



Graduate School of Development Studies

## **International Trade Flows and Employment in Nigeria**

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## List of Acronyms

ACF: Autocorrelation Function

BLUE: Best Linear Unbiased and Efficient estimator

CBN: Central Bank of Nigeria

DF-GLS: Dickey-Fuller Generalized Least Squared

ECM: Error Correction Model

EPA: Economic Partnership Agreement

ECOWAS: Economic Community of West African States

EU: European Union

FDI: Foreign Direct Investment

ILO: International Labour Organization

SAP: Structural Adjusted Programme

NAPEP: National Poverty Alleviation Programme

NBS: Nigeria Bureau of Statistics

NEEDs: National Economic Empowerment and Development Strategies

NTT: New trade theory

OECD: Organisation for Economic Co-operation and Development

OLS: Ordinary Least Square

SEEDs: State Economic Empowerment and Development Strategies

WTO: World Trade Organisation

## **Dedication**

This research paper is dedicated to my baby boy, Farouq Olamide Kareem, for being there with me in the Netherlands and for your priceless companionship.



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## Abstract

*This study investigates the relationship between international trade flows and employment in Nigeria for the period 1981 to 2006. Using time series estimation technique, we found no significant link between trade flows and employment in Nigeria both in the short-run and long run. However, external factors such as FDI, real effective exchange rate, SAP and internal factors such as political stability, labour regulation and real wage are more important factors in explaining employment rate in Nigeria. Likely explanations of these outcomes are probably due to the country trading majorly in primary products which are largely uncompetitive and the non-diversification of the productive base of the economic such as the overdependence on oil exports. An effective and result-oriented employment effect from trade is likely to be aided by fortifying appropriate and enabling institutional and regulatory measures to enhance the diversification and competitiveness of Nigeria trade, the removal of impediments to labour market participations and labour market interventions such as putting effective social protection systems in place and strong political and social commitments to principles of competition and diversification.*

## **Relevance to Development Studies**

The relationship between trade flows and labour market outcomes has been a source of concern to policy makers, experts and the common man, especially as most fear that trade integration may result in significant job losses for developing countries. Job losses may in turn aggravate poverty in Nigeria where there is prevalence of high-level poverty and rising unemployment. This study is therefore of high relevance to development as the results will help in devising measures to be taken to derive maximum employment benefit from trade so as to increase the country's income level and combat the problem of poverty.

**Keywords:** International Trade Flows, Employment, Time series, Causality.

# CHAPTER ONE

## 1.0

## INTRODUCTION

### 1.1. Introduction/Problem Statement

Nigeria is characterized with a 'dualistic' labour market in which the minority of workers have regular formal sector jobs, while majority works in the informal sector, with a large pool of surplus labour. This is seen from its rapidly increasing labour force. For instance, her labour force increased from 25.7 million persons in 1980 to 33.9 million persons in 1990 and further increased to 45 million and 52.7 million persons in 2000 and 2006 respectively. In addition to this, statistical evidences from the government show that the absolute number of total employment in the country has been steadily increasing since 1980. For instance, total employment increased steadily from 18.6 million in 1980 to 22.1 million in 1990, which further rose to 27.5 million in 2000 and later to 34.4 million in 2006.

However, in spite of the country's large pool of surplus labour, rapidly growing labour force and increasing employment, the share of employed workers in total labour force has been declining since 1980, coupled with this, in the last two decade, the trend has been below 70%, which is an indication of high unemployment as more than 30% of its active population are unemployed. For instance, in 1980, the participation rate was 69%, however, the share of employed in total labour force is given as 72.4% which is indicative that about 27.6% of the labour force are unemployed in this period. However, in 1990, while the participation rate increased to 71%, share of employment in total labour force declined to 65.2%. In 2000, both the share of employment in total labour force and participation rate further declined to 61.1% and 70% respectively. However, in 2006, share of employment in total labour force marginally rose to 61.5% while the participation rate marginally fell to 69%. In the same vein, 27.6 % of the labour force was unemployed in 1980 and this rose to 34.8% in 1990 and further rose to 38.9% and 38.5% in 2000 and 2006, respectively. These trends are indicative of a huge employment problem as the economy's capacity to absorb its rising labour force is low as more than 30% of its active population are unemployed.

In addition, imports value increased from US\$1058.9 million in 1970 to US\$16646.4 million in 1980 but fell to 5687.9 million in 1990. However, it rose again in 2000 to US\$9647 million and rose further to US\$33398.1 million in 2006. This trend is not surprising as Nigeria is

highly dependent on imports for most of its raw materials inputs (CBN 1993) and the employment effect of these imports might be positive if a significant portion of imports serves as inputs for labour intensive industries. However, this trend has given rise to debates in developing countries where concerns have been expressed over the loss of jobs due to import competition (Ghose 2003) and deindustrialisation (Pierper 1998) as result of increased imports. It is on this basis that the study seeks to determine the specific effect of imports on employment in Nigeria.

In terms of Nigeria's exports, prior to 1970, Nigeria export was largely dominated by non-oil products (Osuntogun et al. 1997, Oyejide 1986). However, since the oil boom of 1973/74, the bulk of Nigerian exports have been mainly oil export, while the share of non-oil exports in total exports has continued to remain under 5.5% for about the last 2 decades and these non-oil exports have been growing very slowly over time. In 1970, non-oil exports accounted for as high as 42.4% of total exports but gradually started fading out and by 1980, it has declined to 3.9%. This further declined to 3.0% in 1990 and by 2000; it was as low as 1.3% before slightly increasing to 2.3% in 2006. This occurrence has transformed the country from a net exporter of agricultural produce in the 1960s and early 1970s to a large scale importer of the same commodity (Oyejide 1986) and the consequent decline in agriculture shows that Nigeria is not fully engaging its surplus labour in food production and other agricultural production. In addition, the oil export which dominates the exports basket of the country typically generates little employment, most especially since a large quantity of the crude oil is exported in unprocessed form.

However, government has tried to reverse this trend through the implementation of policies to diversify the country's export base away from oil so as to promote a stronger export performance. Such export policy includes export promotion strategies in which incentives were given for the promotion of non-oil exports particularly agriculture and labour intensive manufactures. As noted by Carneiro and Arbache (2003) and Rama (2003), export promotion improve employment level in countries embracing the strategies. Therefore, there had been an ongoing argument between government and public, while the former opined that her export promotion policies have increased the level of employment, majority of the people believe that unemployment is on the rise; it is against this backdrop that we consider it interesting to determine whether the flow of exports have brought any significant effects on employment in Nigeria.

## **1.2. Policy Relevance of the Study**

The issue of employment is very germane to any economy; this is why one of the main macroeconomic objectives of any country is to attain full employment. The issue of employment is paramount to Africa and Nigeria in particular, where high-level poverty is obvious with rising unemployment rates. However, in order to combat the problem of poverty, Oni (2006) argued that reducing the level of unemployment will increase the income level in the economy and thereby reduce the level of poverty. To increase the level of employment, some scholars have argued that the flow of goods and services (trade flows) could propel employment generation, especially in developing countries. This study is therefore relevant as it will provide evidence as to whether trade flows can indeed generate employment. The results will help us in formulating policy stance that would be employment enhancing, so as to increase income and reduce the level of poverty in the country.

In addition, this study is of particular policy relevance to Africa and Nigeria in particular, especially in the face of the ongoing debate on the European Union (EU) Economic Partnership Agreements (EPA) in which Africa is enjoined and persuaded to endorse. As the ‘giant of Africa’ and a representative country of Africa, this study will shed light on the prospective effects of EPA<sup>1</sup> on employment generation in Africa, so that African governments will know whether the agreement will be employment enhancing or not.

