



LUND UNIVERSITY

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Master's Programme in Economic Growth, Population and Development: Development Track

Factors behind Economic Shrinking

Single Case Study Insights from Nigeria

by

Jana Lange

Ja8686la-s@student.lu.se

Abstract: This thesis addresses the research problem of volatile growth and in particular economic shrinking in developing countries. A single case study of Nigeria drawing on qualitative as well as quantitative data assesses four potential factors behind the country's frequent and high shrinking rates between 1960 and 2017. The study finds a lack of structural transformation, productivity and diversification as well as a high reliance on the particularly volatile oil industry, no observable effects of demographic factors and potentially problematic frequent incidences of warfare particularly in recent years. Lastly, the thesis identifies an uncompleted institutional transition from a limited to an open access social order largely due to persisting inequalities resulting in a lack of economic opportunities for part of the population. The thesis provides broad policy recommendations with regard to the assessed factors taking into consideration how Nigeria has temporarily reduced economic shrinking in the past and how the country can profit from these previous experiences in the future. Institutional change constitutes the ultimate factor Nigeria needs to improve in order to become more resilient to economic shrinking since this will lead to automatic improvements in the other factors. These factors require an economic diversification with lower reliance on the oil sector and a reconciliation of the diverse societal groups in order to avoid further violent conflict in the future.

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1 Introduction

1.1 Research Problem

In the past six decades since Nigeria's independence from colonial rule in 1960, the country's economy has suffered from a total of 21 years of economic shrinking. In comparison, the Sub-Saharan Africa region merely experienced 7 years of economic shrinking on average during the same time period. Nigeria therefore constitutes a case of particularly volatile national income growth. While economic growth and a lack thereof have constituted the centre of developmental debates, economic shrinking, i.e. negative national income growth rates, has received relatively little attention in those discussions. However, reoccurring and high rates of economic shrinking have a large impact on a country's income level in the long run. The simulation of a 1% growth rate in the years of economic shrinking in *Figure 1.1* demonstrates that Nigeria's income level would be three times higher than it is today had the economy not faced any episodes of economic shrinking. This drastic difference shows that avoiding economic shrinking by building a resilience thereof constitutes a key requirement in raising Nigeria's income level significantly in the long run.

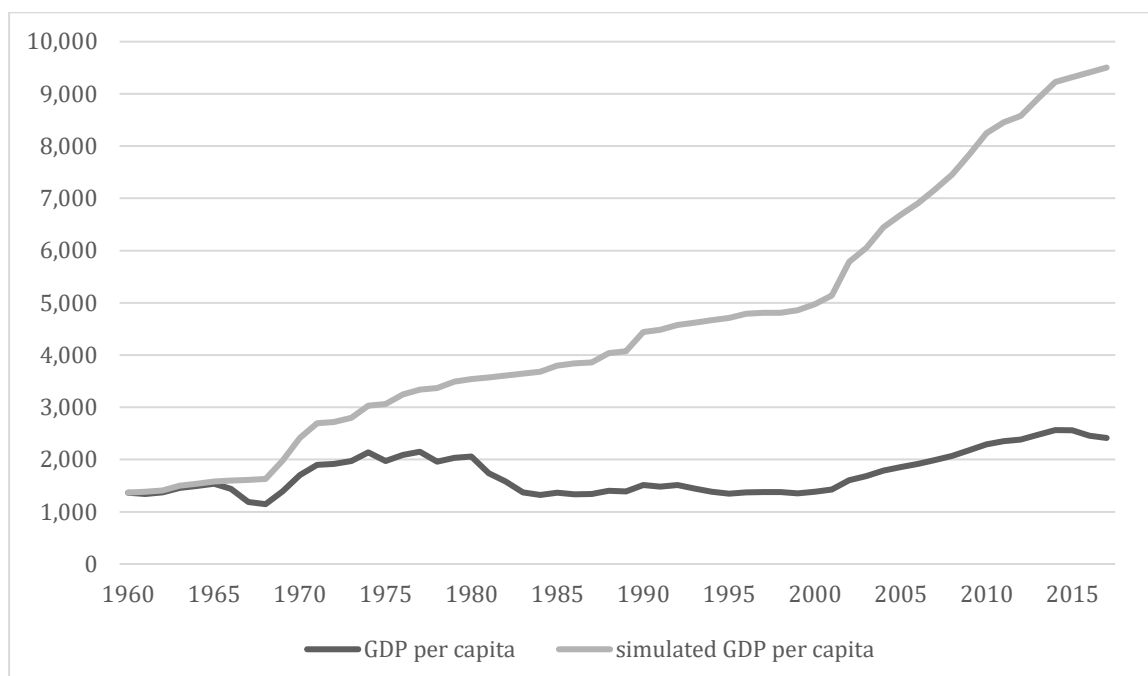


Figure 1.1 Nigerian real and simulated GDP per capita in constant \$US, simulation of a 1% growth rate in the years of economic shrinking, 1960-2017 (author's calculations, data adapted from the World Bank, 2019)

While the frequent reoccurrence of negative growth rates in the long run Nigerian economic performance constitute a rather extreme case of volatile growth, the issue of being unable to

sustain previously generated growth constitutes a characteristic of many developing countries. Temporary economic growth without economic development is generally possible but only growth generated by economic development can be sustained over a longer period of time and lead to high income levels. Addressing the issue of economic shrinking is thus a key component in understanding why many developing countries face volatile long run growth trajectories. A better understanding of the factors leading to economic shrinking therefore generates knowledge concerning how countries can become more resilient thereof and eventually achieve higher income levels. The prospect of a higher resilience to economic shrinking leading to significantly higher income levels in the long run thus situates the issue within research on economic convergence between countries. Developing countries achieving resilience to economic shrinking thus presents a necessary condition in order to achieve so-called conditional convergence (Barro & Sala-i-Martin, 1992).

Previous literature on income growth volatility identifies two distinct country characteristics that correlate with unsustained long run growth trajectories. On the one hand, volatile growth is an issue generally faced by developing countries and on the other hand, the so-called resource curse predicts resource-abundant countries to face particularly volatile growth. The Nigerian case falls into both of these categories, perhaps explaining why Nigeria comparatively suffers particularly frequently from high rates of economic shrinking.

The earlier literature researching growth volatility independent of resource-abundance identifies economic shrinking as temporary shocks in response to crisis such as social conflict as well as in the global economy (Easterly et al., 1993; Rodrik, 1999). More recent studies however have moved away from merely identifying economic shrinking as an extreme situation but instead find developing countries to generally have a lower ability to sustain growth rendering economic shrinking a characteristic of a country's developmental stage (Pritchett, 2000; Berg, Ostry & Zettelmeyer, 2012). Nigeria's frequent economic shrinking could therefore be an indication of its low development levels on the one hand and a response to shocks in the world economy or local conflicts on the other hand.

Being a member of the Organisation of the Petroleum Exporting Countries (OPEC) and possessing 3.1% of the World's oil reserves (OPEC, 2019), another cause of Nigeria's reoccurring economic shrinking episodes may be rooted in the so-called resource curse. The resource curse literature has contributed to the problem of volatile growth by establishing a link between resource-abundance and a country's inability to sustain its growth in the long run. Scholars identify low levels of economic diversification due to the so-called Dutch disease causing currency appreciation in resource-abundant countries as well as weak and corrupt institutions as channels of the resource curse leading to a particularly volatile economy (Auty, 2001; Sachs & Warner, 2001; Ross, 2012; Mehlum, Moene & Torvik, 2006a).

While volatile and unsustained long run growth trajectories have thus received attention from development scholars as well as from proponents of resource curse theory, the specific term of economic shrinking is a rather recent contribution to the field. Broadberry and Wallis (2017) first coined the term in a working paper for the National Bureau of Economic Research (NBER) finding that the early European industrializers suffered from economic shrinking in the earlier stages of their economic development but became increasingly resilient thereof over time. Their findings show that a reduction in the frequency and rate of economic shrinking constituted an

essential part of the European industrializers' development, whereas the rate of economic growth remained rather stable. The author's therefore suggest a stronger focus of future research on the topic of economic shrinking as opposed to the literature's traditional focus on growth. Andersson (2018) and Andersson & Palacio (2017) show that these findings can be applied in analysing the growth paths of developing countries which helps understand their obstacles to economic development today.

This new addition to the existing literature regarding problems of growth volatility with its focus on economic shrinking can therefore offer a new perspective on the obstacles developing countries face in achieving modern economic growth and eventually catching up with the developed world. A focus on economic shrinking rather than growth thus presents economic historians, development economists and growth economists with a new analytical lens through which they might find new insights into the global income divergence. In adopting this perspective, scholars could aim to explain why some countries have failed to become more resilient against economic shrinking over time compared to others instead of explaining divergence in terms of higher and lower growth rates.

This thesis contributes to the previously outlined debates and to the research problem of long run unsustainable growth trajectories in developing countries by focusing on the case of the volatile Nigerian economy between 1960 and 2017. The thesis assesses four different factors potentially contributing to economic shrinking and a higher resilience thereof for the case of Nigeria, which are derived from the literature: structural change including technological change, demographic change, changing incidences of warfare and institutional change. The analysis is guided by the research question:

Why has Nigeria faced reoccurring and high rates of economic shrinking since its independence from colonial rule in 1960 and how can the country avoid them in the future?

The thesis finds a failed structural transformation and a high reliance on the volatile oil sector whereas an impact of demographic factors on the observed episodes of economic shrinking seems unlikely. Furthermore, Nigeria's frequent incidences of warfare could present a factor behind economic shrinking in some, but not all cases. Lastly, the results show that Nigeria has not succeeded in establishing institutions that prevent societal privileges and rely on largely impersonal relationships. The thesis thus concludes that in order to avoid economic shrinking in the future, the Nigerian economy must proceed in the structural transformation that once started but now stagnates while becoming less reliant on its oil sector. Furthermore, the country must find institutional solutions to persisting inequalities which could also help prevent some of the warfare resulting from ethnic and religious tensions.

1.2 Aim and Scope

The thesis aims to identify the factors that have contributed to the reoccurring and high rates of economic shrinking Nigeria has faced between its independence from colonial rule in 1960 and 2017 in order to draw conclusions for a potential improvement of Nigeria's future resilience to

economic shrinking. In order to achieve this aim, the thesis identifies potential factors of economic shrinking in the literature and analyses changes in those factors with regard to changes in the Nigerian economic performance between 1960 and 2017. The results of this analysis firstly identify the periods in which Nigeria achieved the most and the least sustained growth of its economic history. These results then help to secondly, analyse the different factors contributing to economic shrinking and resilience thereof in Nigeria thus thirdly generating policy recommendations for a sustained growth path in the future.

The contribution of this thesis to the current development, growth and economic history literature is threefold. Firstly, it seeks to contribute to theoretical debates on why some developing countries are able to generate but unable to sustain economic growth by exploring the factors potentially contributing to economic shrinking. The thesis primarily draws on Broadberry and Wallis (2017) theoretical approach to identify the factors of economic shrinking and expands their institutional factor further by drawing on earlier research by North, Wallis and Weingast (2009).

Secondly, the thesis constitutes a methodological contribution in approaching the topic of economic shrinking with the single-case study method in contrast to the frequently employed method of econometric panel data studies in previous literature on volatile growth (Easterly et al., 1993; Pritchett, 2000; Berg, Ostry & Zettelmeyer, 2012) and to the comparative history approach by Broadberry and Wallis (2017). The thesis demonstrates the practicability of employing analytical narratives of single cases in research regarding economic shrinking by delivering context-specific policy implications based on an in-depth analysis of the case at hand.

Thirdly, the thesis more specifically contributes to a more thorough historical understanding of Nigeria's long run growth path since the country's independence from colonial rule. The thesis thus adds an economic historic perspective to previous assessments of the country's economy frequently solely focusing on the status quo such as many of the International Monetary Fund's country reports (IMF, 2019).

The scope of the thesis is limited to the Nigerian case in the specified time frame of 1960 to 2017. Furthermore, the thesis's analysis is limited to the four factors discussed below which are taken into consideration based on the existing literature. This focus on a specific case and previously specified factors therefore leads to case-specific results. The thesis therefore refrains from "statistical generalization" (Yin, 2003, p.10) and instead only conducts "analytic generalization" (Yin, 2003, p.10) by evaluating to what extent the empirical results of the Nigerian case correspond to the predictions of existing theories of economic shrinking. The scope of the thesis furthermore encompasses a discussion of the factors with regard to their potential in rendering the Nigerian economy more resilient to economic shrinking in the future. With an analytical focus on four potential factors based on previous literature, the thesis does not deny a potential impact of other unobserved factors of economic shrinking.

1.3 Outline of the Thesis

The thesis begins with a discussion of the theory by first outlining the previous research regarding the general issue of unsustainable economic growth in developing countries and then presenting the more specific theoretical approach of economic shrinking serving as an analytical guide to the rest of the thesis (*chapter 2*). *Chapter 3* then provides the reader firstly, with a presentation of the methodology employed in order to answer the research question, secondly, with a justification of the case selection and lastly with a critical assessment of the data and sources employed. The empirical analysis of the Nigerian case follows in *chapter 4* beginning with an analysis of the economy's performance between 1960 and 2017, before assessing the contribution of the proximate factors to this economic performance, namely structural transformation, demographic change and incidences of warfare. Then the empirical analysis continues with an analysis of the ultimate factor of Nigeria's economic performance, i.e. institutional change between open and limited access orders. The empirical section ends with a discussion of the results of the empirical analysis with regard to their potential in creating a higher resilience against economic shrinking in the future. *Chapter 5* concludes the thesis by summarizing the results and contextualizing them within current debates.

2 Theory

This chapter first outlines and discusses the previous research regarding economic growth and the issue of sustaining that growth by summarizing the main findings and limitations of previous research. Then, the second section of this chapter addresses the topic of economic shrinking in particular and the theoretical approaches relevant to the subsequent empirical analysis.

2.1 Previous Research

Standard neoclassical economic growth models such as the Solow (1956) model traditionally focus on the sources of economic growth in developed countries without accounting for the possibility of economic shrinking. The basic Solow model of economic growth assumes that national income depends on the stocks of capital and labour. As early as in 1928, Cobb and Douglas recognised that accounting exercises of capital and labour stocks leave a residual, which is now considered to be representing an economy's total factor productivity (TFP). TFP therefore captures the data that goes unmeasured by the production functions of neoclassical growth economists. In these neoclassical economic growth models, countries are assumed to gravitate towards their steady state level in the long run. Solow (1957) specifies that economies are able shift their steady state levels upwards through continuous technological change.

Growth accounting exercises comparing a range of countries show that the residual of unmeasurable growth in fact accounts for the largest differences in income between countries (Klenow & Rodriguez-Clare, 1997). The fact that the most important factor behind economic growth, i.e. the residual or TFP, remains an unmeasurable "black box" (Jones, 2016, p.22) thus constitutes a major concern with such neoclassical growth models. If the main factor behind differences in growth rates remains unexplained, this poses a problem for scholars interested in the mechanisms behind global income divergence and convergence. The drawback thus results in limited explanatory power of neoclassical models regarding developmental problems. According to Barro & Sala-i-Martin (1992), countries below their steady state and with lower income should receive higher investments than countries closer to their steady state with high incomes due to the diminishing marginal product of capital. These larger increases in the capital stock of poorer countries would consequently lead to convergence over time. The model thus differs significantly from the reality that many developing countries face stagnant growth rates or even shrinking economies. The neoclassical models may thus be more accurate in explaining the steady long-term growth trajectories in developed economies than the volatile growth of many developing economies.

The paradox of lacking income divergence between countries after the emergence of modern economic growth among the European industrializers not only puzzles neoclassical economists

but also economic historians. Economic historian Gerschenkron (1962) hypothesizes that developing countries should be able to employ already existing technology for rapid productivity increases without having to rely on innovation. Developing countries would accordingly be able to generate higher growth rates than developed countries eventually leading to income convergence. In reality however, catching up has been the exception rather than the rule. While the so-called East Asian Tigers successfully entered the ranks of high-income countries by the end of the 20th century (World Bank, 1993), Latin America seems to be captured in a middle income trap (Paus, 2014) and Sub-Saharan Africa's lack of economic growth throughout the 20th century raises concerns (Austin, 2016). The non-linear growth paths of many developing economies thus remain unexplained by traditional models of economic growth and require a new perspective on long run economic performance.

Due to the lack of explanatory power of neoclassical growth models, in explaining stagnating convergence and volatile growth trajectories, new theories of economic growth have emerged. In recent years, new institutional economics focuses on the role of formal and informal institutions for the initial emergence of modern economic growth and the subsequent income divergence between countries (Acemoglu, Johnson & Robinson, 2004; Engerman & Sokoloff, 2003; North, Wallis, & Weingast, 2009). While scholars such as Acemoglu, Johnson & Robinson (2001) and Nunn (2008) find obstacles to modern economic growth to be engrained in countries' histories, other scholars such as Rodrik (2000; 2008) have sought a less deterministic approach to institutional development in recognizing the capacity of different institutional arrangements in directly shaping economic outcomes. Much of this institutional literature focuses largely on current income levels disregarding the specific long run growth trajectories that have led to the current economic outcomes therefore compressing history (Austin, 2008).

Previous literature on the issue of unsustainable growth pays closer attention to the long run growth paths of developing and developed economies and in what they differ. This literature finds that many developing economies suffer from particularly volatile and unsustainable growth compared to developed economies, rather than merely experiencing consistently low growth rates. Literature on volatile growth thus addresses a developmental issue considered neither by neoclassical economists nor by new institutional economists: growth does not always proceed in a linear fashion but rather fluctuates greatly in many economies. Early scholars of the topic such as Easterly et al. (1993) and Rodrik (1999) relate economic shrinking to temporary economic shocks due to changes in the terms of trade or social conflict. More recent literature on the topic holds that there are essential and persisting differences between the shapes of the long run growth trajectories in developing and developed countries (Pritchett, 2000). Berg, Ostry & Zettelmeyer (2012) find the length of what they call "growth spells" (p.150) to be related to long-term institutional factors such as macroeconomic policies, trade regimes and income distribution. A recent report by the International Monetary Fund (IMF, 2014) highlighting the goal of developmental policies as sustaining growth rather than merely the initiation of growth demonstrates the increasing significance of the topic in developmental debates.

