventured into industries and products that are beyond these advantages as this is crucial in building capabilities over time. Even though Chang did not deny the need to focus on comparative advantage-conforming industries which are likely to be dominated by small firms, he argued that relying *more than* comparative advantage-conforming industries is crucial for export success in the long run (Chang, 2011). A key point for Chang is that export is important for developing economies and the government must intervene to support firms in areas such as marketing, risks sharing, compliance with standards and legal and financial support for R&D, storage and processing facilities, etc. Chang argues that the debate between import substitution and export promotion should be set aside. Instead, developing economies should focus on finding the optimal

[61] The middle-income trap is a phrase used to explain how countries that have experienced rapid growth exhibit lower economic growth and become stuck as the factor accumulation that drove growth loses impetus. Factors such as rising wages and declining rural labour are crucial in pushing countries into the trap (See Larson et al., 2016).

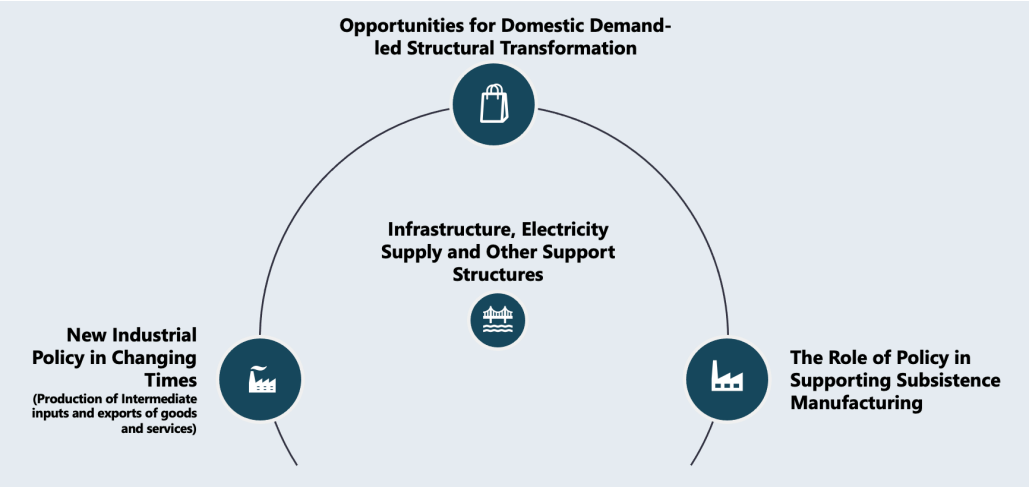
combination of free trade, export promotion, and protection for infant industries, tailored to different sectors and timing.

More recently, Rodrik and Sandhu (2024) have argued that the opportunities for manufacturing-led industrialisation are bleak for late industrialisers and that services is the future of developing countries. This argument is premised on the notion that manufacturing has become technology and skill-intensive, limiting its ability to accommodate more labour. Thus, the focus should be on enhancing productivity in labour-absorbing services. But several authors showed that for these countries, there is more room for growth and labour transition towards the manufacturing sector (Sen, 2023; McMillan & Zeufack, 2022; Haraguchi et al. 2017; Marconi et al. 2016; and Szirmai & Verspagen, 2015). Marconi et al. (2016) showed that manufacturing is crucial for economic growth and productivity, and that manufacturing exports is positively associated with economic growth. Haraguchi et al. (2017) found that manufacturing is still the driver of economic growth in developing countries based on Kaldor's formulation and that the sector's features have not changed in the last 40 years (1970 – 2013). They noted that low-income countries have opportunities for industrialisation, especially in textiles and apparel (See Chapter 2 for detailed discussion). The arguments of these authors can also be supported by the emergence of few large manufacturing outfits in Nigeria in recent years. In 2023, Dangote Group launched the world's largest single refinery project in Nigeria, which employs 29,000 Nigerians and 11,000 foreigners[62]. The project is expected to create over 100,000 indirect employment opportunities (NESG, 2023). Besides this large project, medium-sized and small manufacturing firms from the semi-structured interviews in this study constantly highlighted the opportunities for manufacturing-led growth, driven by rising local demand for manufactured goods and a growing export market. While this study underscores the importance of raising productivity in the services sector, it also argues for the need to build local capacities given the array of opportunities that are present both within and outside Nigeria.

Nigeria's economic growth has not been linked to industrialisation. Growth has been driven by the services sector with intermittent contributions from crude oil. This study has highlighted the potential of manufacturing and tradable services to drive productivity growth, job creation and higher per capita income in Nigeria, if properly developed. Government policy therefore must be geared towards the expansion of these sectors taking into consideration their inherent characteristics and the opportunities that exist. The policy implications of this study will be discussed around four policy themes (See figure 13). In discussing these themes, this chapter examines the existing government policies and plans along with the findings from previous chapters of this study.

[62] See Dangote https://dangote.com/57000-personnel-to-benefit-from-work-at-refinery-site-says-dangote/

Figure 13: Four Policy Themes for Advancing Structural Transformation in Nigeria



Source: Created by the Author

Theme 1: New Industrial Policy in Changing Times

Nigeria's experience with industrial policy has evolved over several decades, encompassing a variety of approaches and strategies. From import substitution and heavy government investment in industry in the 1960s and 1970s to national and sectoral plans in the 2000s, including the Backward Integration Policy and the National Sugar Master Plan, industrialisation has been at the fore of Nigeria's national development agendas. More recently, particularly since 2014, the Nigerian government has not had a specific industrial plan. However, there have been several policies and interventions such as the Zero Oil Policy, the closure of land borders, the banning of certain imports, raising tariffs on some agriculture and manufactured goods and the Trade Policy (2023 – 2027), which have elements of industrial policies. More so, federal and state governments and the private sector have established industrial parks across the country as well as export processing zones to support industrialisation.