## **1.3. Justification of the Study**

Our contribution to the literature on international trade flows and employment are in many folds. First, to the best of our knowledge, we are not aware of any study on trade flows and employment in Nigeria despite the importance of the issue. This is because in most developing countries, Africa in particular, due to both methodological and data problems, it has become difficult to provide empirical evidence on the impact of international trade on employment. Furthermore, previous studies generally concentrate on the effects of globalization/economic liberalization on economic growth, unemployment, poverty, inequality etc (see Kareem 2007, 2009), however, none have evaluated the impact of trade flows on employment generation for Nigeria. Therefore, it is very important to examine how trade flows affect employment in Nigeria. This study is therefore encouraged by the lack of country-specific studies on the trade flow-employment nexus in Nigeria within the existing literature.

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<sup>1</sup> This agreement will provide enlarged reciprocal access to EU markets.

Second, most of the studies within the existing literature have been on developed countries while very few studies are available in Africa (e.g. Hassan 2003, Jenkins and Sen 2006, and Sen 2008). Those studies on Africa mostly examine the effects at the industry level. In addition, most of these studies were based on cross-country analyses. While the findings are quite revealing, there is need for case by case study in view of each country's unique characteristics. This is particularly important given that developing countries differ significantly in terms of their economic and political environment, organizations and institutions because they are at different stages of development. Therefore, the employment effect of international trade may vary across these countries. Thus, single country data may give more reliable and revealing results than studies of the cross-countries or specific areas of the world with their strong parametric restrictions across countries with different economic and political structures. Thus, it would be useful to consider evidence based on country data.

In this vein, we chose to do a country analysis as against a cross-country analysis as the former has the advantage that it does not impose any strong parametric restrictions and thus gives more reliable results. This enables the study to show the country's characteristics and use this to explain the findings. It is as a result of this identified gaps in the literature that we find this study to be worthwhile and seek to do a country analysis using a representative country in West African namely, Nigeria.

Third, the rationality for the choice of the country is that Nigeria is a natural resource country and crude oil exports forms the bulk of her export commodities. She is the world's leading exporter of crude oil in Africa and a representative of countries which are not landlocked. In addition to being a member of the WTO since 1995, she is also a member of the Economic Community of West Africa States (ECOWAS) and a leading member out of the 5 members of the West Africa Monetary Zone and she is committed to a common action of trade liberalization and macroeconomic policy convergence, common rules of origin all of which are aimed at enhancing trade. It is therefore important to study the employment effect of trade in this country given her regional and multilateral trade relations. In addition to this, being a resource rich country, it would be interesting to infer if she is affected by the natural resource curse<sup>2</sup>. In sum, her historical, trade and economic linkages serve as justification to evaluate her trade patterns and labour market impacts.

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<sup>2</sup> The resource curse refers to the paradox that countries with abundance natural resources tend to have less economic growth and worse development outcomes than countries with fewer or no natural resources.



Fourth, previous studies generally concentrate on how trade liberalization influences employment rather than trade flows (c.f. Christev et al. 2005, Fitzgerald and Perosino 1995, Krishna et.al. 2001). They focus on employment effect of trade liberalization using trade policy measures as key explanatory variables. The scope of our study differs from this as we capture the employment effect of trade flows by looking at the imports growth rate and exports growth rate and not openness measures.

In sum, this study will contribute to a better understanding of the employment effects of trade flows in Nigeria. It will also contribute to existing knowledge in terms of the scope of the study, inclusion of relevant variables, and a rigorous and encompassing methodology that will bridge the gaps in the literature.

#### **1.4. Objective of the Study**

The broad objective of this study is to evaluate the effects of trade flows on employment generation in Nigeria. Specifically, we are going to examine;

- (i) the impact of both export and import growth rates on employment generation,
- (ii) whether the relationship between trade flows and employment is a long run or short run or both, and
- (iii) then recommend appropriate policies.

#### **1.5. Research Questions of the Study**

This study intends to provide answers to these questions:

1. To what extent is the growth rate of aggregate employment attributable to export growth rate?
2. To what extent is the growth rate of aggregate employment attributable to imports growth rate?
3. Does a long or short run relationship or both exist between trade flows and employment?
4. To what extent is Nigeria's total employment growth rate attributed to domestic factors and external factors?

## **1.6. Research Hypotheses of the Study**

The study's working null hypotheses are:

H<sub>01</sub>: There is no significance relationship between exports growth rate and aggregate employment rate.

H<sub>02</sub>: There is no significance relationship between imports growth rate and aggregate employment rate.

## **1.7. Scope of the Study**

This study will establish the link between trade flow and employment in Nigeria for the period 1981 to 2006 for which data is available.

## **1.8. Outline of the Study**

The remainder of the paper is structured as follows. Chapter two reviews both the theoretical and the empirical literature. In chapter three, a detailed background of the study covering the trends in trade and employment in Nigeria is critically analysed. Chapter four contains the methodology of the study. In chapter five, the empirical result is presented and given economic interpretations. Chapter six summarizes the study's findings, provides appropriate recommendations and concludes the study.

## CHAPTER TWO

### 2.0. LITERATURE REVIEW

#### 2.1. Introduction

This chapter provides a review of both the theoretical literature and empirical literature on international trade flows and employment.

#### 2.2. Theoretical Considerations

This section deals with the theoretical issues that have been used in the literature to explain the impact of trade flow on employment.

##### 2.2.1. Trade Theories

Earlier debate on the role of trade in labour market outcomes is based in the well known Heckscher-Ohlin theorem. However, the theory's assertion is that there is always full employment such that that international trade will only lead to a reallocation of labour across sectors of the economy. Given this assumption, the issues of trade related unemployment does not arise as trade does not affect aggregate level of employment.

However, some developing countries such as Nigeria is characterized by the Arthur Lewis type of surplus labour, therefore trade might have some implications for the country's employment.

While old trade theories assumes full employment and attributes differences in factor endowment to be the sole source of trade, new trade theories (NTTs) do not assume full employment and emphasized issues such as economies of scale, imperfect competition, externalities, product differentiation, intra industry trade, technological differences and similar factor endowments, to be the reasons for trade of trade.

NTT has been pointed to have a taxonomy effect on employment (c.f. Lall 2004, Fitzgerald and Perosino 1995). We will consider only imperfect competition and economies of scale here. In terms of imperfect competition, Krugman (1986) and Rodrik (1997) emphasized that the elasticity of demand for labour is higher with greater openness when there is imperfect

competition. Rodrik (1997) argued that international trade generates increased output demand or productivity growth which in turn makes the demand for labour more elastic, consequently induce larger employment and wage shocks. However, Bernard et al. (2006) argued that trade reform will lead to both job creation and job destruction in all sectors when there is imperfect competition because both net exporting and net importing sectors would be characterized by expanding high productivity firms and low productivity firms that shrink or close down.

NTT also points out that economies of scale lowers firm's marginal costs and increases firm's sales in both domestic and foreign market, and hence increases each firm's demand elasticity of goods leading to increased demand for labour (Hoon 1994, Naylor 1997, Slaughter 2001).

### **2.2.2. Vent for Surplus Theory of International Trade**

The vent for surplus theory by Myint (1958) posits that developing countries are characterized by unproductive surplus labour, surplus land and natural resources which are idle and thus 'unproductive' and they can be brought into productive uses by opening up to trade or intensifying trade relations. Therefore, international trade can serve as a vent for surplus as it creates new effective demand for the output of surplus resources which would otherwise remain unused. Myint (1958) and Smith (1976) argued that international trade will lead to the utilization of surplus resources, consequently generating more demand for the surplus labour or /and other surplus resources. Therefore, given Nigeria's surplus resources, increased trade can serve as a vent for its surplus labour consequently generating more demand for labour.