Proponents of the resource curse hypothesis also recognise the issue of volatile growth. However, the focus of this theory lies on the growth volatility of resource-abundant countries only. Auty (2004) shows that oil-rich countries in particular face highly volatile growth trajectories and are often unable to sustain the generated economic growth. Two main factors determine this relationship between unstable growth and resource-abundance. Firstly, the so-called Dutch disease predicts that inflows of foreign capital towards the abundant natural resource result in exchange rate appreciations rendering other economic sectors uncompetitive and thus leading to an even higher reliance on the abundant natural resource (Ross, 2012). Secondly, an abundance of natural resources tends to weaken the institutional quality due to the reliance on rents rather than taxes as government income rendering the government unaccountable and intransparent (Mehlum, Moene & Torvik, 2006b; Ross, 2012). Resource curse theories thus explain why resource- and particularly oil-rich countries such as Nigeria are likely to experience volatile long run growth drawing on similar arguments as other scholars of unsustainable growth while particularly highlighting the role of natural resource dependence.

In explaining why global income diverged with the advance of modern economic growth, the focus has generally shifted away from neoclassical short-term economic equilibria towards long run paths of development and historic contextualisation. Combining an economic history perspective with insights from traditional growth accounting as well as with insights derived from new institutional economics, Broadberry and Wallis (2017) explicitly shift the research focus away from economic growth towards economic shrinking. The authors empirically show that the early European industrializers achieved an increasingly higher resilience to economic shrinking rather than increasingly higher growth rates. Accordingly, their modern economic growth was characterised by steady but relatively moderate growth rates no higher than 2%. The significant income increases in Europe from the 18th century were instead achieved by progressively succeeding in decreasing the frequency and rate of economic shrinking. The analysis in this thesis is based on their theoretical approach to economic long run performance with a focus on economic shrinking as further elaborated below.

2.2 Theoretical Approach

The thesis mainly draws on Broadberry and Wallis (2017) theoretical approach of economic shrinking in its empirical analysis. The authors shift away from the traditional focus on economic growth towards the negative growth rates: economic shrinking. The key to economic development of the early European industrializers according to this theoretical approach were not increasingly high growth rates but instead a growing resilience against economic shrinking. From this perspective, volatile growth rates thus constitute a characteristic of low levels of economic development. Achieving sustained growth becomes a key achievement on the path to economic development.

The theory of modern economic growth as the ability to avoid economic shrinking not only has implications for the economic history of Europe but also has potentially important consequences for modern development policies. The results of Broadberry and Wallis (2017) analysis could indicate that the largely stagnant convergence process of global income levels

cannot simply be attributed to the developing economies' failure to achieve growth but instead raises questions on how to maintain growth. This assumption is reinforced by Andersson's (2018) descriptive analysis of economic performance trends showing that Sub-Saharan Africa would slowly converge with the developed world at the speed of 2.5% growth rates since 1950 if it had faced shrinking rates of a scope similar to Asia. Instead, the continent has continuously diverged with the growth frontier in the past. The main difference between the developing and developed countries' growth trajectories can therefore not be found in the faster growth rates of the latter but rather in their resilience against economic shrinking. Andersson and Palacio (2017) also highlight the important role of increasing developing economies' resilience to shrinking in achieving global income convergence.

Broadberry and Wallis' (2017), Andersson's (2018) and Andersson's and Palacio's (2017) findings offer theoretical and empirical support for a critical role of economic shrinking and resilience thereof in economic development thus providing researchers with an incentive to cease the sole focus on factors behind growth and begin to pay equal attention to the causes of economic shrinking. This thesis will adopt their suggested perspective of an analytical focus on economic shrinking in order to assess the Nigerian long run economic performance between 1960 and 2017.

Broadberry and Wallis (2017) propose an economic performance analysis deconstructing long run economic performance into episodes of growing and shrinking. Their formula to determine an economy's performance throughout a given time period can be summarized as follows:

$$\begin{aligned} \text{Economic Performance} = & \\ & \text{Frequency of income growth} \times \text{average income growth} + \\ & \text{Frequency of income shrinking} \times \text{average income shrinking} \end{aligned}$$

Economic performance consequently depends on the frequency at which shrinking and growing episodes occur as well as on the episodes' respective average rate. The thesis follows the authors' research strategy in employing this economic performance analysis as the basis of their factor analysis.

Based on Maddison's (1987) understanding of the contribution of growth accounting to research regarding long run growth paths, Broadberry and Wallis (2017) outline four "proximate factors" (p.13) as well as one "key ultimate factor" (p.27) determining an economy's growth and shrinking. They classify structural change, technological change, demographic change and the changing incidence of warfare as proximate factors of economic performance, whereas they present institutional change as the key ultimate factor.

In presenting institutional change as the ultimate factor behind economic shrinking and resilience thereof, Broadberry and Wallis' (2017) argument corresponds closely to that of the new institutional economists presented above. Berg, Ostry & Zettelmeyer (2012) and Rodrik (1999) share the perspective that institutions play a crucial role in sustaining growth and confirm the assumption empirically in econometric panel data studies. Broadberry and Wallis (2017) more closely define the broad term of institutional change as the transition from a system of "identity rules" (p.24) to a system of "impersonal rules" (p.24). The authors assume impersonal rules to contribute to a higher resilience to economic shrinking since rules tied to

identity create commitment issues whenever the specific individuals in power are subject to change. North, Wallis and Weingast (2009) elaborate the concept further holding that “open access orders” (p.11) are more successful in sustaining growth than “limited access orders” (p.12). On the one hand, limited access orders are characterized by institutions lacking the “consent of the governed” (North, Wallis and Weingast, 2009, p.12), “small numbers of organizations” (p.12), relatively small and centralized institutions and by personal social relationships organized through privilege, hierarchy, inequalities and insecure property rights. On the other hand, open access orders are characterized by a large number of organisations and a vibrant civil society, relatively big and centralized institutions, and by “impersonal social relationships” (p.12) organized through the rule of law, equality and secure property rights.

Drawing on Broadberry and Wallis (2017) factors of economic shrinking and the further elaboration of their ultimate factor of institutional change by North, Wallis and Weingast (2009), this paper derives three proximate factors and one ultimate factor determining economic shrinking and resilience thereof. The first proximate factor constitutes “structural change” (Broadberry and Wallis, 2017, p.13) (including “technological change” (p.13)), the second proximate factor is “demographic change” (p.13) and the third proximate factor is constituted through “changing incidence of warfare” (p.13). The ultimate factor of “institutional change” (Broadberry and Wallis, 2017, p.13) from a limited to an open access order presents the key factor in determining a country’s resilience to economic shrinking. All factors considered in this paper are addressed by previous growth and development literature.

Proximate Factor: Structural Change and Technological Change

Lewis’ (1954) two-sector model of the economy shows that labour movement out of the agricultural sector leads to industrialization eventually resulting in higher economic growth. This structural transformation from an agricultural society to an industry- and services-based economy constitutes an essential part of the economic development process. Recent econometric studies have confirmed the theory’s predictions providing empirical evidence for a positive correlation between higher degrees of structural transformation and higher national income (Herrendorf, Rogerson & Valentinyi, 2013). In addition to this traditional focus on the agricultural and the industrial sector, researchers and international organizations are now also highlighting the need for economic diversification more generally in order to avoid growth volatility (Hausmann, Hwang & Rodrik, 2007; IMF, 2014). For their sample of European countries, Broadberry and Wallis (2017) find that the structural transformation itself did not contribute to a reduction in economic shrinking but rather the productivity improvements through technological change in each sector. However, they hold that these improvements were not large enough to explain the drastic European improvements in reducing economic shrinking thus rendering the assessment of additional factors necessary.

Proximate Factor: Demographic Change

Since rapid population growth can potentially result in a per capita reduction of available resources and since demographic factors determine the size and composition of the labour force, demographic changes need to be considered in any analysis of long run economic performance. The Malthusian trap model applicable to pre-industrial societies holds that economic growth causes the population to grow, eventually bringing per capita income back to its pre-growth

level (Malthus, 1878). Whereas, there is broad scholarly consent that developed countries have escaped the trap (Kögel & Prskawetz, 2001), there is more debate if and to what extent the model is applicable to developing economies in a modern context particularly with regard to the African continent (Korotayev & Zinkina, 2015; Clark 2007). Broadberry and Wallis (2017) assume that the escape of the European countries from the Malthusian trap may have contributed to a reduction in shrinking but hold that the exact relationship between demography and growth remains too contested in the literature to determine the exact nature of the factor's contribution to shrinking.

Proximate Factor: Changing Incidence of Warfare

Changing incidences of warfare potentially interact with the prosperity of an economy on the one hand and with demographic factors in reducing the population on the other hand (Broadberry & Wallis, 2017). Rodrik (1999) argues that social conflict plays a crucial role in low growth rates and negative shocks to economic performance. These conflicts can be either endogenous stemming from a fractionalized society or exogenous in the case of warfare against another country (Rodrik, 1999). However, some scholars see benefits to technological development resulting from warfare with the potential to increase state investment in research and development (Ruttan, 2006) in which case it may even be growth enhancing. Broadberry and Wallis (2017) find, in line with Rodrik's (1999) research, that war generally constituted a negative shock to the European economies and a reduction in the incidences of warfare would therefore result in a reduction of economic shrinking. However, they find no long run demographic effects contributing to a higher resilience to economic shrinking once the wars ended and thus do not ascribe a significant role to the reduction of warfare in eliminating economic shrinking altogether.

Ultimate Factor: Institutional Change

Institutional economists of the old school highlight the evolutionary nature of economics closely intertwined with societal and political changes (Veblen, 1898; Commons, 1931). New institutional economists such as Acemoglu, Johnson and Robinson (2004) and Engerman and Sokoloff (2003) have returned to this concept of development as a historical outcome highlighting how institutions evolved to be more or less conducive of economic growth. In line with this research, North, Wallis and Weingast (2009) developed a theory of modern economic growth and economic divergence based on the concept of limited and open access orders in which open access orders result in more stable growth trajectories due to their provision of equal access to organizations and the impersonal character of their institutions. Broadberry and Wallis (2017) base their ultimate factor contributing to a reduction of economic shrinking on this theoretical approach finding that the early European industrializers followed this institutional development path of transition from limited to open access when modern economic growth first emerged.

3 Methods

This chapter presents the justification and limitations of the methodological approach guiding the subsequent empirical analysis chapter of the thesis: the single case study approach. The second section of the chapter justifies the choice of the Nigerian case for the analysis and briefly presents relevant information on the country. The last section of the chapter discusses the reliability, representativeness and validity of the data and sources employed.

3.1 The Approach

As previously stated, Broadberry and Wallis's (2017) working paper on economic shrinking guides the thesis's analysis in terms of the different factors analysed as well as in choosing a historical long run perspective with a focus on economic shrinking. However, the thesis moves away from their comparative approach and instead employs the single case study method focusing on the sole case of Nigeria between 1960 and 2017 in order to achieve a more in-depth analysis.

As the title of their paper suggests, Broadberry and Wallis' (2017) concept of economic shrinking requires a historical and thus long-term perspective. The authors divide their analysis into proximate and ultimate factors of economic performance following Maddison's (1987) approach. In order to determine the proximate factor contribution of structural transformation and TFP to economic shrinking and resilience thereof, Broadberry and Wallis (2017) rely on traditional growth accounting techniques that Maddison (1987) finds to be particularly transparent due to concealing unavoidable "judgemental elements" (p.651) by the researcher to a lesser extent than econometric methods. Maddison (1987) however, also highlights the insufficiency of these methods in identifying the ultimate elements explaining economic performance. Therefore, Broadberry and Wallis (2017) resort to a historical comparative analysis between countries and time periods in the analysis of their remaining proximate factors of demographic change and changing incidences of warfare as well as for their ultimate factor of institutional change. The thesis relies on this categorization of proximate and ultimate factors in its analysis but focuses on a single case as opposed to Broadberry and Wallis' (2017) comparative approach.

With the broad range of factors of economic performance suggested by Broadberry and Wallis (2017) stemming from the neoclassical as well as institutional economic schools of thought, the thesis employs a single case study in order to incorporate all elements fully and achieve a holistic picture. An in-depth analysis of a single case helps understand which factors contribute to economic shrinking and resilience thereof in the individual context thus providing more specific policy recommendations than comparative studies. This research strategy is especially

fit for the institutional aspect of the analysis since the new institutional economics literature (North, 1991; Acemoglu, Johnson & Robinson, 2004; Greif & Laitin, 2004) highlights the relatively slow and incremental change of institutions as well as their historic character rendering an imposition of one-size-fits-all type institutions undesirable (Rodrik, 2008). An in-depth analysis of a single case therefore provides the opportunity of identifying country-specific strategies that have historically contributed to or hindered a positive economic performance consequently resulting in context-specific policy recommendations that have previously found implementation in the specific case. Lastly, focusing on a single country also limits the effects of unobserved factors of economic performance that might differ across but not within countries over time such as geographical variables (Sachs, 2003).

Creswell defines the case study method as an in-depth analysis of a process restricted by time and activity (2014). The case study's scope is restricted to the existence of Nigeria as an independent state thus starting 1960 at its independence from British colonial rule and ends with the most recent data in 2017. The analysis is restricted to the post-colonial period since colonial factors resulting in resilience to economic shrinking are unlikely to be replicable and thus would not result in practicable policy recommendations.

Answering the research question,

Why has Nigeria faced reoccurring and high rates of economic shrinking since its independence from colonial rule in 1960 and how can the country avoid them in the future?

the single case study serves to illustrate the Nigerian patterns of economic growth and economic shrinking during the specified time period and to explain which different factors identified by previous literature on the topic contributed to economic shrinking or resilience thereof. Yin (2003) has developed a guideline for the design and methodology of case study research in the social sciences including economics. According to his classification of case studies, the case constitutes a "single case" (p.39) of explanatory and "holistic" (p.45) nature. The case is classified as holistic due to the theoretical approach's macroeconomic outlook focusing on the economy as a whole rather than on actors at different organizational levels. Based on the economic shrinking theory proposed by Broadberry and Wallis (2017) the case study provides the possibility for "analytic generalization" (Yin, 2003, p.10) by identifying links between the factors proposed by theory and economic shrinking in the Nigerian case. For the specific case of Nigeria, the case study can result in policy implications specifying the conditions that result in a higher resilience to economic shrinking.

An assessment of Nigeria's economic performance following Broadberry and Wallis' (2017) methodology for assessing the economic shrinking and growing during different time periods constitutes the basis of the empirical analysis. In order to link the empirical data to the previous propositions guided by theory the paper employs the analytical technique of "pattern matching" (Yin, 2003, p.116). For a factor to be relevant to Nigeria's economic shrinking, the factor has to be significantly different in periods of shrinking and growing according to the previously specified propositions. The analysis thus assesses whether the observed empirical trends correspond to the predicted trends of the propositions. This analysis determines the extent to which the empirical results represent the outcomes predicted by theory. The pattern matching

analysis is embedded in an analytical narrative (Rodrik, 2003) which will help cope with the data scarce context as well as historically contextualize the data. The following propositions guide the pattern matching analysis regarding each of the four factors under assessment:

Proposition A: Higher degrees of structural transformation, economic diversification and TFP correlate with a higher resilience to economic shrinking.

Proposition B: Demographic changes correlate with changes in economic performance.

Proposition C: An absence of warfare correlates with a higher resilience against economic shrinking.

Proposition D: Open access orders correlate with a higher resilience to economic shrinking

The main limitation of the single-case study are its context-specific results. As previously indicated “analytic generalization” (Yin, 2003, p.10) allows for inferences regarding the theory employed if the empirical results contradict that theory’s predictions. However, results in line with the theory cannot confirm the theoretical assumptions as they only portray a single case instance. Furthermore, the thesis refrains from “statistical generalization” (Yin, 2003, p.10) since research encompassing a broader range of countries would be necessary. While the theoretical approach serves to guide the research in terms of which factors of economic performance the thesis incorporates, the approach also limits the thesis’ scope to these four factors. Other factors with a potential effect on economic performance such as trade regimes may remain unobserved. Lastly, due to the speculative character of the narrative analysis approach (Rodrik, 2003), the results are of preliminary nature and require confirmation by further research into the causalities assumed by the theoretical approach guiding the analysis.

3.2 Case Selection

The Nigerian case constitutes a “critical” (Yin, 2003, p.40) and a “longitudinal case” (p.42) providing a rationale for the case selection. Nigeria can be considered a *critical* case since the country does not only possess Africa’s largest economy with a 2017 Gross Domestic Product (GDP) of 375.77 billion \$US but also the continent’s largest population of 190,886,311 (World Bank, 2019). The case is *longitudinal* since it provides sufficient variation in periods of economic shrinking and growing to allow for a comparison between these essentially different economic performance patterns within the same case. *Figure 3.1* shows that Nigeria’s variation in frequency and scope of economic shrinking is particularly large compared to the Sub-Saharan African average. The analysis can thus employ this longitudinal case to assess the within case variation rather than requiring the resort to two cases with distinct growth and shrinking patterns.

