

UC Santa Barbara

UC Santa Barbara Electronic Theses and Dissertations

Title

Economic Globalization and Development: External Dependence, Structural Transformation, and Growth Constraints in Nigeria

Permalink

<https://escholarship.org/uc/item/3zq0r1s3>

ISBN

9798186382607

Author

Ogundipe, Michael Oluwasegun

Publication Date

2026-06-09

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Santa Barbara

Economic Globalization and Development: External Dependence, Structural Transformation,
and Growth Constraints in Nigeria

A Thesis submitted in partial satisfaction of the
requirements for the degree Master of Arts
in Global Studies

by

Michael Ogundipe

Committee in charge:

Professor Aashish Mehta, Co-Chair

Professor Nicole Cerpa Vielma, Co-Chair

Professor Ricardo Jacobs

Professor Michael Olabisi, Michigan State University

June 2026

The thesis of Michael Ogundipe is approved.

Michael Olabisi, Michigan State University

Ricardo Jacobs

Nicole Cerpa Vielma, Co-Chair

Aashish Mehta, Co-Chair

June 2026

Economic Globalization and Development: External Dependence, Structural Transformation,
and Growth Constraints in Nigeria

Copyright © 2026

by

Michael Ogundipe

ACKNOWLEDGEMENTS

The completion of this thesis marks the end of my Master's studies at the University of California, Santa Barbara, and the beginning of a new stage of my academic journey. Looking back, I am reminded of how many people contributed to this achievement through their guidance, encouragement, and support.

I am especially grateful to my co-chairs, Professor Aashish Mehta and Professor Nicole Cerpa Vielma. Their guidance helped shape this thesis and my broader development as a researcher. Throughout my time at UCSB, they challenged me to think more carefully, write more clearly, and approach research with greater rigor. Their support, patience, and willingness to engage deeply with my work have had a lasting impact on me, and I am thankful for the time and energy they invested in my growth.

I would also like to thank Professor Ricardo Jacobs for his thoughtful feedback and careful reading of this thesis. His comments consistently pushed me to refine my arguments, strengthen my analysis, and consider questions that I might otherwise have overlooked. The final version of this thesis is much stronger because of his contributions.

My sincere thanks go to Professor Michael Olabisi of Michigan State University. Working with him gave me opportunities that played an important role in my development as a researcher. I am particularly grateful for the opportunity to collaborate on research and publication, experiences that strengthened my empirical skills and deepened my understanding of the research process. His mentorship has been an important part of my academic journey.

I gratefully acknowledge the financial support provided by the Chiota-Payne Foundation and by the Department of Global Studies at UCSB. Their support made it possible for me to pursue graduate study and complete this research.

Finally, I would like to thank my family. I am deeply grateful to my parents, Mr. and Mrs. Ogundipe, whose sacrifices, hard work, and commitment to education created opportunities that I could never have achieved on my own. Their belief in me remained constant through every stage of this journey. I am equally thankful to my siblings for their encouragement, support, and confidence in me over the years. It is especially meaningful to complete this thesis during the year in which my mother celebrates her seventieth birthday. Reaching this milestone while witnessing hers is a reminder that achievements such as this are never individual accomplishments; they rest on years of sacrifice, love, and support from those who came before us.

As I leave UCSB and prepare to begin a PhD, I carry with me the lessons, encouragement, and generosity of the many people who helped me reach this point. For that, I am sincerely grateful.

ABSTRACT

Economic Globalization and Development: External Dependence, Structural Transformation,
and Growth Constraints in Nigeria

by

Michael Ogundipe

This thesis examines how external dependence shaped growth and development in Nigeria. The argument is that the challenges of economic growth, structural transformation, and household welfare are connected by a common structural feature, which is the dependence on a narrow export base for foreign exchange together with persistent reliance on importation of production inputs. This combination repeatedly exposed the economy to external pressures and influenced macroeconomic performance, policy responses, and the available opportunities for households across different regions and sectors.

This thesis analyzes the question from historical, household, and macroeconomic perspectives. First, it reviews the evolution of Nigeria's development trajectory, focusing on the how oil dependence, foreign exchange availability, and structural transformation are connected. Second, it analyses trends in labor allocation, gendered participation in economic activities, and differences in household welfare using nationally representative household survey data from wave 5 of the Nigeria Living Standards Measurement Study. Finally, it applies the balance of payments constrained growth model to investigate whether exchange rate adjustments were enough to relax Nigeria's external constraint from 1991-2023.

The results show that periods of growth were characterized by the presence of supportive external conditions, particularly oil price booms, while periods of external pressures exposed persistent vulnerabilities linked to weak export diversification and import dependency. The household analysis shows that there are persistent differences in labor allocation and welfare outcomes across economic activities and gender groups. Also, the balance of payments analysis shows that depreciation of the currency resulted in very minimal trade responses, with the Marshall–Lerner condition not satisfied and movements in external competitiveness exerting limited effects on export and import performance. The thesis concludes that sustained development requires more than exchange-rate adjustment alone and depends on structural transformation that expands productive capacity, diversifies exports, and reduces reliance on imported production inputs.

TABLE OF CONTENTS

Chapter One	1
Introduction.....	1
1.1 Motivation and Background	1
1.2 Research Question and Central Argument.....	5
1.3 Contribution of the Study.....	6
1.4 Overview of the Study.....	8
Chapter Two.....	10
Nigeria’s Growth, Structure, and External Dependence.....	10
2.1 Analytical Framework: Growth, Structure, and External Constraints.....	10
2.1.1 Growth Patterns	10
2.1.2 Structure of the Economy	13
2.1.3 External Dependence and Macroeconomic Constraints	15
2.2 Historical Evolution of Nigeria’s Economy.....	17
2.2.1 1990s: Adjustment and Instability	17
2.2.2 2000s: Oil-Driven Growth, Debt Relief, and Apparent Macroeconomic Stability	20
2.2.3 2010s: Oil Price Collapse and Renewed External Constraint.....	24
2.3 Conclusion	27

Chapter Three.....	28
Gendered Activities: Men Farm, Women Trade, Or Is It Less Clear-Cut?	28
Abstract.....	28
3.1 Introduction	29
3.2 Materials and Methods	32
3.2.1 Data	32
3.2.2 Empirical Strategy	33
3.3 Results.....	35
3.3.1 Descriptive Statistics.....	35
3.3.2 Regression Analysis	38
3.4 Discussion	45
3.5 Conclusion	48
Chapter Four	50
Exchange Rate Adjustment, Structural Constraints, And Balance-Of-Payments-Constrained Growth in Nigeria	50
4.1 Introduction	51
4.2 Literature Review	54
4.3 Theoretical Framework and Data	58
4.3.1 Balance-of-Payments Constrained Growth.....	58
4.3.2 Thirlwall’s Law	59

4.3.3 Relative Prices and the Extended Model	60
4.3.4 Data and Variable Construction	61
4.4 Empirical Analysis / Results	62
4.4.1 Import Dependence and the External Constraint	62
4.4.2 Export Performance and Structural Breaks.....	63
4.4.3 Balance-of-Payments Constrained Growth.....	65
4.4.4 Explaining Weak Export Growth	67
4.5 Discussion	71
Chapter Five.....	74
Conclusion	74
5.1 Summary of the Thesis	74
5.2 Summary of Findings	76
5.3 Policy Implications	81
5.4 Limitations and Future Research	82
References	84

LIST OF TABLES

Table 3.1: Definitions of Variables Used in the Models	36
Table 3.2: Gender Share of Work Activities.....	36
Table 3.3: Gender Share of Work Activities By Region	37
Table 3.4: Women’s Activity Engagement by Sub-Regions	37
Table 3.5: Logit Regression of The Likelihood of Engaging in Various Activities	40
Table 3.6: Logit Regression of the Likelihood of Engaging in Various Activities by Region	43
Table 3.7: OLS and IV Regressions: Total Household Spending vs. Activities	45
Table 4.1: Import Demand Regression	63
Table 4.2: Export Trend Regressions	65
Table 4.3: Actual Growth and Balance-of-Payments Consistent Growth by Period	66
Table 4.4: Export Demand Regression	68

LIST OF FIGURES

Figure 2.1: GDP Growth and Oil Price Growth in Nigeria 1980–2023	11
Figure 4.1: Export Growth Index.....	64
Figure 4.2: Real Effective Exchange Rate and Official Exchange Rate, 1991–2023.....	69

Chapter One

Introduction

1.1 Motivation and Background

This thesis examines how export concentration, import dependence, and foreign exchange availability have shaped economic growth and development in Nigeria. In this thesis, development is understood as more than growth in output alone. It refers to a process that combines sustained economic expansion with structural transformation, rising productivity, and improvements in living standards. Although integration into the global economy is often associated with opportunities for growth through access to larger markets, technology, and international capital, countries have experienced very different development outcomes under globalization (Jeffrey and Romer 1999; Rodrik 2018). At the same time, the greater role played by international commodity markets and international capital connections has meant that more importance has been placed on external conditions in determining the performance of domestic economies.

However, the benefits associated with globalization have varied significantly between nations, and greater integration has not always ensured continuous development. Although trade and globalization can be expected to produce overall benefits, these are distributed unevenly across countries and regions, and come at the expense of increased vulnerability to external shocks (Autor et al. 2013; Goldberg and Pavcnik 2016; Rodrik 2018; Kose et al. 2009). The vulnerability of many developing economies, as a consequence of their dependence on limited product compositions and their exposure to the volatility of raw commodity prices, is such that economic transformations are extremely reactive to variations in global conditions

(Ploeg 2011; Collier and Goderis 2012; Arezki et al. 2017). Therefore, periods of growth are often tied with good external environments, but falling prices for commodities or changes in the world economy can soon cause a collapse in the gains obtained. This implies a level of dependency from external influences in the sense that performance is still highly dependent on access to foreign currency and international demand circumstances—an issue well-recognized within structuralism and balance-of-payments constraints (Thirlwall 1979; Taylor and Taylor 2004).

This problem becomes particularly acute in countries where the economy is narrowly based on production and exports. Here, exports will be restricted to a few raw materials, while the country's own production will be dependent on imports of raw materials, machinery, and other intermediate goods. Growth in such cases is heavily dependent on international prices of primary products and foreign exchange. Fluctuations in commodity prices directly affect export earnings, while the need to finance imports places a constraint on domestic production and investment when foreign exchange is limited. The link between export concentration, import dependence, and foreign exchange availability has long been recognized as a central feature of development in structurally constrained economies (Thirlwall 1979; Taylor and Taylor 2004; Antonio Ocampo 2017). In this context, external conditions do more than influence economic performance; they shape the pace and sustainability of development.

However, the effects of external conditions are not automatic and do not translate uniformly into domestic outcomes. How changes in commodity prices, capital flows, and foreign exchange affect the domestic economy depend partly on domestic policy and institutional arrangements (Acemoglu et al. 2005), which in this study refer primarily to the ways external earnings and foreign exchange are managed within the economy. For instance,

in most developing countries, the supply of foreign exchange is not neutral, but rather determined by administrative allocations, foreign exchange rate policies, and overall macro-economic policies. Trade and industrial policies may serve to either intensify existing trends of specialization or lead to diversification and economic transformation. The importance of institutions and policies in influencing economic performance cannot be overemphasized, illustrating that differences in country-level performance cannot be explained solely based on external factors (Acemoglu and Robinson 2013; Chang et al. 2002; Ocampo 2017). In this sense, institutions and policies play a crucial role in dealing with external restrictions within the national economy. In this thesis, the focus is primarily on macroeconomic and trade-related policy arrangements, including exchange-rate management, foreign-exchange allocation, fiscal management of oil revenues, and trade and industrial policy, rather than on broader political or legal institutions.

Yet the experience of commodity-exporting economies has not been uniform across countries. In some cases, periods of strong commodity export earnings were accompanied by broader diversification of production and exports, while in others growth remained heavily tied to primary commodities and external market conditions. Indonesia and Malaysia, for example, expanded manufacturing activity and non-resource exports alongside commodity production during important periods of their development process (Jomo 2001). More recent studies on structural transformation continue to emphasize that differences in productive diversification and export structure remain important in shaping long-run development outcomes across developing economies (Andreoni and Tregenna 2020). These differences have raised broader questions about why some commodity-exporting economies were better able to reduce external vulnerability and diversify economic activity over time than others.

Nigeria provides a particularly relevant case for examining these dynamics because periods of high oil revenues were not accompanied by broad diversification of exports or sustained reductions in external vulnerability (Iwayemi and Fowowe 2011; Olayungbo 2019). Since the 1970s, Nigeria has become heavily dependent on crude oil exports, with fuel exports accounting for roughly 85–95 percent of merchandise exports across much of the post-1990 period, while oil revenues also represented a major source of government income and foreign exchange earnings (World Bank, n.d.; IMF, 2021). Over time, this dependence on crude oil exports was accompanied by limited diversification of production and continued reliance on imported manufactured and intermediate goods, increasing the economy’s exposure to external pressures. In addition, domestic production in the country has become highly dependent on imports of various types, especially in relation to capital goods, intermediate goods, and oil products, making the Nigerian economy more vulnerable to the constraints of foreign exchange. Times when there have been high oil prices tend to be linked to increased export earnings, exchange rate stability, and economic growth. At the same time, the gains associated with oil revenues did not spread evenly across sectors, regions, or households within the economy. On the other hand, when there have been low oil prices, there tend to have been foreign exchange problems, exchange rate pressures, less importing, and poor economic performance (Sanusi 2010). In this context, Nigeria provides a useful setting for understanding how external conditions, structural characteristics, and policy responses interact to shape development outcomes in a resource-dependent economy.

Despite these features, there have been times when Nigeria experienced periods of relatively strong economic performance, especially at times when oil prices have been high and there has been increased foreign exchange inflow. This has often occurred during periods

when there has been improved performance of some of the macroeconomic fundamentals, such as higher growth of output, increased government revenue, and stability of the exchange rate. However, Nigeria's economy still relies greatly on the export of crude oil. Non-oil industries continue struggling under constraints relating to the inadequacy of infrastructure, availability of inputs, and foreign currency. It is because of this that periods of growth in the country have been quite sporadic and have been influenced by conditions prevailing outside, rather than internal factors affecting production and productivity. This raises an important question: why have periods of economic expansion not translated into sustained development outcomes in Nigeria? Addressing this question requires examining the interaction between external conditions, domestic economic structure, and the policy and institutional arrangements that shape how these forces are transmitted within the economy.

1.2 Research Question and Central Argument

This thesis addresses the question of why periods of economic expansion in Nigeria have not translated into sustained development outcomes despite periods of rising oil revenues and favorable external conditions. Despite the country experiencing times when its economic performance was quite high, these were relatively short-lived periods and were associated with positive developments in the external environment, such as rising prices for oil and foreign exchange.

The research examines this question through an analysis of the relationship between the external environment and the internal economic structure. More specifically, it looks into how the dependence on a limited set of exports, and the high level of imports can impact development. At the same time, the study examines how domestic policy responses and structural conditions shaped the effects of changes in the external environment.

The central argument is that development in Nigeria results not only from the country's integration within the global economy, but also from the structure of production and the domestic arrangements through which external earnings and foreign exchange are managed within the economy. Where there is limited diversification of exports and high dependence on imports, development is constrained by the amount of foreign exchange available in the economy. As a result, I ask whether this can be explained using the balance-of-payments constrained growth model emphasizes how export performance, import demand, and trade elasticities shape long-run economic growth (Thirlwall 1979). However, the effect of such constraint is dependent on the policies pursued.

This perspective helps explain why periods of economic growth are often followed by slowdowns when external conditions deteriorate. The balance-of-payments-constrained growth analysis focuses on the growth dimension of development by examining how external constraints influence the rate at which the economy can expand over time. In this thesis, sustained growth consistent with external balance is treated as a necessary condition for development, but development also involves structural transformation and improvements in household welfare. This broader understanding of development connects the analysis of external constraints to the historical and household-level dimensions examined elsewhere in the thesis.

1.3 Contribution of the Study

The central contribution of this thesis is to show that the challenges of growth, structural transformation, and household welfare in Nigeria are not separate problems, but different manifestations of the same underlying structural condition. Dependence on a narrow export base for foreign exchange, combined with continued reliance on imported inputs for

production, repeatedly exposed the economy to external pressures that shaped both macroeconomic performance and the opportunities available within everyday economic life. Understanding this relationship helps explain why periods of economic expansion often failed to produce sustained structural transformation and improvements in welfare.

Nigeria's development trajectory was shaped by a long-run process in which external dependence became embedded within patterns of production, trade, and economic management. Episodes of growth, crisis, adjustment, and recovery are therefore interpreted not as isolated events, but as outcomes of a common structural constraint operating through changing external conditions, foreign-exchange availability, and import dependence. This provides a historically grounded account of externally constrained growth that links macroeconomic performance to the evolving structure of production over time.

The consequences of external constraint extended beyond aggregate growth outcomes. The same forces that influenced foreign-exchange availability, production, and economic expansion also shaped patterns of labor allocation, gendered economic activities, and differences in household welfare. In this way, the thesis brings together macroeconomic and household-level perspectives that are often examined separately, showing how the structure of the economy influenced both growth outcomes and the distribution of economic opportunities across society.

The findings also have implications for debates on exchange-rate adjustment in commodity-dependent economies. Despite repeated episodes of depreciation, trade responses remained too weak to substantially relax Nigeria's external constraint. Where exports remain concentrated in crude oil and production depends heavily on imported inputs, changes in relative prices alone are unlikely to generate lasting improvements in external balance. The findings therefore

suggest that the effectiveness of exchange-rate adjustment ultimately depends on the structure of production and trade, pointing to diversification and productive transformation as central components of any long-run solution to external vulnerability.

1.4 Overview of the Study

This thesis focuses on the impact of globalization on development within nations that have a narrow base of production and trade structures. For many emerging nations, development trends tend to be affected by external factors such as the price of commodities, trade flows, and availability of foreign currency, as well as the policy and institutional arrangements through which these are managed. Nigeria provides a relevant case through its heavy dependence on oil exports and import-based production processes.

The study combines three parts that deal with the overall problem. Firstly, it explores the development of the economy of Nigeria over time and evaluates how well the economy responds to the changing external environment. Secondly, it looks into the manifestation of the structure within the households and the activities carried out within them and the outcomes associated with them, particularly in relation to agriculture, trade, and gendered labor allocation. Third, the thesis employs the balance-of-payments-constrained growth framework to examine how export performance, import dependence, and foreign exchange constraints affected the sustainability of long-run economic growth in Nigeria.

In Chapter 2, the focus shifts towards the analysis of Nigeria's economy through a case study approach, looking into growth patterns, structural limitations, and dependency of the economy on external circumstances, alongside the policy and institutional responses that shape their effects. It discusses Nigeria's development from the 1990s up to date, showing that periods of higher growth are often associated with favorable external conditions such as high

prices for crude oil and more foreign currency inflows, as well as the ways in which these are mediated through domestic policy and institutional arrangements. It further reveals that a narrow export basket and high levels of import dependence are common characteristics that impact on economic performance during booms and busts.

Chapter three shifts the focus to the household level. The chapter employs microdata to analyze the division of labor between agricultural production and trading, especially with regard to gender, as well as its impact on the welfare of the household. Instead of analyzing these effects independently of the economy, the chapter shows how they relate to the structure introduced in the previous chapters. This is because in an environment that has had little scope for industrial development and faces continuing outside pressures, households participate in a narrow range of economic activities.