What is missing, however, as shown in the previous chapter, is the implementation of a plan, policy and intervention programme that focuses on raising the domestic value-added in manufacturing. Nigeria needs to implement a strategic plan to produce specific intermediate inputs within a five to ten-year period. What matters also is the approach of the government in achieving this goal. Within the last decade, Nigeria has implemented import restrictions and border closures as a means to trigger local production of specific goods (Ugwuja and Chukwukere, 2021). The impact of these approaches has been mixed. While rice production increased as a result of the closure of land borders, food costs skyrocketed, driving up overall inflation in the country (Aremu et al., 2023). The measures have also triggered exchange rate depreciation (Fasan, 2015), while the domestic capacity to produce the restricted products remained underdeveloped in most cases. This weakened capacity is exemplified by the continued pattern of a high share of manufactured goods in total imports and a weak share of manufactured goods in exports (NBS 2023b). Outside the use of industrial policy, a weaker exchange rate should serve as a disincentive to the importation of intermediate inputs and other products and an incentive to export. In Nigeria, however, limited investments and weak domestic capacity in the production of intermediate inputs meant that currency depreciation significantly increased the cost of importing intermediate inputs for manufacturing firms, as they relied solely on imports. Due to the absence of local alternatives, several manufacturing firms including GlaxoSmithKline (GSK) and Procter & Gamble announced their plans to exit production in Nigeria, citing exchange rate problems

(Taoheed, 2023). This emphasises the importance of building local capabilities in areas where demand for the product exists. Indeed, an overall expansion of the manufacturing sector is required. However, building industrial parks and export processing zones with no connection to a robust local value chain may not be sustainable.

Rather than relying solely on import bans, industrial policy should focus on actively incentivising local production and building domestic capacity. While bans may restrict imports, they do not automatically translate into a stronger local industry. In a country like Nigeria where border enforcement is weak, such bans often lead to increased smuggling, undermining their intended objectives and distorting market dynamics. In addition to strengthening border enforcement agencies, import restrictions must be accompanied by targeted support and investment in domestic firms - an area where the government has not demonstrated consistent commitment. Industrial policy will need to develop local value chains that are critical to modern manufacturing firms for the sourcing of intermediate inputs. The emphasis of such policies must be on products that can be produced locally. Examples include caustic soda, silicon oil, Base oil, corn starch, cotton, sugar, sorbitol, industrial starch, etc. For these products, the government will need to prioritise their development and remove bottlenecks that have limited investment in these value chains. Some of these products, such as industrial starch and cotton, are currently being produced locally, although there is still a huge gap between local production and demand, which is met by imports. Targeted support to scale existing firms, as well as providing incentives for new entrants, is crucial. Industrial policy in Nigeria that fails to cater for the sourcing of intermediate inputs for modern manufacturing firms will limit the benefits of the manufacturing sector to the rest of the economy.

During the semi-structured interviews, a few manufacturers shared a partial success story on how investment was attracted in the production of sorbitol and industrial starch. Despite being the largest cassava producer in the world, Nigeria imported sorbitol and industrial starch from China and Vietnam. Both products are made from cassava and are important ingredients for many fast-moving consumer goods. A Nigerian company, Psaltry International, made entry into the industry by investing in processing plants to produce and supply both products to large manufacturing firms in Nigeria. Although these products are still imported due to the inability of Psaltry International and other players to meet local demand, the story is a testament to the opportunities that exist across value chains in the manufacturing industry. In addition to creating new jobs and income for employees, Psaltry International is enhancing local value-added and conserving foreign exchange, among other benefits. Established in 2005, the company processes cassava into food-grade cassava starch and, in 2019, expanded into the production of sorbitol, with the construction of the first cassava-based sorbitol factory in Africa (IDH, 2020). In 2018, Psaltry International took part in an IDH Cassava Programme, which provided technical assistance and an outgrower project aimed at developing a sustainable and inclusive supply chain for the company to achieve 100% production capacity by 2020. Prior to this programme, the company faced low productivity and was unable to meet the demands of its buyers despite the growth opportunities in the sector. The company also faced inconsistency in obtaining raw materials from farmers, which affected its operations. With support from Rockefeller Foundation, IDH and Psaltry International provided training, credit, input financing, transport support and market linkages to farmers. The programme generated a lot of benefits for both the farmers and Psaltry International. For the farmers, yields increased by 60% and their income improved by 81% during the programme due to better agronomy practice and a guaranteed market (IDH, 2020).

In addition to enhancing food security, IDH noted that 6,223 farmers were trained while 41,660 part-time jobs and 40 full-time jobs were created during the project. For Psaltry International, production capacity increased from 40% in 2018 to 107% in 2020 due to a consistent supply of quality cassava from farmers. In addition, 25,600 permanent jobs were created in the factory and on the field as at 2019. Overall, the company's ability to meet demand for high-quality flour and other products increased and long-term planning improved as it obtained products on a consistent basis from farmers (IDH, 2020). Psaltry International's experience is a testament to how manufacturing firms can build capacity, highlighting the importance of developing value chains in the process. It also shows how Nigeria can maximise the opportunities in the manufacturing sector in areas of value addition and job creation.

As noted by Lewis (1954), it is agriculture that finances industrialisation. The agriculture industry in Nigeria consists largely of subsistence activities with significant wastage, low productivity and under-investment. About 40% of all food produced in the country is wasted or lost (Usman et al., 2023). Agriculture, therefore, in its current form, is not designed to support the industrialisation of the country. The policy focus for the sector should centre on raising productivity through mechanisation, improving farming practices and ensuring better access to quality seedlings and inputs. Nigeria needs an agriculture mechanisation programme financed via public-private partnerships (PPPs), targeting promising areas such as crops in high demand by industries. These partnerships can explore government guarantees for producing and procuring modern machinery, and facilitate knowledge sharing and investment mobilisation in the sector. As in the IDH Cassava program, the government can also facilitate off-taker agreements with manufacturing firms within the confines of a forward integration programme for the sector. One major success factor for the programme is the engagement of smallholder farmers in blocks known as the block farm model. This involves organising farmers into blocks and providing joint support such as training, market access, infrastructure and input financing to enhance productivity[63]. While there are opportunities for large investments in the sector given Nigeria's huge agricultural endowments, challenges of insecurity in some parts of the country, weak infrastructure and policy inconsistency have limited the inflow of investment into the sector. The role of policymakers, therefore, should be to reduce these risks and enhance agricultural productivity over time.