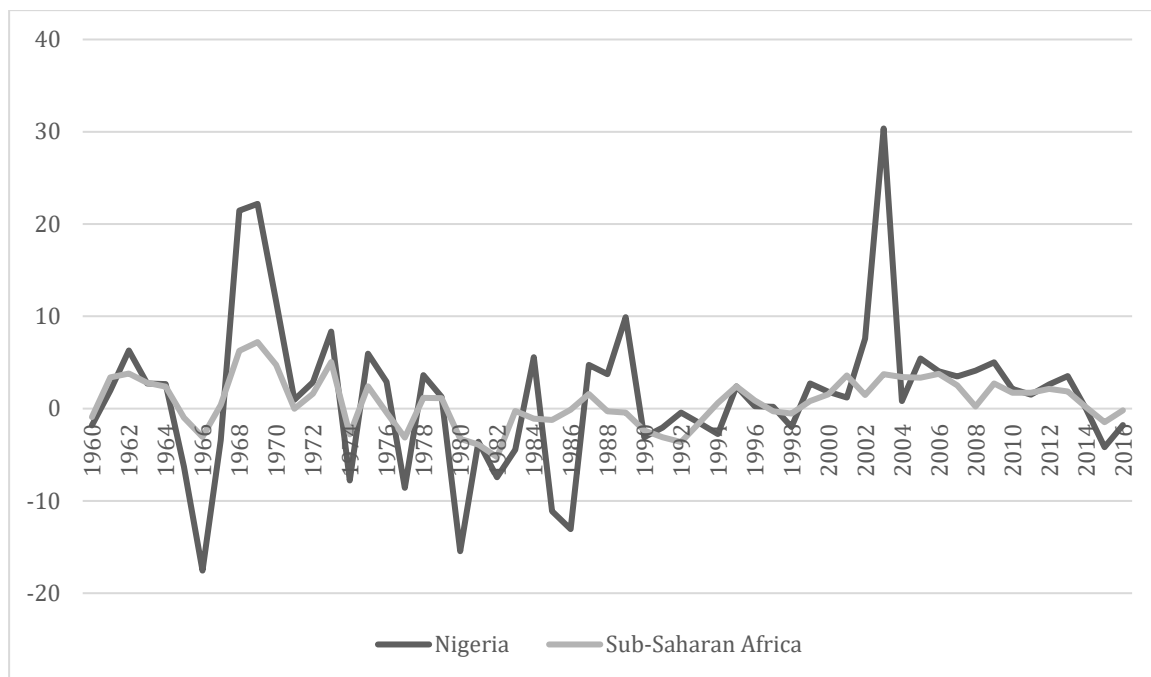


Figure 3.1 GDP per capita growth in Nigeria and Sub-Saharan Africa in %, 1960-2016 (adapted from the World Bank, 2019)

The Nigerian economy combines two factors likely resulting in higher growth volatility according to previous literature: Nigeria is not only a developing country but also resource-abundant. The country is classified as a lower-middle income country by the World Bank (2017) with a GNI of 2,080 \$US and is a member state of the Organisation of the Petroleum Exporting Countries (OPEC) possessing 3.1% of the World’s oil reserves (OPEC, 2019). The country therefore constitutes a particularly relevant case to the economic shrinking approach. Furthermore, an assessment of the Nigerian long run economic performance ties into the scholarly debate concerning the sustainability of the “African Growth Miracle” (Young, 2012) observed in the 2000s.

3.3 Data and Source Material

Following Broadberry and Wallis (2017) approach, the thesis relies on a mixture of quantitative and qualitative data. While using quantitative data wherever sufficiently available for the time period under examination, qualitative evidence helps contextualise that data and fills the remaining breaks where necessary. Analysing quantitative as well as qualitative data thus provides the advantage of presenting a more complete picture of the case using all available resources to collect information, which is particularly important in the data-scarce context of developing countries such as Nigeria, especially since the country has undergone several regime changes since its independence. Furthermore, particularly the proximate factor of changing incidences of warfare and the ultimate factor of institutional change require a qualitative historical narrative to contextualise the data.

Apart from the data scarce context and the different factors analysed requiring both quantitative and qualitative data, the national accounts and other data from developing countries such as Nigeria have received criticism due to the lack of resources of those countries as well as due to transparency issues in undemocratic regimes. The thesis will address this limitation by using the method of “data triangulation” (Yin, 2003, p.14) which is particularly fit for case studies. This includes the accumulation, comparison and evaluation of a variety of data for the same factor assessed. Yin (2003) highlights the importance of triangulating the data for case studies: case studies offer the advantage of being able to draw on a range of data instead of needing to rely on a single indicator per variable thus avoiding false conclusions based on data flaws. Consequently, case studies employ a holistic approach in capturing all available and research relevant data aiming to avoid capturing phenomena only partially. The paper follows this approach in multiple aspects. Combining quantitative and qualitative evidence, the thesis employs “data triangulation” (Yin, 2003, p.98) and triangulates “evaluators” (p.98) by taking different measures of the same factor into consideration. Lastly, the thesis takes four distinct factors as possible determinants of economic shrinking and a resilience thereof into consideration thus triangulating perspectives as suggested by Yin (2003).

The World Bank (2019) Development Indicators, the Groningen Growth and Development Centre 10-Sector Database (Timmer, de Vries & de Vries, 2015) and Penn World Tables (Feenstra, Inklaar & Timmer, 2015) and the Uppsala Conflict Data Program (2019a) constitute main data sources of the thesis. All of these sources are typically used in their respective fields and the specific sources employed are further elaborated with regard to their strengths and weaknesses in providing data concerning the Nigerian case in each chapter. Where multiple sources of data are available, the thesis compares these and justifies their utilisation.

4 Empirical Analysis: Case Study of Nigeria between 1960 and 2017

The chapter begins with the analysis of Nigeria's economic performance between 1960 and 2017 with regard to the frequency and rate of economic growth and shrinking episodes. Then, the second section of the chapter conducts an analysis of the three proximate factors of structural transformation, demographic change and changing incidences of warfare and of the ultimate factor of institutional change as derived from the chosen theoretical approach. The last section discusses the results and their policy implications for Nigeria.

4.1 Nigerian Economic Performance

Before being able to assess to what extent different factors have contributed to the frequency and rate of economic shrinking in Nigeria, the country's economic performance requires a closer assessment. Broadberry and Wallis (2017) provide a simple formula and methodology to identify periods of economic growth and shrinking (see *chapter 2.2*). This type of analysis of Nigeria's GDP per capita growth pattern between 1960 and 2017 constitutes the analytical starting point for the second part of the case study assessing the impact of each factor on the economy's long run performance.

The World Bank (2019) gathers Nigerian national account data since 1960 including GDP levels and growth data measured in United States dollars as well as in national currency. However, there are concerns regarding the reliability of national account data from developing countries such as Nigeria. Other databases of GDP levels such as the Penn World Tables (Feenstra, Inklaar & Timmer, 2015) calculate the national income using methods such as extrapolation thus at times arriving at different data than the national accounts. A comparison of the GDP growth data from the World Bank (2019) and the Penn World Tables data (Feenstra, Inklaar & Timmer, 2015) shows that the main trends and thus conclusions of the economic performance analysis are equal (see *Appendix A*). The data mostly varies in the scope of the recorded economic growth and shrinking, while length and timing of economic shrinking and growth periods is similar in both datasets. The following analysis employs the World Bank (2019) data due to its availability until 2017.

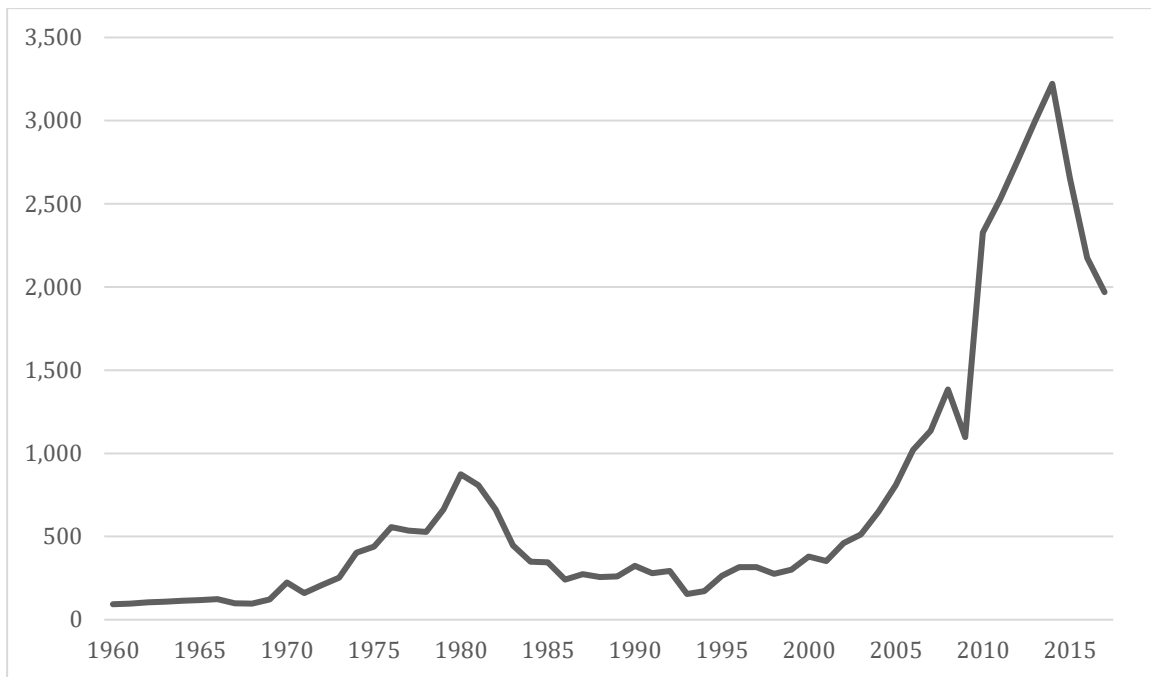


Figure 4.1 Nigerian GDP per capita in current \$US, 1960-2017 (adapted from the World Bank, 2019)

Figure 4.1 shows that Nigeria's GDP levels largely stagnated after the country's independence from colonial rule in 1960. Up until the new millennium, GDP levels merely surged temporarily during the 1970s, but quickly fell back to original GDP levels in the early 1980s. The 2000s however, show a significant rise in income levels achieving a record high for the country. The Nigerian economy has however, faced a decline in income levels once again after 2013. The two GDP level surges subsequent declines in the 1970s and the 2000s already indicate economic shrinking in the 1980s and 2010s. The periods of stagnation on the other hand, require a closer assessment of the GDP growth rates in order to determine whether they stem from low levels of growth or from frequent shrinking.

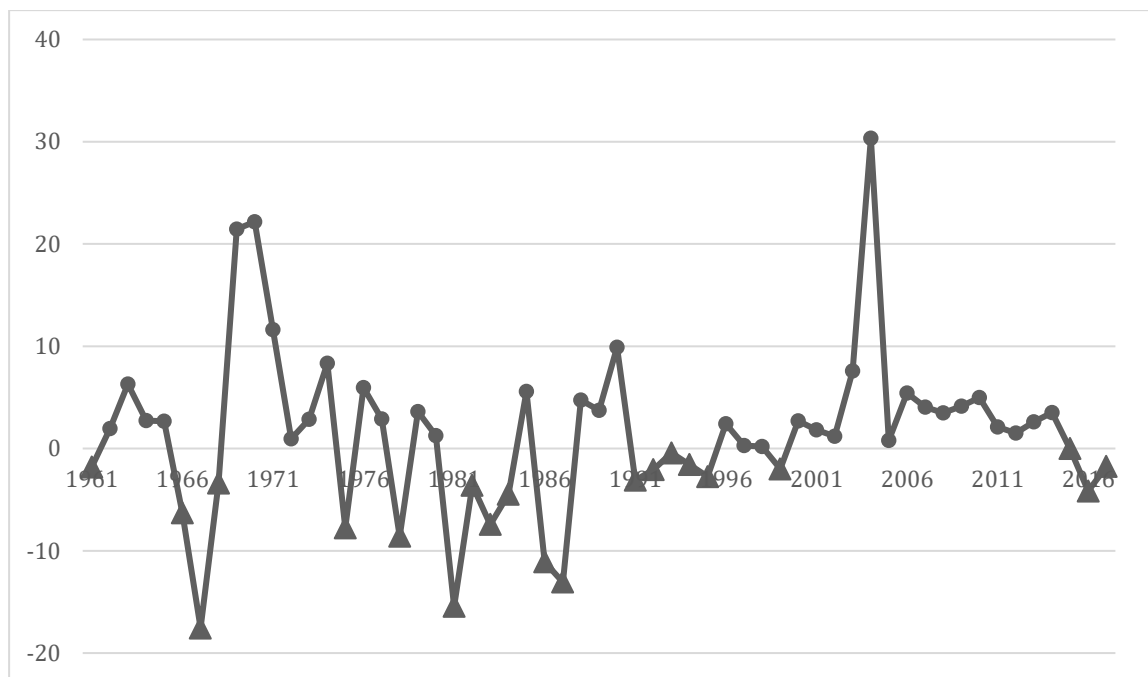


Figure 4.2 Nigerian GDP per capita growth in %, triangles indicate shrinking, 1961-2017 (adapted from the World Bank, 2019)

An assessment of GDP growth rates between 1960 and 2017 shows a more detailed picture of Nigeria’s long run economic performance than mere income levels. Figure 4.2 shows that Nigeria’s economy shrunk during 21 of the 56 years since independence. While, it is thus unsurprising that Nigeria’s income per capita levels stagnated throughout much of the 20th century (as seen in Figure 4.1), the GDP growth figure also shows a positive trend starting in the mid-1990s. Nigerian growth rates have become less volatile over time with lower growth as well as shrinking rates. The 2000s are the first decade since 1960 during which the Nigerian economy succeeded in maintaining growth without the disruption of economic shrinking. A more detailed assessment of the scope and frequency of economic shrinking and growing periods requires further analysis following the formula proposed by Broadberry and Wallis (2017).

Table 4.1 The Nigerian economic performance, 1960-2017 (author's calculations based on data adapted from the World Bank, 2019)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.444	-7.265	0.556	7.026	-3.229	3.903	0.674
1970s	0.2	-8.317	0.8	7.301	-1.663	5.841	4.177
1980s	0.6	-7.435	0.4	2.394	-4.461	0.958	-3.504
1990s	0.5	-3.056	0.5	2.612	-1.528	1.306	-0.222
2000s	0	0	1	4.936	0	4.936	4.936
2010s	0.375	-1.987	0.625	3.309	-0.745	2.068	1.323
1960-2017	0.351	-5.564	0.649	4.921	-1.952	3.194	1.242

Table 4.1 shows the contribution of economic shrinking and growing periods disaggregated into their scope and frequency to Nigeria’s net economic performance per decade as well as for the entire time period under assessment. The calculations show that Nigeria’s net economic

performance over the entire time span could have been as high as 3.2% growth rather than 1.2% had the economy not faced any economic shrinking. The calculations also confirm the previous observation that the 2000s were economically particularly successful for Nigeria, the highest net economic performance of the entire period under analysis of 4.9% stems from uninterrupted growth. The 1980s on the other hand with the highest shrinking frequency per decade and the second highest average shrinking rate constitute Nigeria's lowest economic performance. The country's longest uninterrupted growth spell lasted for 14 years between 2000 and 2014 and its longest shrinking period lasted for 4 years from 1981 until 1984 thus respectively coinciding with the highest and lowest economic performances per decade.

The Nigerian economic performance per decade can be classified into three patterns. The country's economic performance has suffered from net economic shrinking during the 1980s and 1990s. The 1960s and the most recent years since 2010 have seen moderate aggregate growth with a balance of shrinking and growing periods resulting in near stagnation. The 1970s and 2000s on the other hand constitute the most successful decades in terms of resilience to economic shrinking for the Nigerian economy. The economic performance of the 2000s stands out as the only decade characterised by a complete absence of economic shrinking periods. In terms of shrinking frequency, no clear trend emerges due to fluctuations per decade. However, both economic growth and shrinking rates show a declining trend over time with fluctuations becoming overall less extreme.

Nigeria's patterns of economic shrinking and growing is in line with Broadberry and Wallis' (2017) findings regarding the European long run growth performance that high growth rates are generally accompanied by high economic shrinking rates. Their finding of rising income levels mainly owing to lower shrinking frequencies rather than to lower shrinking rates is also confirmed by the Nigerian case. The author's findings on the long run performance of the European industrialised economies thus hold in a modern developmental context for the case of Nigeria. Based on the results of this economic performance analysis, the subsequent assessment of potential factors contributing to economic shrinking and an economy's resilience thereof assesses whether the factors show variation in the two net economic shrinking decades of the 1980s and 1990s compared to the other decades of net growth. The 2000s and to a lesser extent to the 1970s as the decades of the highest net economic growth receive particular attention in this comparison.

4.2 Factors behind Economic Shrinking in Nigeria

4.2.1 Proximate Factor: Structural Change and Technological Change

This chapter discusses the two factors of structural change and technological change as proposed by Broadberry and Wallis (2017) as a single proximate factor of economic performance due to the factors' close intertwinement. Structural change and technological change go hand in hand since productivity increases in the agricultural sector constitute the driving factor behind structural change (Timmer, 2016). The chapter follows Broadberry and Wallis' (2017) approach in conducting an economic performance analysis of each sector of the

economy separately resembling the previous analysis of the entire economy. In addition to this analysis and the assessment of TFP levels, the chapter consults additional measures of structural transformation to provide a more complete picture of the Nigerian case. According to *Proposition A*, the Nigerian economy should be more diversified and show a higher degree of structural transformation and TFP in the decades during which its economy shows a higher resilience to economic shrinking.

The Groningen Growth and Development Centre 10-Sector Database (Timmer, de Vries & de Vries, 2015) provides GDP and employment share data of each Nigerian economic sector between 1960 and 2011. While the World Bank (2019) also provides data on sector growth, this chapter employs the Groningen Growth and Development Centre 10-Sector Database as a source instead since only that database provides information on the mining sector, which is of particular importance in the Nigerian case as the subsequent analysis shows. Remaining data is gathered from a variety of sources such as the Penn World Tables (Feenstra, Inklaar & Timmer, 2015) for total factor productivity (TFP).