Chapter 4 then provides a way of making sense of these patterns. The chapter draws on the balance of payment constraint growth model to explain how the external environment affects long-term growth. The chapter focuses specifically on how export performance, import demand, foreign exchange availability, and real exchange-rate dynamics shaped Nigeria's long-run growth constraint between 1991 and 2023. In doing so, it provides a macroeconomic explanation for the persistence of external vulnerability and limited structural transformation discussed in the earlier chapters.

The concluding chapter summarizes the main points discussed and highlights their relevance to development. It also considers the significance of the findings regarding Nigeria for other countries that are equally integrated into the global economy but are structurally constrained.

Chapter Two

Nigeria's Growth, Structure, and External Dependence

This chapter assesses the impact of the structure and external environment on the economy of Nigeria. The chapter starts with an explanation of how the structure and external environment constrain economic growth and then examines the historical development of these constraints.

2.1 Analytical Framework: Growth, Structure, and External Constraints

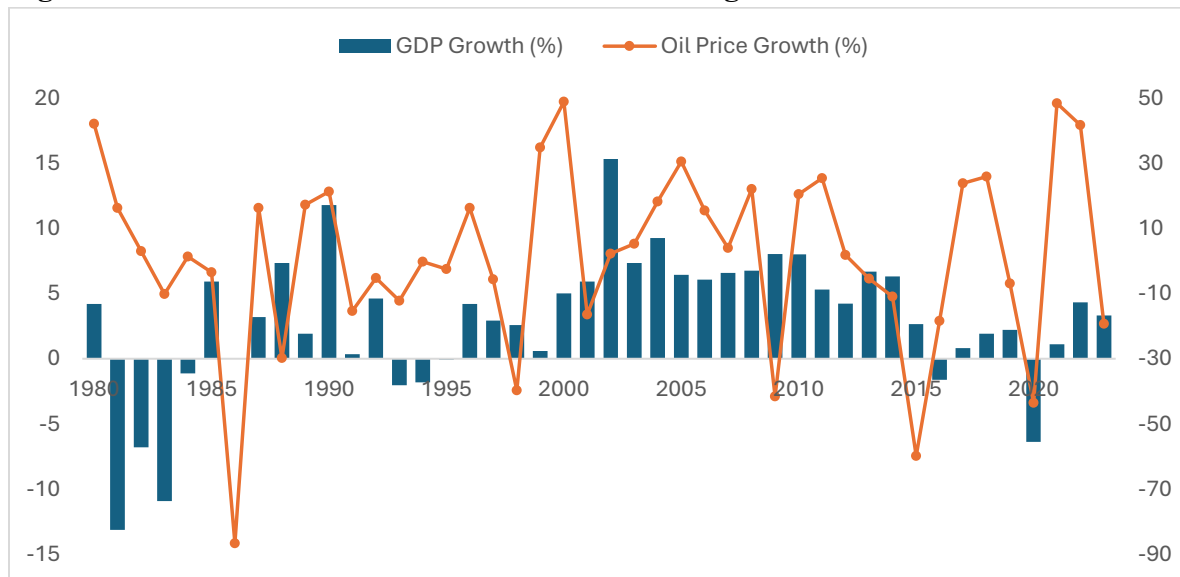
2.1.1 Growth Patterns

The growth performance of Nigeria over the past four decades can be said to have experienced some volatility rather than continuous growth. As shown in Figure 2.1, there is no continuous positive growth trend in GDP, as the figure shows that GDP experiences high volatility over the period of study, with some instances of relative growth followed by some recessions. The volatility shown in the graph is not new as studies that have examined the issue of growth in Nigeria have always argued that the country has not experienced sustainable growth for any extended period of time. For instance, Sala-i-Martin and Subramanian (2013) and Van der Ploeg and Poelhekke (2009) suggest that the episodes of growth in Nigeria are short-lived and highly influenced by external forces rather than by structural changes.

A useful way to look at this pattern is through the external side, focusing on the performance of the country's exports. In Nigeria, its exports are mostly concentrated in its crude oil exports. This means that any changes in the price of crude oil will directly affect the country's export income. This correlation has been extensively studied in oil-dependent countries such as Norway, Nigeria, Saudi Arabia, and Venezuela (e.g., Arezki et al. 2017).

When the price of oil increases, the value from exports increases, and there is an increase in foreign exchange, while exchange-rate movements also influence the economy's ability to finance imports and sustain domestic production. In this way, it becomes easier for the economy to overcome the problem of foreign exchange, which can pay for more imports, including investment and intermediate goods, which will make domestic production easier. On the other hand, a decrease in the price of oil means a decrease in exports and a restriction on foreign exchange, driving up the cost of living, and driving down the standard of living. This model where foreign exchange depends on export earnings follows the balance of payment approach to development.

Figure 2.1: GDP Growth and Oil Price Growth in Nigeria 1980–2023



Source: World Development Indicators and OPEC Annual Statistical Bulletin; author's calculations based on annual GDP and crude oil price data.

Due to the dependence of the Nigerian economy on the importation of production inputs from abroad, the availability of foreign exchange is one of the most critical variables that affect the performance of the economy. Foreign exchange becomes a crucial binding factor whenever firms need machinery, raw materials, and other imported factors of production, as

well as when the entire economy needs foreign exchange for consumption and investment purposes. Whenever there is an abundance of foreign exchange, the binding nature of the constraint reduces, and the growth rate of the economy improves. On the other hand, if the supply of foreign exchange becomes constrained, growth suffers.

The relationship between changes in oil prices and growth experiences can be noted from the figure 2.1. Though there is no perfect synchronicity between the two, phases of better growth are associated with rising oil prices while recessions come after negative shocks in the price level of oil. This is not to imply that the relationship between the two is linear but simply emphasizes the critical role played by the external environment on the economy's performance. Changes in the oil prices will result in foreign income which affects foreign exchange, thus influencing the speed of economic activities. Fuel exports accounted for more than 80 percent of Nigeria's merchandise exports throughout the period under study and exceeded 90 percent in most years. The composition of exports therefore remained heavily concentrated in petroleum products throughout the period. The dependency on such external factors is strongly tied to the structure of export revenue of Nigeria.

There are important implications regarding the high degree of concentration of the country's export basket into one commodity. The reason for this is that whenever there are variations in the commodity markets across the world, they get passed to the domestic economy through its effect on foreign currency receipts. In this regard, the pattern illustrated in Figure 2.1 is further emphasized by the fact that growth results are always in tandem with changes in the external environment. From a wider perspective, it can be said that what Nigeria needs to overcome to achieve sustainable growth goes beyond managing the volatility issue. What Nigeria has to address are its structural limitations due to its narrow export basket and external

dependency, a pattern commonly observed in resource-dependent economies facing volatility in export earnings (Van der Ploeg and Poelhekke 2009; Hausmann et al. 2007).

The relationship between oil prices and GDP growth nevertheless remains uneven rather than perfectly synchronized. This is an indication that prices of oil play a crucial role in determining the Nigerian economy through several channels, such as foreign exchange availability, exchange rates dynamics, and general macroeconomic environment (Iwayemi and Fowowe 2011; Olomola and Adejumo 2006). Also, variations in domestic oil production and disruptions in oil sector can affect exports gains regardless of changes in the global oil price. As a result, changes in oil prices do not always translate immediately or uniformly into domestic economic growth.

2.1.2 Structure of the Economy

The patterns described in the previous section are closely tied to the underlying structure of the Nigerian economy. There are two aspects that are important here: first, the economy's heavy dependency on oil revenues; second, its heavy dependency on imports to manufacture products. These factors combined determine how sensitive the economy is to external changes and explain why the country has continued experiencing growth that is highly volatile in nature.

The composition of exports of the country is characterized by crude oil dominance. As mentioned earlier, exports of fuel play a significant role in total exports of goods, reflecting the specialization of the country in the production of one commodity. This tendency can be traced to foreign exchange earnings as well, given that the majority of earnings come from petroleum products. Therefore, foreign exchange income depends on the state of affairs on the international market, making the country sensitive to external fluctuations. Dependence on one

commodity has become a hallmark of the economy of Nigeria for a long time (Sala-i-Martin and Subramanian 2013; Collier and Goderis 2012; Ajakaiye and Fakiyesi 2009).

The production system within the domestic economy continues to be very much reliant on imports. Production processes involve the use of imported machinery, capital equipment, and intermediate products, while a significant part of the consumption goods is also imported. The situation clearly suggests that there are little domestic manufacturing depths and poor linkage between domestic production systems. In practice, production within various industries becomes impossible in the absence of foreign input. Restrictions on the availability of foreign inputs become immediately visible through low levels of output and slower economic growth. Similar trends have been identified in developing countries due to their heavy reliance on imports and poor industrialization capacity (McMillan et al. 2011).

These features create a particular form of vulnerability. Export earnings are concentrated on oil, while production depends on imports. As a result, external shocks affect the economy from both the income and supply sides. A decline in oil revenues reduces foreign exchange inflows, while at the same time limiting the ability to import the inputs required for production (Arezki et al. 2017). This is why periods of external pressure tend to appear not only as reductions in foreign exchange earnings, but also as disruptions to domestic production itself. When conditions are favorable, the same structure works in reverse, easing constraints and supporting higher levels of activity.

What this points to is a more structural constraint on growth. Production is effectively tied to the availability of foreign exchange, so the pace of expansion depends not only on domestic investment or productivity, but also on the ability to finance imports. In that sense, the constraint is not temporary. It is built into the structure of the economy. Without a more

diversified export base or a reduction in import dependence, exposure to external shocks is likely to remain a defining feature of economic performance.

2.1.3 External Dependence and Macroeconomic Constraints

These structural features identified above create a constant cycle of dependency, which affects the outcome of the economy in Nigeria. Since exports consist mainly of oil but the production process involves imports, foreign exchange becomes a critical issue that affects economic transactions. In this context, changes within the world commodity market do not only affect the country's economy externally because they determine the available resources used to finance imports and production processes.

Fiscal policy consequently shows strong sensitivity to changes in international commodity markets (Abubakar et al. 2023). When there is an oil boom, there tends to be quick rise in government expenditure, while during times of low prices, fiscal adjustments and cuts in government expenditure tend to follow suit.

The same problems extend into exchange-rate management and monetary policy. Since production across many sectors depends heavily on imported inputs, foreign exchange shortages quickly generate exchange rate instability and rising domestic prices. Firms struggling to obtain foreign exchange must either reduce imports or absorb higher import costs, both of which increase production costs within the domestic economy. During periods of external pressure, monetary authorities are often forced to concentrate on inflation control, reserve protection, exchange-rate management, and foreign exchange administration instead of broader developmental objectives. Exchange-rate depreciation raises production costs, discourages investment, and adds pressure to the wider economy (Alege and Osabuohien 2015; Aliyu 2009).

The implications go beyond what is seen in macroeconomic statistics. With the increase in foreign exchange problems, businesses face problems in securing imported materials, delays in manufacturing activities, and difficulties financing expansion and investment. Exchange rate depreciation also affects purchasing power through high costs of imported products and other consumption items associated with international trade (Oyadeyi et al. 2024). Inflation resulting through these processes lowers the standard of living of households as a result of reduced real income. Employment conditions also become more fragile as businesses struggle with rising costs and unstable production conditions. External dependence, in this sense, becomes embedded within everyday economic life rather than remaining confined to trade and finance alone.

The broader problem that faces Nigeria is not necessarily the changes in oil prices. It lies in the combination of high reliance on few exports, heavy imports, and lack of diversification. Although good external environment will help to overcome foreign exchange problems and create high economic activities, any downturn will immediately pose problems in fiscal imbalance, exchange rate, inflation, production, and living standards. Such system has led to the emergence of a pattern where periods of economic growth have continuously been subjected to disruption through external shocks and foreign exchange rate instability. As a result, the economy continues to be vulnerable to changes in the external environment and unable to sustain long-term development.

2.2 Historical Evolution of Nigeria's Economy

The trends outlined above can be observed very clearly within the performance of the Nigerian economy over time. Instead of relying on internal improvements within the country's productivity levels, instances of improved economic growth have been associated with favorable conditions abroad, such as higher prices for crude oil and foreign exchange. Conversely, economic downturns have tended to be preceded by lower oil income and foreign exchange shortages. This section focuses on how the described trends have unfolded over the past decades, from the 1990s, highlighting the crucial stages in the development of the Nigerian economy and demonstrating the impact that changes in the external environment have had on its economic performance.¹

2.2.1 1990s: Adjustment and Instability

There was poor performance characterized by low growth rates coupled with an unstable macroeconomic environment in Nigeria during the 1990s. Economic growth rates were slow with agriculture and crude oil still being dominant in the economy without much progress in industries. Inflation was high, yet there were expansionary policies in the budget and money supply areas. Part of the reason was that the Nigerian government depended on revenues from oil, while government spending became an important means by which military governments sustained patronage network and political support. It was thus politically risky to cut back on government expenditure during this period. Rather than pursuing strict stabilization policies, the governments continued their pattern of spending and monetary expansion despite

¹ This historical synopsis draws primarily on annual reports of the Central Bank of Nigeria (CBN) covering the period 1990–2023, complemented by macroeconomic data from the World Development Indicators (WDI), downloaded in September 2025.

rising inflation. The exchange rate instability and the country's dependency on imports added to the pressure by increasing the domestic cost of imported goods and industrial inputs. The economic balance of payments position was weak since revenues from foreign exchange came from oil despite a high demand for imports.

Early 1990s: Macroeconomic Instability and External Pressures

The economy underperformed during the early years of the decade. The rate of growth was lower compared to that in the latter half of the 1980s. Economic growth occurred mainly within the agricultural sector, where the industry sector was experiencing a slowdown. Low levels of manufacturing prevailed because companies were working at reduced capacities owing to high production costs, inadequate availability of raw materials, and weak physical infrastructure. High rates of inflation emerged because of increases in domestic liquidity and higher production costs.

Pressures were exerted on the external sector as well during this period. There was a balance of payment deficit, and there was also depreciation of the naira due to the increase in the need for foreign exchange. The demand for imports was high, and the level of exportation was minimal without much change. Shortages of foreign exchange started to influence production since companies faced problems sourcing their raw materials from the international market. Even though policy interventions were put in place to try and stabilize the exchange rate and prices, the impacts were insignificant.

Mid-1990s: Economic Contraction and Deepening Instability

The economy faced tough times towards the mid-decade when growth rates declined severely and industries performed even more poorly, resulting in declining output from the

manufacturing industry year after year. Factories had to work at lower capacities owing to lack of foreign exchange, increased cost of production, and low demand in the markets. The economy also witnessed severe inflation rates, which adversely affected people's purchasing power. These conditions show that there was no macroeconomic stability and hence, previous efforts in reforms were unsuccessful in improving productivity.

The external environment faced great tension. Shortages of foreign exchange made it harder for firms to purchase their imports and impacted their capacity to produce. The level of imports fell, not due to an improvement in production, but due to a shortage of foreign exchange, which made it difficult to acquire their requirements. On the other hand, there was still no improvement in non-oil exports, and oil exports remained critical for earning foreign exchange. Inflation and exchange rates had a mutually reinforcing impact, which further complicated the process of regaining confidence.

Late 1990s: Partial Stabilization Without Structural Change

Towards the end of the decade, there were indications of improvement in economic performance, partly owing to high oil prices, tightened monetary policies, as well as measures taken to manage inflation and exchange rate pressures. The move to civilian government also helped create some improvements in investor confidence and macroeconomic management. There was growth in the economy, lower levels of inflation, and sounder macroeconomic management. The financial system also indicated signs of improvement, as did exchange rate stability. This was partly due to tighter monetary policy and better control of domestic liquidity. However, the improvements remained minimal since they were largely based on agricultural and petroleum activities.

In spite of this, the external sector registered some progress during the decade as the price of oil went up towards its end. It helped the balance of payments and relieved some of the stress in the foreign exchange market. However, despite this, the balance of payments continued to suffer because of high debt servicing costs, and the naira continued to come under pressure. The amount of non-oil exports was still very low, and there was no significant transformation in the structure of production. The minimal improvement in the foreign exchange situation did not lead to any development in the area of export capacity. Thus, the economy came out of the 1990s facing the same challenges that it had been facing before. The gains of the late 1990s therefore depended largely on recovering global oil prices and the resulting improvement in foreign exchange earnings rather than on any major structural transformation within the domestic economy.

2.2.2 2000s: Oil-Driven Growth, Debt Relief, and Apparent Macroeconomic Stability

From the 2000s, there was a marked improvement in the country's macroeconomic situation, as rising oil prices translated into large foreign exchange inflows. This helped reduce external pressures that had constrained Nigeria in the 1990s. The stronger foreign exchange position allowed for higher public spending, accumulation of external reserves, financial sector reforms, and improved macroeconomic stability. The growth momentum picked up, there were positive external balances, and increased income from oil exports allowed for an increase in spending as well as financial sector reforms. All these factors gave the impression that the economy had become much more resilient. However, there was little change in the industrial/production pattern of the economy. Crude oil remained dominant in export receipts, non-oil industries were small-scale, and production depended on imports. Consequently, gains in the economy's macroeconomic performance continued to be linked more to external factors

rather than internal factors affecting productivity. In such a scenario, economic growth during the decade was largely attributable to positive external conditions, yet no change in the economic growth trend occurred because of the macroeconomic improvement.

Early 2000s: Recovery, Reforms, and the First Oil-Price Upswing

The beginning of the 2000s was characterized by a process of slow recovery after the instability of the previous years. The average growth rate during 2000 to 2001 was approximately 4 percent, mainly fueled by agriculture and the service sector, aided by infrastructural investments and the development of GSM technology (Central Bank of Nigeria 2000). However, such growth was not indicative of overall improvement in the productive structure. The manufacturing sector had not recovered, suffering from erratic electricity supply, high production costs, and a lack of technology upgrade.

Events in the external sector determined the nature of this recovery process. High oil prices created a current account surplus that allowed for the buildup of foreign currency reserves, thus helping stabilize the exchange rate. On the other hand, the structure of the exports did not change substantially. Oil continued to dominate foreign exchange earnings, whereas non-oil exports made very little contribution. Growth in domestic demand led to an increase in imports, thus creating demands for foreign exchange alongside economic growth. Balance of payments problems became evident once again. Balance of payments problems experienced by the economy in 2001 amid high oil prices highlighted the difficulties in generating foreign exchange outside oil.

Mid-2000s: Oil-Revenue Windfalls and Strengthened External Balances

By mid-decade, steady rises in crude oil prices generated sizable external surpluses and a rapid build-up of foreign exchange reserves. There was improvement in the current account position and stabilisation of the exchange rate due to better foreign exchange inflows. These factors helped create a more stable macroeconomic situation and facilitated further growth in domestic demand. Economic growth continued to be reasonably good, with agriculture and services dominating the expansion in output.

Yet the growth process itself was still characterised by imbalances. Industrial growth was rather tepid, while industrial production fell even though external conditions were favorable. Electricity generation was weak, adversely affecting energy-intensive industries and restricting domestic production growth. Consequently, economic growth did not match growth in productive capacity.

The relationship between increased oil export revenues and domestic demand served to illustrate the shortcomings associated with this process of growth. High foreign flows led to greater liquidity and helped boost consumption, yet import demand grew along with this, placing increasing pressure on the foreign exchange account despite improvements elsewhere. High inflation persisted because of bottlenecks in production. The imbalance between external incomes and domestic productive capacity continued, as did the underdevelopment of the non-oil tradeable sector, insufficiently large for any real change in the overall economic structure. Surpluses abroad occurred amid pressure in the external accounts, due to higher import demands. In this situation, improvements in macroeconomic aggregates were dependent on external factors rather than the structure of the economy itself.