The relationship between trade and employment in each economy can also be explained by the economy's capability which in turn depends on its national endowments and policies (Lall 2004) to which we turn to.

### **2.2.3. Natural Resource Curse**

The notion of resource curse is based on the paradoxical empirical findings that on average, resource rich economies experience lower growth than resource poor economies (c.f. Sachs and Warner 1995, 2001).

In the literature, three explanations usually put forward to explain the natural resource curse revolves around the Dutch disease phenomenon, natural resources volatility and the political economy of natural resource wealth.

### **2.2.3.1. Dutch Disease Phenomenon and Employment**

According to the Dutch disease literature, natural resources exportation generates huge foreign currency revenues which are usually converted into the national currency on domestic foreign exchange markets. In situation where a country's national currency exchange rate is fixed, the conversion of foreign currency into a local one requires an increase in money supply, which causes a hike in domestic prices. However, if the country's national currency exchange rate is not fixed, the disturbance of the demand-supply balance on a domestic currency market will necessitate the appreciation of the local currency. In both cases, the real exchange rate of the currency appreciated<sup>3</sup> and this reduces the competitiveness and profitability of traditional exports such as manufacturing and agriculture. Export goods, which have become more expensive due to the rise in domestic prices, become less competitive in the international markets, consequently resulting in a sharp decline in their production, and gradually leads to deindustrialization overtime causing loss of jobs and higher unemployment. However, this loss of jobs is not compensated for by the growth in the natural resource sector which is usually capital intensive.

Corden and Neary (1982, 1984) segregated the consequence of natural resource revenue (the above Dutch disease effect) into the resource movement effect and the spending effect.

#### **(a) Spending Effect**

Following the increase in natural resource revenue, part of the increased income will be spent on non-tradable good. The increase in the demand for non-tradables will lead to a corresponding increase in the price of non-tradable sector output relative to the tradable sector output, (whose price remains fixed exogenously). Since a measurement of a country's real exchange rate is the ratio of prices of non-tradable to that of the tradable goods, therefore the relative prices increase of non-tradable goods is equivalent to an appreciation of a nation's exchange rate.

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<sup>3</sup> Dutch disease is not always associated with the discovery of natural resources. It can also be caused by large foreign aid or loan inflows and FDI (Nkusu 2004, Younger 1992).

The appreciation of the exchange rate coupled with the increase in tradable sector prices mentioned above, renders non-boom export products less competitive in the world market and consequently leads to the corresponding movement of labour away from both non-booming tradable exports sectors and booming tradable sector to the non-tradable sector (if labour is mobile<sup>4</sup>), thus forcing manufacturing and booming sectors to raise their wages as well. Since they cannot compensate by raising their prices, they will see their profits fall and will have to downsize. This phenomenon has been termed ‘spending effect’ and the resulting contraction of output and employment in tradable sector is usually referred to by Corden and Neary (*ibid*) as indirect de-industrialization or the Dutch disease effect.

### **(b) Resource Movement Effect**

The resource movement effect results from the decline of the non-booming tradable export sector as both capital and labour start shifting away from it to the booming tradable and non-tradable sectors. This movement is because these factors have become too expensive for use in the non-booming tradable sectors. In addition, the exogenous price increase in tradable booming sector raise marginal value production of factors in the sector thus generating higher wages and profits for the sector. This in turn generates increased factors and aggregate demand. This implies an increase in labour demand in this sector, which turns in the inflow of labour from others sectors. However, when a large percentage of the natural resource is exported in unprocessed form, this might generate little or no change in labour demand in the sector.

This movement requires that government put up more infrastructures or rehabilitation of the non-tradable sector so as to accommodate the movement of factors of production and also, investments needed to be made in retraining the workforce. However, if these are not done, the situation might lead to mass unemployment.

In terms of the implications of these two effects for employment, both effects contribute in the decline of output and employment in the non-booming tradable exports sector. The two effects also lead to increase in the relative price of non-tradable output and real exchange rate. However, the combined effect on output and employment in the booming sector and the non-tradable sector is ambiguous: the spending effect tends to increase it while the resource reallocation effect moves it in opposite direction. If the spending effect dominates the resource

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<sup>4</sup> If labour is completely immobile the shift in demand will generate an increase in the relative price of non-tradable output with supply of non-tradable output remaining unchanged.

movement effect, there can be acceleration in growth of output and employment of the non-tradable sector and the booming tradable exports. However, if the booming tradable exports sector employs relatively few workers or if labour mobility is low, it is to be expected that the spending effect will dominate the resource movement effect, in which case we would also expect to see an increase in non-tradable sector output and employment.

### **2.2.3.2. Volatility of Natural Resource**

Another explanation for the natural resource curse is that resource rents tend to be volatile. This is partly because natural resources typically have low price elasticities of supply. Hausmann and Rigobon (2003) argue that the main reason for this negative effect of volatility stems from the financial market imperfections, which makes volatility to give rise to a higher cost of capital and lower investment. This is especially true for poor natural resource rich countries such as Nigeria that face a variety of market imperfections. Therefore, the over-reliance on revenue from oil exports with its inherent volatility may be detrimental to the economy if the prices of resources collapsed in the world market and one of such detrimental effects is declining employment.

### **2.2.3.3. The Political Economy**

A third explanation for the natural resource curse has been largely attributed to the political economy of resource wealth. This revolves around the non-productive activities of economic agents induced by the huge rents from natural resource revenue leading to low institutional quality of government, which in turn slows down development. For instance, Garber (2004) argued that most cases of oil development in poorer countries have produced increased disparity of wealth, leading to political instability such as the cases of Angola and Nigeria. The political implications of high revenues from oil lead to a culture of corruption and rent seeking, lack of accountability and other institutional distortions.

The literature on rent-seeking in the context of resource curse has largely attributed resource boom to increased rent-seeking behaviour and a pernicious distributive struggle for resource rents by powerful groups, resulting in a decline of the level of investment and economic growth (Baland and Francois 2000, Beblawi and Luciani 1987, Lam and Wanttchekon 2003, Lane and Tornell 1996, Mahdavy 1970, Torvik 2002). An abundance of natural resource revenues allows the elite to considerably increase spending on patronage and rent-seeking activities. Consequently, the expenditure on rent-seeking and lobbying affects the economy as it

reduces the rate at which human capital accumulates, thereby exacerbating the Dutch diseases effects (Lam and Wanttchekon 2003).

The rent-seeking behaviour is usually attributed to the fact that most resource-dependent nations are undemocratic because rents from natural resource allow them to be more detached, less democratic and hence less accountable since government revenues do not come from taxes from its citizens, more so that they do not need to levy taxes to carry out their duties. Mehlum and Torvik (2006) argued that in the absence of taxes, citizens is less likely to demand accountability from their government or make latent pressure for democratization in most developing countries (c.f. Diamond and Linz 1989, Manzano 2001, Waterbury 1994). For instance, there is inadequate pressure from the citizens for democratic change in the Middle East (Karl 1996, Mahdavy 1970, Yates 1996).

However, the lack of accountability again fuel political opposition to the ruling party leading further to civil wars and tribal conflicts. In Nigeria for example, political opposition to the ruling party is fuelled by Nigeria's political system of institutionalized patronage as the prosperity of a selected people and access to the share of oil wealth is governed by spending on patronage network wealth with the poor having little or no access to information, infrastructure and jobs in the public sector. These have resulted into numerous coup d'etat, regional and ethnic competitions for oil revenues and in recent times have resulted into what is called the Niger-Delta crisis; the region which claims that it have been marginalized in the distribution of the oil wealth.