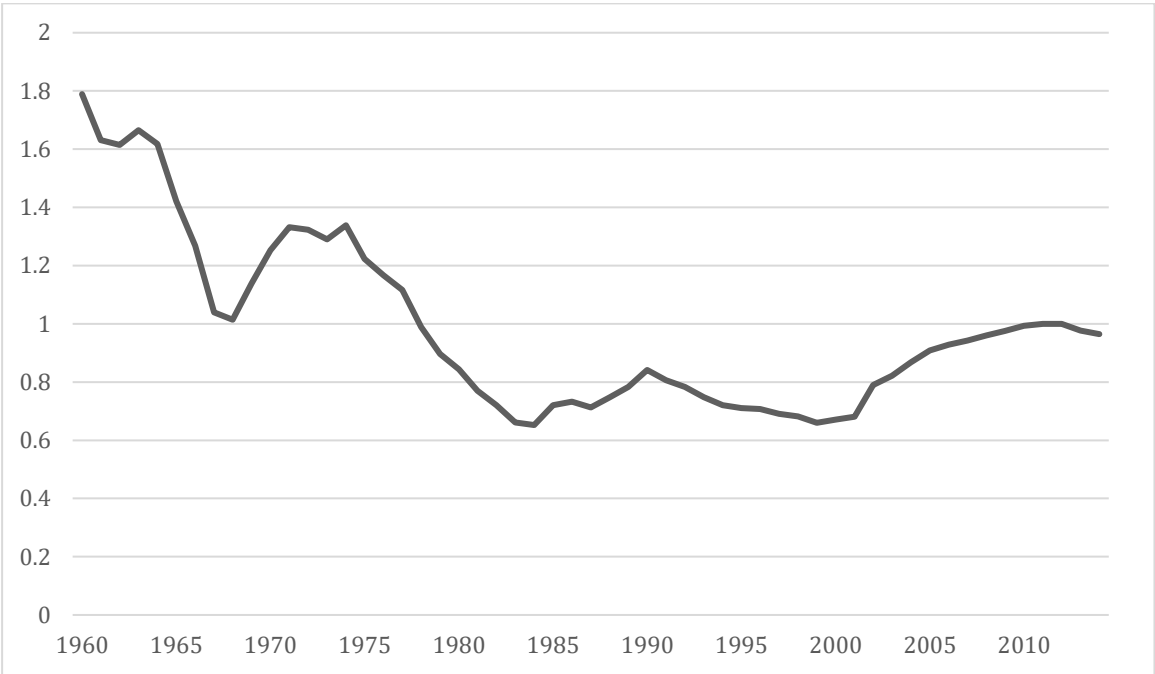


Figure 4.3 Nigerian total factor productivity, 2011=1, 1960-2014 (adapted from Feenstra, Inklaar & Timmer, 2015)

Beginning with an assessment of TFP, *Figure 4.3* shows Nigerian TFP between 1960 and 2014 employing 2011 as the baseline year. The more shrinking resilient decades of the 1960s and 1970s indeed show significantly higher productivity levels than the net shrinking decades of the 1980s and 1990s. It is also striking that Nigeria’s record high in TFP was reached just after independence from colonial rule. Surprisingly, the productivity levels of the 2000s prove to be only marginally higher than of those of the net shrinking decades despite the 2000s high economic performance. Low productivity levels might thus have led to economic shrinking in the 1980s and 1990s but they do not seem to present a necessary condition to avoid shrinking in the Nigerian case. The observed pattern is therefore only partially in line with *Proposition A*.

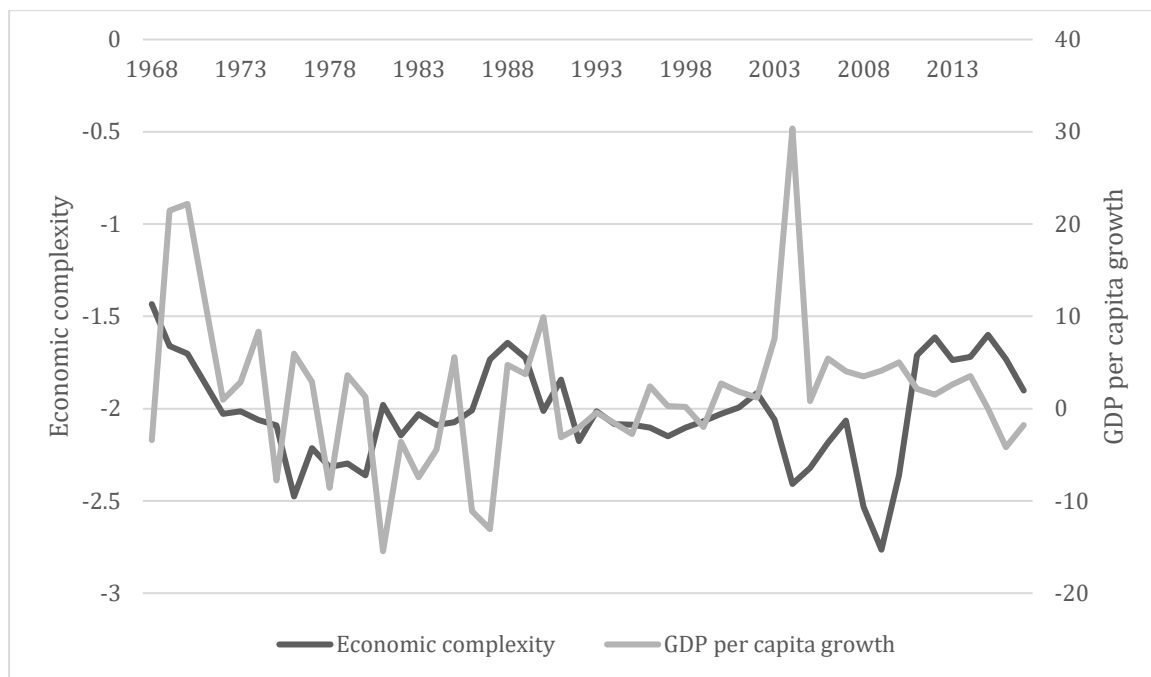


Figure 4.4 Economic complexity index measuring the complexity of Nigerian export products (adapted from the Observatory of Economic Complexity, 2019) and GDP per capita growth in %, 1968-2017 (adapted from the World Bank, 2019)

The resource curse literature assigns a lack of economic diversification an essential role in rendering growth volatile. Hausmann, Hwang & Rodrik (2007) and the IMF (2014) confirm this proposition. Figure 4.4 maps the complexity of Nigerian exports since 1968 against its GDP per capita growth rates. Until 2002, both show relatively similar trends: Growth rates slowly decline parallel to economic complexity in the 1970s; while the 1980s are characterized by an increase in export product complexity despite the frequent and high economic shrinking, the 1990s show lower economic complexity accompanying the net shrinking experience. However, the decade of the 2000s showing the highest economic performance and resilience against economic shrinking, faces record lows in economic complexity indicating that the strong economic performance must have been built on a low range of products. In contrast, the 2010s face a lower economic performance with more frequent shrinking despite the improvements in the complexity of Nigerian export products. Once again, economic diversification does not seem to present a necessary condition for an absence of economic shrinking. Proposition A is thus once again only partly in line with the Nigerian experience.

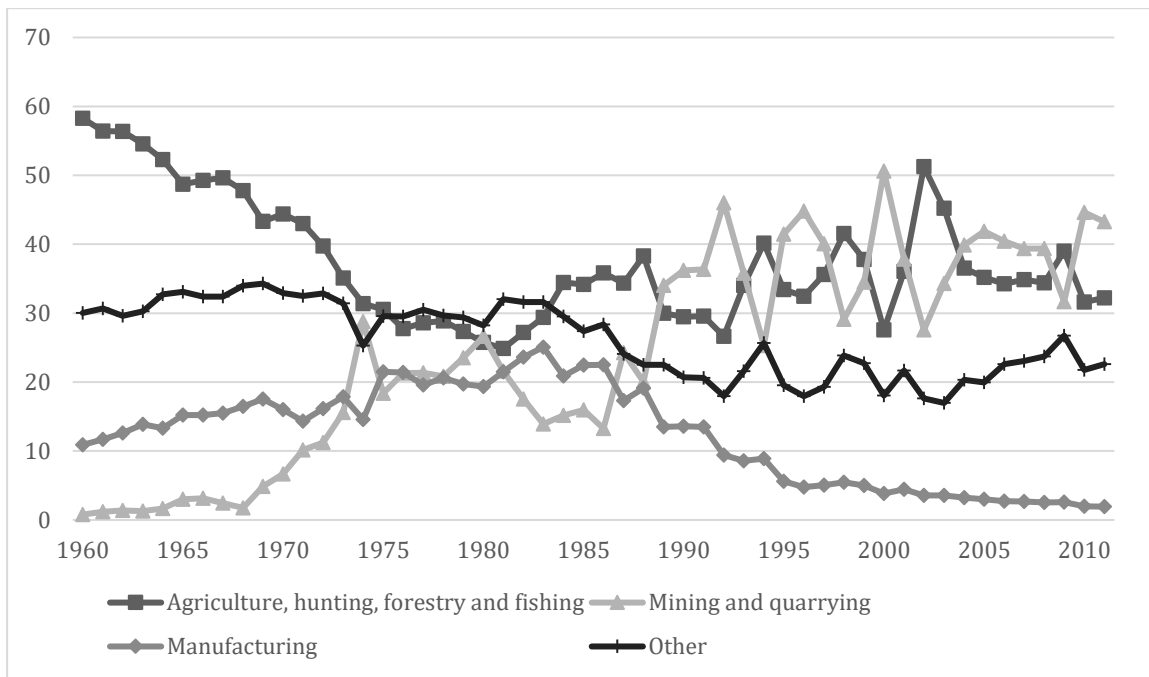


Figure 4.5 Sectoral GDP shares of the Nigerian economy in %, 1960-2011 (adapted from Timmer, de Vries & de Vries, 2015)

The sectoral GDP shares in Figure 4.5 show a similar pattern as the TFP and complexity data. The GDP shares of the different sectors largely correspond to the predictions of Proposition A when comparing the 1960s and 1970s with the 1980s and 1990s. However, a different pattern emerges for the two most recent decades. Until 1980, Nigeria undergoes a process of structural transformation with increasingly lower shares of its GDP generated by the agricultural sector and with slow but stable growth in the manufacturing sector. The Nigerian economy becomes more prone to economic shrinking once the process of structural transformation starts stagnating and eventually reverses itself in the 1980s and 1990s. However, the reversal trend continues even in the more recent net growing decades. Particularly the manufacturing sector faces a continuous decline since 1983 without being replaced by significantly large increases in other sectors. Therefore, the 2000s once again present an irregularity in the previous trends contradicting the assumptions of Proposition A. Nigeria's increasing reliance on the mining sector as a contribution to the country's GDP, could constitute one possible explanation for these unexpected trends emerging from the 2000s onwards. This phenomenon is therefore further investigated after following the continued assessment of the structural transformation process.

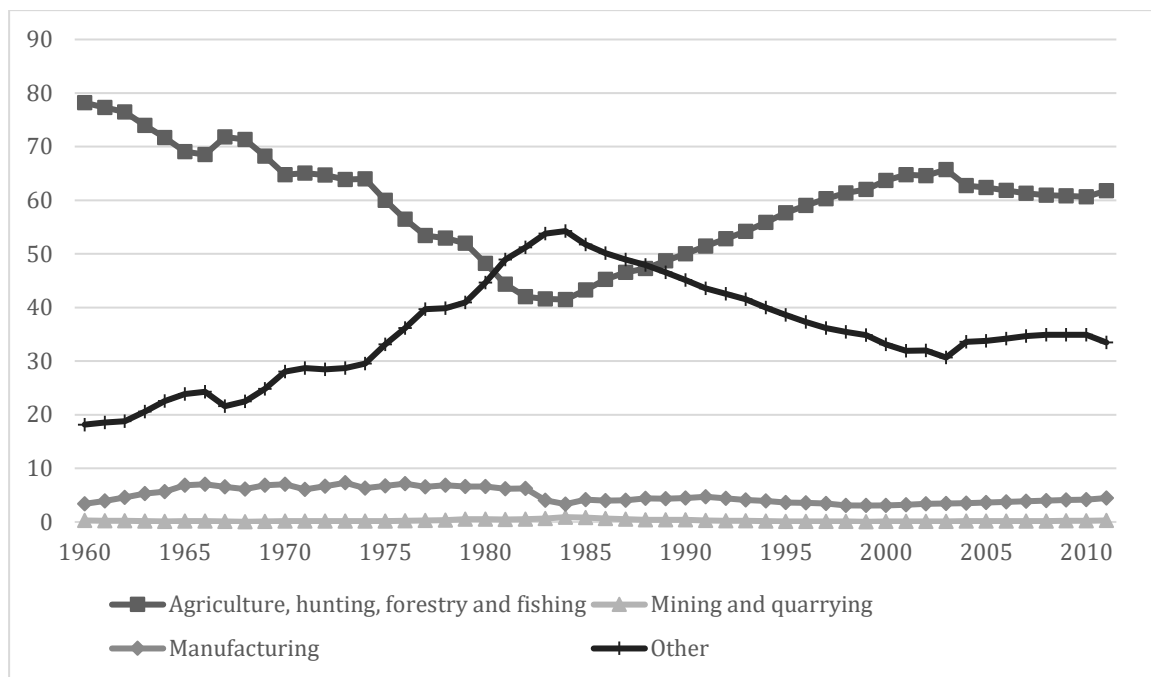


Figure 4.6 Sectoral employment shares of the Nigerian economy in %, 1960-2011 (adapted from Timmer, de Vries & de Vries, 2015)

The sectoral employment shares in *Figure 4.6* confirm the pattern emerging from the GDP shares. A structural transformation seems to be in progress until about 1983 when the process begins to reverse itself. Both, the manufacturing and the mining sector prove to be relatively labour-scarce during the entire time period despite their large changes in contribution to GDP. The employment shares therefore generally confirm the paradox of the high economic performance of the 2000s despite the continued reversal of the previously ongoing structural transformation counter to *Proposition A*.

Table 4.2 Sectoral shares and contributions to economic shrinking and growing in Nigeria, 1960-2009 (author's calculations based on data adapted from Timmer, de Vries & de Vries, 2015)

Sectors	Shares					Contributions			
	1960s	1970s	1980s	1990s	2000s	1960s		1970s	
						Growing	Shrinking	Growing	Shrinking
Agriculture	51.66	33.67	31.43	34.08	37.43	5.433	-2.779	19.359	0
Mining	2.15	17.80	20.25	36.95	38.29	56.186	-7.481	57.599	-2.331
Manufacturing	14.24	18.17	20.54	7.99	3.21	14.199	-1.850	26.696	0
Other	4.56	4.34	4.00	3.00	3.01	82.024	-14.579	153.392	0

Sectors	Contributions					
	1980s		1990s		2000s	
	Growing	Shrinking	Growing	Shrinking	Growing	Shrinking
Agriculture	20.245	-0.214	34.350	0	25.421	0
Mining	41.569	-6.313	49.808	-5.017	30.825	-4.190
Manufacturing	15.443	-0.955	17.483	0	14.834	0
Other	95.575	0	210.785	0	189.744	0

Table 4.2 (see Appendix B for more details) shows the average GDP share per sector and decade as well as each sector’s economic shrinking and growing per decade. The mining sector proves to be particularly volatile, on average growing more than the agricultural and manufacturing sectors but also shrinking at higher rates and more frequently than those sectors. Considering this particular volatility of the mining sector, an increasing reliance on this sector should consequently result in higher volatility of the entire economy. Paradoxically, the trends in Figure 4.5 indicate that when the Nigerian economy was particularly prone to economic shrinking in the 1980s, the mining sector contributed relatively little to total GDP, whereas the most shrinking resilient period of the 2000s relied heavily on mining as a share of national income. Therefore, the heavy reliance on the mining, i.e. oil, sector requires further attention.

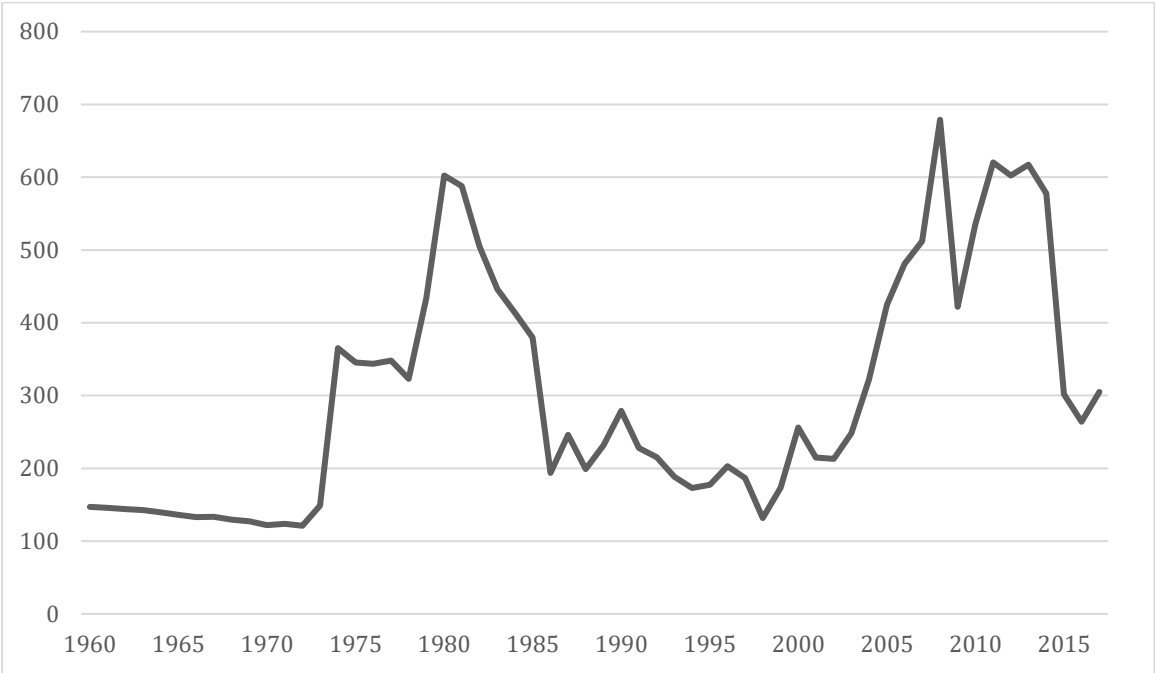


Figure 4.7 Real petroleum price, 1900=100, 1960-2017 (adapted from Jacks, 2019)

From the previous analyses of the Nigerian economic sectors, the mining sector has emerged as a key sector to national income and as a key contributor to economic shrinking. Figure 4.7 shows the real petroleum price. Production value data by Ross and Mahdavi (2015, see Appendix C) confirms that Nigerian production indeed corresponds very closely to the price trends. With the exception of the 1960s when Nigerian oil production was still low, the Nigerian economic performance and particularly its patterns of economic shrinking corresponds closely to oil price trends. The Nigerian economy proves particularly resilient to economic shrinking when oil prices are high and particularly volatile during oil busts. Much of the economic shrinking of the Nigerian economy can consequently be attributed to the resource curse.