Late 2000s: Global Commodity Boom and External Pressures

During the later part of the 2000s, the world economy experienced a commodities boom that pushed oil prices to record highs. Although disruptions in the Niger Delta weakened oil production and reduced industrial output in 2008, high oil prices still generated large export earnings and foreign exchange inflows that supported domestic demand and public expenditure. The economy grew at a rate of 6 percent in 2008 due to the performance of the agriculture sector, the services industry, and construction. The increase was largely attributed to strong internal demand and good external environment, not industrial expansion. Manufacturing activity remained subdued, and the supply of power continued to decline. Much of the expansion was driven by oil earnings, domestic demand, construction, and services rather than by industrial transformation or rising productive capacity. As a result, the economy experienced rapid growth without corresponding improvements in infrastructure and manufacturing performance.

The high price of crude oil was one of the factors that improved the balance of payments, which helped improve the balance of payments surplus and increase foreign exchange reserves. The situation did not last long because, during the global financial crisis, capital outflows occurred, putting more pressure on the value of the naira. Inflation rose due to rising food and fuel costs globally.

Consequences of the economic crisis spread to the internal financial system as well. Stock prices fell dramatically; there was a decrease in credit flows and loss of investors' confidence. As a result, the Central Bank provided liquidity to the banking sector, reduced the Monetary Policy Rate by 100 basis points, and became more involved in the foreign exchange market because of the impact of capital flight and falling oil prices on the naira and the financial

system. This was enough to provide stability to the financial system, but the measures failed to deal with the underlying problems in the economy. It became apparent that the quick transition from external surplus to deficit under the new international circumstances resulted from dependence on oil revenues and the inability to generate sufficient foreign exchange flows in other industries.

2.2.3 2010s: Oil Price Collapse and Renewed External Constraint

The period between 2010 and 2019 witnessed a transformation in the economic growth trajectory of Nigeria. While the economy started off with a decent level of output and some growth in non-oil activities, both were supported by a small base and narrow structure of exports. Meanwhile, there was heavy reliance on imports, double-digit inflation, and poor performance in the labour market. Long before the fall in the price of oil in 2014, the balance of payments had already become tighter because of higher growth in the demand for imports than in the receipts of non-oil exports, thereby reducing the cushion of foreign exchange resources.

Early 2010s: Strong Output but Deepening Structural Vulnerabilities (2010–2013)

Strong economic growth characterized the initial years of the decade. The economy grew at a rate exceeding six percent during 2012 due to growth in agriculture, services, and industrial sectors. Improvement in electricity production and telecommunications investments resulted in such growth, while manufacturing witnessed some progress in utilization. However, little changed in terms of structure of the economy during the period despite the mentioned changes. Most industries depended on imports for their input needs, while productivity growth

remained low. In addition, inflation exceeded the target set by the central bank. Employment levels were relatively high, implying insufficient broad-based economic growth.

The external environment was conducive to stability at this point. The price of oil was high enough to keep the current account in surplus and build up foreign exchange reserves. There was no change in the composition of the exports. Oil was the main source of foreign-exchange income while the exports of other products were relatively insignificant. Meanwhile, there was a growing import of capital and intermediate products as economic activities picked up, leading to greater demand for foreign exchange. Foreign portfolio investment was a positive element for the financial account while foreign direct investment was declining.

Mid-2010s: Oil-Price Collapse, Recession, and a Weak Recovery

However, mid-decade saw a dramatic change in economic fundamentals. The decline in world oil prices after 2014 had a major impact on the amount of export revenue generated. In 2015, the rate of growth had been sharply reduced, and there were problems for the non-oil economy in terms of increased input prices, energy shortages, and difficulties accessing foreign currency. The decrease in export revenue affected the availability of foreign currency required to produce and consume at home. The country experienced a current account deficit and depletion of reserves as the central bank tried to cope with increased foreign exchange pressure.

Economic activities slowed down in 2016, leading to the first economic recession in years. Companies cut back on their operations or closed their doors, leading to job losses due to difficulties in accessing imported materials. Foreign currency shortages resulted in low output levels within industries utilizing imported materials. The subsequent revival in 2017 was slow and inconsistent. There were positive trends in the economy, such as growth in oil production and the foreign currency management system. However, non-oil sectors were still

sluggish, and numerous industries were operating under high costs. The rate of economic revival was determined by how reliant the country's economic activities were on foreign currencies.

Late 2010s: Weak Growth and a Persistent External Constraint

Growth for the latter part of the decade was sluggish, with growth registering a small rise in 2019. Growth was buoyed by services and agriculture sectors, whereas the industrial sector continued to be hampered by deficiencies in infrastructure and high costs of production. The gradual growth pattern pointed to underutilization of productive capacity as a result of the prior economic slowdown.

External environment became increasingly vulnerable during this period. First, the balance of payments recorded a deficit position because of the continued strength in import demand coupled with non-performance in the non-oil exports. The dependence on oil as an earner of foreign exchange revenues, together with the increase in the imports of capital and intermediate goods, raised the demand for foreign exchange resources. There were continuing discrepancies between foreign-exchange revenues and the amount required to meet import obligations, thus exerting constant strain on the external front. Reserves fell, and the exchange rate had to be stabilized through monetary policy actions.

The shock resulting from the pandemic in 2020 made these problems more evident. The fall in the price of crude oil as well as in the demand made earnings from the country's exports smaller, while the effects of internal policies negatively impacted economic performance. The contraction of the country's output coupled with the rising deficit of the current account made the situation worse, as fewer funds entered the country. Due to such an impact, the economy had less foreign exchange available for sustaining output in difficult

circumstances. There were no new problems in the structure of the economy caused by the recession, but already present ones became visible instead.

2.3 Conclusion

Over the three decades, a certain trend appears to characterize the economic performance of Nigeria. Whenever there was better economic performance, it would usually correspond with favorable external conditions, especially higher prices of crude oil, while periods of poor economic performance would be characterized by unfavorable external performance, specifically low foreign exchange income. During the 1990s, there were constraints on exports as well as insufficient foreign exchange income which resulted in macroeconomic instability. However, during the 2000s, the situation changed temporarily due to higher oil incomes resulting in external surpluses and foreign exchange reserves, but the production and exports were still unchanged. The last decade revealed the vulnerability of the Nigeria economy due to lower prices of oil.

During all these periods, the basic characteristics of the economy did not change significantly. The export proceeds from crude oil still accounted for the bulk of export proceeds; non-oil exports did not increase much; and the domestic manufacturing sector depended greatly on imports of raw materials. Hence, any expansion in production led to higher demands for foreign exchange, whereas reductions in foreign exchange receipts resulted immediately in reduced production. From these trends, one can deduce that growth in the Nigerian economy can never be analyzed without considering its external sector and structure of trade and production.

Chapter Three

Gendered Activities: Men Farm, Women Trade, Or Is It Less Clear-Cut?²

The previous chapter examined Nigeria's growth dynamics from a macroeconomic perspective, emphasizing the role of external constraints, particularly those arising from oil dependence and foreign exchange availability. While this provides an explanation for the volatility of aggregate economic performance, it leaves open the question of how these structural features translate into outcomes at the micro level. This chapter addresses this gap by examining how economic structure shapes patterns of participation in agricultural value chains, with a focus on gender differences and their implications for household welfare.

Abstract

The study explores gender participation in agricultural value chains, showing how roles are differentiated across genders and regions. The study fills an important gap in the literature which takes gender disparities as uniform and ignores subnational differences in farming and trading activities, with a focus on Africa's most populous country, Nigeria. We estimated gender differences in participation, and compared welfare outcomes, using a combination of logit regression models, and instrumental variable estimation, that control for unobserved factors in the model. Household consumption expenditure is used as a proxy for welfare in the data, the most recent General Household Survey, covering more than 32,000 individuals. We find that men dominate farming, while women tend to dominate retail and wholesale trade, but with large regional differences that blur these distinctions. Being a woman implies a lower

² This chapter is based on joint work with Michael Olabisi. References to “we/our” reflect co-authored work.

probability of farming, but almost doubles the likelihood of being engaged in wholesale and about triples that of retailing compared to being a man. The regional differences matter. In the southern regions of the country, women are more diversified across farming and trade activities relative to the north. In assessing the impact of the allocation of activities by gender, we show that farming households spend the least, while households with wholesalers have significantly higher expenditures.

3.1 Introduction

Gender disparities in labor force participation continue to matter in high- and low-income economies. The disparities matter for household welfare in most developing economies, where agriculture remains the primary source of income, and the division of labor between men and women is unequal, and shaped by different cultural norms, access to resources, and shifts in market dynamics (Pandey et al. 2021; Komatsu et al. 2018). Women still grapple with reduced access to land and agricultural inputs, and less control over financial resources that are crucial for farming or trading farm products (Kilic et al. 2015; M. Olabisi et al. 2023). One open question that results from these disparities, is how much they create differences in the shares of men and women who farm, or who trade farm products.

A robust body of research studies captures the differences in gender participation by profession in several developing economies (Ashaley-Nikoi and Abbey 2023; Njiru et al. 2024; Fischer and Qaim 2012; Diiro et al. 2018). The differences in participation matter, as they affect household income (Ogutuu et al. 2020; Knöblsdorfer et al. 2021). In developing economies where a majority of households are involved in agriculture, it is important to consider how gender differences feature in different geographic regions and at various stages of the food value chain.

There is a remarkable gap in this literature: the absence of studies that document regional and intra-national differences in gender-participation gaps. Furthermore, looking at how regional differences in gender participation evolve through the stages of food value chains promises new insights. Most of the literature presents gender gaps as nationally uniform, overlooking how specific subnational cultural patterns may shape the most salient outcomes (Pandey et al. 2021; Komatsu et al. 2018; Karamba and Winters 2015). On the contrary, a growing literature shows that these sub-national differences matter, either in infrastructure (Fisher and Naidoo 2016; Van den Broeck et al. 2023), or market access and sociocultural norms (Dhar et al. 2024). The oversight by researchers here, hides the lived experiences of women and men whose roles in agriculture are spread unevenly across different sub-national units and regions.

Women's participation in agricultural value chains does not automatically improve their economic outcomes. There are documented differences in scale by gender for example, that matter for household outcomes (Anang et al. 2016). Even though women participate in market-linked agricultural chains-segments beyond on-farm production that connect outputs to buyers (processing, transport, wholesaling, and retail)—the economic benefits are often shared unequally, with male household members more likely to gain the rewards when women have no control over resources (Knöbelsdorfer et al. 2021). In northern Nigeria's tomato corridor, for example, women participate more in retail markets, but men usually control bulk purchasing, price-setting and profits through market associations (Liverpool-Tasie et al. 2023).

This study contributes to the first (we know of), that documents how gender participation changes from farming to wholesale and retail, at different rates for different sub-regions of a developing economy. Our thesis is that the sub-national differences matter for how

national and development policies should be structured, since gendered participation is not uniform but is mediated by geography.

Our study therefore complements previous articles that show gender differences in participation in farming (Knöblsdorfer et al. 2021; Njiru et al. 2024; Fischer and Qaim 2012; Kawarazuka et al. 2022; De et al. 2024; Coles and Mitchell 2011; Asadullah and Kambhampati 2021). Our main addition to this literature is showing that gendered divisions extend beyond farm production into wholesale and retail segments and that these effects vary sharply by region. Considering retail and whole-sale activities is important, because as we show, incomes from these activities differ notably from farming.

The analysis presented in this study is among the first to document gender differences in participation in wholesale markets in a developing economy such as Nigeria. Seminal papers on this topic show differences for Kenya (Diirro et al. 2018; Oduol et al. 2017), India (Pandey et al. 2021; Waris et al. 2016), and Malawi (Karamba and Winters 2015). The innovation in this study is the use of a nationally representative survey (rather than a market survey) to document differences in the prevalence of gender at different stages of the value chain.

Building on this contribution, we offer a framework that can help guide policy discussions on how to improve women's access to economic activities both in agriculture and trade. This study helps to identify where the constraints are most binding and where targeted support may be most effective by investigating the patterns across regions and activities. This same approach could be considered in other settings where gender roles in agriculture and commerce shape household welfare, making this analysis relevant beyond Nigeria.

3.2 Materials and Methods

3.2.1 Data

This study uses data from the Nigeria General Household Survey, a nationally representative living standards measurement survey, which was implemented by the Nigerian National Bureau of Statistics, in collaboration with the World Bank Microdata Library. Data was collected in multiple waves, each wave covering 2 visits: Post-Planting and Post-Harvest. For this study, we focus on wave 5 (2023/24), as it provides the most recent and comprehensive data on labor activities, demography, and agricultural participation. This survey was carried out in the 37 states of Nigeria covering rural and urban households in the six geopolitical zones. We accessed the survey data in July 2025 from the World Bank website. No information from the data could be used to identify individual participants during or after data collection. The wave 5 survey consisted of 4,771 distinct households and 32,009 total individuals.

For our study, the main unit of analysis is the individual, with household-level variables used to contextualize the results. We focused on individuals reporting primary participation in agricultural value-chain activities or specific non-farm sales activities, given the importance of agriculture to the economy (Nwankwo et al. 2024). We included only respondents with complete demographic and labor activity information. This targeted focus allowed us to explore gender and regional differences throughout the value chain.

We organized all reported activities into four categories: Farming, Agricultural Labor, Wholesale and Retail Trade, and ‘Other’, for all other occupations.

3.2.2 Empirical Strategy

Our analysis proceeds in two stages. First, we examine the factors that shape an individual's likelihood of working in farming, wholesaling, or retailing. Second, we study how these activity choices relate to household welfare. To do this, we use three models: a logit model, ordinary least squares (OLS), and an instrumental variable (IV) model.

The dependent variables for participation in farming, wholesale, and retail take the value 1 for participation and 0 otherwise. Therefore, we use a logit model to estimate the probability that an individual engages in each activity while controlling for personal and household characteristics. The logit estimator is usually more robust to outliers, and we do not want to presume that our latent variable has a normal distribution. This allows us to examine how gender, education, location, and other factors shape participation in different parts of the value chain. The inclusion of these variables is supported by theory, as well as past research showing that the choices and opportunities for work are shaped by the variables (Komatsu et al. 2018; M. Olabisi et al. 2023; Ogutu et al. 2020).

For individual i in region r , the probability of engaging in activity j is modeled as:

$$Pr(Y_{ij} = 1) = \frac{\exp(\beta_0 + \beta_1 Female_i + \beta_2 X_i + \beta_3 Z_r)}{1 + \exp(\beta_0 + \beta_1 Female_i + \beta_2 X_i + \beta_3 Z_r)} \quad (3.1)$$

Where Y_{ij} denotes participation in farming, wholesale, or retail trade; X_i includes gender, sector, age, education, marital status, land ownership, house ownership; and Z_r are regional dummies. Gender is a categorical variable and takes 0 for male and 1 for female. The age variable is a categorical variable that takes the following values: less than 35 years, 35–50 years, 51–65 years, and above 65. The education variable is a dummy that captures whether the respondent has ever attended school (Yes = 1, No = 0). Marital status is a categorical variable—Married, Never Married, and Others. Land ownership is a dummy variable equal to

1 if the household owns land and 0 otherwise. The rural–urban indicator is a dummy variable equal to 1 for rural residents and 0 for urban residents. Zone dummies are also included, covering North Central, North East, North West, South East, South South, and South West.

To assess welfare differences, we use total household consumption expenditure as the outcome variable. OLS provides a simple way to compare the spending levels of households that engage in different activities.

Household welfare is estimated as:

$$C_h = \alpha_0 + \alpha_1 Activity_h + \alpha_2 X_h + \mu_h \quad (3.2)$$

Where C_h denotes household consumption expenditure, $Activity$ captures the household's main value-chain engagement (farming only, retail only, wholesale only, or combinations), and X_h includes household characteristics.

However, because occupational choice may be endogenous, and may be influenced by unobserved factors that are not captured in the data, we also estimate an IV model to obtain more reliable estimates of the effect of activity choice on household welfare. Our instruments are the averages for the locality or enumeration area of each household of occupational categories. The IV approach helps us separate the effect of activity choice from the unobserved influences that usually make activities clustered by area.

The IV model takes the form:

$$First\ stage: Activity_h = \gamma_0 + \gamma_1 Instrument_h + \gamma_2 X_h + \varepsilon_h \quad (3.3)$$

$$Second\ Stage: C_h = \alpha_0 + \alpha_1 Activity_h + \alpha_2 X_h + \mu_h \quad (3.4)$$

Where $Instrument_h$ is an exogenous factor correlated with activity choice, in this case, the average activity choice of other households in the area, but not directly with household

expenditure. This approach allows us to isolate the welfare impact of participating in different value-chain activities.

Table 3.1 summarizes the variables used in the estimation steps, and how they contribute to the estimations. The category with the value zero (0) served as the baseline for each categorical variable, except for the marital status variable, for which we used the category labeled ‘Others’—the category with widowed, separated or divorced persons, as the baseline. We used the North Central zone as the baseline for geo-political zone categories in Table 3.5.

3.3 Results

3.3.1 Descriptive Statistics

Table 3.2 highlights the gendered share of activities participation in agricultural value chain in Nigeria. Men dominate farming (61.1%) and agricultural labor (76.5%), while women dominate retailing (74.4%) and wholesaling (65.8%). These figures show that women are more engaged in sales and trading roles, suggesting gendered division of labor in agriculture value chain, with men more engaged in production and physically intensive tasks, while women are more engaged in distributional tasks.

Table 3.3 shows how these activities are distributed across the regions. Farming is almost evenly distributed in the south, with slightly higher participation from women (53.1%) compared to men (46.9%). However, in the North, farming is pre-dominantly by men (68.6%), with women having the lower share (31.4%). In the same vein, agricultural labor is slightly dominated by women in the South but is highly dominated by men in the North. However, in trade-related roles, women are more concentrated in both retailing (81.5% and 68.9%) and wholesaling (75.6% and 55.7%) in both regions, although more pronounced in the South. The “Others” category includes all non-agricultural and non-agricultural-trade occupations

reported in the survey. These include paid employment (civil service, teaching, security services), skilled and semi-skilled trades (tailoring, welding, carpentry), transport work, construction labor, domestic services, and self-employment outside food markets.

Table 3.1: Definitions of Variables Used in the Models

Variable	Role(s)	Description	Coding
Farming participation	Dependent (logit)	Individual works on own or family farm	Dummy: 1 = participates, 0 = otherwise
Wholesale participation	Dependent (logit)	Individual works in wholesale trade	Dummy: 1 = participates, 0 = otherwise
Retail participation	Dependent (logit)	Individual works in retail trade	Dummy: 1 = participates, 0 = otherwise
Household consumption	Dependent (OLS, IV)	Total household expenditure (welfare measure)	Continuous (Naira)
Gender	Independent	Respondent is female	Dummy: 1 = female, 0 = male
Sector	Independent	Location of residence	Dummy: 1 = rural, 0 = urban
Education	Independent	Ever attended school	Dummy: 1 = no schooling, 0 = attended school
Age group	Independent	Age category of respondent	<35; 35–50; 51–65; >65
Marital status	Independent	Respondent's marital category	Married; Never married; Others
Land ownership	Independent	Household owns agricultural land	Dummy: 1 = owns land, 0 = Does not own land
House ownership	Independent	Household owns dwelling unit	Dummy: 1 = owns house, 0 = does not own house
Zone	Independent	Nigeria's geopolitical zone	0 = North Central; 1 = North East; 2 = North West; 3 = South East; 4 = South South; 5 = South West
Average activity type	Independent (OLS, IV)	Households' main activity, averaged by enumeration area	Seven binary variables indicating: farmers only; retailers only; wholesalers only; farmers + retailers; farmers + wholesalers; wholesalers + retailers; farmers + wholesalers + retailers.