The literature also points that large rents produces the incentives to dismantle the institutional safeguards that would protect the rents and also weakens the institutional framework that regulates the use of public funds- a phenomenon which is called *rent capturing* (Ross 1999). Sachs and Warner (1999) argued that bad institution results from resource wealth because the large persistent income associated with it make government to postpone reforms such as free trade, bureaucratic efficiency and institutional quality which are necessary for the improvement of the country's economic management.

In sum, the employment implication of the natural resource curse is that Dutch disease phenomenon, rent-seeking activities, lack of accountability and weak institutions emanating from



bad management of the large natural resource revenue might attenuate underdevelopment which might prevent government in improving the lives of their citizens, in terms of providing employment for them.

### **2.3. Empirical Study Review**

This subsection reviews the empirical evidence on trade and employment. Although the empirical studies span some cross-country analysis, the review will mainly focus on country studies since our study is country specific. Due to limited writing space, our empirical analysis will review only a few studies on each of these categories.

Baldwin (1995) investigated the impact of trade and foreign direct investment on employment and relative wages using factor content methodology. Although, he find support for a small impact of trade on employment in OECD countries, however, the employment creating effects of increased exports usually dominated the employment displacing effects of increased imports.

An OECD (1992) study used the growth accounting methodology<sup>5</sup> to investigate the link between trade and employment for the period 1970 to 1985, and concluded that between 1970 and 1985 trade was a net source of employment gains in Denmark, France, Germany and the Netherlands, but a source of loss in the UK. It was found that trade factors have played only a minor role in recent job losses and productivity growth has been the main factor displacing labour in the short run.

In the same vein as the studies reviewed above, the bulk of empirics on employment and trade flows especially the trade of developed with OECD countries have generally found that trade has little links with employment generation because the net employment effects of changes in exports and imports have not been significant in OECD countries (c.f. Hill et al. 2008, OECD 1992, Messerlin 1995) etcetera. To them, changes in employment is not driven by changes in trade flows but it is mainly driven by domestic factors, such as changes in demand for domestic goods and increases in labour productivity as well as the functioning of the labour market.

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<sup>5</sup> In the growth accounting methodology, the sources of employment change are decomposed into domestic demand, trade and productivity components.

Jenkins and Sen (2006) examined the impact of trade flows and foreign investment on employment in four developing countries – Bangladesh, Kenya, South Africa and Vietnam by employing three case-study methodological approaches – factor content, growth accounting and econometric modeling. They provide evidence that the economic integration of Bangladesh and Vietnam has brought about significant increase in the number of unskilled jobs, particularly for women. However, job creation in response to greater openness has been minimal in Kenya and South Africa with job creation biased towards more skilled workers. They also find that in South Africa and Kenya, for a given level of output, trade appears to have led to a significant fall in employment.

A significant number of studies have also been done on the demand for workers in relation to trade at the country level. For instance, Messerlin (1995) examined the impact of trade and foreign direct investment on labour markets on the French economy between 1976 and 1992 using the growth accounting methodology. Using export share and import penetration ratio and exchange rate and privatization to control for idiosyncratic shocks, he found that the estimated net impact of trade on total employment is very small and positive for most of the period examined, though the effect was negative during the economic expansion of 1988 to 1999 and that French unemployment is more related to macroeconomic factors, policies, poorly functioning labour and product markets than to foreign trade.

Christev et al. (2005) exploit the dramatic increase of Ukrainian trade flows to and from areas outside the Commonwealth of Independent States (CIS) on job creation and destruction in three-digit industrial sectors for the years 1993-2000 using sectoral gross job flows establishment level data employing a generalized method of moments (GMM) estimator. Using export share and import penetration ratio and exchange rate and privatization to control for idiosyncratic shocks, they found that trade is a factor of some but of minor importance in the determination of aggregate job flows. Over time, industries reallocate jobs faster as they become more exposed to trade and competition in EU markets. In addition, while sectors which engage in more trade with the rest of the world show increased job destruction rates, trade with CIS decreases job destruction with net employment growth occurring only in sectors that maintain strong trade ties in the CIS.

Morawczynski and Wach (2004) investigate whether Polish foreign trade impact on employment by pooling data for 28 sectors between 1993 and 1999 using regression analysis. They analysed employment effect of trade using employment, export and import and output. Their results found moderate evidences for traditional theories linking trade and employment as they found that import growth negatively affect employment changes in all the 28 sectors. However, they found an insignificant positive link between export growth and employment.

Apart from developed countries studies, there are also a number of studies done on developing countries. For instance, Sen (2008) analyzed the impact of international trade on manufacturing employment outcomes in India for the period 1975 to 1999 and also used the methodological approaches of factor content, growth accounting. He also employed econometric modelling by setting up a standard demand for labour equation using export-output ratio, import penetration ratio and real wage as regressors. His findings based on the factor content approach revealed that the employment coefficients of exports and imports in India have consistently fallen over the period; The growth accounting approach reveals that some of the Indian employment growth in the 1990s is caused by the growth of exports, and between 1975 and 1999, most of the employment increase can be linked to increase in domestic demand. Finally, using econometric modelling he found that the overall effect of international trade on manufacturing employment has been minimal.

Recently, a number of empirical studies have investigated the effects of growing trade flows on labour demand elasticities. However, most of the evidences show that there have been small impacts both in developed countries (Bruno et al. 2001, Slaughter 2001) and developing countries (Fajnzylber and Maloney 2000, Krishna et al. 2001). We take a look at a one of such studies.

Slaughter (2001) investigated whether trade is responsible for the increase in the elasticity of labour demand for production workers in manufacturing during the period 1961-1991 in the United States. He found that both elasticity of labour demand and trade has increased over time. He also showed that although, the various openness indicators raise the elasticity of demand for labour, however, there is no robust linkage between them as his results were not robust to the inclusion of time trends. He however found dissimilar results for the non-production workers by providing evidence that their elasticity of labour has not risen.

There are also mixed results emerging from studies in African countries. Rattso and Torvik (1998) analysed the employment effect following the liberalization of trade in Zimbabwe in the early 1990s and capture the economy-wide interaction using a computable general equilibrium (CGE) model. Using 1985 as the base year, the model distinguishes between tradable and non-tradable goods and simulation includes term of trade effects, imports and exports and exchange rate. He found that opening up of trade led to a contraction in output and employment, an accompanying sharp increase in imports and a rising trade deficit.

However, a study on Mauritius found far more favourable outcomes from trade. Milner and Wright (1998) investigated labour market responses to trade in Mauritius for 1968 to 1991 using a panel of 25 manufacturing industries which were classified into importables and exportables. He introduced into his model variables such as output, wages import and export to investigate the link. Using a dynamic panel data technique (GMM), they find that the reduction in protection for local firms during 1985 to 1987 led a rise in employment in the export industries but no contraction in employment in the industries producing importables. He attributed the later result to increase in the supply of female labour in the economy.

It would be noticed that most of these studies focus on manufacturing employment or the organised sector of the economy compared to rural or urban informal sector. The reason for the relative neglect of these sectors has been attributed to the paucity of data and other economic variables in these sectors, and that much of the economic activities in the subsistence agriculture and urban informal sectors are non-tradables (c.f. Lee 2004). However, the overview of all these results confirms that employment effects differ across countries.

## CHAPTER THREE

### 3.0. NIGERIA'S EMPLOYMENT AND TRADE PERFORMANCE

#### 3.1. Introduction

This chapter presents in details, the performance of Nigeria's employment and trade flows. It also analyses trends in some other key variables.