In addition to the production of intermediate inputs, Nigeria needs to expand the breadth of its manufacturing sector. The current situation where only three sectors (Cement; Food, Beverage & Tobacco and Textile, Apparel & Footwear) accounted for 79.2% of manufacturing output from 2020 to 2023 highlights the need for more investments in other areas of manufacturing. These areas include Oil Refining; Basic Metal, Iron & Steel; Chemicals and Pharmaceutical Products and Non-Metallic Products, the majority of which are capital-intensive. One reason for the low investment in these sub-sectors is the perceived risks stemming from issues such as insufficient power supply, weak infrastructure, and policy inconsistency in the country. In such an environment, policymakers will need to define clear policy goals for these sectors through long-term planning and commit to implementing these plans. In this instance, public institutions may not only de-risk the sector but also take risks by making significant commitments to partner with the private sector. Mazzucato describes this as an

[63] See more on the Block Farm Model here: https://www.idhsustainabletrade.com/publication/block-farming-model/

"entrepreneurial state" that shapes and co-creates markets (see Mazzucato and Rodrik, 2023). Potential investors must be reassured of the government's commitment to develop the sector in the medium to long term. Chang and Andreoni (2020) explain this as a roadmapping exercise which can reduce uncertainties faced by the private sector. Furthermore, these sectors can benefit from forward and backward linkage programmes given their interdependence with other sectors in the economy. The selection of sub-sectors in manufacturing that qualify for backward integration should be influenced by the cost of backward integration vis-à-vis the cost of importing intermediate inputs. Other factors such as the availability of intermediate inputs and the government's commitment to follow through on implementation are important considerations. Specifically for the chemicals and pharmaceutical industry, for instance, a comprehensive mapping of available raw materials and intermediate inputs, investment gap and enabling policies to encourage local production is required. The government will need to incentivise investments in research and development and foster relations with research institutes and the private sector. Overall, investment in transport infrastructure to enable market access for firms within the country can spur demand growth and local investments in the sector.

In terms of exports, there are significant opportunities for modern manufacturing and tradable services firms to expand across African and international markets. Among modern manufacturing firms, large firms operating in Nigeria have, over time, developed the capacity for large-scale production and can compete both locally and internationally. These firms can be incentivised to export to other African countries and markets outside the continent. Policy instruments and initiatives to support their expansion to these markets include encouraging these firms to take advantage of existing Export Processing Zones with preferential tax regimes, streamlined regulations, a weaker currency and supportive infrastructure. According to the Nigeria Export Processing Zones Authority (NEPZA), there are about 55 Free Trade and Export Processing Zones in Nigeria but only 26 are operational[64] with about 16 of these zones owned by the private sector. Others are owned by the federal government, state government and through PPP arrangements. There are about 541 enterprises within these zones, which are grossly inadequate to drive exports on a massive scale. To put this in perspective, the Shanghai Free Trade Zone (SFTZ) in China has over 50,000 member companies[65]. More firms need to be incentivised to establish FTZs in partnership with the government, while the challenges of inadequate infrastructure, limited funding and poor management need to be addressed for FTZs that are not operational[66].

Some large manufacturing firms, in recent times, have reiterated the need to earn foreign exchange by expanding their export capacity, following the exchange rate crisis that Nigeria experienced in 2022/2023. The fact that more firms are looking to export presents an opportunity for government policy to target and support these firms in their expansion bid through export promotion policies and economic diplomacy. In negotiating the African Continental Free Trade Area (AfCFTA) deal and other trade agreements with other countries, the government will need to open up new markets for exports, reduce trade barriers and strengthen the existing export credit facilities. As contained in Nigeria's

[64] NEPZA website lists 26 operational zones across Nigeria: https://nepza.gov.ng/free-zones/operational-zones/
[65] https://rpc.cfainstitute.org/en/research/cfa-magazine/2018/the-shanghai-free-trade-zone-continues-its-growth#:~:text=Launched%20in%202013%2C%20the%20Shanghai,kilometer%20area%20of%20the%20city.
[66] Several studies have examined labour conditions in Export Processing Zones (EPZs) in various countries, highlighting concerns such as limited workers' rights, excessive working hours, and poor working conditions (see Richardson et al., 2017 and Cirera and Lakshman, 2017). Given these findings, policymakers in Nigeria need to enforce labour rights and standards to address these potential issues.

Trade Policy document, the Nigerian Export Promotion Council (NEPC) is expected to "promote Nigerian exportable products through participation in at least 30 international trade fairs, contact promotion programmes, trade missions, and buyer/seller meetings annually" (FMITI, 2023; P. 62). Policymakers will need to conduct a specific needs assessment for large manufacturing firms that are willing to expand beyond Nigeria. For medium-sized modern manufacturing firms, the diaspora market presents a huge opportunity for their expansion. While some of these firms are already servicing this growing market, there is no deliberate government policy aimed at supporting their expansion. These firms could benefit from grants, subsidised loans, market access support and capacity-building programmes to enhance their export capabilities. Interventions could cover areas such as market research, export documentation, and compliance with international standards. Other wider reforms to remove export barriers and simplify the export process will also benefit these firms and have a ripple effect on their growth and ability to create jobs.

Services export remains a potential area for countries to raise productivity and income levels. Within service exports, ICT is an integral aspect for Nigeria, given the country's young population and digital progress over the years. The implementation of specific training programmes to target IT skills, which are in high demand in advanced economies, will be required. A study of the global demand gap across several IT areas and how Nigeria can meet such gaps within a specified timeframe will be crucial. The supply of talent to other countries must be done in a coherent manner and not at the expense of local talent needs. Service export is a grey area in national trade and development policies and thus, more investment of resources in understanding the dynamics and approaches to developing this aspect is important going forward. Services export needs to be integrated into the broader national, industrial and trade policies and programmes of the government. This study observes that the tradable services sector is not only important for exports, but is useful in raising domestic productivity as shown in the regression and shift-share results in the previous chapter. Therefore, implementing a national skills development programme to address skills gaps and enhance the capabilities of the workforce is an important element in raising the productivity of the sector. Such programme will focus on upskilling and reskilling opportunities tailored to the specific needs of key sectors within the tradable services industry, such as IT outsourcing, business process outsourcing, financial services, and professional consulting. A key success factor of such programme will be partnerships with the private sector, academia and other industry stakeholders. Equipping workers with in-demand skills and certifications is pivotal in improving service delivery, attracting foreign investment, and driving the expansion of Nigeria's tradable services sector.

Theme 2: Opportunities for Domestic Demand-led Structural Transformation

As argued in the previous chapter, structural transformation can also be demand-led, driven by government, firms and consumer demand. This argument is rooted in the assumption that insufficient demand can limit the growth of a sector (Andreoni & Chang, 2019) and demand growth can be a source of innovation, allowing domestic firms to build capabilities (Landini et al., 2020). Specifically for Nigeria which has a large and fast-growing population, local demand for manufactured goods and services is pivotal for economic development, provided that a significant share of this demand is met by domestic producers rather than imports.