Table 3.2: Gender Share of Work Activities

Activity	Total	Male		Female	
		Freq	%	Freq	%
Farmer (own or family farm)	8548	5220	61.1	3328	38.9
Agricultural laborer	196	150	76.5	46	23.5
Retail trade (street vendor)	1221	313	25.6	908	74.4
Wholesale and shop-keepers (warehouse)	931	318	34.2	613	65.8
Others	4433	2493	56.2	1940	43.8

Table 3.3: Gender Share of Work Activities By Region

Activity	South				North			
	Male		Female		Male		Female	
	Freq	%	Freq	%	Freq	%	Freq	%
Farmer (own or family farm)	1397	46.9	1581	53.1	3823	68.6	1747	31.4
Agricultural laborer	25	48.1	27	51.9	125	86.8	19	13.2
Retail trade (street vendor)	98	18.5	432	81.5	215	31.1	476	68.9
Wholesale and shop-keepers (warehouse)	116	24.4	359	75.6	202	44.3	254	55.7
Others	1072	59.9	719	40.1	1546	44.0	1970	56.0

Table 3.4 shows the extent of women's engagement in each activity of the value chain. The table shows that over-all, women are most engaged in farming with 58.7%, although the extent varies across the sub-regions, with high-est involvement in the North Central (64.6%), moderate in the Core South—which comprises the South-South and South-East geo-political zones, (59.9%), and least in the Core North—made up of the North-West and North-East zones, (36.3%) and the South West (21.2%) respectively. Very few persons, especially women, engage in agricultural labor in all sub-regions as the shares are not greater than 1%. (Table 3.2 shows farm-labor as 1.3% of reported activities, i.e., $196/[8548+196+1221+931+4433]$). Women in Nigeria's South-West zone are more engaged in trade-related activities in the value chain, as 19.9% women are seen in retailing and 21.4% in wholesaling. The Core North and Core South also see significant share of women in trade with 14.3% in retailing and 7.4% in wholesale in the Core North, while 12% and 8.4% of women are seen in Core South.

Table 3.4: Women's Activity Engagement by Sub-Regions

Activity	Core North		Core South		North Central		South West		Overall	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Farmer (own or family farm)	842	36.3	1423	59.9	905	64.6	158	21.2	3328	48.7
Agricultural laborer	5	0.2	24	1.0	14	1.0	3	0.4	46	0.7
Retail trade (street vendor)	331	14.3	284	12.0	145	10.4	148	19.9	908	13.3
Wholesale and shop-keepers (warehouse)	172	7.4	200	8.4	82	5.9	159	21.4	613	9.0
Others	967	41.7	443	18.7	254	18.1	276	37.1	1940	28.4
Total	2317	100.0	2374	100.0	1401	100.0	744	100.0	6835	100.0

3.3.2 Regression Analysis

We used regression models to estimate gender differences in participation. To document differences in consumption, as an indicator of welfare, we used household-level consumption expenditure. (Individual-level consumption data is not available). The logit regression estimates in our analysis were reported as odds ratios to simplify the interpretation of the results.

The logit regression from Table 3.5 provides evidence on the likelihood of participation in activities. The result shows that women are 49% less likely to participate in farming compared to men, on average ($p < .05$). However, women are 35% ($p < .01$) and 189% ($p < .05$) more likely than men to participate in wholesale and retail activities respectively. This is consistent with the descriptive statistics in the Descriptive Statistics Section, which show men over-represented in farming, relative to their share of the population. Individuals in rural areas are 164% more likely to participate in farming ($p < .05$), 69% less likely to participate in wholesale ($p < .05$) and 58% less likely to participate in retail ($p < .05$). This reflects the structural divide within agricultural production, which is largely in rural, and trade in urban Nigeria. The interaction term shows that rural women are 60% ($p < .05$) more inclined to diversify into trading activities, pointing to trade as a key livelihood strategy for women in rural settings. For the age variable in Table 3.5, relative to individuals under 35 years, those aged 35–50 are 33% less likely to participate in wholesaling ($p < 0.05$) and 29% less likely to participate in retailing ($p < 0.05$), while showing no statistically significant difference for farming. Individuals aged 51–65 are 45% less likely to participate in wholesaling ($p < 0.01$), with no significant differences in farming or retailing. In contrast, individuals aged 65 and

above are 65% more likely to participate in farming ($p < 0.01$), while their participation in wholesaling and retailing does not differ significantly from the under-35 group.

Education also appears to play a role in determining entry into the value chain. Individuals with no education are 38% ($p < .05$) more likely to go into farming, but are also 38% ($p < .05$) less likely to trade. Education can thus be seen as providing the required human capital for going into trade-related activities, relative to farming, while increasing the odds of entering other professions relative to retail or wholesale trade. Marriage and home ownership, particularly for women, appears to provide additional household resources and networks that can be leveraged to establish small-scale trading activities. This is evident from our result, as married individuals are 26% ($p < .05$) less likely to go into farming, but 39% ($p < .05$) more likely to go into trade (wholesale). As expected, people who own land are 335% (28.6 times odds) more likely to farm ($p < .05$), and about 80% less (0.41 times odds) of trading.

Regional differences reveal the heterogeneity of gender participation in Nigeria's sub-regions. In the North East (43% ($p < .05$)) and the North West (73% ($p < .05$)), individuals are less likely to farm but more likely to engage in retailing compared to the north central. By contrast, in southern regions, women are more heavily engaged in both farming and trading. This means that gendered divisions of labor are not uniform, but are mediated by geography, culture, and local economic structures.

In Table 3.6, we disaggregate the logit regression by region (North vs. South) which is helpful to show the regional contrast of the variables. From the table, we show that the odds of women participating in farming is lower in the North (47%) ($p < .05$) as well as the South (45%) ($p < .05$), while the odds of participating in trade (wholesale and retail) is higher for women, compared to men.

Table 3.5: Logit Regression of The Likelihood of Engaging in Various Activities

	<i>Dependent variable: Activity</i>		
	Farming	Wholesaling	Retailing
	(1)	(2)	(3)
GENDER			
Female	-0.68*** -0.1	0.30* -0.17	1.06*** -0.16
SECTOR			
Rural	0.97*** -0.07	-1.17*** -0.13	-0.87*** -0.13
Age group			
35–50	-0.06 -0.08	-0.40** -0.17	-0.34* -0.17
51–65	0.12 -0.09	-0.60*** -0.2	-0.10 -0.18
Above 65	0.50*** -0.13	-0.12 -0.25	-0.32 -0.28
Ever attended school			
No	0.32*** -0.05	-0.48*** -0.12	0.07 -0.09
Marital status			
Married	-0.30*** -0.08	0.33** -0.13	0.22* -0.11
Never married	0.19* -0.1	-0.30* -0.18	-0.19 -0.15
Own land			
Yes	3.35*** -0.18	-0.89*** -0.11	-0.76*** -0.1
Zone			
North East	-0.56*** -0.06	-0.43*** -0.16	0.37*** -0.12
North West	-1.32*** -0.06	1.01*** -0.12	0.79*** -0.11
South East	-0.23*** -0.07	-0.06 -0.15	0.49*** -0.12
South South	-0.50*** -0.07	0.49*** -0.14	0.07 -0.13
South West	-0.84*** -0.09	0.50*** -0.14	0.08 -0.13
Own house			
Yes	0.05 -0.05	0.18* -0.09	-0.18** -0.08
Interactions			
Female × Rural	0.06 -0.1	0.47*** -0.16	0.16 -0.15
Female × 35–50	0.06 -0.09	0.48** -0.19	0.48*** -0.18
Female × 51–65	-0.02 -0.12	0.85*** -0.23	0.13 -0.21
Female × Above 65	0.05 -0.18	0.13 -0.33	0.29 -0.33
Constant	-2.92*** -0.22	-1.92*** -0.24	-2.10*** -0.22
Observations	13,104	13,104	13,104
Log Likelihood	-7,623.40	-2,765.77	-3,365.14

Note: *p < 0.1; **p < 0.05; ***p < 0.01.

This means that women, irrespective of the sub-national region, are less likely to be involved in agricultural production (farming) compared to men, while they are more likely, net of region, to engage in agricultural trade (wholesale and retail), although with higher odds in the south (3.3 times more likely than men to wholesale, and 5 times more likely than men to retail). Both effects are statistically significant ($p < .05$). Similarly, in both regions, rural dwellers are more likely to farm, with rural dwellers in the north 3.6 times ($p < .05$) more likely than urban dwellers, and rural dwellers 1.63 times ($p < .05$) more likely than urban dwellers in the south. Although rural dwellers in both regions are less likely to get involved in trades, people who dwell in rural areas of northern Nigeria are much lesser likely to participate in wholesale (84% $p < .05$), and retail (67% $p < .05$). This means rural residence status boosts farming odds dramatically (3.6x in the North; 1.6x in the South) but sharply reduces the odds of participating in wholesale and retail activities.

From the age variables, an increase in the age of individuals in the north is associated with an increased odds of participating in farming (32% for 51-65, and 55% for above 65). However, in the south, old age increases farming (75% for “above 65”) and also increases the odds of participating in wholesale and retail. In the north, individuals between 35 and 50 years of age are 37% less likely than individuals below 35 years of age to engage in wholesale, however, are 45% more likely in the south.

Education shapes where people enter in value chain in both regions. Although having no education in the north and south channel individuals into farming, the effect is more pronounced in the north (80% less odds) than in the south (21% less odds). In both regions, education opens the access to participate in trades, the effect is slightly higher in the south. Individuals who are married are 32% ($p < .05$) less likely to participate in farming in the north,

but 51% ($p < .05$) and 31% ($p < .05$) more likely to participate in wholesaling and retailing, respectively, compared to other marital statuses. Land ownership on the other hand is the single strongest predictor of farming participation in both North and South, with odds ratios above 25 ($p < .05$). This shows that farming is overwhelmingly tied to asset ownership. Conversely, land ownership significantly reduces the odds of participation in wholesale and retail trade, suggesting that non-landholders diversify into trade as an alternative. Interaction effects confirm that being female increases the likelihood of engaging in trade when combined with rural residence. In both regions, rural women are significantly more likely than rural men to engage in retailing and wholesaling. This means that trade serves as a key livelihood pathway for women in rural areas.

The highest average expenditures recorded among households engaged solely in wholesaling (25,647.59) and those solely in retailing (21,017.73), while farmers only households have the lowest spending (11,926.80). Mixed-activity households, such as those combining farming, wholesaling, and retailing (21,482.93) or farmers and wholesalers (18,939.23), show relatively high expenditures, indicating that diversification into trade raises household spending capacity.

The OLS estimates from Table 3.7 indicate substantial differences in household spending across activity groups. The baseline category captures households engaged in other activities outside of the three in focus. Households that rely only on farming spend significantly less, with consumption expenditures lower by about 7,210 units—the equivalent of about 6 per week or about 40% of the average household spending, compared to other groups ($p < .05$).

Table 3.6: Logit Regression of the Likelihood of Engaging in Various Activities by Region

	<i>Dependent variable: Activity</i>		
	Farming	Wholesaling	Retailing
	(1)	(2)	(3)
GENDER			
Female	-0.68*** -0.1	0.30* -0.17	1.06*** -0.16
SECTOR			
Rural	0.97*** -0.07	-1.17*** -0.13	-0.87*** -0.13
Age group			
35–50	-0.06 -0.08	-0.40** -0.17	-0.34* -0.17
51–65	0.12 -0.09	-0.60*** -0.2	-0.10 -0.18
Above 65	0.50*** -0.13	-0.12 -0.25	-0.32 -0.28
Ever attended school			
No	0.32*** -0.05	-0.48*** -0.12	0.07 -0.09
Marital status			
Married	-0.30*** -0.08	0.33** -0.13	0.22* -0.11
Never married	0.19* -0.1	-0.30* -0.18	-0.19 -0.15
Own land			
Yes	3.35*** -0.18	-0.89*** -0.11	-0.76*** -0.1
Zone			
North East	-0.56*** -0.06	-0.43*** -0.16	0.37*** -0.12
North West	-1.32*** -0.06	1.01*** -0.12	0.79*** -0.11
South East	-0.23*** -0.07	-0.06 -0.15	0.49*** -0.12
South South	-0.50*** -0.07	0.49*** -0.14	0.07 -0.13
South West	-0.84*** -0.09	0.50*** -0.14	0.08 -0.13
Own house			
Yes	0.05 -0.05	0.18* -0.09	-0.18** -0.08
Interactions			
Female × Rural	0.06 -0.1	0.47*** -0.16	0.16 -0.15
Female × 35–50	0.06 -0.09	0.48** -0.19	0.48*** -0.18
Female × 51–65	-0.02 -0.12	0.85*** -0.23	0.13 -0.21
Female × Above 65	0.05 -0.18	0.13 -0.33	0.29 -0.33
Constant	-2.92*** -0.22	-1.92*** -0.24	-2.10*** -0.22
Observations	13,104	13,104	13,104
Log Likelihood	-7,623.40	-2,765.77	-3,365.14

Note: *p < 0.1; **p < 0.05; ***p < 0.01.

Similarly, households combining farming and retailing also spend significantly less (−4,060) ($p < .05$), implying that farming households, whether specialized or diversified into retail, face constraints that reflect in their spending. In contrast, households engaged solely in wholesaling spend significantly more (+6,511) ($p < .05$), showing the higher returns associated with wholesale trade. Retailers alone and other mixed groups (farmers with wholesalers, wholesalers with retailers, or those engaged in all three activities) do not show significant differences under OLS, suggesting that without addressing endogeneity, the effect of diversification is less clear.

The IV estimates (from columns 2 to 4) provide a clearer picture. Farming-only households still spend significantly less (−6,837) ($p < .05$), and the negative effect is even larger when farming is combined with retailing (−9,499) ($p < .05$). By contrast, households engaged solely in retailing (+11,326) ($p < .05$) or wholesaling (+11,897) ($p < .05$) see large, positive, and significant effects on consumption spending, reinforcing that trade-based households have stronger purchasing power.

Disaggregating by region reveals important heterogeneity. In the North (column 3), farming households exhibit sharp spending disadvantages: farmers only (−9,708) ($p < .05$) and farmers combined with retail (−7,617) ($p < .05$) both spend significantly less. By contrast, retailers only (+16,237) ($p < .05$), wholesalers only (+21,539) ($p < .05$), and farmers with wholesalers (+15,027) ($p < .05$) show strong spending advantages, suggesting trade is far more rewarding in the north. The South displays a slightly different pattern: farmers also spend less when combined with retail (−13,986) ($p < .05$), but both retailers only (+9,423) and wholesalers only (+8,191) maintain significantly higher spending, indicating that trade is universally advantageous. What stands out is the large positive effect for households combining all three

activities (+61,450) ($p < .05$), which is unique to the South, suggesting that diversified participation across farm, wholesale, and retail activities is especially rewarding in this region.

To assess the strength and validity of the instruments, we used a series of diagnostic tests for the IV models. The Supplementary Information Section includes a table that shows the details of the post-estimation tests. The tests consistently provide estimates that reject a hypothesis of weak instruments. The Wu-Hausman endogeneity test that we used also implied that an IV estimator should be preferred for estimation.

Table 3.7: OLS and IV Regressions: Total Household Spending vs. Activities

	<i>Dependent variable: Total spending</i>			
	OLS	Instrumental variable		
	Overall (1)	Overall (2)	North (3)	South (4)
Farmers only	−7,209.82*** (865.04)	−6,836.79*** (1,780.28)	−9,707.81*** (2,887.16)	−4,991.33** (2,346.01)
Retailers only	1,881.10 (1,320.47)	11,325.99*** (3,262.84)	16,237.47*** (5,768.79)	9,422.53** (3,977.97)
Wholesalers only	6,510.97*** (1,332.63)	11,896.96*** (3,437.86)	21,539.39*** (6,119.97)	8,190.71* (4,223.99)
Farmers and retailers	−4,059.57*** (1,139.09)	−9,499.13*** (2,450.55)	−7,617.07** (3,851.87)	−13,986.00*** (3,333.78)
Farmers and wholesalers	−197.39 (1,299.14)	5,724.65* (2,966.47)	15,026.99*** (4,782.47)	−603.17 (3,888.43)
Wholesalers and retailers	−166.96 (2,824.43)	13,701.66* (7,175.45)	4,589.03 (9,430.33)	3,293.10 (14,812.13)
Farmers, wholesalers, and retailers	2,346.31 (2,422.92)	1,305.67 (6,599.71)	−26,655.65*** (8,780.59)	61,449.89*** (14,491.80)
Constant	19,136.63*** (776.75)	17,999.09*** (1,637.60)	19,838.44*** (2,697.86)	17,469.68*** (2,096.28)
Observations	4,305	4,305	2,249	2,056
R ²	0.05	0.01	−0.06	−0.06
Adjusted R ²	0.05	0.011	−0.06	−0.06

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

3.4 Discussion

Regional differences in gender participation emerge from constraints that shape what men and women do in farm economies. Consistent with prior studies that highlight women's limited access to land and farm inputs (Pandey et al. 2021; Komatsu et al. 2018; Kilic et al.

2015; Asadullah and Kambhampati 2021), we find that women are significantly less likely than men to farm. It is reasonable to expect that limited rights to land, lower access to farm inputs, and unequal control over agricultural assets reduce women's ability to engage in farming (Komatsu et al. 2018; Asadullah and Kambhampati 2021; Abdisa et al. 2024; Anderson et al. 2021). So, we explain the results of our analysis showing male-female gaps as feasible, given these barriers, when combined with the demands of unpaid domestic work (Slavchevska et al. 2021). Retail and small-scale wholesale trade appear less constrained, as financial entry barriers are lower, time requirements are more flexible, and returns are less tied to land ownership (Pierotti et al. 2022). In our setting, this helps explain why married women and rural women are more likely to appear in trading roles than in farming: trade allows more time-flexibility, especially where markets are nearby and demand for small-scale retail is strong (Oduol et al. 2017; Pierotti et al. 2022; Dinkelman and Ngai 2022).

Our results show that participating in trade—related activities, especially retailing and wholesaling (especially in the south), are associated with higher household consumption spending. This suggests that women's participation in distribution and marketing is important to household welfare, in agreement with related papers that link non-farm income to better household outcomes (Olabisi et al. 2021). In our case, retail and wholesale trade appear to offer a parallel welfare-enhancing channel. Age patterns in the results also complement interesting regional differences, with one commonality, a return to farming for those aged 65 and above. Older adults may be expected to turn to work that relies more on the social networks needed to hire farm labor and own landed property. On the other hand, it is useful to consider that other studies showing less financial inclusion in the northern regions of Nigeria, may help to explain why as respondents get older, they are more likely to undertake trade—which requires

financial capital, in the southern parts of the country, and less likely to do so in the north-ern parts (Table 3.6). A more detailed treatment of this issue is beyond the scope of the current analysis.

The regional differences in our results reflect how social and institutional conditions, which act more like unwritten policies, shape women's access to work. In northern Nigeria, cultural expectations about women's movement and public roles limit the types of activities open to women. Women's ability to farm at scale or participate in large markets where bargaining and long travel are required can be affected by the aforementioned constraints. The pattern could help to explain why women in northern Nigeria appear mostly in small, local retail rather than in farming or wholesaling. The situation differs in southern Nigeria, where mobility rules are less strict and market systems are more developed. Our estimates of household consumption spending are consistent with the other results: in the North, trade offers one of the few ways women can access higher-income activities, while in the South, combining farming and trade produces the largest gains.