In conclusion, two distinct patterns emerge from the analysis of structural change and technological change. The economic shrinking and growing patterns of the 20th century largely support Proposition A indicating the beginning of a structural transformation in the net growing periods of the 1960s and 1970s and a reversal of the structural transformation from the 1980s onwards. However, since the 2000s a different pattern emerges. Despite a continuous lack of structural transformation and lower productivity levels than in the 1960s and 1970s, the economy becomes more resilient to economic shrinking. The economy’s high reliance on its

oil sector could be a potential explanation for this pattern with oil prices coinciding observably with Nigeria’s economic performance. The resource curse may consequently largely be responsible for Nigeria’s volatile economy.

4.2.2 Proximate Factor: Demographic Change

Broadberry and Wallis (2017) consider demographic change as another proximate factor of economic performance. While they hold that the exact relationship between demographic factors and resilience to economic shrinking remains unclear and contested in the literature, extreme fluctuations in demographic trends could result in economic growth volatilities. According to *Proposition B*, demographic changes correlate with changes in economic performance. The World Bank (2019) provides data on total population, population growth, birth and death rates, as well as enough data to derive age pyramids for each decade covering the entire time period under assessment.

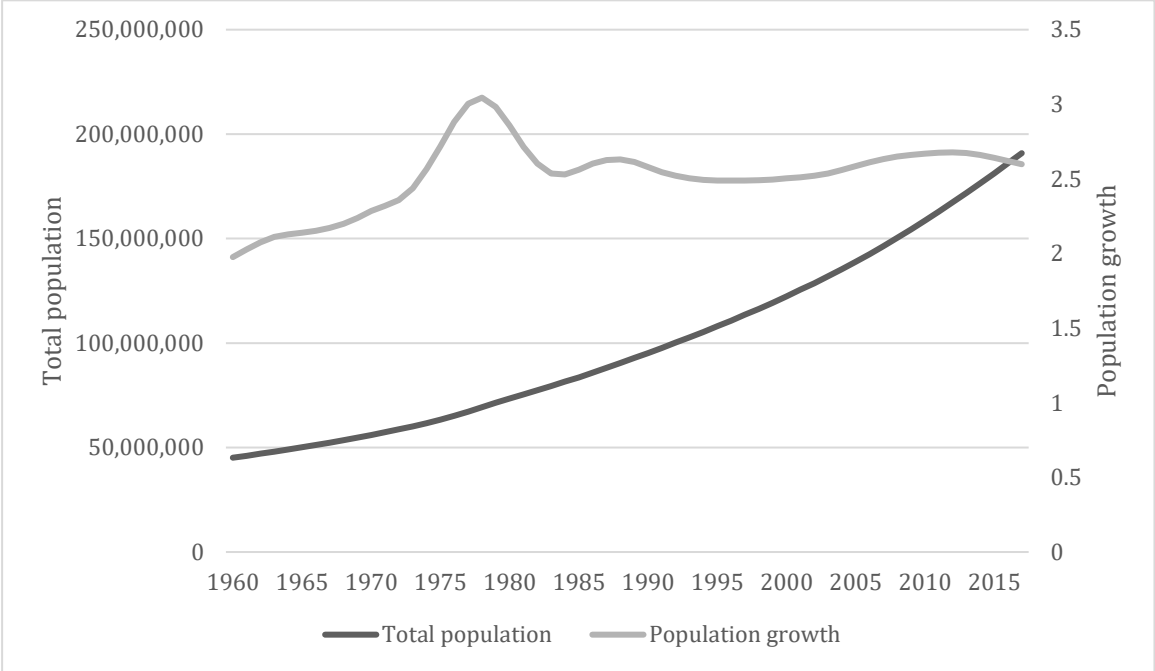


Figure 4.8 Nigerian total population and population growth in %, 1960-2017 (adapted from the World Bank, 2019)

Figure 4.8 shows the total population of Nigeria as well as the population growth rate. The total population data shows an exponential increase in Nigeria’s number of inhabitants from 45,137,812 in 1960 to 190,886,311 in 2017 stemming from a relatively stable population growth rate around 2.5%. The growth rate however differs from its general trend between 1972 and 1983: the growth rate surges rapidly from just above 2% to just above 3% in 1978 before falling back to just above 2.5% where it remains stable from then on. While the two decades of the 1960s and 1970s with a net positive economic performance thus coincided with increasingly higher population growth rates peaking in the particularly high economic performance decade of the 1970s, the following decades show only marginal fluctuations in the population growth

rate despite the negative economic performances of the 1980s and 1990s. The population growth data does therefore not support *Proposition B*.

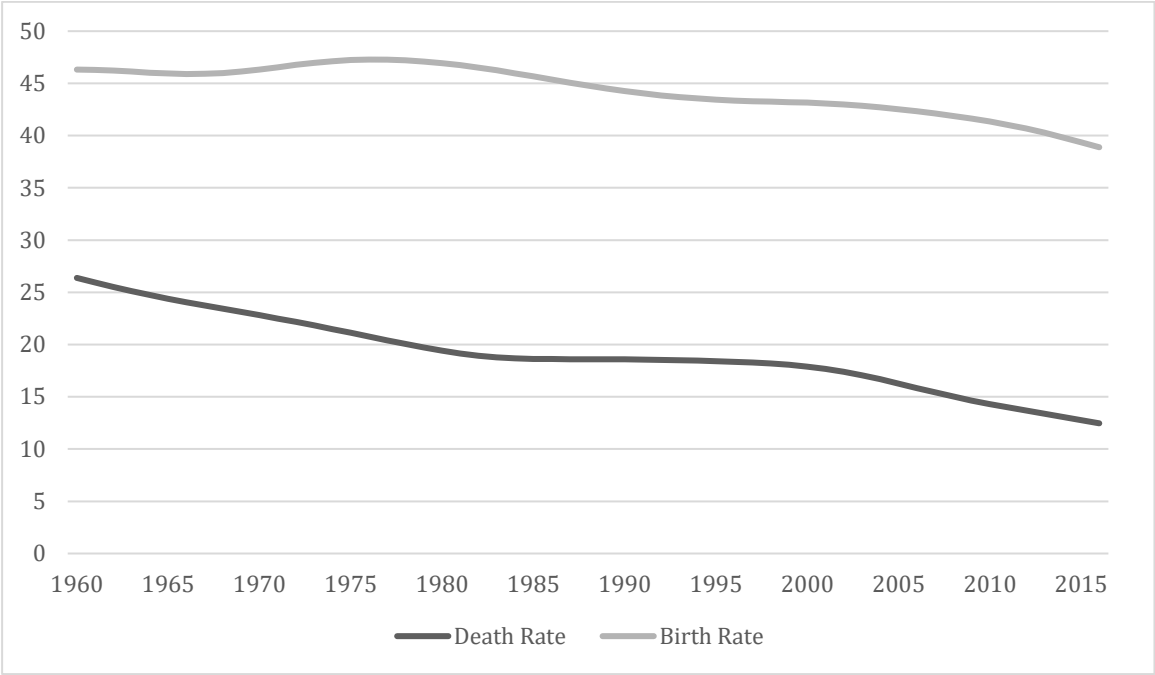


Figure 4.9 Birth rate and death rate in Nigeria per 1000 people, 1960-2016 (adapted from the World Bank, 2019)

As Figure 4.9 shows, birth and death rates over the time period under examination are both in constant decline. The observed constant population growth resulted from a consistently higher birth rate over the entire time period. On average 19 out of 1000 people died each year while there were on average 44 births per 1000 people. Furthermore, the gap between birth and death rate first increased until 1980 as already indicated by the growing population rates and then stayed relatively constant over the next four decades. Whereas in 1960 20 more people were born than died per 1000 people, the latest data of 2016 shows a gap of 26 per 1000 people. The gap between birth and death rate has increased since the death rate has declined by 53% over the entire time period, whereas the birth rate has declined by merely 16% over the same time. Similar to the population growth rate, birth and death rates show no irregularities systematically coinciding with periods of economic shrinking or growth and thus do not offer support for *Proposition B*. The initial surge in birth rates resulting in higher population growth in the 1970s could stem from the economic gains during this period according to Malthusian assumptions. However, the figures do not provide any further confirmation for the existence of Malthusian waves.

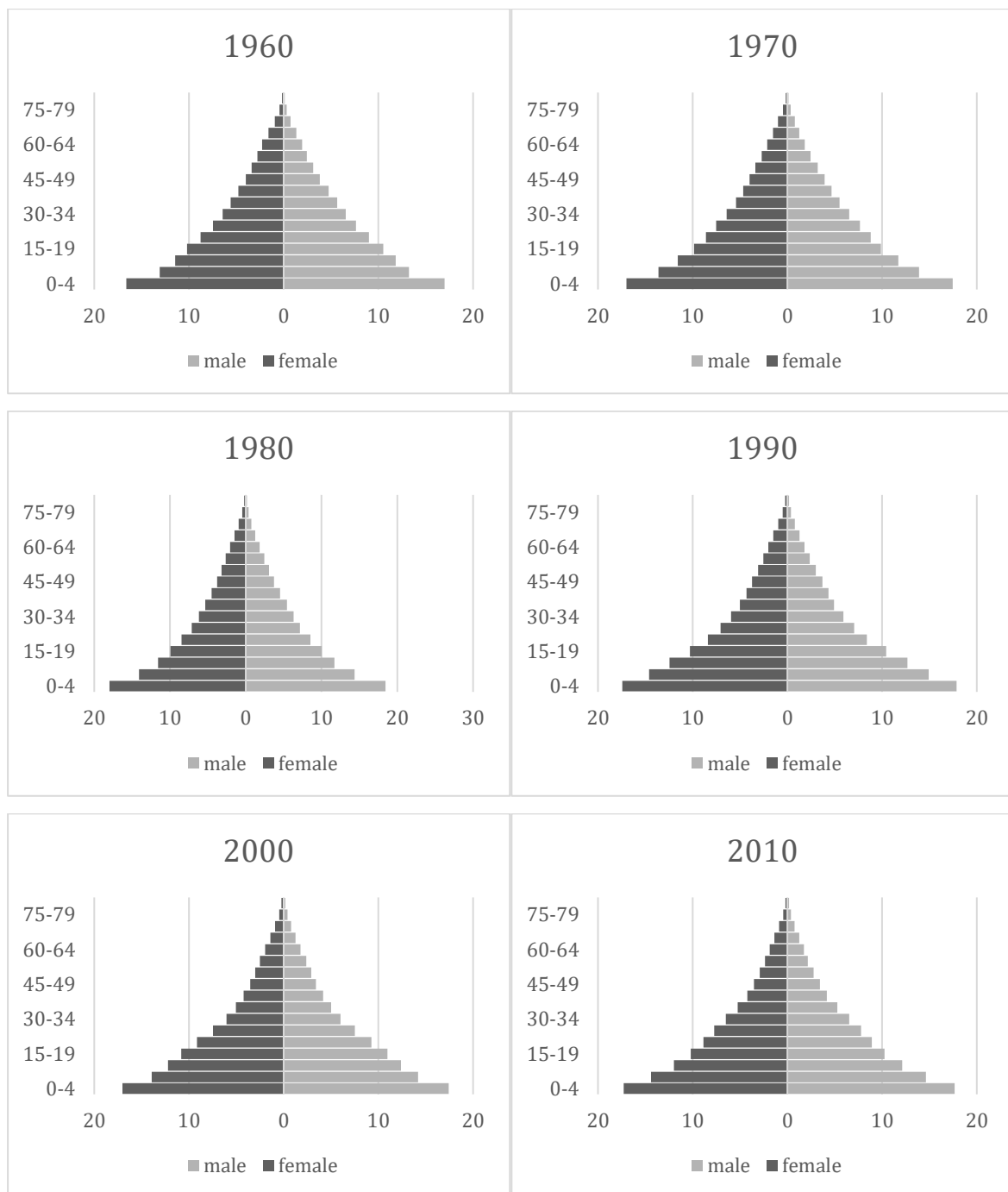


Figure 4.10 Nigerian age pyramids in % of the total male/female population, 1960, 1980, 1990, 2000, 2010 (adapted from the World Bank, 2019)

The age structure of the population constitutes another factor that could potentially impact the Nigerian growth performance. However, a closer examination of the population's age structure in age pyramids for each decade (see Figure 4.10) shows very little variation. Generally, all age pyramids show a very young population as is common among many developing countries particularly in Sub-Saharan Africa. Once again, the net shrinking decades of the 1980s and 1990s do not show any anomalies compared to the four net growing decades and Proposition B can thus not be supported with regard to the age structure of the population.

The data indicates that Nigeria has not undergone a demographic transition similar to more developed countries yet. The country has succeeded in significantly lowering the death rate indicating health improvements of the overall population. However, birth rates do not follow at the same pace and remain relatively high thus leading to the observed continuous population growth. After a temporary fluctuation in the population growth rate in the 1970s, the rate stabilized around 2.5% a year. Apart from the fluctuation in the 1970s there is no indication of a Malthusian trap. The lack of fluctuations in the data and very little variation in trends in the net economic shrinking periods of the 1980s and 1990s, indicates that demographic trends are very unlikely to have affected Nigeria's economic performance significantly thus rejecting *Proposition B*.

4.2.3 Proximate Factor: Incidences of Warfare

Broadberry and Wallis (2017) classify incidences of warfare as their final proximate factor of long run economic performance. According to *Proposition C*, an absence of warfare correlates with a higher resilience against economic shrinking. Mostly qualitative data from the Uppsala Conflict Data Program (2019a) providing extensive information regarding armed conflicts from 1945 helps assess whether armed conflict is responsible for the economic shrinking frequently faced by the Nigerian economy.

According to the Uppsala Conflict Data Program (2019a), armed conflict in Nigeria has resulted in 51,196 deaths since 1989. While the country's post-colonial history is generally characterised by inter-ethnic tensions, particularly between the Muslim Northern regions and the Christian Southern regions, the political liberalization of 1999 has led to an increase in armed conflicts between ethnic groups since the beginning of the 2000s (Uppsala Conflict Data Program, 2019a). Nigeria has a heterogeneous population not only divided by religion with almost equal amounts of Christians and Muslims (see *Figure 4.11*) but also between its approximately 250 different ethnicities (Central Intelligence Agency, 2019, see *Figure 4.12*) with no ethnicity constituting the majority.

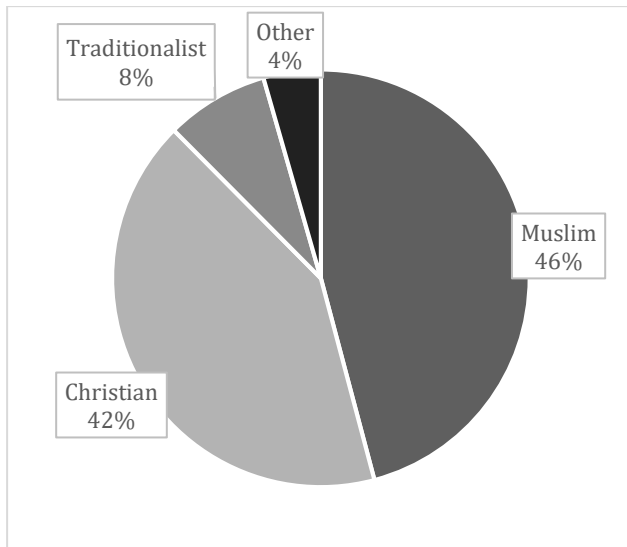


Figure 4.11 Religions of Nigeria (adapted from the Central Intelligence Agency, 2019)

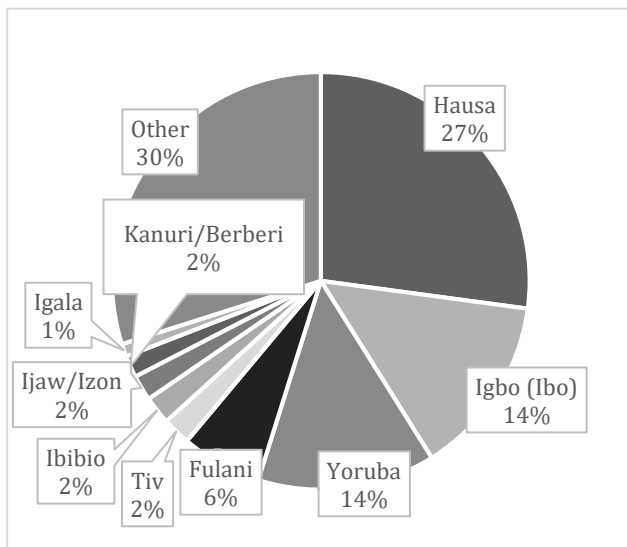


Figure 4.12 Ethnicities of Nigeria (adapted from the Central Intelligence Agency, 2019)

Ethnic tensions resulted in the Nigeria’s first armed conflict since independence from colonial rule in the form of the 1966 coup d’état by an Igbo group. The countercoup that followed established military rule (Uppsala Conflict Data Program, 2019a). Indeed, the Nigerian economy faced economic shrinking starting in 1966 and in the two years following the conflict, providing support for *Proposition C*.