Government demand is a powerful tool that can structurally transform the Nigerian economy. Between 2015 and 2022, the federal government of Nigeria's expenditure increased by about fivefold

from ₦5 trillion to ₦24.4 trillion in 2022, according to data from the Central Bank of Nigeria. This expenditure is expected to follow an upward trend, given the country's huge deficits in areas such as infrastructure, education, healthcare, etc. Such growing demand presents an opportunity to trigger local production and grow the capacity of local firms in the process. To make this happen, Nigeria needs a procurement system (laws, policies and government actions) that mandates government entities to patronise local firms for the purchase of specific budget items. This can focus on areas where Nigeria has and can build competitive advantages. Modern manufacturing firms engaged in the production of items such as stationery, motor vehicles, cement, furniture, tyres, and clothing will benefit from such a policy. This policy should target firms that are already engaged in production and can demonstrate that they can build capacities over time and produce quality products at a competitive price. As an example, Nigerian firms have made significant investments in the motor vehicles industry over the years and these firms will benefit from procurement laws or policies that mandate the government to purchase locally-made vehicles as opposed to importation. Beyond the federal government, this should be replicated across the 36 states in Nigeria and the Federal Capital Territory.

For consumer and firm demand, policies will need to increase local capacity to produce quality and affordable goods and services. The role of regulatory agencies such as the Standard Organisation of Nigeria (SON) is important in ensuring firms comply with relevant certifications and standards. The government, through its agencies, can also support firms that procure local intermediate inputs by offering targeted incentives. Such incentives would not only encourage the use of local inputs but also help improve production processes and product quality, while keeping prices competitive.

Theme 3: Infrastructure, Electricity Supply and other Support Structures are crucial for Structural Transformation

Having a conducive business environment is crucial in attracting and retaining investments in key sectors of the economy. Continuous investment in infrastructure across the country to narrow the country's infrastructure deficit is important. The construction and maintenance of farm and border access roads, seaports and rail can open up opportunities in the manufacturing and agricultural sectors, and facilitate trade and access to markets and intermediate inputs. Similarly, a stable supply of electricity will reduce energy costs for firms, many of which rely on alternative energy sources such as diesel and petrol. Better infrastructure and power supply will improve the business environment and ensure Nigerian firms are competitive in relation to other firms on the continent or those outside Africa. Government policies must also seek to enhance rural-urban connectivity, which can enhance market access, labour mobility and the benefits of agglomeration economies. Effective industrial planning in terms of the location of industries, coupled with the provision of internet connectivity, schools, electricity, water supply and recreational parks, is crucial in enhancing rural productivity and ensuring the poor and low-income earners are connected to structural transformation. Furthermore, insecurity in the food-producing regions of the country continues to limit investments, especially in agriculture. The federal and state governments must provide a safe and secure environment for farmers and investors, as this is crucial in improving productivity in the economy. Other reforms, such as the streamlining of taxes and ensuring a stable policy environment, are important.

Theme 4: The Role of Policy in Supporting Subsistence Manufacturing

One contribution of this study is to decompose manufacturing into two groups – subsistence and modern. As noted in the previous chapter, the needs of subsistence firms are different from those of modern manufacturing firms, which account for less than 10% of the total number of manufacturing firms in Nigeria. While subsistence manufacturing firms contribute less to productivity growth, they are crucial for job creation. Therefore, the sustainability of these firms is crucial in providing opportunities for labour and the populace. As a way forward, government policy will need to focus on the expansion and transition of these firms to become modern manufacturing firms. This will require addressing the most important bottlenecks that have limited their expansion: limited access to finance, better technology and markets and a low-skilled workforce.

Limited access to affordable finance is not unique to businesses in the manufacturing sector in Nigeria. It is a challenge that many small businesses face, irrespective of their sector. But because of the important role that manufacturing firms can play in the economy, as shown in the regression result in terms of productivity, employment and income gains, these firms need to be prioritised in the design of solutions to the problem of limited finance. In terms of the source of finance, commercial banks are not structured to fund subsistence manufacturing firms. Put in another way, subsistence manufacturing firms are not structured to receive funding from commercial banks. To meet the requirements for funding, businesses will need to be properly structured in the area of corporate governance, and have relevant documentation and huge collateral. These requirements cannot be met by many subsistence firms, due to their features – sole proprietorship, limited collateral and poor documentation. As such, most financial institutions target mid-sized firms to reduce the risks of non-performing loans. As noted by Adeyemi et al. (2022), the most dominant form of financing for small businesses in Nigeria in 2022 was personal savings – 74% of business owners[67] who raised finance cited personal savings as the main type of finance they accessed.

The government's approach to addressing this challenge for small businesses has been to provide direct cash support to business owners. For instance, in 2023, the President of Nigeria announced the ₦200 billion Presidential Intervention Fund for businesses, out of which ₦75 billion was dedicated to Micro, Small and Medium Enterprises and another ₦75 billion to the manufacturing sector. Such funds often do not reach many small businesses due to government bureaucracy and corruption, while monitoring and evaluation are often missing. Therefore, addressing this funding challenge will require partnerships between the government and the private sector in disbursing, monitoring and evaluating funds. In particular, the solution can include the creation of an SME bank, a specialised financial institution that will focus on small business lending. This institution can be run by a public-private partnership model, with outlets in the six regions of the country and headed by experts who understand the intricacies of financing subsistence manufacturing firms. In addition to providing grants, the institution will need to offer support to these businesses in the areas of structuring, book-keeping, documentation, financial management and reporting. Successful businesses that have gone through this structuring can therefore qualify for funding. Monitoring and evaluation will be crucial in this process. With better financing, subsistence manufacturing firms will be able to hire skilled workers, reinvest in their businesses and support growth and expansion.

[67] The survey featured 8,611 businesses across the country

Subsistence manufacturing firms can also benefit from training programmes to improve the skills of their workforce. The government can collaborate with training institutions, industry associations, and business support organisations to develop customised training programmes that are tailored to the needs of subsistence manufacturing firms. These programmes should cover a range of topics, including business management, financial literacy, marketing, and technology adoption. In addition, the government can incentivise firms to invest in training and skills development. This can be done through the introduction of recognition and certification programs to acknowledge small businesses that make such investments. Such certifications can enhance the credibility and reputation of subsistence manufacturing firms. Finally, government policy can ease access to markets for subsistence manufacturing firms, many of which are confined within their locality, especially the nano and micro firms. One way to improve market access is by creating business support hubs where businesses can obtain advice to grow and expand into new areas. The government can also utilise procurement laws and policies that prioritise the participation of small-scale manufacturers in government contracts and procurement opportunities.