The interaction terms in Tables 3.5 and 3.6 add depth to our explanations by showing rural-urban differences in female participation, with more of the higher participation of rural women in farming, coming from southern Nigeria. The regional and rural-urban differences are likely due to social norms on mobility and land access. The options faced by women are more sharply limited outside urban centers. Where markets are close and travel demands are lower, women participate more in small-scale trade. In settings with tighter restrictions, these opportunities narrow.

3.5 Conclusion

We show that gender and regional conditions strongly influence how households participate in agricultural value chains. We use data from Africa's most populous nation and show that these choices matter for household welfare—given how consumption spending differs by the main activities households undertake. We find that men continue to dominate farming, while women play a much larger role in retail and wholesale trade. However, these patterns differ across regions.

In northern Nigeria, women are more concentrated in small-scale retail, likely due to stricter mobility expectations, limited access to large markets, and weaker support structures that reduce women's ability to engage in farming and higher-value trading activities. In southern Nigeria, social norms are more flexible, markets are better developed, and women's trading networks are stronger. These conditions allow women to participate more actively in wholesale and retail trade and, in some households, to combine farming with trade. These structural differences explain our welfare results: farming households have the lowest levels of consumption, while trade-based households show clear spending advantages, especially wholesalers. In the South, combining farming with trade brings even larger gains. These results show that gendered economic opportunities are shaped by regional constraints and cannot be addressed by a single national policy.

Our findings suggest some areas for policy action. Targeted programs for women, including programs focused on financial capital for wholesale and retail trade, could ease some of the constraints women face nationwide. Region-specific measures are also important. Subsidized transport, and other innovative approaches that reduce the cost of physical mobility to markets for women traders in the North could help address the barriers that led to our

observed gendered differences in levels of participation. Credit lines and shared storage facilities, are other examples of interventions that could enable women in all regions of the country to scale into higher-value wholesaling.

This research study is most relevant to policy in how it shows regional differences in gendered constraints and welfare outcomes. We suggest, based on the differences across Nigeria, that policies tailored to sub-regions and localities are more likely to be effective compared to a uniform national approach. One limitation of this study is that the data prevent us from observing intra-household decision-making processes or specific mechanisms through which women switch from farming to trade. Our IV strategy, though an improvement in identification, cannot capture all the unobserved community-level constraints. Future work should investigate how bargaining within households shapes activity choice as well as test interventions seeking to relax financial capital, mobility and market-access constraints for women to encourage participation in wholesale trade, retail trade, and agriculture.

Chapter Four

Exchange Rate Adjustment, Structural Constraints, And Balance-Of-Payments-Constrained Growth in Nigeria

This chapter evaluates the role of external factors on the growth performance of Nigeria from the framework of the balance-of-payments-constrained growth model. It begins with an evaluation of the import demand and export performance, before analyzing the trend of the real effective exchange rate and the balance-of-payments-constrained growth rate. The final section of the chapter provides a more general assessment of the results in light of their broader structural implications, within the context of commodity dependence, weak export diversification and external vulnerability.

This chapter examines the long-run performance of the Nigerian economy within the balance-of-payment constrained (BoPC) growth model from 1991 to 2023. This study analyzes the role of export performance, import demand, and real effective exchange-rate (REER) in shaping Nigeria's external constraint overtime. Using estimates of export and import demand together with BoPC growth rates, this research finds that growth was significantly higher than the BoPC growth rate after 2000 despite weakening export performance. The results also show that changes in the REER had weak and statistically insignificant effects on both export and import performance, while the Marshall–Lerner condition was not satisfied. Despite repeated episodes of exchange-rate depreciation, progress toward improving competitiveness abroad was minimal, and the rate of increase in non-oil exports was weak. The findings highlight the limits of exchange rate management as an effective mechanism for addressing external challenges in the presence of weak export diversification.

4.1 Introduction

Nigeria faces a persistent foreign-exchange constraint arising from the combination of export concentration and import dependence. Because export earnings are derived largely from crude oil while domestic production relies heavily on imported capital goods, machinery, technology, and intermediate inputs, periods of economic expansion frequently generate pressures on the external account. In this setting, exchange-rate depreciation has been one of the principal policy instruments used to manage foreign-exchange shortages and improve external adjustment. The key question, however, is whether depreciation produces trade responses strong enough to relax the underlying constraint or merely provides temporary relief from it.

Nigeria provides an important case for examining this question. Despite repeated policy efforts aimed at diversification, crude oil has remained the dominant source of export earnings and foreign exchange inflows for several decades (Awe et al. 2023). At the same time, domestic production continues to rely heavily on imported machinery, industrial inputs, refined petroleum products, and manufactured goods. This combination of export concentration and import dependence has left the economy highly exposed to movements in global oil markets. During periods of rising oil prices, foreign exchange earnings and import capacity expanded substantially, supporting episodes of economic growth. However, non-oil exports grew only weakly and contributed little to reducing external vulnerability (Adi et al. 2022; Awe et al. 2023).

The fall in global oil prices after 2014 exposed the extent of structural problem, with declining earnings from exports further compounding foreign exchange shortages, exchange rate volatility, inflationary pressures, and macroeconomic adjustments pressures in Nigeria

(IMF, 2018; IMF, 2020). Policy responses entailed repeated exchange rate revaluations, foreign exchange regulations, and increased external borrowing, but the strain on the external account remained intense.

These raise broader questions regarding the effectiveness of exchange rate-based adjustment in commodity-based economies. Traditional open economy models assume that exchange rate depreciation improves the trade balance through increased exports and decreased imports based on adequate elasticity of trade flows to changes in relative prices (Blecker and Razmi 2010; Bahmani-Oskooee and Hegerty 2010; Soliman 2024). This explains the Marshall-Lerner condition where aggregate price elasticity of exports and imports is required to be sufficiently high enough for depreciation to enhance external balance. However, the functioning of this approach might vary in situations where exports are predominantly comprised of primary commodities which have limited domestic value addition in the country and are highly dependent on imports. This is because depreciation might result in increased production cost coupled with limited export growth. As a result, the case of Nigeria speaks to a wider debate about the limitations of changes in the exchange rate in structurally import-dependent developing economies.

The debate is linked closely balance-of-payments constrained growth (BoPC) literature developed by Anthony P. Thirlwall (1979). According to the theory, long-term growth is constrained by the relationship between export growth and income elasticity of import demand. Subsequent works have expanded the conceptual model to incorporate growth within developing and commodity-dependent countries, where foreign exchange availability is still central to growth (Blecker and Razmi 2010). Recent literature has additionally emphasized the impact of productive composition, technology, imported intermediate goods, and the real

exchange rate on the external constraint (Porcile and Yajima 2021; Iasco-Pereira and Missio 2022; Bölükbaşı and Cıvcir 2024). This literature suggests that exchange-rate adjustment cannot be evaluated only through price movements. Its effects also depend on whether the economy has the productive capacity to expand exports and reduce import dependence.

Nigeria is especially relevant in this regard. Oil booms, foreign exchange reserve growth, and higher import capabilities have always coincided with growth cycles while lower revenues from the oil export have often resulted in fiscal strain and macroeconomic instability for Nigeria, along with balance-of-payments pressures (Sala-i-Martin and Subramanian 2013; Iwayemi and Fowowe 2011). Existing studies provide substantial evidence on oil dependence, Dutch disease dynamics, exchange rate volatility, and external vulnerability in Nigeria (Aliyu 2009; Adeniran et al. 2014; Ogbuabor et al. 2020). However, not much has been done to find out whether the exchange rate adjustments and movements in external competitiveness were sufficient to overcome Nigeria's balance-of-payments constraints, especially within a framework that jointly examines export performance, import demand, and real effective exchange-rate dynamics.

This chapter examines the effect of export performance, import demands, and real effective exchange rate (REER) movements on Nigeria's balance of payments constraint between 1991-2023. It examines whether successive rounds of exchange rate adjustment and currency devaluations generated trade responses strong enough to ease external-sector pressures within a commodity-dependent economy characterized by weak export diversification and persistent import dependence. The study contributes to debates on external adjustment in developing countries by showing that dependence on commodity-exports and

imports of production inputs limits the effectiveness of exchange-rate-based adjustment mechanisms.

The findings show that actual GDP growth increasingly exceeded the balance-of-payments-constrained growth rate after 2000, even as export growth weakened. REER movements had weak and statistically insignificant effects on export and import performance, and the Marshall–Lerner condition was not satisfied. These results suggest that depreciation did not generate the trade responses needed to relax Nigeria’s external constraint. The constraint instead reflected deeper structural weaknesses: continued dependence on crude oil exports, limited non-oil productive capacity, and sustained reliance on imported inputs and foreign exchange earnings.

4.2 Literature Review

The Balance of Payments Constraint Growth (BoPC) model, which was developed by Anthony P. (Thirlwall 1979), emphasizes the role of the external sector in long-run growth analysis. The core assumption is that countries cannot sustain growth rates that generate import requirements that exceed the foreign exchange earned from exports. When domestic income rises faster than export revenues, external imbalances are inevitable, hence the need for adjustment measures through slow growth, depletion of reserve, exchange rate adjustments, or foreign borrowing. This framework becomes highly relevant for developing countries that depend largely on imports of equipment, raw materials, and capital goods.

Further work expanded the theory by considering capital flows, relative prices, debt dynamics and production structures (Anthony P. Thirlwall and Hussain 1982; Moreno-Brid 1998; Barbosa-Filho 2004; Romero and McCombie 2016). Structuralist approaches also elaborate on the linkages between BoPC dynamics and technology, diversification, and

specialization (Cimoli et al. 2009; Porcile and Yajima 2021; Iasco-Pereira and Missio 2022). From this view, economies with weak industrial base and high reliance on imported inputs exhibit greater elasticity for imports as well as higher BoP pressures. Thus, the foreign exchange constraint is rooted not only with trade, but also with the structure of production itself.

This creates an important tension in the literature. From the traditional open-economy point of view, exchange rate depreciation plays a very important role in correcting external imbalance. Depreciation is considered to be instrumental in improving competitiveness through lower prices on the goods exported and reduction in demand for imported products when the volume of trade reacts correctly to relative prices (Eggertsson and Krugman 2012; Bahmani-Oskooee and Hegerty 2010; Bussière et al. 2020). This is the basis of the Marshall-Lerner condition which states that depreciation will have a positive effect on balance of trade if the sum of export and import price elasticity exceeds one.

Structuralist and post-Keynesian approaches are more cautious about this mechanism. They argue that the elasticity of trade depends on the production structure, import dependency, and the ability of domestic firms to expand production when relative prices change (Blecker and Razmi 2010; Ahmed et al. 2017; Pereira and Missio 2022). In cases where economies are highly dependent on imports for machinery, fuels, technologies, and intermediate goods, depreciation would increase production cost, creating inflationary pressures while generating minimal export gains (Amiti et al. 2014; Ahmed et al. 2017; Bölükbaşı and Cıvcır 2024). The deep issue, therefore, is whether exchange rate adjustments can create sustainable external gains in economies characterized by weak diversification and dependent on import for production. This is particularly relevant for Nigeria, where export earnings remain

concentrated in crude oil and domestic production depends heavily on imported machinery, industrial inputs, and intermediate goods.

This debate connects directly to the structural change literature. The structuralist development approach argues that sustained growth depends on shifting resources into activities with higher productivity and greater technicity (Cimoli et al. 2009). Rodrik (2016) explains that many developing countries experienced premature deindustrialization even before building manufacturing bases capable of driving structural transformation. The literature on Sub-Saharan African countries shows that growth driven by commodities does not foster diversification or sustained growth in manufacturing activities (Newman et al. 2016). As a result, underdeveloped industries lead to dependency on foreign capital, machinery, and other intermediate products, hence increasing foreign exchange pressures during periods of economic expansions. Nigeria reflects many of these concerns, as economic expansion has largely occurred without comparable progress in manufacturing development, export diversification, or reduced dependence on imports.

Recent studies reinforce this argument. Bölükbaşı and Cıvı (2024) show that imported intermediate goods and sectoral structure directly influence balance-of-payments-constrained growth dynamics in Turkey. Commodity dependence adds another dimension to this problem. The Dutch disease literature argues that resource booms can weaken manufacturing competitiveness by appreciating the real exchange rate and shifting resources away from tradable sectors (R. Auty 2002; R. M. Auty 2001). Commodity booms may temporarily expand foreign exchange earnings and import capacity without generating broad industrial diversification, leaving growth highly vulnerable to external shocks when commodity prices decline.

Nigeria fits this structural problem closely. The literature link oil dependence to macroeconomic instability, weak industrial diversification, and persistent vulnerability to the external environment. Sala-i-Martin and Subramanian (2013) pointed that oil dependency hampered institutional and productive developments in Nigeria, while Iwayemi and Fowowe (2011) show that oil price shocks have had significant macroeconomic impacts. Recent research papers also confirm similar issues. For instance, Adi et al. (2022) show how oil price shocks and foreign exchange pressure remain highly connected in Nigeria, while Awe et al. (2023) highlights the continued weakness of diversification. Exchange rate literature also shows that despite consistent depreciation and exchange rate volatility, no significant diversification of exports and competitiveness improvements have been achieved (Aliyu 2009; Adeniran et al. 2014). Where exports continue relying on crude oil and production relying heavily on imports of equipment, exchange rate adjustment is likely tied to the production structure rather than price changes.

The literature therefore reflects an important theoretical divide. One perspective emphasizes relative prices and expects depreciation to improve competitiveness and trade performance. Another perspective, based on structuralist and BoPC traditions, argues that mere adjustment in prices would not have any real external pressure effect when productive structures remain narrow and import reliant. Nigeria provides an important example to understand this debate because it combines repeated exchange-rate adjustment, persistent commodity dependence, weak non-oil export expansion, and strong reliance on imported production inputs.

Although existing studies provide important insights into oil dependence, exchange-rate instability, and external vulnerability in Nigeria, less attention has been given to why

repeated exchange-rate adjustment failed to generate stronger export diversification and sustained improvements in external competitiveness. Existing evidence also remains divided on whether trade responses to depreciation were sufficiently strong to substantially relax Nigeria's balance-of-payments constraint. This study contributes to the literature by jointly examining export performance, import demand, and REER dynamics within a BoPC framework, linking Nigeria's external constraint directly to the broader structural problem of commodity dependence, weak diversification, and import-dependent production.

4.3 Theoretical Framework and Data

4.3.1 Balance-of-Payments Constrained Growth

The balance-of-payments-constrained growth (BoPC) framework argues that the long-run growth of an open economy is limited by the availability of foreign exchange (Thirlwall 1979; Romero and McCombie 2016).

The balance-of-payments equilibrium condition can be written as:

$$P_d X = P_f M E \quad (4.1)$$

Where X denotes exports, M imports, P_d domestic export prices, P_f foreign prices, and E the nominal exchange rate. The condition states that, in the long run, export earnings must be sufficient to finance imports.

The export and import demand functions are specified as:

$$X = \left(\frac{P_d}{P_f E} \right)^\eta Z^\varepsilon \quad (4.2)$$

$$M = \left(\frac{P_f E}{P_d} \right)^\psi Y^\pi \quad (4.3)$$

Where Z represents world income and Y domestic income. The parameters η and ψ denote the price elasticities of exports and imports, respectively, while ε and π represent the corresponding income elasticities. The framework therefore emphasizes the relationship between export growth, import demand, and foreign exchange availability (Blecker 2016).

For countries with weak export diversification and import-dependent, the balance of payments constraint becomes quite severe as a result of the fast increase in imports and the limited increase in exports during domestic expansion (Cimoli et al. 2010; Anthony Philip Thirlwall 2012). This balance of payments constraint is especially relevant for Nigeria where exports are mainly from crude oil, and the local production involves the use of many imported products.

4.3.2 Thirlwall's Law

Thirlwall's Law provides a simplified expression of the balance-of-payments-constrained growth rate. In its basic form, relative-price effects are assumed to be relatively weak or insufficient to offset the dominant influence of export growth and import demand over the long run (Thirlwall 1979). The balance-of-payments-constrained growth rate is therefore given by:

$$y_B = \frac{\varepsilon z}{\pi} \quad (4.4)$$

Where y_B is the balance-of-payments constrained growth rate, z is world income growth, ε is the income elasticity of export demand, and π is the income elasticity of import demand. Since export growth can be expressed as $x = \varepsilon z$, the model can be written more directly as:

$$y_B = \frac{x}{\pi} \quad (4.5)$$

This relationship forms the basis of the empirical analysis. It implies that sustainable growth depends positively on export growth and negatively on the income elasticity of imports. Economies with weak export performance and high import dependence therefore face stronger external pressures because domestic expansion generates import demand faster than export earnings can finance it (Blecker 2016).

4.3.3 Relative Prices and the Extended Model

While the simplified version of Thirlwall's Law emphasizes export growth and import demand, the extended model incorporates the effects of relative prices and exchange-rate movements. The balance-of-payments-constrained growth equation can therefore be written as:

$$y_B = \frac{(1+\eta+\psi)(p_d-p_f-e)+\varepsilon z}{\pi} \quad (4.6)$$

Where p_d represents domestic prices, p_f foreign prices, and e the nominal exchange rate. The term (p_d-p_f-e) captures movements in relative prices and international competitiveness, while η and ψ denote the price elasticities of export and import demand, respectively.

The extended model suggests that exchange-rate depreciation may relax external pressures by improving competitiveness and altering export and import demand (Anthony Philip Thirlwall 2012; Blecker 2016). However, this depends on the Marshall–Lerner condition:

$$\eta + \psi > 1 \quad (4.7)$$

The condition states that depreciation improves the trade balance only when the combined price elasticities of exports and imports exceed unity. If trade flows respond weakly

to relative-price changes, depreciation may generate limited improvements in the external balance despite raising domestic prices and import costs (Krugman and Obstfeld 2009).

This issue is particularly relevant for Nigeria, where exports remain concentrated in crude oil and domestic production depends heavily on imported machinery and intermediate inputs. Under such conditions, exchange-rate adjustment may have limited effects on export expansion and import compression. The empirical analysis therefore begins with the standard Thirlwall specification before examining whether relative-price adjustment materially altered Nigeria's balance-of-payments constraint.

4.3.4 Data and Variable Construction

The empirical analysis is limited to the Nigerian experience from 1992 to 2023. The period includes the post-Structural Adjustment Program (SAP) era when Nigeria experienced considerable trade liberalization, frequent exchange rate changes, and increased openness to international markets. Using 1992 as the starting point for the analysis is also important as it improves data consistency in the variables used for the analysis.

Data on export and import growth rates were obtained from the International Monetary Fund World Economic Outlook database. Data on real effective exchange rate (REER), GDP growth, and world GDP growth were sourced from the World Bank World Development Indicators database.

To examine long-run export performance, a cumulative export growth index was constructed using annual export growth rates. The index tracks the cumulative evolution of exports relative to the base year and is used to identify periods of export expansion, stagnation, and decline. Trend regressions are subsequently estimated for the identified sub-periods to characterize changes in export performance across distinct export-growth regimes. The

empirical analysis follows the standard balance-of-payments-constrained growth specification introduced in Equation (4.5):

$$y_B = \frac{x}{\pi}$$

Where y_B denotes the balance-of-payments-constrained growth rate, x export growth, and π the income elasticity of imports estimated from the import demand function. The specification implies that sustainable growth depends positively on export growth and negatively on the responsiveness of imports to domestic income expansion.