#### 3.2. Nigerian Labour Market

Nigeria is the most populous country in Africa and it is blessed with a large pool of surplus labour. Nigeria's labour market is dualistic as it is characterized with both formal and informal employment with the bulk of its labour force engaged in agriculture particularly at the subsistence level (Ogunlela and Mukhtar 2009).

##### 3.2.1. Nigeria's Employment Performance

In nominal terms, a glance at Table 3.1 shows that the number of people employed<sup>6</sup> in Nigeria has been on a consistently increasing over the years. In nominal value, 5 year average employment between 1981 and 1985 was 20.2 million and this increased to 23.7 million between 1991 and 1995 and further rose to 2.65 million and 30.9 million in the period 1996 to 2000 and 2001 to 2006, respectively. The observed trend might be attributed to programmes by various regimes to combat unemployment in the country. Notable among these are the Structural Adjustment Programme (SAP) adopted in 1986 and its emphasis on privatization which led to the establishment of the National Directorate of Employment (NDE) whose primary role is to generate employment opportunities. There is the National Poverty Alleviation Programme (NAPEP) established in 2001 which has as one of its objective youth empowerment and employment. There is also National Economic Empowerment and Development Strategy (NEEDs), established in 2004 which focuses on employment generation. We also have State Economic Empowerment and Development Strategy (SEEDs) which is a duplication of NEEDs at the state level.

In spite of the general upward trend, the data given in Table 3.1 suggests that Nigeria has a huge employment problem. For instance, from 1981 to 1985, average growth rate of

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<sup>6</sup> Data on employment does not distinguish between skilled and unskilled workers and covers only formal sector employees.

unemployment was as high as 5.3% while the labour force is given as 28.6 million, out of an active population aged 15 to 64 of about 40 million which amounts to an average participation rate of 68.6%. On top of that, the share of employed in total labour force is given as 71.7%, which indicates that about 28.3% of the active population are unemployed in this period. These are indication of employment problem which is clearly evident in Table 3.1, which shows that employment rate recorded a growth of as low as 2.2% during this period.

The reasons for above trend are two folds. First, the lull in the Nigerian economy during the period which discouraged new investments and also forced government to implement stabilization programmes which include restrictions on imports. Nigeria is a country which depends highly on imports for some of its raw materials and consequently, the restrictions on imports forced many industries to operate below their installed capacity which caused most of them to shut down and retrench a significant number of their employees (CBN 1993). This also made job placement for fresh school leavers and graduates to be difficult (Obadan and Odusola 1999). Secondly, government also placed an embargo on employment from 1981 to 1984. There was also public sector retrenchment which made disengagement from the federal civil service to rise from 2,724 in 1980 to 6,294 persons in 1984 (CBN various issues).

In 1986 to 1990, there was a rise in both labour force and active population to an average value of 32.4 million and 45.5 million, respective. In addition, labour force participation rate in this period was as high as that of the period between 1981 and 1985 recording an average value of 68.3% compared to 68.6% in 1981 to 1985. However, employment growth rate did not commensurate with both the increase in labour force and active population because employment problem worsen during the period 1986 to 1990 as average employment growth rate fell from 2.2% in 1981 to 1985 to 1.3% in 1986 to 1990. Also, the share of employment in labour force rate fell from 71.7% in 1981 to 1985 to 66.9% in 1986 to 1990 despite the rise in both labour force and active population in this period. In addition, average unemployment growth rate was also as high as 4.9% although, it has decreased by 0.4% from the 1981 to 1985 value. All of these are indicative that the economy could not absorb the high surplus labour recorded in the period.

The reason for the decline in employment growth in this period was as a result of the country's adoption of SAP in 1986 which was adopted to tackle the economy down-turn of the country and to gear the economy towards encouraging diversification via greater participation of the private sector as against the public sector that used to be the major employers of labour.

However, the encouragement of greater employment opportunities in the private sector was implemented pari-passu with organizational downsizing via the introduction of SAP which led to the continual retrenchment of staff and placement of embargo on employment in the public sector. This generated short-run frictional and structural unemployment problems. The net effect from these two scenarios is negative and significant decrease in the average growth rate of employment from 2.2% in 1981 to 1985 to 1.3% in 1986 to 1990.

However, in the period 1991 to 1995 employment growth rates started to improve, recording an average growth rate of 2.4%. In addition, the period also witnessed a decrease in average unemployment rate which declined from 4.9% in 1986 to 1990 to 4.0% in 1991 to 1995. In spite of this development, there was an increase in both labour force and active population but a decrease in share of employment in labour force from an average value of 66.9% in 1986 to 1990 to 64.1% in 1991 to 1995 indicating that about 35.9% of the labour force is unemployed in the period.

The 1991 to 1995 trend was due to the peak of political upheavals experienced in Nigeria which began in June 12, 1993 which provided a wrong signal to both private and foreign investors. This consequently, affected all economic activities resulting into a decrease in the share of employment in labour force.

In 1996 to 2000, employment increased to an average value of 26.5 million, but average employment growth rate again fell drastically to 2.0%. This implies that employment in nominal terms is increasing at a decreasing rate. Furthermore, although the period recorded increased labour force of 42.7 million with a high participation rate of 67.5%, the huge employment problem is however evident as the country's average unemployment growth rate remains as high as 4.0% and the country's share of employment in labour force fell to 62% from the previous period, implying that about 38% of the labour force are unemployed in the period.

The period 2001 to 2006 witnessed a rise in average both labour force and active population to 49.3 million and 71.5 million respectively but a decline in the participation rate to 66.4%. However, average employment growth rate increased remarkably from 2.0% in 1996 to 2000 to 3.8% in 2001 to 2006. However, the capacity of the country to absorb the increased labour force was still weak as the period also recorded a rise in the average unemployment

growth rate of 4.9%. More so, the share of employment in labour force marginally increased from 62% in 1996 and 2000 to 63.2% in 2001 to 2006. The rise in the period's employment growth rate that recorded the highest value compared to the other periods can be attributed to poverty alleviation programmes of NAPEP and NEEDs which lay emphasis on employment generation.

In sum, despite the plethora of poverty alleviation programmes, Nigeria employment growth rate is still not substantially high despite the numerous employment programmes implemented.

**Table 3.1 Trend in Labour Market Characteristics in Nigeria (1981 to 2006)**

Five Year Average	Employment (Million)	Employment Growth Rate (%)	Unemployment Growth Rate (%)	Labour force (Million)	Active Population (15 to 64) (Million)	Labour Force Participation Rate (%)	Share of Employed in Labour Force (Million)
1981 to 1985	20.2	2.2	5.3	28.6	40.0	68.6	71.7
1986 to 1990	21.6	1.3	4.9	32.4	45.5	68.3	66.9
1991 to 1995	23.7	2.4	4.0	36.9	52.4	67.7	64.1
1996 to 2000	26.5	2.0	4.0	42.7	60.9	67.5	62.0
2001 to 2006	30.9	3.8	4.9	49.3	71.5	66.4	63.2

Source: World Bank World Development Indicator, 2008.

### 3.3. Nigeria's Exports Performance

Nigeria exported an average US\$4939.9 million worth of commodities in 1971 to 1975 with oil exports dominating her export basket amounting to about 84.8% of total exports. In addition, the country also witness high export intensity measured as share of exports in total GDP of about 23.1%. The reason for the domination and relatively high export intensity is due to the oil boom of 1973/1974 which transformed the country from a net exporter of agriculture to a net exporter of oil (Osuntogun 1997, Oyejide 1986).