Technology will play a significant role in raising the productivity of manufacturing firms. In all, while technology will affect all sectors and their ability to create jobs, there is technology[68] that will replace jobs or limit job creation. As noted in the interviews, large manufacturing firms in Nigeria are more likely to adopt such advanced technology mainly because of their access to capital and skilled labour. This has implications for the demand for skilled workers in the areas of engineering and digital technology. There is also technology that will convert jobs from one form to another. As mentioned in the previous chapter, not all technology displaces workers. Among subsistence firms, disruptions caused by technological changes are temporary and do not often result in job losses on the aggregate. They convert jobs from one form to another and create new roles for labour. For instance, moving from manual fetching of water to using pumps in a factory in Lagos created new jobs for technicians and engineers. Such (analogue) technology requires labour and smaller firms are likely to adopt this analogue technology with a blend of labour in the production process. Walter et al. (2024) observed that the cost of technology is a major constraint for small and medium-sized enterprises (SMEs) across countries.

As these firms tend to lag behind modern manufacturing firms in adopting technology, government support will be required to bridge the gap. With this in mind, the government, through the Ministry of Science and Technology, can implement technology adoption programs that provide training, technical assistance, and mentorship to subsistence manufacturing firms. Key ingredients of the programme would include educating business owners about the relevance of technology in raising productivity, selecting and implementing suitable technologies that will not prevent hiring additional workers, and offering relevant support to ensure successful integration. This programme can be implemented in partnership with business member organisations and other stakeholders. Finally, there is technology that will improve market access for businesses. Digital acceleration induced by the COVID-19 pandemic presents opportunities for firms to explore online platforms to reach markets in Nigeria and beyond. Targeted training programmes for subsistence manufacturing, along with efforts to improve ICT infrastructure and connectivity, will be required to support access to technology for these firms.

[68] Advanced Digital Production (ADP) technologies. See UNIDO (2021) in reference.

7.3 Conclusion

The study of structural transformation is crucial in understanding development. Over time, the movement of labour from agriculture to manufacturing has been linked to stronger economic growth, while the transition towards services has been mostly associated with a negative relationship with growth (Gollin and Kaboski, 2023). The experience of Southeast Asian countries supports the narrative that better economic growth is linked to industrialisation. However, Fan et al (2021) and a growing number of studies have found that productivity growth in services such as retail and hospitality significantly improved living standards in India from 1987 to 2011. As noted by Gollin and Kaboski (2023, P22), "Not all growth appears to be linked to industrialisation, and not all manufacturing leads to growth". These contrasting outcomes on the role, or perhaps, the changing roles of manufacturing and services in the development process call for further investigation, especially on a country level.

Since the 2000s, Nigeria has experienced a shift in its economic structure towards the services sector. The share of workers in the services sector grew from 19% in the year 2000 to 46% in 2021, while that of manufacturing grew marginally from 5% to 7% during the period. Adopting a mixed-method approach, this study examined the impact of the movement of labour across sectors on per capita income growth, employment and productivity growth in Nigeria from 1990 - 2021. It explores opportunities for structural transformation and factors that will drive the rapid expansion of sectors and enhance the creation of jobs and inclusion in Nigeria. In analysing the impact of the movement of labour on broad economic aggregates in Nigeria, this study emphasised the importance of decomposing the services sector by productivity levels. 'Tradable services' exhibits higher productivity levels and includes information and communication, finance and insurance, and professional and technical services. 'Non-tradable services' is characterised by low productivity, covering activities such as wholesale and retail trade, hotels and restaurants, and other community, social and personal services. Services is not a homogeneous sector, and the idea of dualism, as argued by Arthur Lewis, also exists within services. This has constituted an important paradigm in understanding the drivers of productivity in Nigeria.

This study found that the movement of labour towards the services sector since the 2000s led to an increase in per capita income in Nigeria. This positive influence was driven by the expansion tradable services sector (high productivity services), although much of the movement of labour was towards the non-tradable services sector. Among all sectors, tradable services had the highest contribution to productivity growth in Nigeria through the structural change component. Key sectors such as finance, ICT and telecommunication have been pivotal in driving economic growth in the 2000s and are among the fastest-growing sectors in Nigeria in the last five years.

A major reason why Nigeria has not achieved significant structural transformation is due to the high exposure of its manufacturing sector to imported inputs and a low export ratio. While intermediate input dependence and low export of manufactured goods have constrained Nigeria's structural transformation, they are also, in part, consequences of the country's limited progress in structural transformation itself. These two factors, in addition to structural problems of inadequate infrastructure, limited power supply, lack of coherent industrial strategy and limited access to finance, have made the sector vulnerable to exchange rate depreciations and disruptions in the global supply chains. Any industrial strategy aimed at reviving the sector must ensure the development of local value chains and enhance exports of manufactured goods.

One major finding of this study is that Nigeria's manufacturing sector, despite its weak contribution to GDP and employment, positively contributed to per capita income growth, employment and productivity growth in the last three decades. This study empirically confirms that Kaldor's third law holds in Nigeria - growth in manufacturing output is positively linked to productivity growth in the economy. The sector holds great opportunity for a successful structural transformation in Nigeria. But to better understand the nature of the sector, this study decomposes manufacturing into subsistence and modern manufacturing. Subsistence manufacturing refers to under-resourced, low-productive and small-scale manufacturing firms that are run by sole proprietors, servicing local and in-country markets. Modern manufacturing, on the other hand, are better-resourced, structured and more productive firms that produce goods at a medium to large scale, targeting the local market and also the international market where necessary. This categorisation of manufacturing firms is important for several reasons: (1) Manufacturing is not homogeneous as portrayed in many conventional literatures of structural transformation. Productivity levels in manufacturing vary and for Nigeria, the dominance of subsistence manufacturing is an important factor that has limited the sector's contribution to productivity gains and income growth (2) How these firms use/interact with capital, technology and labour differs. Modern manufacturing firms offer better wages, use better technology and display evidence of capital accumulation relative to subsistence manufacturing firms. While the movement of labour towards manufacturing is crucial for development, within-sector transformation in manufacturing may be required to maximise the sector's role in the structural transformation process (3) The expansion needs of subsistence manufacturing firms differ from those of modern manufacturing firms. Policy can therefore focus on the unique needs of firms in each category.