To examine the role of relative prices and external competitiveness within the extended framework, the real effective exchange rate (REER) is used as a proxy for relative-price competitiveness. REER captures changes in Nigeria's competitiveness relative to its trading partners by incorporating both exchange-rate and relative-price movements. This allows the analysis to evaluate whether exchange-rate adjustment materially influenced Nigeria's external constraint over time.

4.4 Empirical Analysis / Results

4.4.1 Import Dependence and the External Constraint

Within the balance-of-payments-constrained growth framework, the income elasticity of imports (π) plays a central role in determining the extent to which domestic growth generates import demand. Economies characterized by limited export diversification and strong dependence on imported intermediate and capital goods typically exhibit higher import elasticities and stronger balance-of-payments pressures (Thirlwall 2012; Blecker 2016). Estimating the responsiveness of imports to domestic income growth is therefore important for evaluating the strength of Nigeria's external constraint.

The import demand specification is estimated following the import demand in Equation (4.3):

$$m_t = \psi q_t + \pi y_t \quad (4.8)$$

Where m_t denotes import growth, q_t represents relative-price movements proxied by the real effective exchange rate (REER), and y_t denotes domestic income growth. The coefficient π captures the income elasticity of imports, while ψ measures the responsiveness of imports to relative-price movements.

Table 4.1: Import Demand Regression

	Import
REER Growth	0.139 (0.366)
GDP Growth	1.046*** (0.377)
Constant	0.0127 (0.0181)
R ²	0.211
Observations	32

*Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

The elasticity of imports to income is slightly greater than one and also statistically significant, meaning that an increase in domestic income leads to a proportional increase in imports. On the other hand, the coefficient of the real effective exchange rate is statistically insignificant, meaning that changes in relative prices had little impact on the level of imports in the economy over the sample period. This implies that there is considerable dependency on imports in Nigeria. An expansion of domestic activities causes a sharp rise in imports.

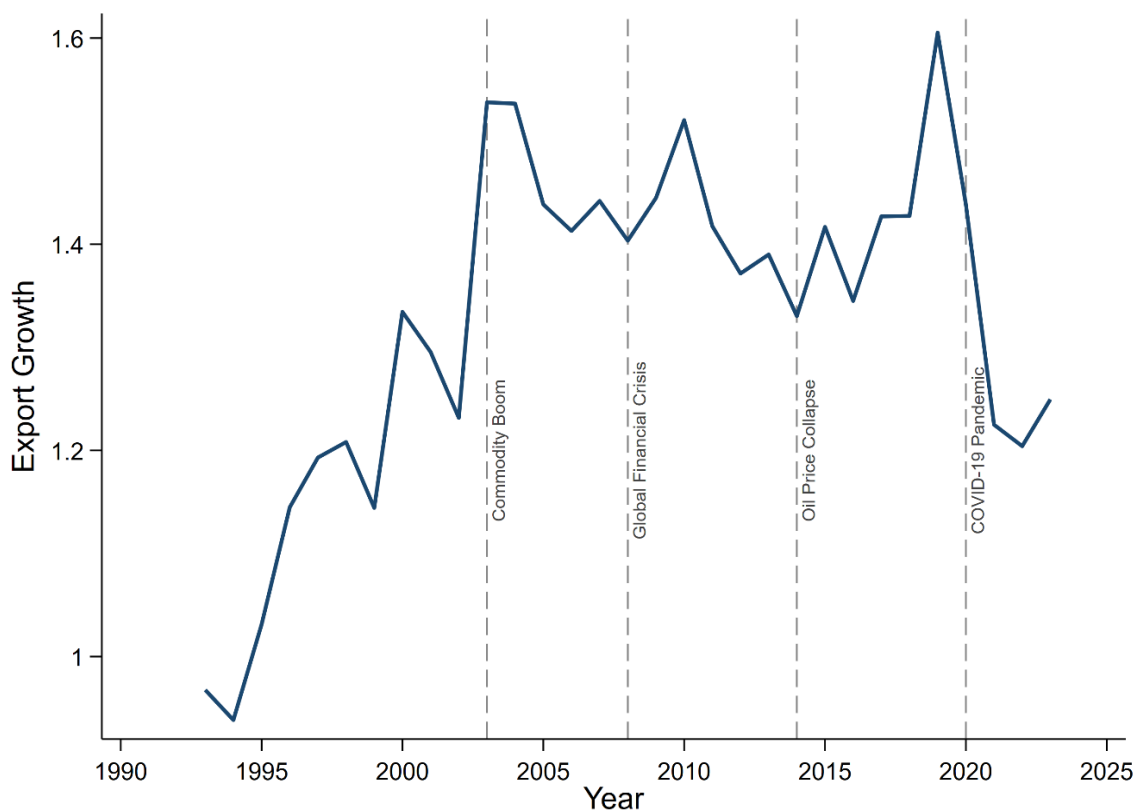
4.4.2 Export Performance and Structural Breaks

Export growth is central to the balance-of-payments-constrained growth framework because export earnings determine the economy's capacity to finance imports over time

(Thirlwall 1979). For Nigeria, export performance changed considerably across different periods alongside shifts in oil-market conditions and developments within the domestic economy.

Figure 4.1 below presents the index of cumulative export growth in Nigeria between 1992 and 2023. The graph displays three major trends. First, there was sustained upward movement for most of the 1990s, which implies positive growth of exports during the post-adjustment period. Second, export growth became considerably less dynamic after 2000, as evidenced by the increasingly flat and volatile nature of the index despite periods when oil prices were favorable. Finally, there is a significant drop in the index after 2019 due to the impact of the pandemic on global oil markets.

Figure 4.1: Export Growth Index



Source: IMF World Economic Outlook (WEO) Database; author's calculations.

To examine these changes more formally, trend regressions are estimated for the periods identified in Figure 4.1.

Table 4.2: Export Trend Regressions

	1992-2001	2002-2018	2019-2023
Time Trend	0.041*** (0.006)	-0.003 (0.004)	-0.095* (0.032)
_cons	-81.577*** (12.920)	6.553 (7.664)	192.521* (64.317)
Observations	10	17	5
R ²	0.837	0.029	0.747

*Notes: Dependent variable is the cumulative export growth index. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

From the analysis, it can be seen that there is a notable disparity in export growth from one period to the next. From 1992-2001, the time trend is positive and statistically significant at 1%, thus signifying continued export growth in the 1990s. In the next period, the trend is negative and statistically insignificant, implying a lack of impetus in export growth after 2000. The deterioration becomes more pronounced during 2019–2023, where the estimated trend is negative and statistically significant at the 10 percent level, reflecting weaker export performance following the COVID-19 shock.

The regression results reveal three general stages of Nigeria's export behavior, which include significant growth during the 1990s period, weaker and less sustainable growth after the year 2000, and a decline in export activities after 2019. Within the balance-of-payments-constrained growth model, weak growth in exports reduces the ability of the country to finance its import needs.

4.4.3 Balance-of-Payments Constrained Growth

The balance-of-payments constrained growth rate is calculated using the simplified version of Thirlwall's Law introduced in Equation (4.5):

$$y_B = \frac{x}{\pi}$$

Where x represents export growth and π denotes the income elasticity of imports estimated from the import demand regression. The estimated value of π from Table 4.1 is approximately 1.05. Period-specific export growth rates obtained from the trend regressions are then used to compute the balance-of-payments consistent growth rate across the different export regimes identified in the previous section.

Table 4.3: Actual Growth and Balance-of-Payments Consistent Growth by Period

Period	Actual GDP Growth	Export Growth (x)	π	BoPC Growth (y_B)
1992–2001	0.0219	0.041	1.046	0.0392
2002–2018	0.0589	-0.003	1.046	-0.0029
2019–2023	0.0092	-0.095	1.046	-0.0908

The relationship between real GDP growth and the balance-constrained growth rate is highlighted in Table 4.3 for the three time periods mentioned above. The first period was the 1990s where relatively strong growth in exports led to a higher externally sustainable growth rate. There is a significant change in this relationship starting from the year 2000. For the period 2002–2018, real GDP growth continued to remain positive despite the low level of exports growth and the negative balance-of-payments constraint growth rate. The gap becomes more pronounced after 2019, following a sharp fall in exports growth, but with real GDP growth exceeding the external sustainable level.

One reason for this divergence is due to the structure of Nigeria’s exports. Oil remained the main contributor to Nigeria’s exports, even after continuous efforts to diversify, meaning that export activities were heavily susceptible to oil price changes and supply interruptions (Olokoyo et al. 2020; Adi et al. 2022; Awe et al. 2023). With slowing export growth after 2000, foreign borrowing and exchange-rate management became more important for domestic

economic activity during periods of foreign currency shortages. These measures helped sustain growth in the short run but did not eliminate the underlying external constraint.

The results show a clear structural deficiency in the Nigerian economy. Despite experiencing positive growth after the year 2000, there was an evident deterioration in its export performance. The increase in domestic income continued raising import demands, while exports were unable to increase at the same pace. Therefore, the economy increasingly became exposed to exchange and external instabilities. Within the balance-of-payments-constrained growth framework, the results suggest that sustained long-run growth requires strong export performance.

4.4.4 Explaining Weak Export Growth

The previous sections showed that export growth weakened considerably after 2000, contributing to the decline in Nigeria's balance-of-payments-constrained growth rate. Within the BoPC framework, export growth depends on both external demand conditions and movements in external competitiveness.

Following the export demand specification introduced earlier in Equation (4.2), export growth can be expressed as:

$$x = \eta(p_d - p_f - e) + \varepsilon z \quad (4.9)$$

Where x denotes export growth, $(p_d - p_f - e)$ captures relative-price movements proxied by the real effective exchange rate (REER), and z represents world income growth.

Table 4.4: Export Demand Regression

	Export Growth
REER Growth	0.036 (0.062)
World GDP Growth	0.559 (1.109)
Constant	-0.007 (0.037)
Observations	33
R ²	0.020

*Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

The coefficient estimate in REER is positive but statistically insignificant, implying that changes in external competitiveness had little impact on exports during the period under study. The coefficient estimates for world GDP is also statistically insignificant, pointing to a weak relationship between global demand and export behavior of Nigeria. This result is consistent with the fact that the export composition of Nigeria is relatively small and that there have been no substantial growths in non-oil exports. Despite periods of strong growth in the world economy and several times of depreciation in the exchange rate, export behavior has been poor and dependent on crude oil prices.

However, the bigger picture reveals the presence of structural problems in the exports sector rather than a temporary problem of competitiveness. The export performance remained weakly related to global demand and the changes in the exchange rate, limiting the capacity of the external sector to support long-run economic growth.

Real Exchange Rate Dynamics and Competitiveness

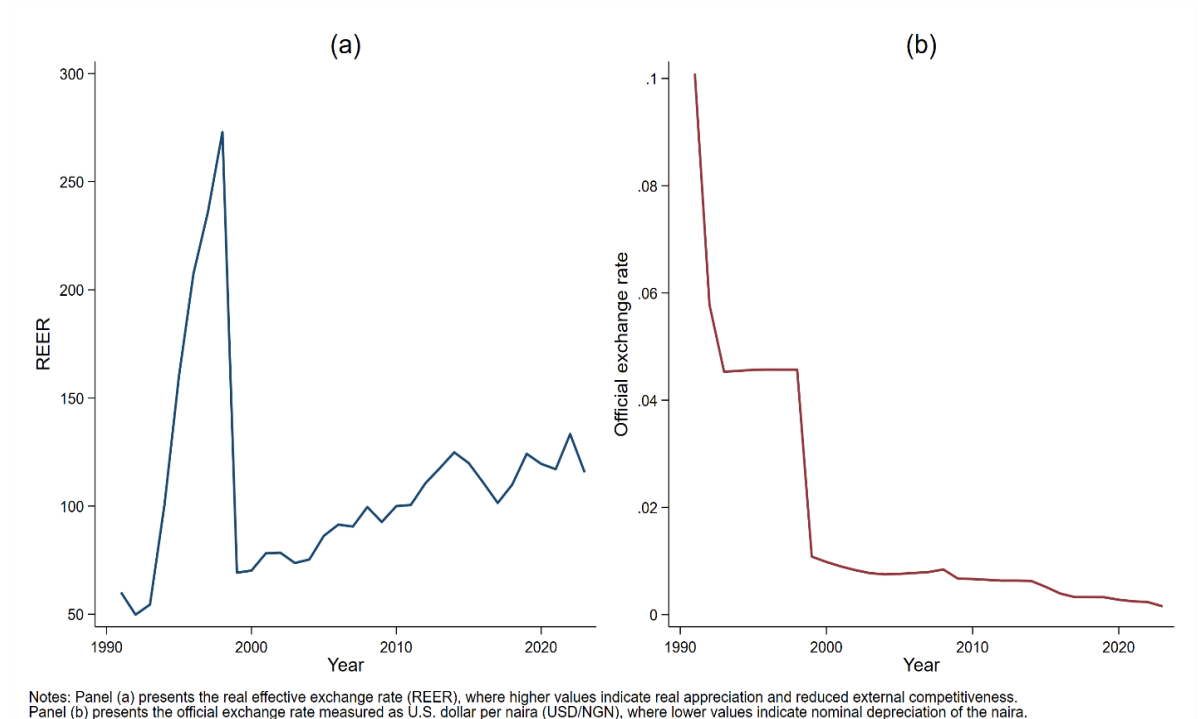
Figure 4.2 illustrates the movements of both the real effective exchange rate (REER) and the official exchange rate in Nigeria between 1991 and 2023. Over this period, exchange

rate management has been one of the main instruments used by the Nigerian government during foreign exchange crises and external imbalance.

Following exchange rate reform policies introduced in Nigeria after the structural adjustment program, there was significant depreciation of the naira over time, especially when there were declining revenues from oil exports (Iyoha & Oriakhi, 2002). Depreciation increased significantly when there were sharp drops in oil prices such as what happened between 2014 and 2016 (IMF, 2018).

Despite substantial nominal depreciation, movements in the REER were considerably weaker. In several periods, the REER remained relatively high despite large declines in the nominal exchange rate. This divergence reflects the role of domestic inflation and broader price pressures in offsetting part of the competitiveness gains expected from nominal depreciation.

Figure 4.2: Real Effective Exchange Rate and Official Exchange Rate, 1991–2023



The pattern helps explain the weak export response observed in the export demand regression. Despite continuous efforts by Nigeria to adjust its nominal exchange rate, its

exports continued to experience weak and volatile growth since 2000. Therefore, the mere depreciation of its nominal exchange rate was unable to improve exports because export structure had hardly changed at all since the same time. In other words, non-oil exports continued to make very little contribution to the earnings of foreign exchange.

Marshall–Lerner Condition

These export and import regressions provide information on the usefulness of the exchange rate adjustment to the Nigerian economy. According to the extended balance-of-payment constraint growth model, an exchange rate depreciation would be useful in improving the trade balance if the total elasticities of exports and imports were greater than unity as specified in Equation (4.7):

$$\eta + \psi > 1$$

The estimated export price elasticity obtained from the export model is 0.036, while that obtained from the import model is 0.139. The sum of these elasticities is 0.175, far below unity: $\eta + \psi = 0.175 < 1$

The results imply that the Marshall-Lerner condition is not met in the Nigerian economy. Although the currency experienced significant depreciation through the years, any changes in the exchange rate failed to produce much impact on the growth in exports or reduction in imports. This helps in explaining the failure of depreciation periods to make improvements to the external position and exports.

The limited response to exports indicated a fundamental flaw within the economic structure itself rather than exchange-rate policy alone. The focus of exports on oil sectors, dependence on income from crude oil exports, and the lack of diversification in non-crude oil exports meant that the external sector was less sensitive to changes in competitiveness. The

repeated depreciation of the naira became a recurring solution to the problem of external disequilibrium, but the effect on export growth was limited. Under these conditions, adjustment in nominal exchange rates was not sufficient to ensure competitive strength and export growth.

4.5 Discussion

One of the central findings from this chapter is that Nigeria's growth increasingly moved beyond the level supported by the external sector after 2000. Export growth weakened considerably during this period, yet import demand continued to rise alongside domestic income growth. The balance-of-payment-constrained growth rate consequently declined over time while actual GDP growth remained relatively higher. Within the BoPC framework developed by Anthony P. Thirlwall, this pattern points to a growing imbalance between the economy's capacity to generate foreign exchange earnings and its rising import requirements (Thirlwall 1979; Romero and McCombie 2016).

Similar patterns have been observed in several developing economies where growth remained closely tied to external balance conditions. Romero and McCombie (2016), for example, show that external demand and import dependence continued to shape long-run growth performance across several Latin American economies. The Nigerian case shares important similarities with this literature, particularly in the persistence of weak export diversification and rising import dependence over time.

The contrast becomes clearer when compared with economies such as South Korea and China, where export growth became increasingly linked to manufacturing expansion and structural transformation. Amsden (1989) showed that South Korea's industrialization strategy strengthened export capacity through manufacturing development and technological upgrading, while Rodrik (2008) argues that competitive exchange rates supported industrial

growth by improving the profitability of tradable sectors. Nigeria followed a different path. Export earnings remained heavily concentrated in crude oil exports, while non-oil exports expanded only weakly despite repeated exchange-rate adjustment and diversification policies. This suggests that exchange-rate depreciation alone does not generate similar outcomes across countries. Its effectiveness depends heavily on productive structure and export composition.

The exchange-rate results from this chapter strongly support this interpretation. Nigeria experienced repeated episodes of nominal depreciation over the last four decades, particularly during periods of falling oil revenues and foreign exchange pressure. Under conventional exchange-rate theory, sustained depreciation is expected to improve competitiveness by lowering the relative price of exports and encouraging substitution away from imports where trade flows respond sufficiently to relative price changes (Urgessa 2024). Yet the empirical results show only weak responses of exports and imports to changes in the REER, while the Marshall–Lerner condition was not satisfied. Depreciation altered the nominal value of the currency, but it did not generate sufficiently strong export expansion or import compression to substantially improve the external position of the economy.

Part of the explanation lies in the structural features of the Nigerian economy itself. Exchange-rate depreciation repeatedly occurred alongside rising domestic inflation and continued dependence on imported intermediate inputs and capital goods. Under these conditions, part of the competitiveness gain expected from nominal depreciation was offset by domestic price increases. Similar arguments appear within the structuralist literature on exchange rates and development. Bresser-Pereira (2016) argues that exchange-rate policy alone cannot sustain competitiveness where deeper structural weaknesses continue to limit productive capacity, while Ocampo (2020) emphasizes that external sustainability ultimately

depends on structural transformation and diversification rather than relative-price adjustment alone.

The Nigerian experience is in line with the existing literature on Dutch disease and commodity dependence. According to Auty (2001), countries dependent on resources have challenges in diversifying their manufacturing, since periods of commodities boom reduce the need to upgrade industries and expand the tradable goods sector. Despite numerous efforts towards diversification, crude oil remained the dominant export for Nigeria, making the country's exports extremely sensitive to oil price movements and production conditions (Adi et al. 2022; Awe et al. 2023). Export growth consequently remained volatile, while non-oil exports contributed only modestly to foreign exchange earnings.

The results point to a broader structural development problem rather than a temporary competitiveness issue. Nigeria's external constraint cannot be understood simply as a problem of exchange-rate misalignment or short-run foreign exchange shortages. The deeper issue lies in the narrow structure of the export sector, weak diversification of production, and continued dependence on imported inputs and crude oil export earnings. Under these conditions, exchange-rate adjustment alone was insufficient to substantially relax the external constraint or generate sustained export-led growth over time.