By 1976 to 1980, average export value has increased to US\$15348 million, with 93.1% of it being oil exports. Despite the huge increment, the period only recorded a marginal increase in export GDP ratio of 24.3% and export growth rate fell to 30.7% implying that exports value has been increasing at a decreasing rate. The reason for the large increases in export value in the period is due to the Iran/Iraq war of 1977 to 1980 which made Iran to cut her oil production and consequently made Nigeria and some other oil producing countries to increase their oil exports in order to offset the decline in the period.



However, in the period 1981 to 1985, Nigerian exports values started taking a downward trend, recording an average value of US\$13124.5 million. This is evident in the negative growth rate of -10.6 % recorded in the period and decline in average export GDP ratio to 16.4%. The share of oil exports in total exports remain as high as 96.7%. The drastic decline in exports and its growth can be attributed to the 1982/83 oil glut in the world market which adversely affected Nigeria whose bulk of export commodities is made up of oil.

By 1986 to 1990 average value of exports had further dropped to US\$8072.2 million. However, it gradually increased to US\$7842.8 million in 1989 which was however not up to the value obtained in the early 1980s. In addition, both export growth rate and export GDP ratio increased to 16.9 % and 25.8%, respectively. However, the share of oil exports in total exports remain as high as 94% despite the SAP adopted in 1986 aimed at diversifying the productive base of the economy away from oil.

The decline in these years can be attributed to the country's adoption of the structural adjustment programme (SAP) in 1986 with the accompany trade liberalization measures in most African countries. As nearly all of them are primary commodities exporters, the simultaneous opening up of their economy to allow free trade made their exports to become uncompetitive, consequently reducing the demand for their exports in the world market. This occurrence points out that trade liberalization measures in African countries must be accompanied by product diversification in order to reap the desired results.

Interestingly, by 1991 to 1995, exports have again taken an upward trend, recording an average value of US\$17384.7 million. Remarkably, the period witnessed a rise in oil export share to 97.7%, and a rise in export GDP ratio and export rate to 77.1% and 65.3%, respectively. The reason for these higher values as distinct from those of the previous period values might be due to the integration of the country into WTO in 1995 and the establishment of more exports processing zones in Nigeria.

The country's average exports again increased to US\$36560.7 million in 1996 to 2000 with 97.7% of it being oil exports. Furthermore, the export GDP ratio has fallen to 39.5% which is still relatively high but the growth rate of export has became negative in the period recording

an average value of -4.2%. This means that in absolute terms, Nigeria's exports value have been increasing at a decreasing rate.

However, in 2001 to 2007, the average value of exports declined to US\$35280.9 million. Despite the decline, export GDP ratio improved to 41.7% while export growth rate increased remarkably from -4.2% in 1996 to 2000 to 23% 2001 to 2007.

In sum, Nigeria's export performance seems to be very poor with about 95% of exports being oil with only a little non-oil exports which has been growing slowly over time despite various measures by the government to diversify the economy away from oil such as the operation feed the nation, deregulation, privatization and commercialization, export promotion policies. The oil sector typically generates little employment, particularly with most of the country's oil being exported in unprocessed form. On this basis, it might be hard for Nigeria's exports to stimulate employment unless the economy diversify from oil so as to promote a stronger non-oil export performance especially in labour intensive manufacture and agriculture exports both of which can serve as a vent for Nigeria's ever increasing surplus labour.

### **3.4. Nigeria's Imports Performance**

As could be seen from Table 3.2, in 1971 to 1975 average value of imports was US\$2743.7 million with an import GDP ratio which was more than 13% and a very high import rate of 46.9%. However, the period still recorded the one of the highest growth rate of imports despite the import substitution industrialization strategy practiced in the period. This was due to over-reliance of intermediate imports for the production of final goods in the country and the spending effect of the oil windfall from the oil boom of 1973/74 which made Nigerians to develop a high taste for imported goods.

Interestingly, between 1976 and 1980, average values of imports and imports GDP ratio have decreased to US\$12386 million and 20.3%, respectively. Despite the increase in imports value in the period, its growth rate declined to 2.3% indicating that imports has been increasing at a decreasing rate. Although, in 1981 to 1985, average imports increased to US\$13327.4 million, it recorded a negative growth rate of -12.1% and a decline in import GDP ratio to 16.7%. This was due to the glut in international oil market that reduced the windfall from oil and jeopardizes other economic activities which consequently made the economy to cut down on its imports.

However, starting from 1986 to 1990, despite the decline in average imports value to US\$4399.4 million, imports growth rate and import GDP ratio started taking an upward trend, amounting to 3.7% and 14.1%, respectively. The upward trend starting from 1986 to 1990 was due to the trade liberalization policy that removed the barriers to trade.

In 1991 to 1995, there was a sharp increase in average imports value to US\$13351.5 million and a huge rise in both the average import rate and import GDP ratio to 80.8 and 59.6%, respectively. This trend can be attributed to both trade liberalization policy of SAP which continued well into 1993 and the joining of WTO which increased the country's market access to other African and WTO member countries.

In 1996 to 2000, both average imports value and import growth rate decline dramatically to US\$24312.7 million and -9.6% although the import GDP ratio remain as high as 25.7%. However, in 2001 to 2007, the average value of imports declined to US\$22820.2 million. Despite the decline, import GDP ratio improved to 26.4% while import growth rate increased remarkably from -9.6% in 1996 to 2000 to 26.5% 2001 to 2007.

**Table 3.2: Five Years Average Trend in Trade Flows in Nigeria (1981 to 2006)**

Five Year Average	Exports (US\$ Million)	Share of Non-oil Exports in Total Exports (%)	Share of Oil Exports in Total Exports (%)	Export GDP Ratio (%)	Export Growth Rate (%)	Imports (US\$ Million)	Imports GDP Ratio (%)	Import Growth Rate (%)	Trade Balance (US\$ Million)
1971 to 1975	4939.9	15.2	84.8	23.1	55.7	2743.7	13.7	46.9	2196.3
1976 to 1980	15348.0	6.9	93.1	24.3	30.7	12386.0	20.3	23.7	2962.0
1981 to 1985	13124.5	3.3	96.7	16.4	-10.6	13327.4	16.7	-12.1	-202.9
1986 to 1990	8072.2	6.0	94.0	25.8	16.9	4399.4	14.1	3.7	3672.8
1991 to 1995	17384.7	2.6	97.4	77.1	65.3	13351.5	59.6	80.8	4033.2
1996 to 2000	36560.7	2.3	97.7	39.5	-4.2	24312.7	25.7	-9.6	12248.0
2001 to 2007	35280.9	2.7	97.3	41.7	23.0	22820.2	26.4	26.5	12460.8

Source: NBS (2006), CBN Central Bank of Nigeria Statistical Bulletin, 2008.

### 3.5. Nigeria's Trade Balance

Trade balance usually shows the difference between the inflow and outflow of goods and services. From Table 3.2, it could be seen that Nigeria has majorly been experiencing an increasing trade surplus in each period except in 1981 to 1985 when the country recorded a trade deficit of 202.9 million. The trade deficits can be attributed to the glut international oil market that led to a fall in the country's export value. Thus, contrary to the perception that Nigeria has been import dependent, her trade balance indicates that she has been a net exporter of goods and services.