Historically, industrialisation efforts in Nigeria have been geared towards supporting large modern manufacturing firms. Nigeria's large market was a major factor that attracted many large manufacturing firms to the country. This strategy is being challenged by the impact of COVID-19 and the war in Ukraine, which have resulted in the scarcity of foreign exchange and therefore, intermediate inputs, which are mostly imported. These two events and their attendant effects have led to the demise and exit of several manufacturing firms from Nigeria. To address these challenges, industrial policy must seek to develop Nigeria's manufacturing value chain and ensure optimal sourcing of strategic intermediate inputs that can be easily produced within the country. With Nigeria's huge agricultural and mineral resource endowments, government policy support needs to leverage these endowments, incentivising investments into the procurement and processing of intermediate inputs such as sugar, corn starch, sorbitol, etc., as demand for these products already exists and is most met by imports. A few firms, such as Psaltry International, have taken the lead in producing industrial starch, but there is room for more firms to capture the opportunities across several products and value chains. A forward integration agricultural programme that examines the intermediate inputs needs of large manufacturing firms, facilitates off-taker agreements and provides subsidised finance, input and mechanisation to new and existing firms willing to capture these opportunities is required. In addition, the large manufacturing firms in Nigeria must begin to look beyond the local markets and expand their reach to other countries via exports. While the African Continental Free Trade Area (AfCFTA) Agreement presents an opportunity for these firms, the government must intervene to provide incentives that encourage exports to other markets. For medium-sized modern manufacturing firms, the diasporan and broader international markets offer a huge opportunity to grow and expand, in addition to the AfCFTA. Deliberate efforts to capture this

fast-growing market are required, and government policies to ease market entry for these firms become important. Service exports can also target skills needs in advanced countries, particularly in areas of ICT, healthcare and finance.

Nigeria's approach to industrialisation must look beyond large manufacturing firms and target subsistence manufacturing firms, which are an important source of job creation. Efforts must be channelled to ensure the growth and transition of these firms to become modern manufacturing firms. The expansion of these firms is often limited by poor access to finance, markets, skilled workforce and better technology. Improving access to affordable structured finance by establishing an SME Bank that focuses on small business lending across the country will be crucial in addressing the challenge of limited access to finance for these businesses. This must be complemented by business support programmes in the areas of structuring, book-keeping, documentation, financial management and reporting. Furthermore, establishing business support hubs, training programmes to improve the skills of their workforce and technology adoption programmes to improve productivity and market access are crucial. In addition to supply-side policies, Nigerian firms can benefit from demand-led structural transformation by enacting procurement policies and laws that support the federal and state governments' purchases of locally-made goods. This can target firms that have demonstrated the capacity to produce quality and competitive products over time.

Nigeria's experience of structural transformation differs from that of many East Asian countries. As at 2021, 81% of Nigeria's labour force was employed in sectors with low labour productivity – agriculture and non-tradable services. Labour is moving away from agriculture but mainly and rapidly towards the non-tradable services sector, which has accommodated the most labour since the 2000s. With this, the opportunities for structural change towards manufacturing and tradable services are still huge. This will be driven by global political dynamics, demand growth and skills gap, shifts towards a unified Africa and the changing technological landscape. Selected industrial policies focused on building firms' capabilities while experimenting and learning from previous mistakes are required to ensure inclusive economic development in Nigeria.

This study makes important academic contributions to the study of structural transformation. To start with, the categorisation of manufacturing into modern and subsistence, based on access to resources, level of productivity and interactions with markets, provides a new lens for viewing manufacturing firms while accounting for unique features of each category. This offers an alternative to the debate of formal vs informal firms, particularly because of the overlapping features between formal and informal firms (see Rodrik and Sandhu 2024) in a country like Nigeria. For instance, data on manufacturing firms show that 95% of formal manufacturing firms in Nigeria are nano, micro and small firms that are mostly owned by sole proprietors (SMEDAN, 2021). These firms face numerous challenges of limited access to finance, inputs, infrastructure deficits, and poor market access, as informal firms do, despite their formal status. The idea that productivity differs within manufacturing broadens the discussion beyond the mere transition of informal firms to formal status. It emphasises the importance of enhancing the productivity of subsistence firms, which also includes formal firms and increasing the overall value-added contribution of the manufacturing sector. The study further highlights the need to view services from a productivity standpoint, highlighting the important role that tradable services has played in improving income and productivity in Nigeria. Although several literature (see Chapter 2) have argued that high-productivity services is not labour-intensive, the fact

that the share of tradable services in total employment increased from 1% in 2000 to 9% in 2018[69] suggests otherwise in the case of Nigeria. This study has provided substantial evidence that the movement of labour towards tradable services was instrumental in raising productivity and income growth in Nigeria. This also highlights the importance of skills development and productivity enhancement, particularly in the area of digital skills and ICT in Nigeria.

Finally, this study contributes to the technology-employment debate in Nigeria's manufacturing sector. Rather than focusing on fears of automation displacing workers, the more pressing challenge is the limited access to productivity-enhancing technologies, finance and skills, particularly among subsistence firms that still rely on analogue technology, which tends to complement, rather than replace labour. Even for modern firms, the use of advanced technologies does not automatically lead to job losses, as productivity gains can generate indirect employment along the value chain. Essentially, the fear of widespread job displacement in manufacturing due to technological advancement appears overstated in the Nigerian context.

7.4 Limitations of the Study and Avenues for Further Research

This study examined the dynamics of structural transformation, productivity and employment generation in Nigeria. It would have been useful to measure the extent to which the movement of labour across sectors has influenced social indicators (such as poverty and income inequality). However, the lack of reliable time series data for these indicators narrowed the scope of this study to per capita income, unemployment and productivity. Beyond the absence of data, the issues of worker's wages, working conditions, and social inclusion, if explored in detail, would have significantly enriched this study. In addition, the absence of time series data on employment within the manufacturing subsectors was a limitation of the study. This made it challenging to analyse trends and patterns of employment dynamics of the subsectors of the manufacturing sector in Nigeria. While the author examined data on output growth of the subsectors and the share of output in total manufacturing, data on employment would have made it easier to explore the capacity of the subsectors in accommodating labour over time.