Chapter Five

Conclusion

This chapter presents the conclusion of this thesis by revisiting the question that motivated the study: why periods of economic expansion in Nigeria have failed to produce sustained development and structural transformation. It provides an interconnection on the main ideas discussed in the thesis, as well as an examination of the relationships between external dependency, macroeconomic instability, welfare, and the Nigerian economy as a whole. This chapter also explores the impact of these factors on the economic options available and their welfare effects in various sectors and geographical and social settings. It discusses the broader implications of the study, acknowledges its limitations, and suggests possible directions for future research.

5.1 Summary of the Thesis

The thesis began from the broader observation that integration into the global economy has generated sharply uneven development outcomes across countries. While some commodity-exporting economies were able to use external earnings to deepen productive capacity and sustain structural transformation, others remained highly exposed to external shocks, foreign exchange pressures, and recurring instability. Nigeria was examined within this broader context. Rather than approaching oil dependence simply as a question of export specialization, the thesis focused on how dependence on crude oil exports and imported production inputs gradually shaped the wider structure of the economy itself. The analysis therefore began with the historical evolution of the Nigerian economy in order to trace how external earnings became increasingly tied to fiscal policy, exchange-rate management,

inflationary pressures, import capacity, and broader macroeconomic stability. The historical discussion was intended to move beyond describing episodes of growth and crisis and instead examine how external dependence became embedded within the organization of production, the conduct of economic policy, and the wider development trajectory of the country over time.

The historical analysis also pointed toward a broader issue that could not be fully understood through macroeconomic aggregates alone. If external dependence and weak structural transformation shaped the wider economy in such fundamental ways, then those same conditions were also likely to shape the kinds of economic opportunities available across households, regions, and social groups. Attention therefore shifted toward the household level in order to examine how broader structural conditions appeared within everyday economic life. The discussion of labor allocation across farming, retail trade, and wholesale trade emerged from this broader concern, together with the examination of regional and gender differences in welfare outcomes. The household-level analysis therefore formed part of a wider effort to understand how the structure of the economy influenced patterns of economic activity, income generation, and the distribution of welfare opportunities across the population.

These discussions eventually returned the thesis to the central macroeconomic problem of growth itself. Once the relationship between external dependence, import capacity, production, and household welfare had been established, the remaining question concerned why these patterns persisted despite repeated episodes of economic expansion and periods of favorable external conditions. At this stage, the balance-of-payments-constrained growth framework provided a way of formally examining the persistence of external constraint within the Nigerian economy. The macroeconomic modeling therefore emerged directly from the broader structural questions developed throughout the thesis rather than standing apart from

them. The historical discussion showed how dependence has been the key factor in shaping the development trajectory of Nigeria overtime, while at the micro level, it has been shown how the same conditions have influenced labor allocation and welfare results. The balance-of-payments-constrained growth framework then provided an understanding of how all the above arguments fit into the context of macroeconomic growth and structural transformation in the Nigerian economy by examining how export structure, import dependence, and foreign exchange availability continued to shape long-run growth

5.2 Summary of Findings

The problems examined in this study is not limited to the Nigerian experience alone. For resource-abundant economies in the developing world, different development experiences have been recorded over time even as there have been phases of accelerated economic growth as a result of export revenues from resources. Some economies have used their export revenues well by expanding production, developing their domestic economy, and facilitating structural changes; others, on the other hand, have remained exposed to shocks and instability due to foreign exchange pressures and external factors. In the Nigerian case, experience illustrates the importance of looking beyond growth itself, but also the role of foreign exchange within the structure of the economy. The significance of the case therefore lies in understanding Nigeria's development experience and what it reveals about the challenges of transforming resource wealth into sustained development.

As Africa's most populous country and one of the world's largest crude oil exporters, development within the Nigerian economy affect the welfare of millions of people and are also pertinent beyond its national borders. Since the economy depends greatly on its oil exports, the country has been affected by repeated periods of boom and bust due to changes in international

commodity prices, causing problems that go beyond just growth in the economy. Fiscal policy, exchange-rate management, employment opportunities, household welfare, and the prospects for structural transformation have all been shaped by this volatility. The Nigeria experience demonstrates that the developmental consequences of being resource-rich depend on the availability of external earnings, and the extent to which those earnings become connected to structural transformation within the wider economy.

Nigeria's development experience has been shaped by a structure in which economic expansion remained closely tied to crude oil exports, foreign exchange earnings, and imported production inputs. The historical analysis showed that periods of rising oil prices often worked to relieve external pressure and help achieve a higher level of economic performance through increased foreign exchange earnings, increased government spending, and better import capabilities. During such times, growth relatively accelerates, and the economy benefit from temporary improvement in macroeconomic performance. However, this is not always accompanied by the much-needed structural change in the economy. The manufacturing sector remains relatively underdeveloped, production remain highly dependent on imports, and the economy remain extremely sensitive to changes in external environment. As a result, periods of dropping oil prices in the global market repeatedly create pressure on exchange rate availability, inflation, import, fiscal adjustment, and weakens production conditions. The historical discussion therefore suggested that Nigeria's growth experience was characterized by repeated cycles in which favorable external conditions temporarily relaxed structural pressures without fundamentally altering the underlying dependence on external earnings and imported production.

This structure also shaped the kinds of policy choices available to governments and monetary authorities over time. Since foreign exchange earnings and public revenue depended heavily on crude oil exports, periods of external pressure frequently reduced the state's ability to sustain expenditure, stabilize the exchange rate, finance imports, and maintain macroeconomic stability. Economic management therefore became increasingly centered around the problem of managing foreign exchange shortages, inflationary pressures, exchange-rate instability, and fiscal adjustment during downturns. Periods of expansion often eased these pressures temporarily, but they did not remove the underlying constraint because domestic production itself remained tied to imported machinery, industrial inputs, refined petroleum products, and intermediate goods. In this sense, external dependence affected far more than export performance alone. It shaped the wider policy environment within which governments attempted to manage growth, stabilize prices, support production, and respond to economic crises over time.

The implications of these broader structural conditions extended beyond macroeconomic policy and became visible within patterns of employment, labor allocation, and household welfare across different regions and social groups. A period of higher oil earnings increased the amount of foreign currency earnings, hence enabling the purchase of machinery and other raw materials needed for production processes and economic activities in general. On the other hand, lower earnings from the export of oil brought about the scarcity of foreign exchange, leading to reduced imports, increased costs of production, and the vulnerability of industries dependent on imported raw materials. In an economy that was marked by a lack of industrial growth, many families still depended on agriculture and small-scale trading because alternative opportunities were relatively scarce. This is where the

gendered pattern observed in the household analysis emerged within the same context, determining how structure of production shapes access to job opportunities, income-generating activities, and welfare opportunities across society. The effects extended beyond the external sector, influencing employment opportunities, household incomes, and the range of economic activities available across different regions. In this way, changes in the availability of foreign exchange is critical in linking macroeconomic conditions to household welfares.

The household-level analysis showed that weak structural transformation influenced the organization of economic activities and the distribution of economic opportunities within everyday life. Men remained more concentrated in farming activities, while women were more represented within retail and wholesale trade, although these patterns varied across regions. The result further showed that consumption expenditure among farmers is relatively low compared to trading households, with wholesalers performing better than retail traders. The differences observed are reflective of the overall economic structure. As external pressures weakened production conditions and limited the growth of productive industries, households responded according to the opportunities available within an economy characterized by uneven development, high reliance on imports and low industrialization. The broader implication drawn from the study is that the macroeconomic structure and the household outcomes cannot be treated in isolation because the overall production structure within the economy influences the employment conditions, welfare gains, and distributions of economic activities across society.

The balance-of-payments-constrained growth analysis provided a formal macroeconomic explanation for why these broader patterns persisted over time despite repeated episodes of economic expansion. The findings suggested that Nigeria's long-run

growth remained constrained by the narrow structure of exports, strong import dependence, and recurring foreign exchange pressures. Import demand responded strongly to domestic income growth, while exchange-rate adjustment alone appeared insufficient to relax the external constraint in any sustained way. This finding became particularly important when considered alongside the earlier historical and household-level discussions. The historical analysis had already shown that periods of economic expansion repeatedly depended on favorable external conditions and rising foreign exchange earnings, while the household-level analysis illustrated how weak structural transformation shaped employment opportunities and welfare outcomes across the population. The balance-of-payments-constrained growth framework brought these broader discussions together by formally showing why growth remained difficult to sustain within an economy where production, imports, and foreign exchange availability remained so closely connected.

The central argument developed throughout the thesis is therefore that Nigeria's development problems arise out of a more fundamental structural issue rather than a temporary failure of macroeconomic management. Although there is no doubt that institutional inefficiency and corruption form part of the larger environment that influences economic policymaking, these are insufficient on their own to explain the continuing problems of persistence of instability, uneven development, and weak structural transformation over time. The deeper problem revolves around the way in which external dependence became incorporated into the overall system of production, trade, employment, finance, exchange rate management, and household well-being. As a result, this thesis argues that external dependence increasingly constituted the overall context within which the Nigerian economy operated, with

repercussions for macroeconomic stability, policy decisions, employment opportunities, household conditions, and long-term structural change.

5.3 Policy Implications

The findings drawn from this thesis have wider implications for the understanding of development and economic policy in countries whose economies rely heavily on resources. One of the main implications is that macroeconomic policy independence remains limited where the availability of foreign exchange is highly contingent on a narrow export base. Macroeconomic policies such as monetary, fiscal, and exchange rate policies may not operate independent of changes in the external environment because inflationary pressures, import needs, government spending, and exchange rates are tied to changes in external receipts. In this regard, economic management become heavily reliant on stabilization, hence limiting the potential for structural change in the economy. What emerges from the analysis is that the structure through which growth occurs matters as much as growth itself.

Commodity-exporting economies do not experience identical outcomes simply because they possess natural resources. The fundamental issue here is whether or not foreign revenues become connected with economic diversification, domestic linkages, and increases in productive capacity. Nigeria's development trajectory was therefore not historically inevitable, but emerges from the interplay of various factors, including oil dependence, weak industry, import dependence, uneven regional development, and weak productive integration across sectors of the economy. Questions of governance and institutional quality clearly remain important within this broader context, but the discussion developed throughout the thesis suggests that structural conditions also played a central role in shaping long-run development outcomes. Sustainable development therefore needs more than just growth driven by external

conditions. What matters is that growth can be connected with structural change that lowers external dependency over time.

5.4 Limitations and Future Research

The thesis approached the question of development and external dependence in Nigeria using a historical, household-level, and the macroeconomic approach, while recognizing the inherent limitations of each approach. The historical approach focuses on the relationship between oil dependency, foreign exchange dynamics, and structural change, as opposed to providing a complete overview of the domestic politics of Nigeria. Political issues such as political coalitions, state capacity, and policy incentives are considered only to the extent that they relate to the overall economic framework. A more detailed political analysis of how governments managed oil revenues, industrial policy, and exchange rate policy would be valuable in understanding dependency.

At the household level, the analysis focused on examining the variations in labor distribution and welfare impacts among household activities, but it did not sufficiently consider the changes that occur over long periods of time amid economic instability. Although the analysis found that there are certain trends of inequality and economic opportunity, the process by which households respond to economic challenges such as inflation, unemployment, migration, and falling incomes remains unclear. Future research might therefore be conducted to investigate how macroeconomic instability affects labor mobility and welfare outcomes.

The balance of payments constraint growth model in this thesis explores the impact of exports, imports, and foreign exchange dynamics on growth performance over time. While the model provides an important explanation of the existence of external constraints within the Nigeria's economic structure, it fails to incorporate the effects of industrial policies and

technological advancements or regional production linkages on altering long run growth trajectories. Therefore, further research should focus on understanding the effects of industrialization and technological advancements on the external dependency-growth nexus.

References

1. Abdisa, Takele, Abule Mehare, and Mekonnen B. Wakeyo. 2024. "Analyzing Gender Gap in Agricultural Productivity: Evidence from Ethiopia." *Journal of Agriculture and Food Research* 15: 100960.
2. Abubakar, Attahir Babaji, Mansur Muhammad, and Samuel Mensah. 2023. "Response of Fiscal Efforts to Oil Price Dynamics." *Resources Policy* 81: 103353.
3. Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2005. "Institutions as a Fundamental Cause of Long-Run Growth." *Handbook of Economic Growth* 1: 385–472.
4. Acemoglu, Daron, and James A. Robinson. 2013. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown Currency. [https://books.google.com/books?hl=en&lr=&id=FXJvAAAAQBAJ&oi=fnd&pg=PA1&dq=Acemoglu,+D.,+%26+Robinson,+J.+A.+\(2012\).+Why+nations+fail:+The+origins+of+power,+prosperity,+and+poverty.+Crown+Publishers.&ots=6jcG9F5qXh&sig=NCZcGUT4tl6KbABZIUbcWIVzpRU](https://books.google.com/books?hl=en&lr=&id=FXJvAAAAQBAJ&oi=fnd&pg=PA1&dq=Acemoglu,+D.,+%26+Robinson,+J.+A.+(2012).+Why+nations+fail:+The+origins+of+power,+prosperity,+and+poverty.+Crown+Publishers.&ots=6jcG9F5qXh&sig=NCZcGUT4tl6KbABZIUbcWIVzpRU).
5. Adeniran, J. O., S. A. Yusuf, and Olatoke A. Adeyemi. 2014. "The Impact of Exchange Rate Fluctuation on the Nigerian Economic Growth: An Empirical Investigation." *International Journal of Academic Research in Business and Social Sciences* 4 (8): 224–33.
6. Adi, Agya Atabani, Samuel Paabu Adda, and Amadi Kingsley Wobilor. 2022. "Shocks and Volatility Transmission between Oil Price and Nigeria's Exchange Rate." *SN Business & Economics* 2 (6): 47. <https://doi.org/10.1007/s43546-022-00228-z>.
7. Ahmed, Swarnali, Maximiliano Appendino, and Michele Ruta. 2017. "Global Value Chains and the Exchange Rate Elasticity of Exports." *The B.E. Journal of Macroeconomics* 17 (1): 20150130. <https://doi.org/10.1515/bejm-2015-0130>.
8. Ajakaiye, Olu, and Tayo Fakiyesi. 2009. "Global Financial Crisis Discussion Series." *Paper* 8: 50.
9. Alege, Philip O., and Evans S. Osabuohien. 2015. "Trade-Exchange Rate Nexus in Sub-Saharan African Countries: Evidence from Panel Cointegration Analysis." *Foreign Trade Review* 50 (3): 151–67. <https://doi.org/10.1177/0015732515589440>.
10. Aliyu, Shehu Usman Rano. 2009. *Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation*. <https://mpira.ub.uni-muenchen.de/id/eprint/16319>.
11. Amiti, Mary, Oleg Itskhoki, and Jozef Konings. 2014. "Importers, Exporters, and Exchange Rate Disconnect." *American Economic Review* 104 (7): 1942–78.
12. Amsden, Alice Hoffenberg. 1989. *Asia's next Giant: South Korea and Late Industrialization*. Oxford University Press.

- [https://books.google.com/books?hl=en&lr=&id=f0hDv51qS6MC&oi=fnd&pg=PR13&dq=Amsden,+A.+H.+\(1989\).+Asia%E2%80%99s+Next+Giant:+South+Korea+and+Late+Industrialization.+Oxford+University+Press.&ots=IKxI0EF9RI&sig=bsN4_-GVdGmY3J_E1Ozz7kCsKSs](https://books.google.com/books?hl=en&lr=&id=f0hDv51qS6MC&oi=fnd&pg=PR13&dq=Amsden,+A.+H.+(1989).+Asia%E2%80%99s+Next+Giant:+South+Korea+and+Late+Industrialization.+Oxford+University+Press.&ots=IKxI0EF9RI&sig=bsN4_-GVdGmY3J_E1Ozz7kCsKSs).
13. Anang, Benjamin Tetteh, Stefan Bäckman, and Antonios Rezitis. 2016. “Does Farm Size Matter? Investigating Scale Efficiency of Peasant Rice Farmers in Northern Ghana.” *Economics Bulletin* 36 (4): 2275–90.
 14. Anderson, C. Leigh, Travis W. Reynolds, Pierre Biscaye, Vedavati Patwardhan, and Carly Schmidt. 2021. “Economic Benefits of Empowering Women in Agriculture: Assumptions and Evidence.” *The Journal of Development Studies* 57 (2): 193–208. <https://doi.org/10.1080/00220388.2020.1769071>.
 15. Andreoni, Antonio, and Fiona Tregenna. 2020. “Escaping the Middle-Income Technology Trap: A Comparative Analysis of Industrial Policies in China, Brazil and South Africa.” *Structural Change and Economic Dynamics* 54: 324–40.
 16. Antonio Ocampo, José. 2017. *Resetting the International Monetary (Non) System*. Oxford University Press. <https://library.oapen.org/handle/20.500.12657/31029>.
 17. Arezki, Rabah, Valerie A. Ramey, and Liugang Sheng. 2017. “News Shocks in Open Economies: Evidence from Giant Oil Discoveries.” *The Quarterly Journal of Economics* 132 (1): 103–55.
 18. Asadullah, M. Niaz, and Uma Kambhampati. 2021. “Feminization of Farming, Food Security and Female Empowerment.” *Global Food Security* 29: 100532.
 19. Ashaley-Nikoi, Juliana, and Emmanuel Abbey. 2023. “Determinants of the Level of Informality amongst Female Street Food Vendors in Sub-Saharan Africa: Evidence from Two Regions in Ghana.” *Cities* 138: 104359.
 20. Autor, David H., David Dorn, and Gordon H. Hanson. 2013. “The Geography of Trade and Technology Shocks in the United States.” *American Economic Review* 103 (3): 220–25.
 21. Auty, Richard. 2002. *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. Routledge. <https://api.taylorfrancis.com/content/books/mono/download?identifierName=doi&identifierValue=10.4324/9780203422595&type=googlepdf>.
 22. Auty, Richard M. 2001. *Resource Abundance and Economic Development*. OUP Oxford. [https://books.google.com/books?hl=en&lr=&id=sDlwTNnksQIC&oi=fnd&pg=PR11&dq=Auty,+R.+M.+\(2001\).+Resource+Abundance+and+Economic+Development.+Oxford+University+Press.&ots=waUpQvkdV&sig=4lgFo4_SKAI9Q9HlrG4KR9Khp-M](https://books.google.com/books?hl=en&lr=&id=sDlwTNnksQIC&oi=fnd&pg=PR11&dq=Auty,+R.+M.+(2001).+Resource+Abundance+and+Economic+Development.+Oxford+University+Press.&ots=waUpQvkdV&sig=4lgFo4_SKAI9Q9HlrG4KR9Khp-M).