### 3.6. Trend in Wages

Figure 1 shows the trend of wages in Nigeria. Wages<sup>7</sup> declined from US\$1088 million in 1980 to US\$9469 million in 1981 but picked up again in 1982 and steadily increase till 1985 before falling in 1986. The decline might be attributed to the massive retrenchment in the public sector in the period. Afterwards, it started oscillating but became stable at US\$1862 million in 1993 and maintained an upward trend till 1998 to US\$5582 million before falling again to US\$1481 million in 1999 when salary was reviewed in the country. Thereafter, it rose again in 2000 and decreased to US\$2294 million in 2003 when the federal government introduced a regressive wage increment for federal government civil service with state and local government to negotiate based on their ability to pay. It seems that this regressive wage is employment generating as it made employment rate to increase from 1.79% in 2003 to 5.9% in 2004. It however started oscillating before stabilizing in 2005 at US\$5881 million and increased to US\$12710 million in 2006.

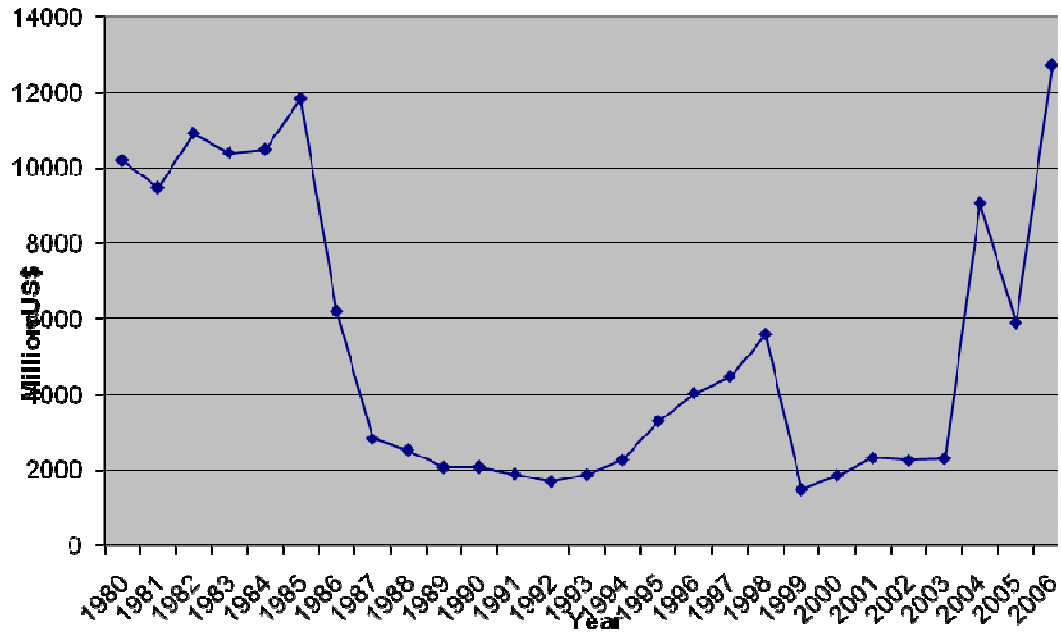
Figure 2 shows that real wage rate has also been fluctuating over the years. However, one interesting part of it is that salary review in the country is usually accommodated with a fall in real wage. For example, real wage fell from US\$661 in 1998 to US\$162 in 1999 when salary was reviewed upward. It also fell from US\$67 in 2000 to US\$54.6 in 2003 and from US\$471 in 2004 to US\$305 in 2005 following salary increment.

It can be noted from the trend that wage increments are usually followed by threat of reduction in government workforce which in some cases have actually resulted into massive layoff in the civil service (Olaleye 1974, Owoye 1984).

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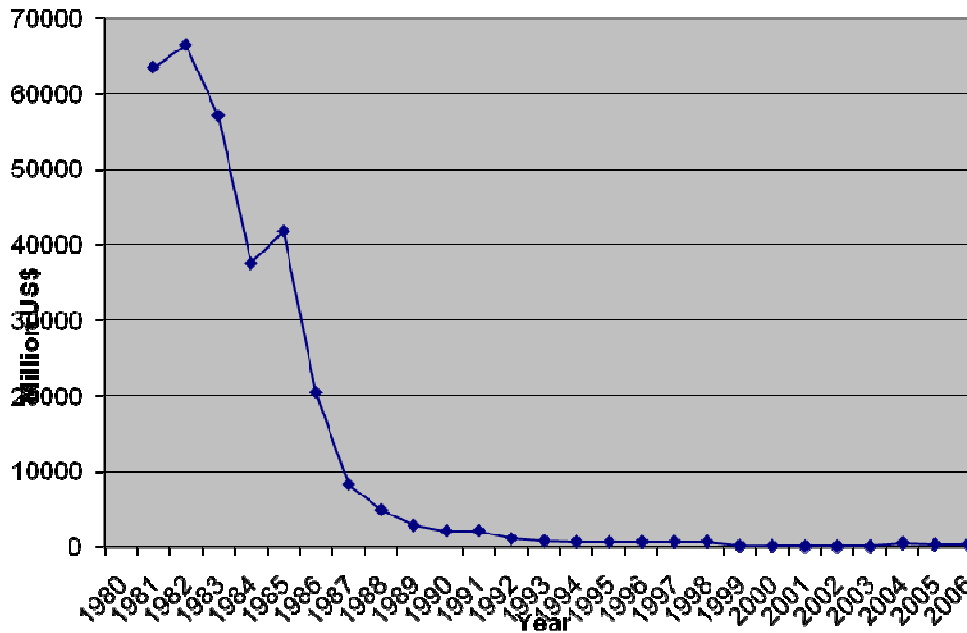
<sup>7</sup> Wage is defined as the total compensation of employees of formal sector.

**Figure 1: Nominal wage trend in Nigeria (1980 to 2006)**



Source: NBS, 2006

**Figure 2: Real Wages in Nigeria (1981 to 2006)**



Source: NBS, 2006

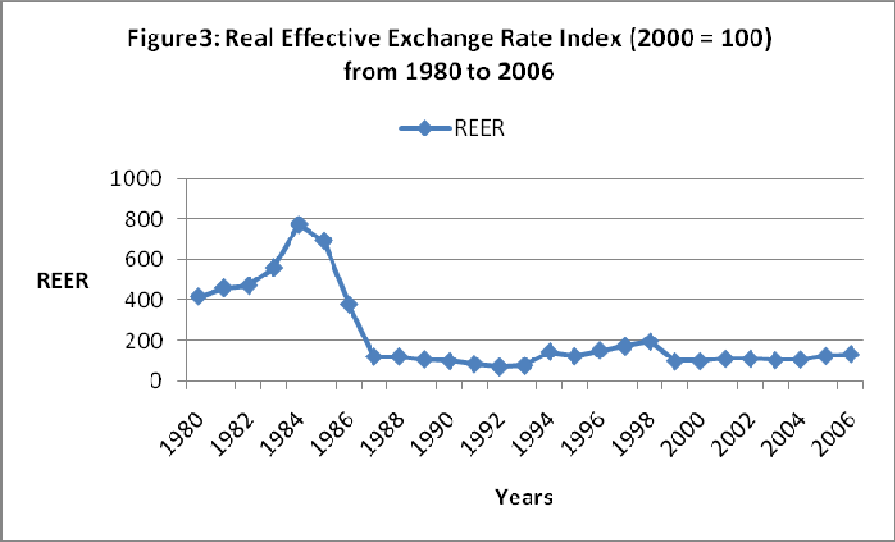
### 3.7. Exchange Rate

Figure 3 shows the trend in real effective exchange rate in Nigeria. In the early 1980s, real effective exchange rate depreciated strongly, which was due to the glut in global oil market that inhibits the flow of foreign currencies into the country. Also, the production capacity of the country declined sharply due to inadequacy of foreign exchange to purchase inputs for the domestic industries. As a result of this, government introduced both contractionary fiscal and monetary policies<sup>8</sup> in order to manage the flow foreign exchange. Specifically, in 1980, the real effective exchange of Nigeria to the basket of currencies of her major trading partners amounts to about 418, indicating that more of her currency was used to exchange for the weighted average of currencies of her major trading partners. The real effective exchange of naira further depreciated to 772.5 in 1984. However, the value started appreciating from 1985, it has appreciated to a value of 692 and by 1987, following the introduction of SAP when the economy was deregulated, Nigeria's real effective exchange rate further appreciated to 121, despite the devaluation policy of SAP. Interestingly, throughout the SAP period, the real effective exchange rate appreciated. For instance, it appreciated to 100 in 1990 from 121 in 1987, which later got to its peak in 1992 with 71. Subsequently, the values have been fluctuating, that is, either depreciating or appreciating over time.