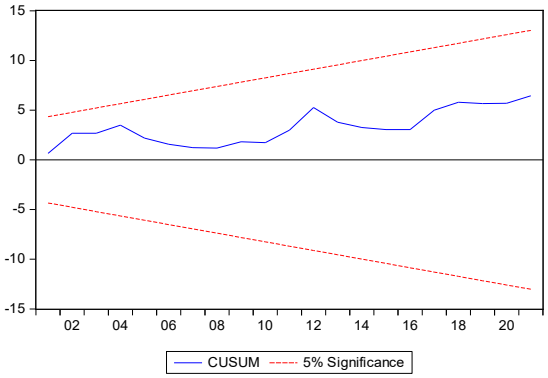
Following the findings and limitations of the study, there are a few areas for further research. The first is to explore further the components of tradable services and how each component relates to per capita income growth, labour productivity and employment. Second, future studies can explore options to enhance the productivity of labour-intensive services and their linkages with other economic indicators. Finally, future research can examine the interconnectedness of subsistence and modern manufacturing firms, exploring in detail their contributions to the rest of the economy.

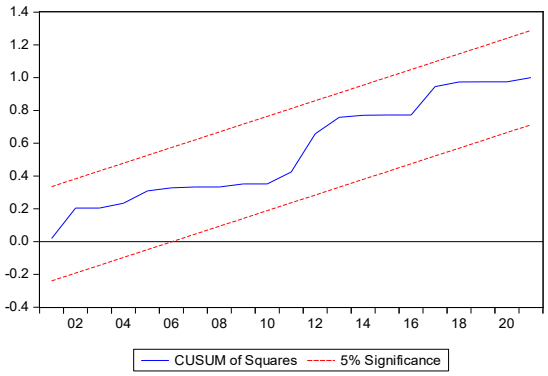
[69] Author's calculation from data from the Economic Transformation Database. See reference: de Vries et al., 2021 for datasheet.

APPENDIX

Appendix A

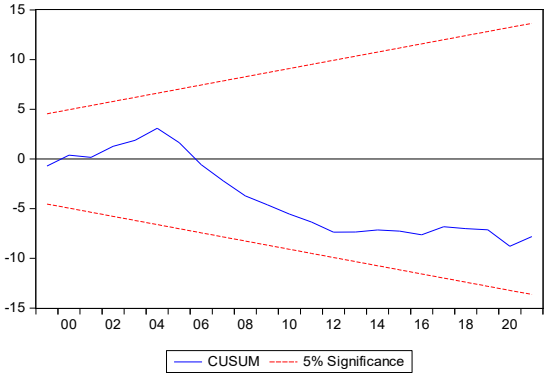
EQUATION 1: CUSUM and CUSUM SQUARE

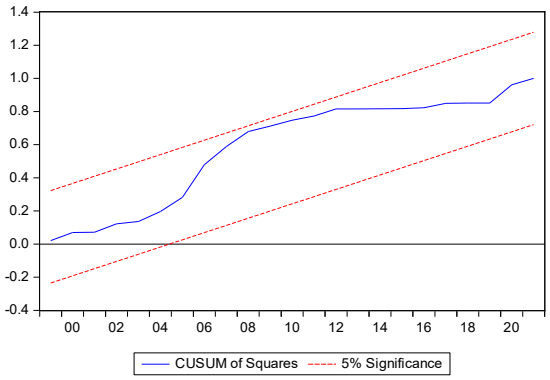




Equation 1: In estimating the equation, a lag length of 2 was chosen using the Akaike information criterion (AIC) and the lags of the independent variables were found to be insignificant.

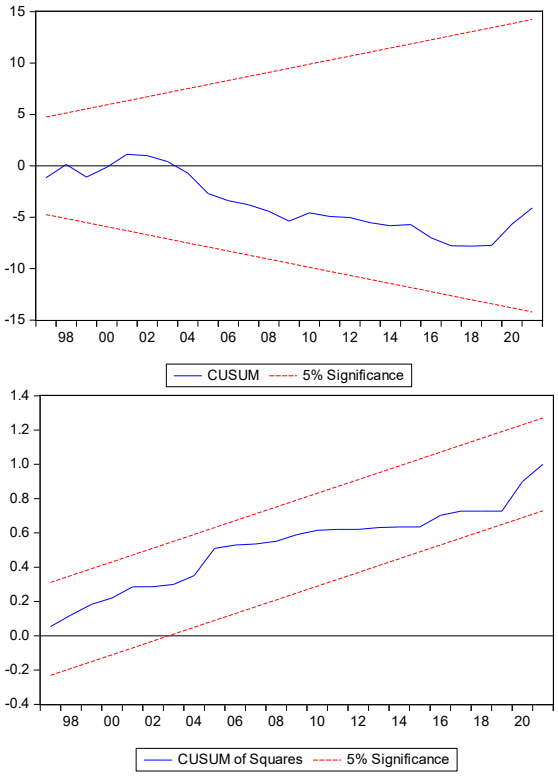
EQUATION 2: CUSUM and CUSUM SQUARE





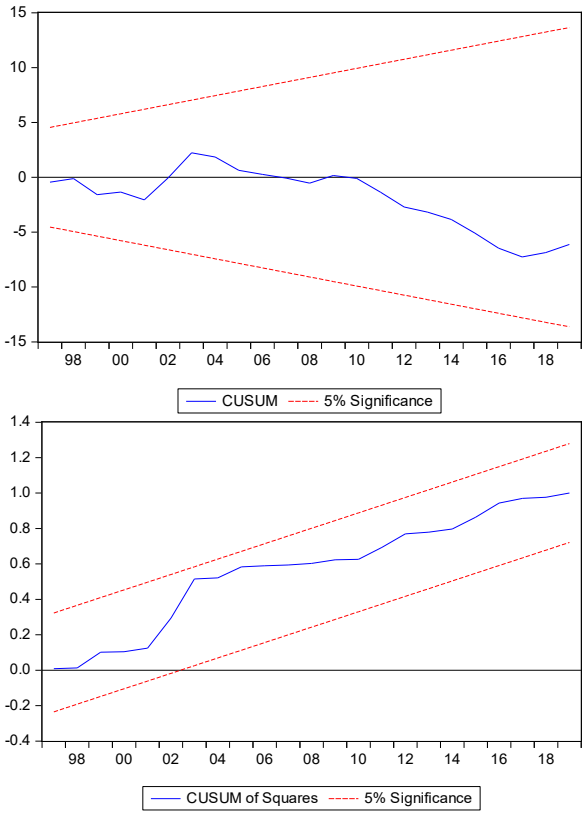
Equation 2: In estimating the model, an optimal lag length of 1 was chosen using the Akaike information criterion (AIC). CUSUM and CUSUM square tests show that the model is stable as they lie within the 5% significance level.