Confirming the predictions of resource curse theorists regarding the high conflict potential resulting from the struggle for control over natural resources (Mehlum, Moene & Torvik, 2006b), Nigeria has experienced several instances of civil war related to its oil-abundance. Between 1967 and 1970, the Biafran War broke out when the oil-rich Biafran region demanded independence and control over the natural resource (Uppsala Conflict Data Program, 2019b). A temporary surge of violence following this conflict occurred once again in 1999 between the ethnic group of the Ijaw and the Nigerian government (Uppsala Conflict Data Program, 2019b). In 2004, another instance of armed conflict occurred in the same region between the Niger Delta

People's Volunteer Force, also an Ijaw group, its rival, the Niger Delta Vigilantes, and the Nigerian Government (Uppsala Conflict Data Program, 2019c). Whereas the Nigerian economy shrank between 1967 and 1968 as well as in 1999, the economy achieved high growth rates despite the ongoing conflict in 1969, 1970 and 2004. The pattern here is thus less clear with regard to the economic performance effects of the conflicts over Nigeria's oil-rich regions and does not offer full support for *Proposition C*.

As many other African countries, Nigeria inherited poorly defined borders from colonial rule. In 1996, border hostilities between Cameroon and Nigeria developed into armed conflict, after Nigeria had employed soldiers in the contested area in 1993 and Nigerian civilians had been killed by the Cameroonian government in 1994 (Uppsala Conflict Data Program, 2019d). The conflict was characterised by continuous sporadic outbreaks of violence between 1997 and 1998 as well as between 2000 and 2002 (Uppsala Conflict Data Program, 2019d). Despite the conflict's official resolution by the International Court of Justice in 2002, sporadic outbreaks of violence reoccurred in 2005. Despite the ongoing conflicts, the Nigerian economy solely shrank between 1993 and 1995 thus again not showing a clear pattern of conflict coinciding with economic shrinking as predicted by *Proposition C*.

Nigeria has recently experienced surges in religiously motivated warfare parallel to the global surge in Islamism. In 2004, the Afghan Taliban inspired student movement Ahlul Sunnah Jamaa conducted several attacks on police stations in the struggle to achieve an independent Northern Nigerian Islamic State but was quickly defeated by the Nigerian government (Uppsala Conflict Data Program, 2019e). In 2009, another Islamist group emerged. Jama'atu Ahlis Sunna Lidda'awati wal-Jihad (commonly referred to as *Boko Haram*) struggled for control over Nigerian territory in order to establish a Nigerian Islamist state. In 2015, this Islamist group pledged allegiance to the so-called Islamic State thus officially joining the global Islamist struggle. With the exception of 2010, active fighting between the Nigerian government and the Islamist group lasted from 2009 until 2017 costing 11,894 battle-related deaths in total, Nigeria's highest number of war casualties since the beginning of data recording in 1989 (Uppsala Conflict Data Program, 2019f). Throughout this period of conflict, the Nigerian economy experienced economic shrinking only in the most recent years between 2015 and 2017.

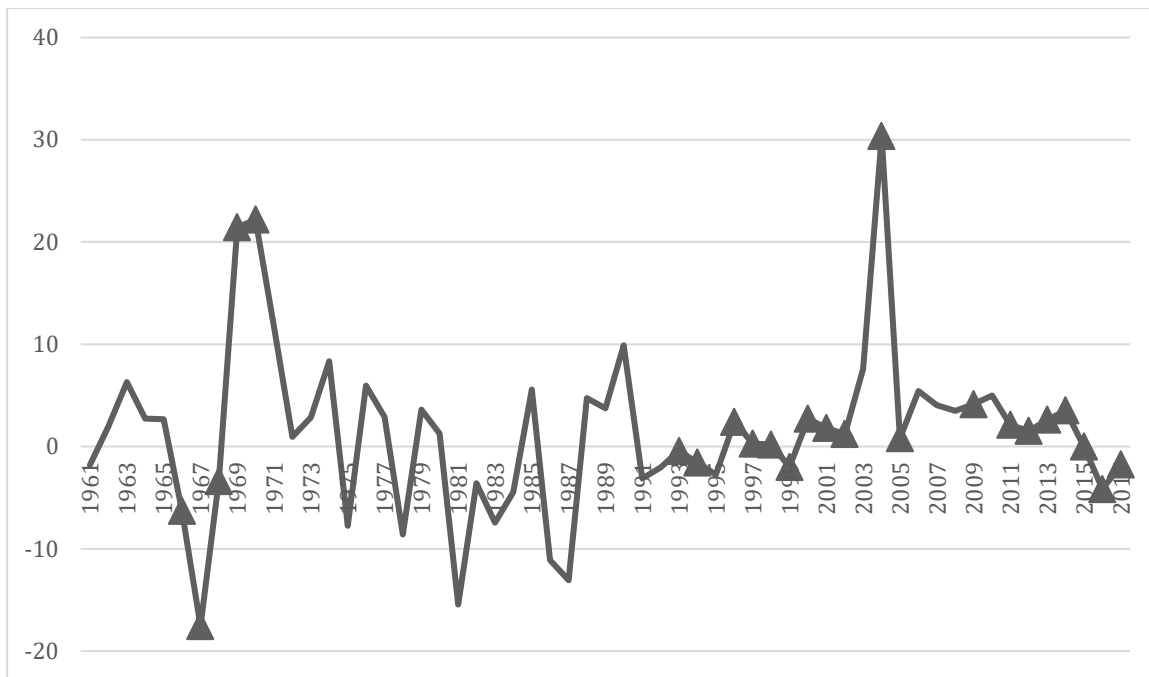


Figure 4.13 GDP per capita growth in %, armed conflict marked by triangles, 1961-2017 (adapted from the World Bank, 2019 and the Uppsala Conflict Program, 2019a, b, c, d, e, f)

Figure 4.13 summarizes the incidences of warfare Nigeria experienced since 1960 and relates them to the country's economic performance each year. In conclusion, social conflict does not consistently coincide with periods of economic shrinking. The net shrinking decade of the 1980s was a peaceful decade, whereas the 2000s achieved a high economic performance despite numerous conflicts. Incidences of warfare did not inevitably lead to economic shrinking: the years of 1969, 1970 and 2004 recorded Nigeria's highest growth rates despite ongoing conflict. The fact that all three years were characterised by struggles over the control of Nigeria's oil resources, could explain this paradox with the causality running in the opposite direction with high oil revenues sparking conflict over the distribution of those revenues. However, both oil prices and oil production figures do not show exceptionally high figures in those years (see Chapter 4.2.1, Figure 4.7 and Appendix C). The paradox therefore remains unresolved.

Since no clear pattern emerges indicating that incidences of warfare necessarily correlated with economic shrinking, the evidence from the Nigerian case only offers limited support for Proposition C. Nevertheless, some instances of economic shrinking in Nigeria's long run economic performance could have resulted from warfare. For instance, the decline in economic performance in recent years could have resulted from the persisting conflict between the Nigerian government and Jama'atu Ahlis Sunna Lidda'awati wal-Jihad. Factors such as the number of casualties and the diversion of government funds towards warfare rather than economic development could determine the effect of individual wars on economic performance. Unfortunately, casualty data is limited and government expenditure data is unavailable for Nigeria preventing further investigation of the exact channels through which warfare might affect economic performance.

4.2.4 Ultimate Factor: Institutional Change

According to Broadberry and Wallis (2017) institutional change from a closed to an open access order constitutes the ultimate factor behind a high resilience against economic shrinking. *Proposition D* predicts that open access orders correlate with a higher resilience to economic shrinking. A careful assessment of Nigerian political history since 1960 in terms of open and limited access order characteristics helps determine whether the different political systems the country employed over the past six decades contributed to economic shrinking or a resilience thereof.

Broadberry and Wallis (2017) identify the key difference between limited and open access orders in their identity-bound rules as opposed to impersonal rules. North, Wallis and Weingast (2009) further specify the concept by holding that limited access orders lack the “consent of the governed” (p.12), show only “small numbers of organizations” (p.12), employ relatively small and centralized institutions and organize their personal social relationships through privilege, hierarchy, inequalities and insecure property rights. Open access orders in contrast show a large number of organisations including a rich civil society, relatively big and centralized institutions and organize their “impersonal social relationships” (p.12) through the rule of law, equality and secure property rights. Data scarcity hinders a complete assessment of all these factors for the complete period of examination in Nigeria. However, there is enough available data regarding the Nigeria’s regime types and transition in order to match general patterns with the country’s economic performance.

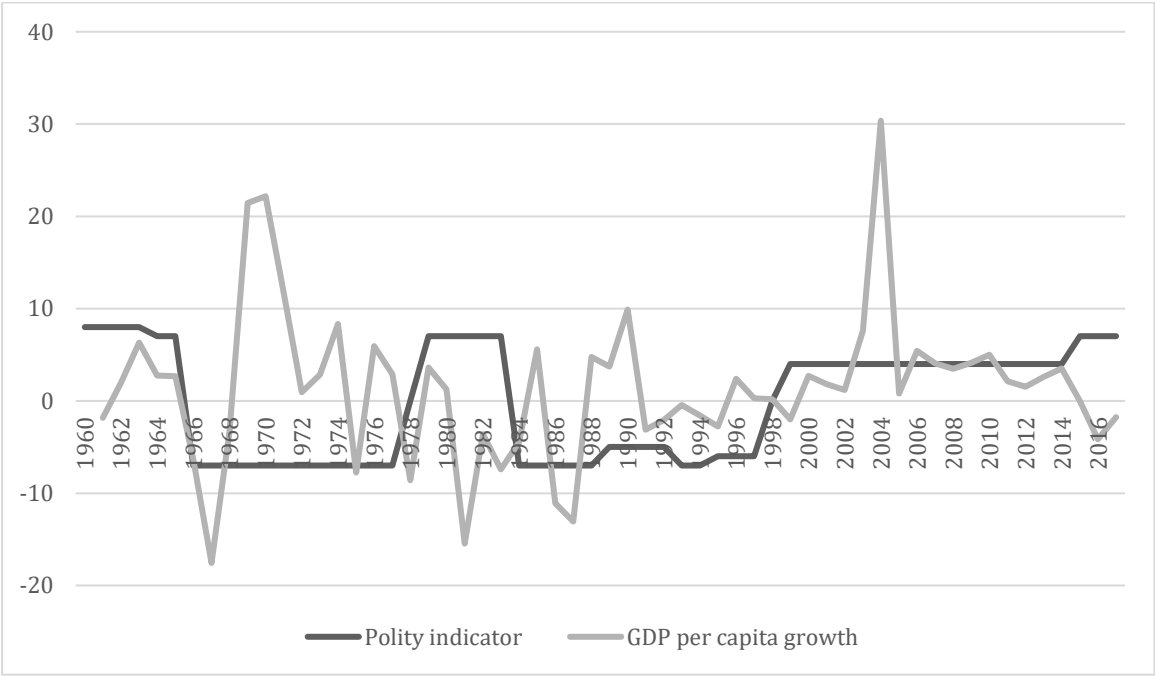


Figure 4.14 Polity IV indicator for Nigeria, 10=full democracy, -10=full autocracy, 0= transitional period (adapted from the Center for Systemic Peace, 2019a) and GDP per capita growth in %, 1960-2017 (adapted from the World Bank, 2019)

The polity IV indicator shown in *Figure 4.12* combines data concerning the competitiveness of executive recruitment and political participation, the constraints on the chief executive, the

openness of the executive recruitment and the regulation of participation into a measure of a country's democratic or authoritarian character (Center for Systemic Peace, 2019b). Lacking a comprehensive dataset concerning social orders as classified by North, Wallis and Weingast (2009), the authors instead make use of this Polity IV dataset (Center for Systemic Peace, 2019a) that also includes information concerning the Nigerian case. They classify open access orders as corresponding to democratic regime types and limited access orders as corresponding to more autocratic regimes. The data included in the indicator listed above specifically answers the question whether the regime governs with the consent of the people and assesses how limited the access opportunities into government positions are.

The Nigerian case does not show a clear indication of a relationship between the regime type and economic performance. While the net economic shrinking periods of the 1990s and 2000s were predominantly autocratic, the early 1980s experienced economic shrinking despite the brief democratization of Nigeria's institutions. The economic growth periods show similarly inconclusive evidence. The 1970s showed a high economic performance despite the reign of an autocratic regime, whereas the economically successful period of the 2000s showed significantly higher rates of democratization. Furthermore, the higher democracy indicator in recent years has not prevented economic shrinking. The Nigerian case of political participation does therefore not offer support for *Proposition D*.

The second proxy measure North, Wallis and Weingast (2009) employ to distinguish limited and open access orders, the size of the government measured in government expenditure is unfortunately unavailable for Nigeria. However, the aspect of impersonality of rules Broadberry and Wallis (2017) highlight also provides valuable information regarding the existence of limited and open access orders. Nigeria's history is marked by multiple coups d'états. Not all coups were violent as the one in 1966 (Uppsala Conflict Data Program, 2019a). Not only did coups replace the top executive during times of military rule as in 1985 and 1990, but they also served as a transitional measure to democracy in 1975 as well as to end democratic rule in 1983 (Country Watch, 2018). Failed democratisation during the 1990s furthermore led to multiple instances of military-backed personnel change (Country Watch, 2018). This history of political power derived from de facto control of the military rather than based on constitutional law even during times of democracy shows that even democratization did not break the impersonal character of social and political relationships in Nigeria. Therefore, the country never fully transitioned to an open access order until the 2000s despite the brief periods of democratization. This lack of impersonal rule could explain why Nigeria's economic performance and democratization indicators do not correlate. The 2000s successful economic performance could from this perspective be an indication of the country's first true transition towards impersonal rule.

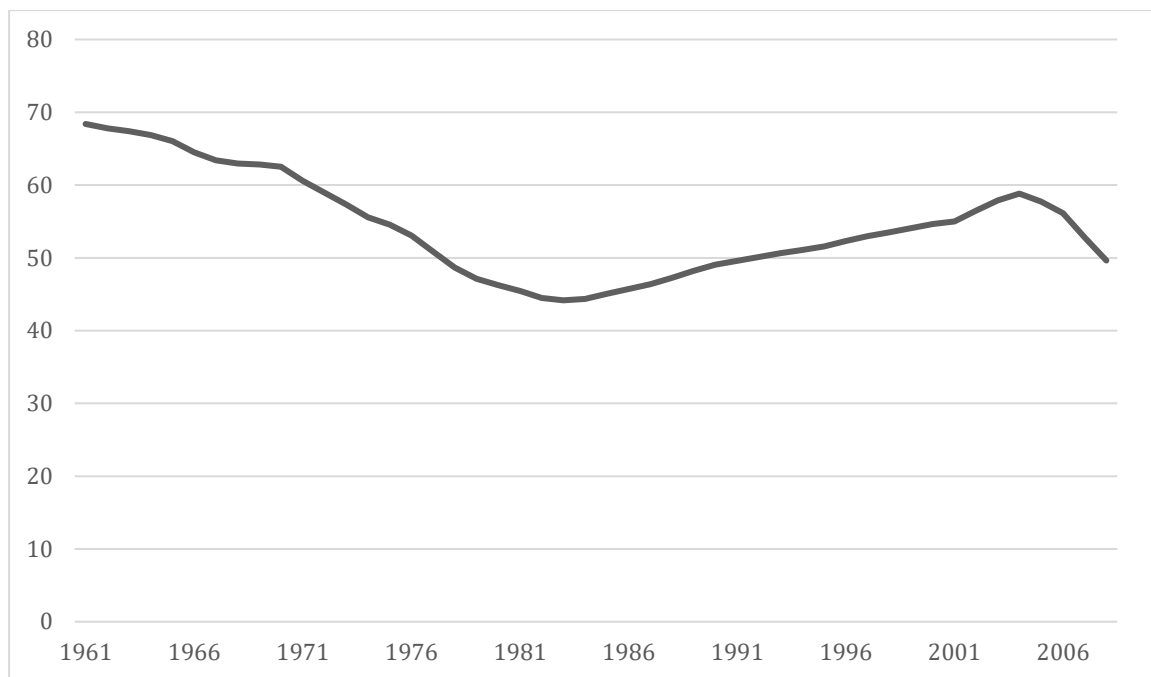


Figure 4.15 Estimated level of the Nigerian shadow economy in % of GDP, 1961-2007 (adapted from Elgin & Öztunali, 2012)

The size of the informal economy indicated in *Figure 4.15* constitutes another indicator of the impersonality of social relationships, however focusing on the population as a whole rather than merely the rulers. Broadberry and Wallis (2017) hold that the existence of elite privileges will lead to a limitation of the “extent of the market” (p.25). Market access constitutes a particular problem in the Nigerian economy. Estimations of an existing shadow economy by Elgin and Öztunali (2012) show that Nigeria has consistently high rates of informal economic activity indicating potential issues with access to formal economic organizations such as firms. The large informal Nigerian market shows that a large part of the population remains engaged in economic activities organised around personal lines in line with the limited access order rather than impersonal activities coordinated by the legal framework of the state. The estimations indeed indicate in line with *Proposition D* that the size of the informal economy decreased during the net growth periods of the 1960s and 1970s, followed by continuous increases during the net shrinking periods of the 1980s and 1990s. The 2000s period with the highest economic performance once again saw a decrease in informal exchange. While these trends indicate that people increasingly engaging in formal rather than informal exchange has positive effects on the country’s resilience to economic shrinking, the level of the informal economy remains high and is thus unlikely alone responsible for the country’s economic performance. The figures reject also reject the previous indications of a transition to an open access order after 2000. Nigeria most likely remained in a limited access order even after the 20th century.