23. Awe, Olushina Olawale, Ann Precious Musa, and Gbenga Peter Sanusi. 2023. "Revisiting Economic Diversification in Africa's Largest Resource-Rich Nation: Empirical Insights from Unsupervised Machine Learning." *Resources Policy* 82: 103540.
24. Bahmani-Oskooee, Mohsen, and Scott W. Hegerty. 2010. "The J-and S-Curves: A Survey of the Recent Literature." *Journal of Economic Studies* 37 (6): 580–96.
25. Barbosa-Filho, Nelson H. 2004. "The Balance of Payments Constraint: From Balanced Trade to Sustainable Debt." In *Essays on Balance of Payments Constrained Growth*. Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203495360-14/balance-payments-constraint-balanced-trade-sustainable-debt-nelson-barbosa-filho>.
26. Blecker, Robert A. 2016. "The Debate over 'Thirlwall's Law': Balance-of-Payments-Constrained Growth Reconsidered." *European Journal of Economics and Economic Policies* 13 (3): 275–90.
27. Blecker, Robert A., and Arslan Razmi. 2010. "Export-Led Growth, Real Exchange Rates and the Fallacy of Composition." In *Handbook of Alternative Theories of Economic Growth*. Edward Elgar Publishing. <https://www.elgaronline.com/downloadpdf/edcollchap/edcoll/9781847204028/9781847204028.00030.pdf>.
28. Bölükbaşı, Halime, and Irfan Civcir. 2024. "Imported Inputs, Balance of Payments and Economic Growth: A Model and a Test on the Case of Turkey." *Structural Change and Economic Dynamics* 70: 319–32.
29. Bresser-Pereira, Luiz Carlos. 2016. "Reflecting on New Developmentalism and Classical Developmentalism." *Review of Keynesian Economics* 4 (3): 331–52.
30. Bussière, Matthieu, Guillaume Gaulier, and Walter Steingress. 2020. "Global Trade Flows: Revisiting the Exchange Rate Elasticities." *Open Economies Review* 31 (1): 25–78. <https://doi.org/10.1007/s11079-019-09573-3>.
31. Central Bank of Nigeria. 2000. "Central Bank of Nigeria Annual Report and Statement of Accounts for the Year Ended 31st December 2000." *Central Bank Nigeria Annual Report and Statement of Account 2000*, December 31, 1–138.
32. Chang, Ha-Joon, J. M. Keynes, F. List, and F. Hayek. 2002. "'Kicking Away the Ladder': Development Strategy in Historical Perspective (A Book Review) Sebastian Orafaga Bii." London: Anthem Press. https://www.kamjournal.org/wp-content/uploads/2021/08/Microsoft-Word-Vol-3.-No-1.-final-copy.docx_6__1-9.pdf.
33. Cimoli, Mario, Giovanni Dosi, and Joseph E. Stiglitz. 2009. "Industrial Policy and Development: The Political Economy of Capabilities Accumulation." *New York: Oxford*, 113–37.

34. Cimoli, Mario, Gabriel Porcile, and Sebastián Rovira. 2010. "Structural Change and the BOP-Constraint: Why Did Latin America Fail to Converge?" *Cambridge Journal of Economics* 34 (2): 389–411.
35. Coles, Christopher, and Jonathan Mitchell. 2011. *Gender and Agricultural Value Chains: A Review of Current Knowledge and Practice and Their Policy Implications*. <https://ageconsearch.umn.edu/record/289016/>.
36. Collier, Paul, and Benedikt Goderis. 2012. "Commodity Prices and Growth: An Empirical Investigation." *European Economic Review* 56 (6): 1241–60.
37. De, Anusha, Caroline Mieke, and Bjorn Van Campenhout. 2024. "Gender Bias in Customer Perceptions: The Case of Agro-Input Dealers in Uganda." *Agricultural Systems* 217: 103954.
38. Dhar, Rahul, Michael Olabisi, Iredele Emmanuel Ogunbayo, Nathaniel Olutegbe, Oreoluwa Ibukun Akano, and David Tschirley. 2024. "Food Demand Responses to Global Price Shocks: Contrasts in Sub-National Evidence from Nigeria." *Available at SSRN 4958337*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4958337.
39. Diiro, Gracious M., Greg Seymour, Menale Kassie, Geoffrey Muricho, and Beatrice Wambui Muriithi. 2018. "Women's Empowerment in Agriculture and Agricultural Productivity: Evidence from Rural Maize Farmer Households in Western Kenya." *PloS One* 13 (5): e0197995.
40. Dinkelman, Taryn, and L. Rachel Ngai. 2022. "Time Use and Gender in Africa in Times of Structural Transformation." *Journal of Economic Perspectives* 36 (1): 57–80.
41. Eggertsson, Gauti B., and Paul Krugman. 2012. "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach." *The Quarterly Journal of Economics* 127 (3): 1469–513.
42. Fischer, Elisabeth, and Martin Qaim. 2012. "Gender, Agricultural Commercialization, and Collective Action in Kenya." *Food Security* 4 (3): 441–53. <https://doi.org/10.1007/s12571-012-0199-7>.
43. Fisher, Brendan, and Robin Naidoo. 2016. "The Geography of Gender Inequality." *PloS One* 11 (3): e0145778.
44. Goldberg, Pinelopi K., and Nina Pavcnik. 2016. "The Effects of Trade Policy." In *Handbook of Commercial Policy*, vol. 1. Elsevier. <https://www.sciencedirect.com/science/article/pii/S2214312216300023>.
45. Hausmann, Ricardo, Jason Hwang, and Dani Rodrik. 2007. "What You Export Matters." *Journal of Economic Growth* 12 (1): 1–25. <https://doi.org/10.1007/s10887-006-9009-4>.
46. Iasco-Pereira, Hugo, and Fabrício José Missio. 2022. "Would a Competitive Real Exchange Rate Be a Driver of Economic Prosperity?" *PSL Quarterly Review* 75 (303): 355–83.

47. IMF (IMF). n.d.-a. “IMF Executive Board Approves US\$ 3.4 Billion in Emergency Support to Nigeria to Address the COVID-19 Pandemic.” Accessed May 13, 2026. <https://www.imf.org/en/news/articles/2020/04/28/pr20191-nigeria-imf-executive-board-approves-emergency-support-to-address-covid-19>.
48. IMF (IMF). n.d.-b. “Nigeria: 2018 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Nigeria.” Accessed May 13, 2026. <https://www.imf.org/en/publications/cr/issues/2018/03/07/nigeria-2018-article-iv-consultation-press-release-staff-report-and-statement-by-the-45699>.
49. IMF (IMF). n.d.-c. “Nigeria: 2021 Article IV Consultation-Press Release; Staff Report; Staff Statement, and Statement by the Executive Director for Nigeria.” Accessed May 19, 2026. <https://www.imf.org/en/publications/cr/issues/2022/02/09/nigeria-2021-article-iv-consultation-press-release-staff-report-staff-statement-and-512944>.
50. Iwayemi, Akin, and Babajide Fowowe. 2011. “Impact of Oil Price Shocks on Selected Macroeconomic Variables in Nigeria.” *Energy Policy* 39 (2): 603–12.
51. Jeffrey, Frankel, and David Romer. 1999. “Does Trade Cause Growth?” *American Economic Review* 83 (3): 379–99.
52. Jomo, K. 2001. *Southeast Asia’s Industrialization: Industrial Policy, Capabilities and Sustainability*. Springer. [https://books.google.com/books?hl=en&lr=&id=K7yDDAAQBAJ&oi=fnd&pg=PR1&dq=Jomo,+K.+S.+\(2001\).+Southeast+Asia%E2%80%99s+Industrialization:+Industrial+Policy,+Capabilities+and+Sustainability.+Palgrave.&ots=NA9UCa9Awk&sig=JT0PwsMBkhOEcOg6TxDzeGWRkKU](https://books.google.com/books?hl=en&lr=&id=K7yDDAAQBAJ&oi=fnd&pg=PR1&dq=Jomo,+K.+S.+(2001).+Southeast+Asia%E2%80%99s+Industrialization:+Industrial+Policy,+Capabilities+and+Sustainability.+Palgrave.&ots=NA9UCa9Awk&sig=JT0PwsMBkhOEcOg6TxDzeGWRkKU).
53. Karamba, R. Wendy, and Paul C. Winters. 2015. “Gender and Agricultural Productivity: Implications of the Farm Input Subsidy Program in Malawi.” *Agricultural Economics* 46 (3): 357–74. <https://doi.org/10.1111/agec.12169>.
54. Kwarazuka, Nozomi, Cheryl R. Doss, Cathy Rozel Farnworth, and Rhiannon Pyburn. 2022. “Myths about the Feminization of Agriculture: Implications for Global Food Security.” *Global Food Security* 33: 100611.
55. Kilic, Talip, Paul Winters, and Calogero Carletto. 2015. “Gender and Agriculture in Sub-Saharan Africa: Introduction to the Special Issue.” *Agricultural Economics* 46 (3): 281–84. <https://doi.org/10.1111/agec.12165>.
56. Knöblsdorfer, Isabel, Jorge Sellare, and Matin Qaim. 2021. “Effects of Fairtrade on Farm Household Food Security and Living Standards: Insights from Côte d’Ivoire.” *Global Food Security* 29: 100535.
57. Komatsu, Hitomi, Hazel Jean L. Malapit, and Sophie Theis. 2018. “Does Women’s Time in Domestic Work and Agriculture Affect Women’s and Children’s Dietary Diversity? Evidence from Bangladesh, Nepal, Cambodia, Ghana, and Mozambique.” *Food Policy* 79: 256–70.

58. Kose, M. Ayhan, Eswar S. Prasad, and Marco E. Terrones. 2009. "Does Openness to International Financial Flows Raise Productivity Growth?" *Journal of International Money and Finance* 28 (4): 554–80.
59. Krugman, Paul R., and Maurice Obstfeld. 2009. *Internationale Wirtschaft: Theorie Und Politik Der Außenwirtschaft*. Pearson Deutschland GmbH. https://books.google.com/books?hl=en&lr=&id=GcnlvS5A07EC&oi=fnd&pg=PA6&dq=Krugman+%26+Obstfeld,+2009&ots=_cOMroNlRy&sig=x6GpReI2oUF9xQII_zEzCH2UMew.
60. Liverpool-Tasie, Lenis Saweda O., Rabi'u Ya'u, Aisha Ibrahim, et al. 2023. "Transformation of Vegetable Value Chains in Nigeria: Spatial and Seasonal Lengthening & Intensification." In *RSM2SNF Working Paper*. Michigan State University East Lansing, MI. [https://www.canr.msu.edu/fsg/projects/\(17\)%20RR%20Working%20Paper%20Vegetables%20Nigeria.pdf](https://www.canr.msu.edu/fsg/projects/(17)%20RR%20Working%20Paper%20Vegetables%20Nigeria.pdf).
61. McMillan, Margaret, Dani Rodrik, Marc Bacchetta, and Marion Jensen. 2011. "Making Globalization Socially Sustainable." Ed. Marc Bacchetta and Marion Jansen, *Chapter Globalization, Structural Change, and Productivity Growth*. Geneva: International Labour Organization and World Trade Organization. https://www.wto.org/English/res_e/publications_e/ilo_wto_e/ILO-WTO02-final.pdf.
62. Moreno-Brid, Juan Carlos. 1998. "On Capital Flows and The Balance-of-Payments-Constrained Growth Model." *Journal of Post Keynesian Economics* 21 (2): 283–98. <https://doi.org/10.1080/01603477.1998.11490194>.
63. Newman, Carol, John Page, John Rand, Abebe Shemeles, Måns Söderbom, and Finn Tarp. 2016. *Made in Africa: Learning to Compete in Industry*. Brookings Institution Press. <https://library.oapen.org/handle/20.500.12657/25778>.
64. Njiru, Nelly, Alessandra Galiè, Immaculate Omondi, Dalmas Omia, Agnes Loriba, and Peter Awin. 2024. "Gender Transformative Innovation: Women's Inclusion in Livestock Vaccine Systems in Northern Ghana." *Agricultural Systems* 219: 104023.
65. Nwankwo, Clara U., Michael E. Ikehi, Tsochukwu E. Ejiofor, and Florence O. Ifeanyieze. 2024. "Successive National Agricultural Policies/Programmes, Growth of Gross Domestic Product (GDP) and Expansion of Agribusinesses in Nigeria." *Plos One* 19 (2): e0291999.
66. Ocampo, José Antonio. 2017. "Commodity-Led Development in Latin America." *International Development Policy| Revue Internationale de Politique de Développement*, no. 9: 51–76.
67. Ocampo, José Antonio. 2020. *Industrial Policy, Macroeconomics, and Structural Change*. <https://academic.oup.com/edited-volume/34292/chapter/290698991>.

68. Oduol, Judith Beatrice Auma, Dagmar Mithöfer, Frank Place, et al. 2017. “Women’s Participation in High Value Agricultural Commodity Chains in Kenya: Strategies for Closing the Gender Gap.” *Journal of Rural Studies* 50: 228–39.
69. Ogbuabor, Jonathan E., Anthony Orji, Charles O. Manasseh, and Onyinye I. Anthony-Orji. 2020. “Institutional Quality and Growth in West Africa: What Happened after the Great Recession?” *International Advances in Economic Research* 26 (4): 343–61. <https://doi.org/10.1007/s11294-020-09805-0>.
70. Ogutu, Sylvester Ochieng, Theda Gödecke, and Matin Qaim. 2020. “Agricultural Commercialisation and Nutrition in Smallholder Farm Households.” *Journal of Agricultural Economics* 71 (2): 534–55. <https://doi.org/10.1111/1477-9552.12359>.
71. Olabisi, M., M. Maredia, T. Ajibade, and H. A. Ajeigbe. 2023. “Gender Participation Rates in Food Value Chains: Evidence from Nigeria.” *Working Paper*.
72. Olabisi, Michael, Hephzibah Onyeje Obekpa, and Lenis Saweda O. Liverpool-Tasie. 2021. “Is Growing Your Own Food Necessary for Dietary Diversity? Evidence from Nigeria.” *Food Policy* 104: 102144.
73. Olayungbo, D. Oluseun. 2019. “Effects of Global Oil Price on Exchange Rate, Trade Balance, and Reserves in Nigeria: A Frequency Domain Causality Approach.” *Journal of Risk and Financial Management* 12 (1): 43.
74. Olokoyo, Felicia O., Oyakhilome W. Ibhagui, and Abiola Babajide. 2020. “Macroeconomic Indicators and Capital Market Performance: Are the Links Sustainable?” *Cogent Business & Management* 7 (1): 1792258. <https://doi.org/10.1080/23311975.2020.1792258>.
75. Olomola, Philip A., and Akintoye V. Adejumo. 2006. “Oil Price Shock and Macroeconomic Activities in Nigeria.” *International Research Journal of Finance and Economics* 3 (1): 28–34.
76. Oyadeyi, Olajide O., Oluwadamilola A. Oyadeyi, and Faith A. Iyoha. 2024. “Exchange Rate Pass-through on Prices in Nigeria—a Threshold Analysis.” *International Journal of Financial Studies* 12 (4): 101.
77. Pandey, Vivek, Hari K. Nagarajan, and Deepak Kumar. 2021. “Impact of Gendered Participation in Market-Linked Value-Chains on Economic Outcomes: Evidence from India.” *Food Policy* 104: 102142.
78. Pereira, Hugo C. Iasco, and Fabrício J. Missio. 2022. “Real Exchange Rate and Structural Change: Theory and Empirical Evidence.” *Investigación Económica* 81 (320): 81–107.
79. Pierotti, Rachael S., Sophia Friedson-Ridenour, and Olubukola Olayiwola. 2022. “Women Farm What They Can Manage: How Time Constraints Affect the Quantity and Quality of Labor for Married Women’s Agricultural Production in Southwestern Nigeria.” *World Development* 152: 105800.

80. Ploeg, Frederick van der. 2011. "Natural Resources: Curse or Blessing?" *Journal of Economic Literature* 49 (2): 366–420.
81. Porcile, Gabriel, and Giuliano Toshio Yajima. 2021. "New Structuralism and the Balance-of Payments Constraint." In *Thirlwall's Law at 40*. Edward Elgar Publishing. <https://www.elgaronline.com/abstract/edcoll/9781800881464/9781800881464.00010.xml>
82. Rodrik, Dani. 2008. "The Real Exchange Rate and Economic Growth." *Brookings Papers on Economic Activity* 2008 (2): 365–412.
83. Rodrik, Dani. 2016. "Premature Deindustrialization." *Journal of Economic Growth* 21 (1): 1–33. <https://doi.org/10.1007/s10887-015-9122-3>.
84. Rodrik, Dani. 2018. *New Technologies, Global Value Chains, and Developing Economies*. National Bureau of Economic Research. <https://www.nber.org/papers/w25164>.
85. Romero, João P., and John S. L. McCombie. 2016. "The Multi-Sectoral Thirlwall's Law: Evidence from 14 Developed European Countries Using Product-Level Data." *International Review of Applied Economics* 30 (3): 301–25. <https://doi.org/10.1080/02692171.2015.1102207>.
86. Sala-i-Martin, Xavier, and Arvind Subramanian. 2013. "Addressing the Natural Resource Curse: An Illustration from Nigeria." *Journal of African Economies* 22 (4): 570–615.
87. Sanusi, Lamido Sanusi. 2010. "Growth Prospects for the Nigerian Economy." *Convocation Lecture Delivered at the Igbinedion University Eighth Convocation Ceremony, Okada, Edo State*. https://www.academia.edu/download/62177988/growth_prospect_for_nigerian_economy20200223-117527-ny3x7y.PDF.
88. Slavchevska, Vanya, Cheryl R. Doss, Ana Paula De La O Campos, and Chiara Brunelli. 2021. "Beyond Ownership: Women's and Men's Land Rights in Sub-Saharan Africa." *Oxford Development Studies* 49 (1): 2–22. <https://doi.org/10.1080/13600818.2020.1818714>.
89. Soliman, Hebatallah Ahmed. 2024. "Empirical Tests of the Marshall–Lerner Condition: Evidence from Egypt–BRICS Commodity Trade Using ARDL Approach." *Future Business Journal* 10 (1): 121. <https://doi.org/10.1186/s43093-024-00408-3>.
90. Taylor, Alan M., and Mark P. Taylor. 2004. "The Purchasing Power Parity Debate." *Journal of Economic Perspectives* 18 (4): 135–58. <https://doi.org/10.1257/0895330042632744>.
91. Thirlwall, Anthony P., and M. Nureldin Hussain. 1982. "The Balance of Payments Constraint, Capital Flows and Growth Rate Differences between Developing Countries." *Oxford Economic Papers* 34 (3): 498–510.

92. Thirlwall, Anthony Philip. 1979. "The Balance of Payments Constraint as an Explanation of International Growth Rate Differences." *PSL Quarterly Review* 32 (128): 45–53.
93. Thirlwall, Anthony Philip. 2012. "Balance of Payments Constrained Growth Models: History and Overview." In *Models of Balance of Payments Constrained Growth*, edited by Elias Soukiazis and Pedro A. Cerqueira. Palgrave Macmillan UK. https://doi.org/10.1057/9781137023957_2.
94. Urgessa, Obsa. 2024. "Effects of Real Effective Exchange Rate Volatility on Export Earnings in Ethiopia: Symmetric and Asymmetric Effect Analysis." *Heliyon* 10 (1). [https://www.cell.com/heliyon/fulltext/S2405-8440\(23\)10737-7](https://www.cell.com/heliyon/fulltext/S2405-8440(23)10737-7).
95. Van den Broeck, Goedele, Talip Kilic, and Janneke Pieters. 2023. "Structural Transformation and the Gender Pay Gap in Sub-Saharan Africa." *Plos One* 18 (4): e0278188.
96. Van der Ploeg, Frederick, and Steven Poelhekke. 2009. "Volatility and the Natural Resource Curse." *Oxford Economic Papers* 61 (4): 727–60.
97. Waris, Amtul, B. Nirmala, and S. Arun Kumar. 2016. "Gender Gap and Female Workforce Participation in Agriculture in Andhra Pradesh, India." *African Journal of Agricultural Research* 11 (9): 769–78.
98. World Bank (World Bank). n.d. "World Development Report 2020: Trading for Development in the Age of Global Value Chains." Text/HTML. Accessed May 19, 2026. <https://www.worldbank.org/en/publication/wdr2020>.