EQUATION 3: CUSUM and CUSUM SQUARE



Equation 3: The CUSUM and CUSUM square tests show that the model is stable as they lie within the 5% significance level.

EQUATION 4: CUSUM and CUSUM SQUARE



Equation 4: CUSUM and CUSUM square tests show that the model is stable as they lie within the 5% significance level. In estimating the model, an optimal lag length of 1 was chosen using the Akaike information criterion (AIC).

Appendix B: Participant Information Sheet and Consent Form

Project title:
Structural Transformation, Productivity Growth and Employment Generation: Lessons for Nigeria

About the project
Changes in the structure of an economy are important in explaining income and productivity growth, job creation and economic development. Since the 2000s, the composition of the Nigerian economy has changed, with an expansion of the services sector in both Gross Domestic Product (GDP) and employment. As at 2022, the services sector accounted for 55.4% of Nigeria's real GDP, a significant increase from 37% in 2000. Manufacturing, on the other hand, has experienced a decline in its GDP share, from 12% in 2000 to 9% in 2022. While several studies have shown that the manufacturing sector is vital for increasing the income level and productivity growth of developing countries, particularly the East Asian countries, Nigeria is yet to experience such transformation. This study seeks to explore whether the movement of labour and economic resources towards the manufacturing sector and perhaps, towards some aspects of services, would trigger economic and social inclusion in Nigeria.

Participation and withdrawal

The interviewee will take part in semi-structured interview conducted by the researcher. The interviews will last for approximately 45 minutes to an hour and will be recorded, unless the interviewee requests otherwise. Participation is voluntary and the participants can withdraw from the process by simply saying so to the researcher conducting the interview, and have their responses deleted at any time during the research activity.

What happens to the information provided?

The interview recordings will be stored on an external drive offline and be password protected, with access granted only to Wilson Erumebor. Interviews will be transcribed and transcripts will be anonymised and password protected. The study should not involve the publishing of information potentially recognisable to others (names and identifying features will be changed for the protection of the interviewee's privacy). If such a situation were to arise, written consent from the interviewee will be required.

Authorisation

This project is authorised by the School of Oriental and African Studies (SOAS), University of London and has passed through the university's ethics procedures.

Contacts

Wilson Erumebor, School of Oriental and African Studies (SOAS), University of London
Email: 625886@soas.ac.uk

Dr Sara Stevano, School of Oriental and African Studies (SOAS), University of London
Email: ss129@soas.ac.uk

Consent

Please ensure that you have read and understood the information contained in the Participant Information Sheet and ask any questions before you sign the consent form. If you have any questions please contact a member of the research team.

I agree to participate in the interview	YES / NO
I agree to a digital voice recording of my interview by the researcher	YES / NO

Date:

Print name:

Signature:

Appendix C: Interview Questions (For the manufacturing sector)

Study on Structural Transformation, Productivity Growth and Employment Generation: Lessons for Nigeria

Wilson Erumebor, School of Oriental and African Studies (SOAS), University of London

Summary

Changes in the structure of an economy are important in explaining income and productivity growth, job creation and economic development. Since the 2000s, the composition of the Nigerian economy has changed, with an expansion of the services sector in both Gross Domestic Product (GDP) and employment. As at 2022, the services sector accounted for 55.4% of Nigeria's real GDP, a significant increase from 37% in 2000. Manufacturing, on the other hand, has experienced a decline in its real GDP share, from 12% in 2000 to 9% in 2022. While several studies have shown that the manufacturing sector is vital for increasing the income level and productivity growth of developing countries, particularly the East Asian countries, Nigeria is yet to experience such transformation. This study seeks to explore whether the movement of labour and economic resources towards the manufacturing sector and perhaps, towards some aspects of services, would trigger economic and social inclusion in Nigeria.

Key areas to explore

- Productivity growth
- Investment/re-investment/Growth/Expansion
- Employment generation
- Wages growth

Questions for Manufacturing firms

Growth and Employment

1) From your experience, do you think manufacturing firms are unique in the economy? What is the nature of growth in the sector?
2) Has your firm attained growth in the last two decades and if yes, what has been the driver?
3) From my research, preliminary findings show that growth of manufacturing output in Nigeria has not led to reduction in overall unemployment. What, in your view, could be responsible for this?
4) Do you think Nigeria's manufacturing sector has the capacity to employment more people relative to other sectors like agriculture, banking, telecoms, ICT? If yes, what factors will make the sector achieve this?
    i) Are these factors internal to your firm (ability to meet demand, technology adoption etc) or are they external (globalisation, rise of China in Africa, government policies etc)? If no, please explain why.
5) How easy is it for a firm to transition from micro to small to medium to large? Are there specific bottlenecks that prevent this from happening? Are these bottlenecks internal or external to the firm?
6) What will be the growth driver in the manufacturing sector? Will the growth be driven by small firms or large firms? Which sub-sector in manufacturing will drive growth and job creation?

Productivity Growth and Investment

7) There is a notion that large manufacturing firms are more productive than smaller firms. Do you think this is correct given the experience of your firm? Is the growth in the sector driven by smaller or larger firms?
8) Does being a formal or informal manufacturing firm matter for productivity growth in the sector?
9) How do you think recent technological innovations will impact the manufacturing sector?
10) How much of your profit do you re-invest and does this impact the survival and growth of your firm?
11) What are the success stories in manufacturing and key drivers? Can this success story be replicated across other sub-sectors?

Wages and social inclusion

12) What is the level of wages in the sector? Are they higher than wages in sectors like agriculture, trade, banking, telecommunications? Do you think real wages have grown in the last decade vis-a-vis rising cost of living.
13) What is the share of women employed in your firm? And what is your perception on whether manufacturing can create better and quality jobs of the future.
14) In view of the tough economic conditions, what are your coping strategies?

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