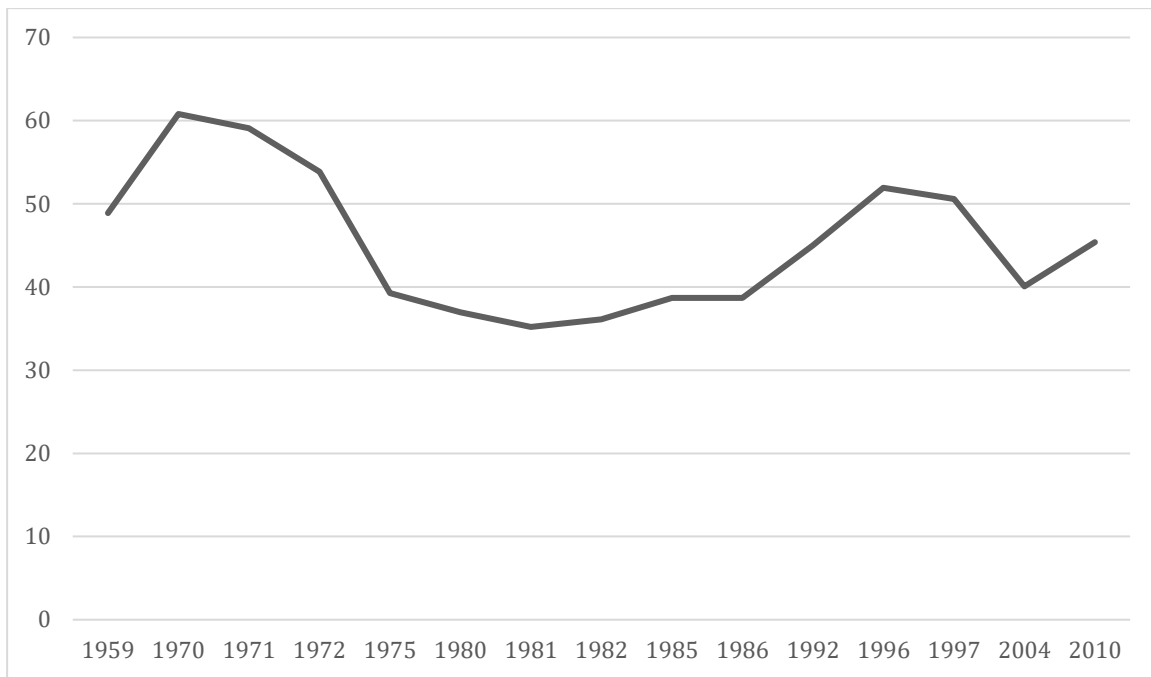


Figure 4.16 Nigerian Gini coefficient in %, 1959-2010 (author's calculations of yearly average of the highest quality estimations available from UNU-WIDER, 2019)

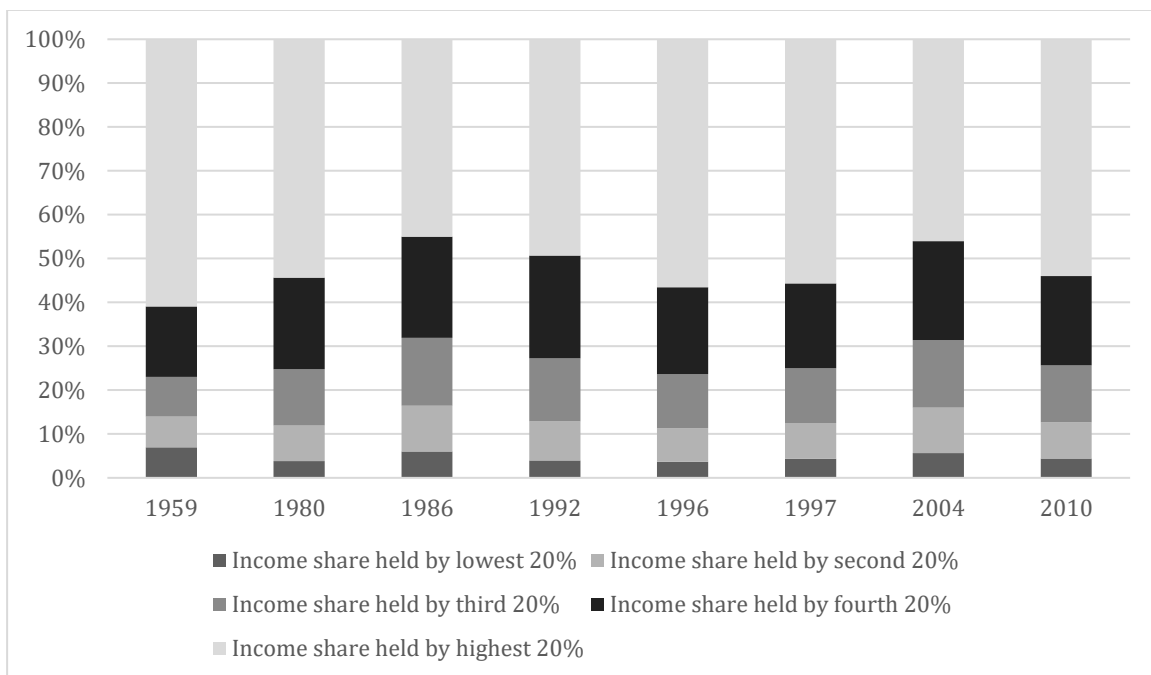


Figure 4.17 Nigerian income shares, 1959-2010 (author's calculations of yearly average of the highest quality estimations available from UNU-WIDER, 2019)

Broadberry and Wallis (2017) hold that for the institutional change necessary for a higher resilience against economic shrinking a mere change in the rules does not suffice but rather social dynamics need to change as well. Data for multiple measures indicating social dynamics such as inequalities and hierarchies is available for Nigeria. UNU-WIDER (2019) provides a collection of estimations of Gini coefficients and income shares held by each quintile of the population for Nigeria. Figure 4.16 and 4.17 provide the average of the highest quality data

available for each year. Whereas inequalities widened in the first decade after independence, in the 1970s inequalities decreased significantly correlating with a period with a relatively large resilience to economic shrinking. In the mid-1980s, inequalities began to widen once again correlating with the two decades of net economic shrinking. The pattern that emerges shows widening inequalities in the decades with higher net economic shrinking and shrinking inequalities in net economic growth periods. This trend is also confirmed by the poverty headcount ratio that grew to 63.5% of the population in 1996 (see *Appendix D*) starting from the first poverty measurement at 53.3% in 1985. Similar to inequalities, poverty rates also recovered in the 2000s to 53.5% in 2003. However, the occurring stagnation in improving the poverty rate observed in 2009 at 53.5% could be a partial explanation for the reoccurring shrinking rates in the 2010s. Inequality measures as well as poverty measures therefore offer support for *Proposition D*.

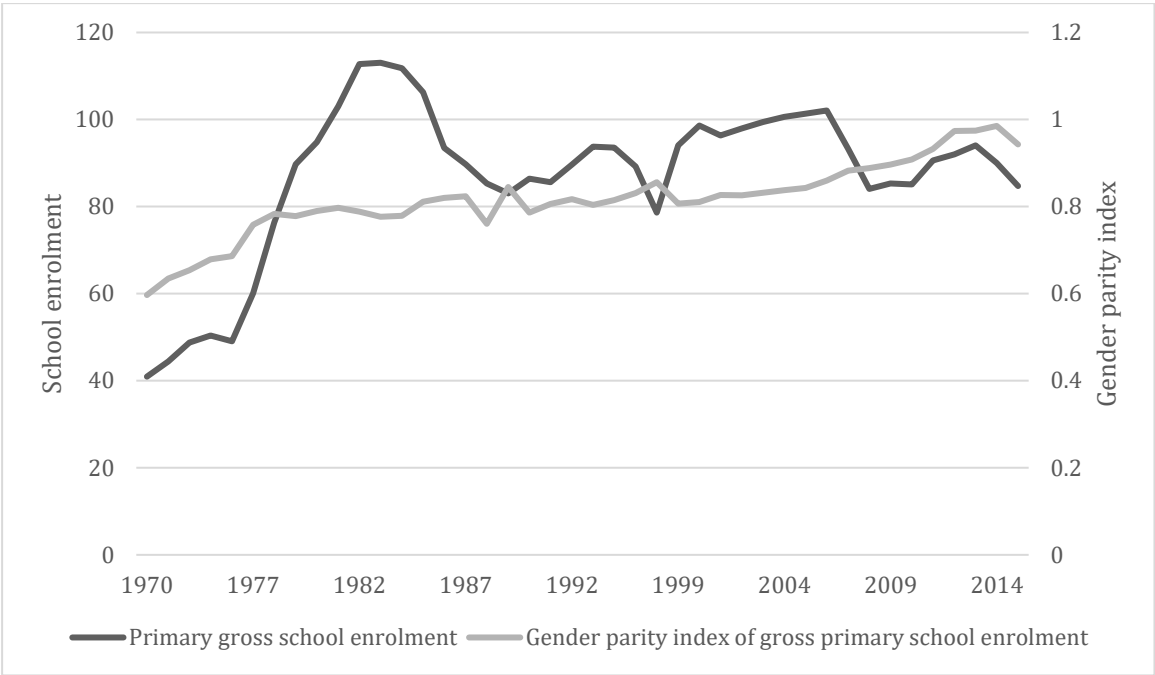


Figure 4.18 Nigerian primary gross school enrolment in %, and gender parity index, scale 0 to 1, 1970-2016 (adapted from the World Bank, 2019)

The World Development Indicators (World Bank, 2019) provide data regarding three more measures showing different aspects of Nigeria’s equality. Firstly, unemployment rates for Nigeria available only since 1986 continuously remained at about 4% since they were first reported and relatively equal for both genders. However, in the most recent period of economic shrinking since 2013 the numbers significantly increased to their highest point since the first measurement around 6% (see *Appendix D*). Primary school enrolments in *Figure 4.18* show a different pattern. Gender inequalities in education continuously improved with the exception of a decrease from near perfect gender parity in 2014 in the two most recent years. This pattern once again provides support for *Proposition D* with regard to the most recent years becoming more prone to economic shrinking due to a deterioration of inclusiveness of the Nigerian society and particularly economic opportunities. While primary school enrolment figures also show a recent deterioration of the trend, the figures also show more variation in trends prior to the 2000s. The largest improvements were made during the economically successful decade of the

1970s, deterioration followed in the 1980s and improvements were again made in the 2000s, however only until 2006 and remaining far below the rates of the 1970s. The patterns broadly confirm *Proposition D*, however once again the 2000s show a slightly distinct pattern than expected. The third measure of equal economic opportunities the World Bank (2019) provides shows the remaining differences between the rural and urban population. Access to electricity has continuously stayed significantly lower in rural regions compared to urban areas (see *Appendix D*). While the difference has decreased continuously since 1990, a divergence of more than 40 percentage points persists. Furthermore, Nigeria still fails to provide electricity to more than 10% of its urban population without any significant improvements since the first measurement in 1990 thus limiting the economic opportunities of a large part of its population.

While Nigeria has therefore undergone multiple periods of democratization superficially indicating a transition from a limited to an open access order, a closer analysis shows that impersonal rules and privileges largely persist indicating that the country in fact remains in a limited access order. The data shows that steps closer towards an open access order generally led to improvements in economic performance throughout Nigeria's history. However, the persistence of a limited access order offers a potential explanation of Nigeria's continued struggle to sustain its economic growth. The return of economic shrinking after the economically successful period of the 2000s could be an indication of the lack of societal transformation towards a higher inclusiveness not just politically but also economically in line with *Proposition D*. Once again, the 2000s stand out as a period with only limited improvements in different institutional factors despite their high economic performance.

4.3 Discussion

The previous analysis focuses on three proximate factors and a single ultimate factor potentially affecting the Nigerian long run economic performance since 1960. The economic performance analysis showed a particular vulnerability of the Nigerian economy to economic shrinking in the 1980s and 1990s and a relatively successful economic performance in the 1970s and especially in the 2000s with a complete absence of economic shrinking. The four propositions guiding the analysis receive only partial support from the Nigerian case. However, the analysis of the four factors helps shed new light on Nigeria's economy and particularly its problematic continued economic shrinking. Several broad policy implications result from the findings of the empirical analysis.

The analysis of Nigeria's structural change and productivity levels showed that much of Nigeria's economic volatility stems from the country's reliance on oil. The decades during which the country was largely free of economic shrinking largely correlated with favourable oil prices. While an ongoing structural transformation was observable until 1980, the new millennium shows a very different picture. The striking economic success of the 2000s was neither based on a successful structural transformation nor on significant growth in productivity levels. Consequently, high oil prices provide a reasonable explanation for the decade's high economic performance. The indication of the country's high and increasing reliance on oil is particularly worrying due to two factors. Firstly, the oil industry employs a consistently very

small fraction of the population and therefore has little potential for improving the economic welfare of a broad spectrum of the Nigerian society in the absence of significant redistributive policies. Secondly, the analysis shows that the oil industry in Nigeria constitutes the most volatile sector of the country and will thus continue to cause economic shrinking. The country therefore needs to focus on its more labour-intensive industries and either redistribute oil rents or intensify economic activity in non-oil sectors while advancing the currently stagnating structural transformation process. These measures would also lead to a diversification of the Nigerian economy.

The analysis of demographic change showed that it is rather unlikely that Nigerian economic shrinking resulted from changes in demographic factors since there was very little variation in the trends of these factors over the past six decades. Therefore, no demographic policy implications can be derived and Nigeria's economic performance policies should instead focus on improving the other three factors of economic shrinking.

Nigeria shows a significant amount of incidences of warfare in the country's young history. A few of these instances of warfare could well be responsible for some instances of economic shrinking. However, the extreme shrinking observed in the 1990s and 1980s cannot be attributed to warfare since the two decades were almost entirely peaceful. Reducing warfare through reconciliation of different societal groups does thus not represent the main solution in reducing the gravest economic shrinking, but might help prevent some instances of economic shrinking.

The institutional analysis shows that political participation through elections is not sufficient for creating lasting positive effects on resilience to economic shrinking. The country also needs to sustain the electoral regime changes of the past two decades and prevent reoccurrences of political rule based on personal power relations. Another large task the country is facing is an integration of all parts of its society into the formal economy and a lowering of inequalities to eliminate societal privileges that help sustain the current system of identity rather than impersonal rules. The institutional analysis also indicates that the economic success of the 2000s was not solely built on favourable oil prices but may also constitute the result of institutional and societal improvements.

The four factors of economic shrinking are interrelated according to the theoretical approach (Broadberry & Wallis, 2017). Bringing about a structural transformation targeting particularly labour-intensive industries would not only create more jobs in the formal economy but also lift people out of poverty and potentially reduce inequalities. At the same time, investments in education can raise productivity and reduce social relationships based on identity rather than impersonal rules. While the country has achieved to establish a more democratic regime in recent years, solutions need to be found to ensure an incorporation of different religions and ethnicities in the political process, which could also help reduce societal tensions leading to armed conflict.

As the ultimate factor of economic shrinking and resilience thereof, institutional change bears the largest potential in improving Nigeria's economic performance. Open access institutions would generate a political economy based on the broad-based consent of Nigeria's citizens. This social order would then redefine the economic priorities away from the oil sector due to

the low amount of people engaged in this industry. Furthermore, the structural transformation process would be fuelled by higher equality in the population's economic opportunities. If the necessary infrastructure such as electricity and education were provided to the entire population, people would be able to engage in higher productivity activities. An open access order guaranteeing citizens equality and impersonal rules that balance the political power of different societal groups, would most probably also result in a reduction of conflicts that may potentially harm economic performance. Therefore, an institutional reform as according to Broadberry and Wallis' (2017) theory bears the highest potential of all four factors in reducing economic shrinking in Nigeria.

5 Conclusion

The thesis answered the question of why Nigeria faced frequent and high rates of economic shrinking between 1960 and 2017 and how the country can avoid these in the future. The analysis aimed to assess the validity of the theory for the Nigerian case by taking into account a range of theoretical propositions. Furthermore, the thesis aimed to find case-specific answers to the goal of avoiding economic shrinking in formulating broad policy recommendations for Nigeria. Lastly, the thesis contributed a new methodological approach to the economic shrinking literature by means of a single case study that helped cope with the data scarce environment through the usage of data triangulation. These aims of the thesis were achieved in five analytical steps guided by the economic shrinking approach of Broadberry and Wallis (2017).

Firstly, the economic performance analysis of the Nigerian economy between 1960 and 2017 identified the decades of the 1980s and 1990s as periods of net economic shrinking. The 1980s faced the lowest economic performance of all with the highest shrinking frequency, whereas the 1990s faced the highest average rate of shrinking. In contrast, the 1970s and the 2000s constitute the decades of the highest economic performances with the 2000s being particularly successful in resisting economic shrinking.

Secondly, the structural and technological change analysis showed that Nigeria began the process of structural transformation in the 1960s but reversed the process since the 1980s accompanied by an increasing reliance on its oil industry. The trends of the 20th century therefore correspond with *Proposition A* in that a higher degree of structural transformation coincided with a higher resilience to economic shrinking. However, in terms of productivity and economic diversification the trends provide a less clear support to the previously stated proposition since both peaked in the early 1960s. The 2000s generally emerged as a decade running counter to the trends observed in the 20th century achieving high economic performance without strikingly high levels of productivity, diversification or structural transformation.

Thirdly, the demographic change analysis did not generate observable patterns between economic shrinking and population growth, birth and death rates or the population's age structure. The results do thus not correspond with *Proposition B* that demographic changes correlate with changes in economic performance. The observed patterns showed that demographics most likely played no significant role in Nigeria's economic shrinking.

Fourthly, the analysis of incidences of warfare in relation to economic shrinking resulted in mixed observations. Some wars correlated with economic performance while others did not. However, especially the recent surge in civil warfare may have had an impact on the recent reoccurrence of economic shrinking. *Proposition C* therefore only received partial support. A lack of data concerning important factors such as government expenditure on warfare and the

number of war-related casualties from 1960 unfortunately prevented the analysis from distinguishing between individual incidences of warfare and their direct economic effects.

Lastly, the institutional change analysis established that Nigeria has not yet transitioned to an open access order, which is regarded as the ultimate condition to achieve resilience against economic shrinking according to theory. *Proposition D* received supporting evidence through some of the results in that whenever Nigeria came closer to the establishment of an open access order, the economy also became more resilient to shrinking. This trend was especially observable in terms of inequalities leading to a lack of economic opportunities for parts of the Nigerian population. The observations regarding democratization however, showed no clear pattern of correlation with economic performance.

Since institutional change was identified as the ultimate factor behind economic performance by the theory (Broadberry & Wallis, 2017), a change in Nigeria's institutional structures would result in changes in the other factors and thus represent the most effective starting point for a strategy against economic shrinking. Two of the proximate factors also resulted in more specific policy implications. Firstly, Nigeria requires a new structural transformation while also decreasing its reliance on oil. Secondly, a reconciliation of different societal groups is essential to decreasing potentially economically harmful violent conflicts.

The results of the thesis did not only show which factors would need to be improved in order to avoid economic shrinking in the future but they also showed the important impact of resource dependence on economic performance volatility as consistent with resource curse theory. This resource curse aspect to the Nigerian case of economic shrinking could represent an important starting point for consecutive research regarding the Nigerian economic performance. Furthermore, in addition to a closer assessment of the Nigerian oil industry, future research could turn towards external factors of economic shrinking such as trade, aid and IMF loans, which remained excluded from this assessment due to its limited theoretical approach.

In addition to contributing to resource curse debates, the thesis also showed that the "African Growth Miracle" (Young, 2012) of the 2000s could not be sustained in Nigeria in recent years largely due to an incomplete institutional transformation resulting in a lack of structural transformation and continuing violent conflict. Future research could therefore investigate the economic shrinking experiences of other Sub-Saharan African countries in order to assess in how far they correspond to the Nigerian experience of an unsustainable growth miracle.

The thesis could provide the basis for two additional research inquiries. Firstly, the Nigerian case could be studied within a longer time period starting in colonial times as the analysis showed that the country experienced record achievements in productivity and economic diversity by the end of the colonial reign which requires further investigation. Secondly, different developing countries' long run economic performances should be studied from a comparative economic shrinking perspective, on the one hand to inductively continue the development of the relatively recent theoretical approach and on the other hand, to find strategies against economic shrinking that could work successfully across a multitude of countries. The thesis therefor merely presents a starting point for further research within the relatively young research field focusing on economic shrinking in developing countries.

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Appendix A

Table 5.1 The Nigerian economic performance, 1960-2014 (author's calculations based on data adapted from Feenstra, Inklaar & Timmer, 2015)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.3	-6.644	0.7	10.918	-1.993	7.643	5.650
1970s	0.3	-2.708	0.7	11.035	-0.813	7.725	6.912
1980s	0.8	-15.472	0.2	5.414	-12.378	1.083	-11.295
1990s	0.7	-9.230	0.3	12.679	-6.461	3.804	-2.657
2000s	0	0	1	29.855	0	29.855	29.855
2010s	0.2	-0.803	0.8	7.315	-0.161	5.852	5.692
1960-2017	0.4	-9.875	0.6	16.071	-3.950	9.643	5.693

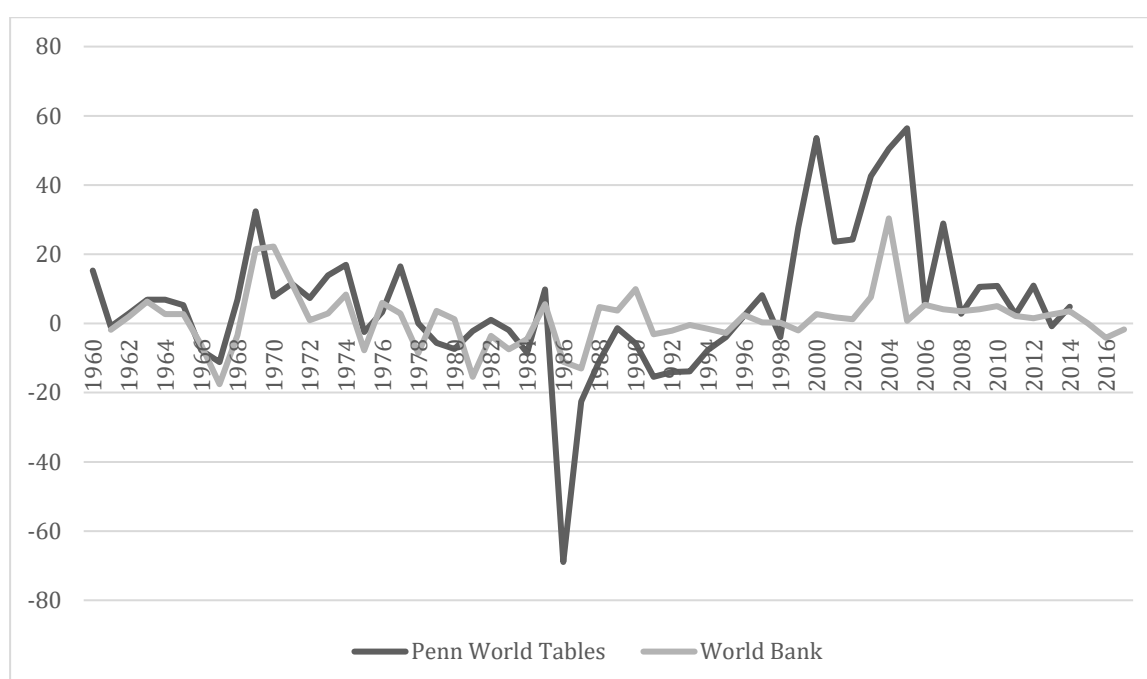


Figure 5.1 Comparison of Nigerian GDP per capita growth rates from the Penn World Tables estimations and the World Bank national accounts data (adapted from Feenstra, Inklaar & Timmer, 2015; World Bank, 2019)

Appendix B

Table 5.2 Economic performance analysis of Nigeria's agriculture, hunting, forestry and fishing sector, 1960-2009 (author's calculations based on data from Timmer, de Vries & de Vries, 2015)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.222	-12.504	0.778	6.986	-2.779	5.433	2.655
1970s	0	0	1	19.359	0	19.359	19.359
1980s	0.1	-2.143	0.9	22.494	-0.214	20.245	20.030
1990s	0	0	1	34.350	0	34.350	34.350
2000s	0	0	1	25.421	0	25.421	25.421
1960-2009	0.061	-9.051	0.939	22.236	-0.554	20.874	20.320

Table 5.3 Economic performance analysis of Nigeria's mining and quarrying sector, 1960-2009 (author's calculations based on data from Timmer, de Vries & de Vries, 2015)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.222	-33.665	0.778	72.239	-7.481	56.186	48.705
1970s	0.1	-23.312	0.9	63.999	-2.331	57.599	55.268
1980s	0.4	-15.782	0.6	69.281	-6.313	41.569	35.256
1990s	0.4	-12.543	0.6	83.013	-5.017	49.808	44.791
2000s	0.2	-20.950	0.8	38.532	-4.190	30.825	26.635
1960-2009	0.265	-18.911	0.735	63.991	-5.017	47.014	41.997

Table 5.4 Economic performance analysis of Nigeria's manufacturing sector, 1960-2009 (author's calculations based on data from Timmer, de Vries & de Vries, 2015)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.11	-16.65	0.889	15.974	-1.850	14.199	12.348
1970s	0	0	1	26.696	0	26.696	26.696
1980s	0.2	-4.78	0.8	19.304	-0.955	15.443	14.488
1990s	0	0	1	17.483	0	17.483	17.483
2000s	0	0	1	14.834	0	14.834	14.834
1960-2009	0.061	-8.74	0.939	18.964	-0.535	17.803	17.268

Table 5.5 Economic performance analysis of other Nigerian sectors, 1960-2009 (author's calculations based on data from Timmer, de Vries & de Vries, 2015)

	Shrinking frequency	Shrinking rate	Growth frequency	Growth rate	Shrinking total	Growth total	Economic performance
1960s	0.111	-131.208	0.889	92.277	-14.579	82.024	67.445
1970s	0	0	1	153.392	0	153.392	153.392
1980s	0	0	1	95.575	0	95.575	95.575
1990s	0	0	1	210.785	0	210.785	210.785
2000s	0	0	1	189.744	0	189.744	189.744
1960-2009	0.020	-131.208	0.980	150.691	-2.678	147.616	144.938

Appendix C

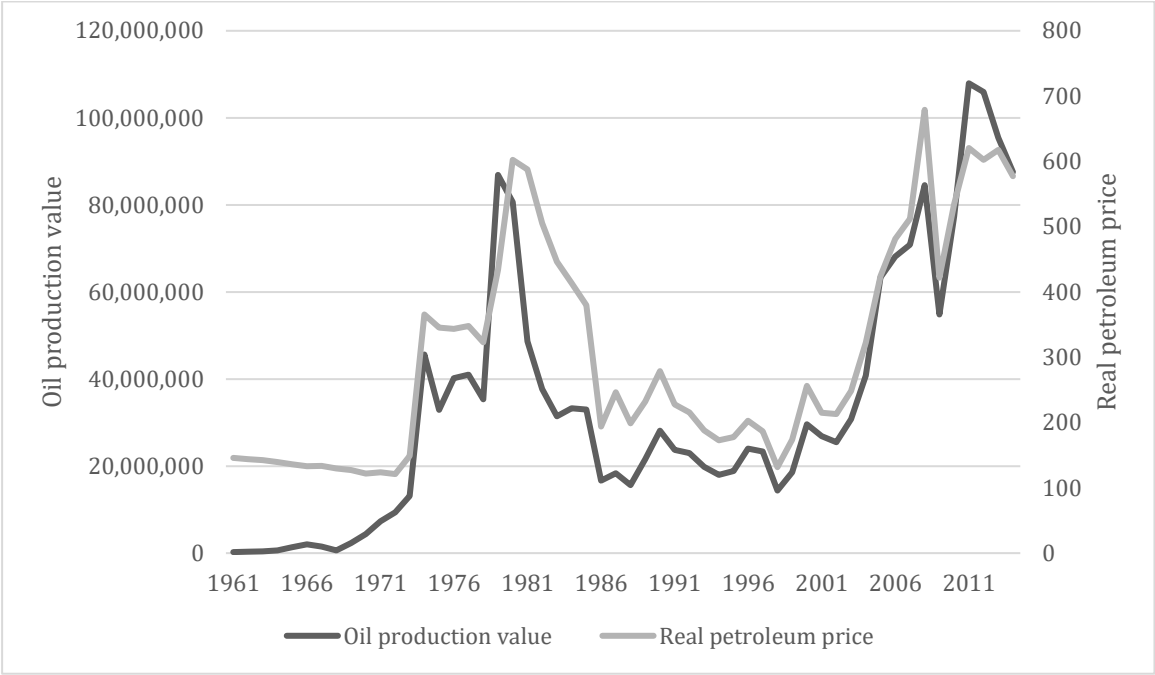


Figure 5.2 Nigerian oil production value in thousands in 2014 \$US (adapted from Ross & Mahdavi, 2015) and real petroleum price, 1900=100, 1961-2014 (adapted from Jacks, 2019)

Appendix D

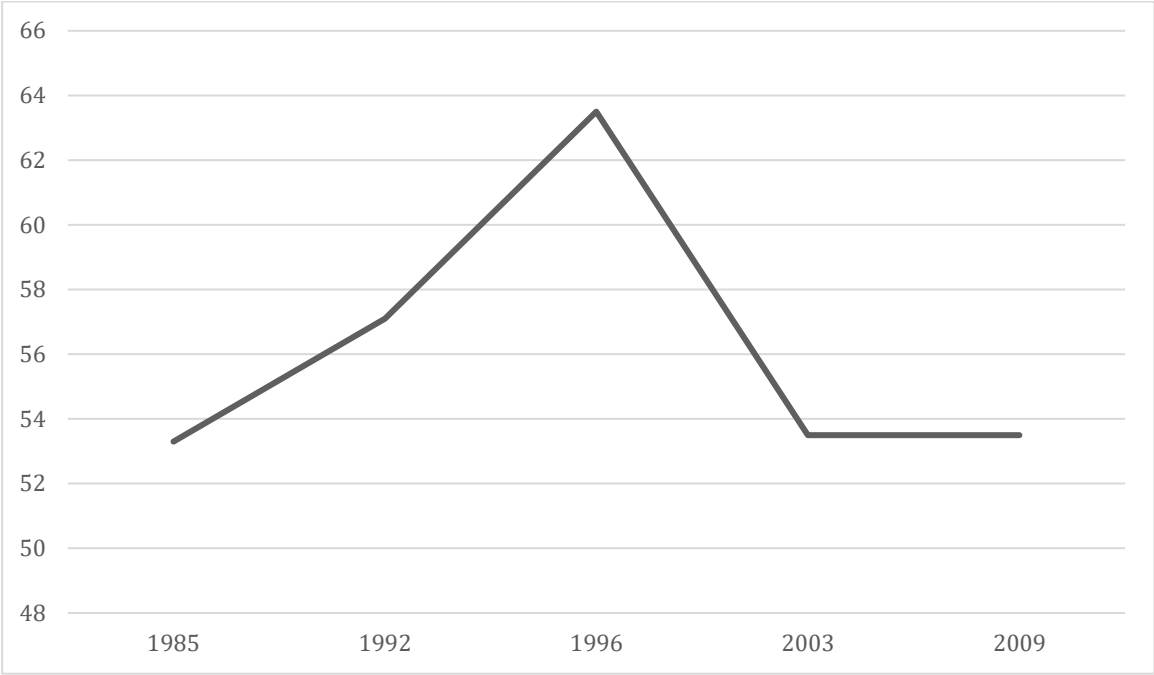


Figure 5.3 Nigerian poverty headcount ratio at \$1.90 a day in 2011 PPP as % of the population, 1985, 1992, 1996, 2003, 2009 (adapted from the World Bank, 2019)



Figure 5.4 Nigerian unemployment rates in %, national estimation of 1986, International Labour Organization estimations 1991-2017 (adapted from the World Bank, 2019)

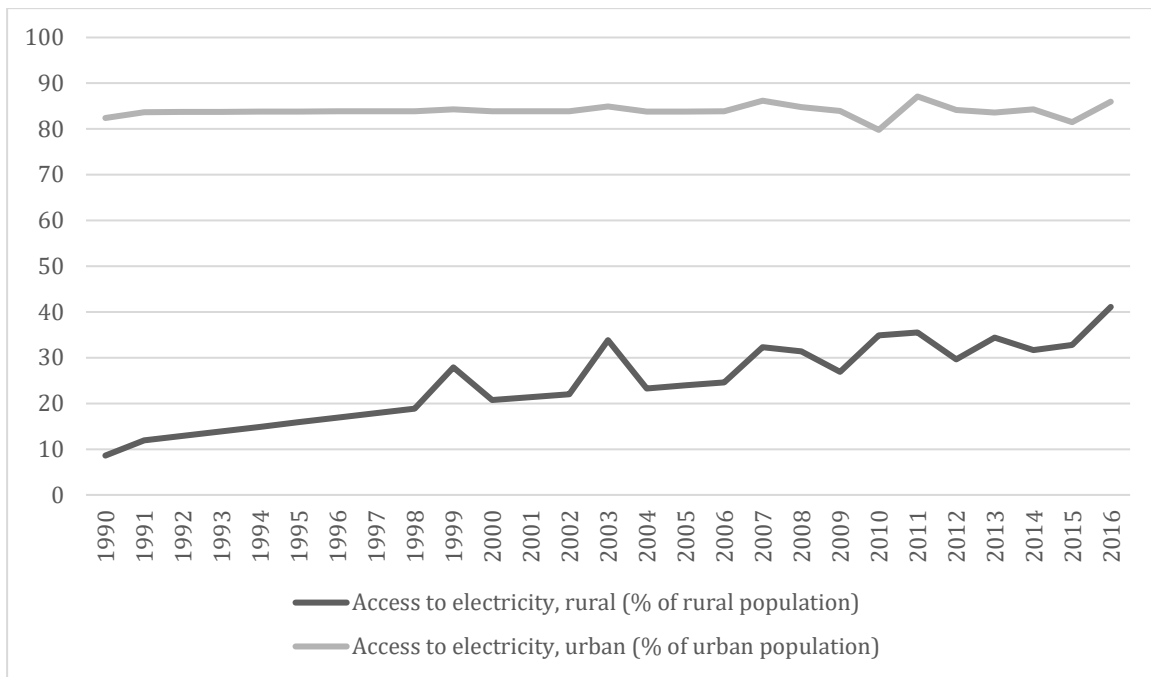


Figure 5.5 Nigerian rural and urban access to electricity in %, 1990-2016 (adapted from the World Bank, 2019)