From Figure 3, it is noticed that the real effective exchange rate has been slightly fluctuating over time. While an appreciation is expected to be inimical to employment via the Dutch diseases, depreciation makes exports to be cheaper at the international market and it is expected to benefit the country as it will lead to increased exports production and consequently increasing demand for labour. The net effect on employment would therefore be determined by regression analysis.

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<sup>8</sup> Policies such as austerity measures and stabilization policies.



Source: World Development Indicators, 2008

## **CHAPTER FOUR**

### **4.0. METHODOLOGY OF THE STUDY**

#### **4.1. Introduction**

This chapter contains the methodology employed in analysing the data. It provides the, empirical strategy and estimation technique, analytical framework, model specification, as well as the description and sources of the data.

#### **4.2. Empirical Strategy and Estimation Technique**

Estimating the link between trade flows and employment may be plagued by what is called spurious regression which produces very high R-square and 't' statistics but without any coherent economic meaning (Granger and Newbold 1974). This problem stems from the fact that the classical ordinary least square estimation technique (OLS) assumes that a series is stationary and would produce biased estimates and spurious regression if the series is non-stationary (Wooldridge 2003). To avoid biased estimates from the spurious regression as some of our variables are non-stationary, we therefore employ a time series approach.

#### **4.3. Justification of using Time series Analysis**

Aside regression and trend analyses, two principal methodologies that have been used to evaluate empirically the impact of trade on employment are the factor content and growth accounting approaches. This study chose to use time series analysis over the other two methods due to the following reasons.

Firstly, growth accounting methodology decomposes the sources of employment change into domestic demand, trade and productivity components. Since it attribute changes in employment to only three factors, it is therefore a more aggregated approach as against time series which allows the analysts to identify the separate contributions made by trade, other key control variables and the error term which accounts for other variable not included in the model. Therefore, by using a disaggregated approach, econometric and time series models can reveal more insights about the economy than growth accounting method.



Furthermore, we chose to use time series over growth accounting framework because the latter does not draw on the theoretical framework of the country that is under study. For instance, the method does not explain the fundamental underlying forces, such as institutions and economic policies that drive the evolution of employment in Nigeria. This made us to choose regression analysis so as to account for institution (using political stability variable) and economic policies (using SAP, exchange rate).

Secondly, factor content methodology which examine the employment impact of trade via the labour required to produce a given amount of exports or being displaced by a given amount of imports has also been frequently used in the literature. However, our analysis chose time series analysis over factor content methodology because of the dearth of data on the specific amount of labour required to produce a given amount of exports and the labour being displaced by a given amount of imports.

Therefore, the present study seeks to add to this literature using Ordinary Least Square (OLS) time series analysis. The justification of using time series OLS estimation techniques is because of its properties of being the best linear unbiased and efficient estimator (BLUE) (see Damodar 2004). In addition, Engel and Granger time series approach takes into consideration, the theoretical background of the issue under study. Furthermore, time series takes into consideration data generating properties of the series so as to avoid a spurious regression and produce unbiased estimates as long as the other OLS assumptions such as the assumptions of no autocorrelation, homoscedasticity, normality and no multicollinearity, are satisfied.

However, the disadvantage of our methodology in relation to our data is that our analysis covers 26 time series observations. However large sample observations have been identified to be ideal in time series analysis so as to ensure adequate power for model testing such as the unit root tests and the portmanteau tests (c.f. Box and Jenkins 1976, McCain and McCleary 1980).

The importance of having a large time series observation is that there are cases where the classical linear model assumptions are not satisfied for certain time series problems, then in such a case, we must appeal to large sample properties of OLS or the central limit theorem to justify the usual OLS test statistics and confidence intervals. However, since large time series sample on employment is difficult to come by, we have no choice than to rely on large sample

approximations of OLS for our time series data. Bearing the above in mind, we resolved to use OLS as a benchmark model.

#### **4.4. Choice of Variables**

The literature on the link between trade flows and employment has used a variety of explanatory variables in studying its determinants. These variables include export, imports and factors affecting the demand and supply for labour.

One of the major determinants of employment is related to the factors which affects the demand and supply of labour. Labour market regulation and wage rate have been distinguished to have impact on the number of workers employed (Hasan 2003, Helliwell 1994, Rodrik 1996, Sen 2008). Our model therefore deems it fit to consider these variables as control variables.

Another factor that affects employment relates to a country's characteristics. As discussed in the theoretical literature, the country under study is an oil rich economy and the political economy of oil wealth might cause some political instability thereby inhibiting employment creation while at the same time cause job destruction. Thus, it is vital to control for political in/stability in our model. In addition, the domestic investment capacity of the national economy has also been considered by us as important in generating employment as increased domestic investment may stimulate increased demand for labour.

Apart from the above internal factors, there are also some external factors that have been considered as control variables in the literature one of which is FDI (Badwin 1995, OECD 1992). Furthermore, we also intend to use real effective exchange rate as a control variable (Christer et al. 2005, Mersserlin 1995, Rattso and Torvik 1998). As discussed in the theoretical framework, as an oil rich nation, Nigeria might be affected by the Dutch disease effect or oil price volatility which might offset her employment generation capability. Thus, it is vital to control for real effective exchange rate. In addition, because Nigeria like most developing countries underwent a lot of trade and economic liberalization starting from 1986 during the SAP, we therefore included a variable to capture this structural break. This is because the structural break due to SAP might have altered the growth path of employment in the country.

#### 4.5. Model Specification

To explore the link between trade flow and employment, we begin with the variant of following benchmark model using OLS. The model can be written as:

$$E_t = B_0 + \beta_1 EX_t + \beta_2 IM_t + D_t + V_t + \varepsilon_t \dots\dots\dots(1)$$

$E_t$  = The total employment growth rate in Nigeria at time 't'.

The explanatory variables are:

$EX_t$  = Export growth rate in at time 't'

$IM_t$  = Import growth rate at time 't'

$D_t$  is a dummy variable which captures the effects of SAP which was implemented in Nigeria in 1986. Dummy for SAP is included in the model because it captures the impact of trade liberalization on employment and takes the value of one in one in 1986 till date, zero otherwise.

$V_t$  = Vector of other control variables that affect the dependent variable through their impact on the demand and supply of labour. These are real effective exchange rate, and a variable for political in/stability. Others include labour market regulation, domestic investment and foreign direct investment, and real wage rate. All variables are in annual percentage growth except labour market regulation, political in/stability and SAP dummy.  $\varepsilon_t$  = is the residual error of the model which captures all other unobserved factors not included as regressands but influence employment.

#### 4.6. Analytical Framework

Rising imports may generate a decline in employment if it leads to a decrease in the demand for the country's domestic output. In addition, employment will fall if rising import rate eliminates low productivity firms through import competition. However, one can expect a positive employment effect if a significant portion of the imports constitute labour-intensive inputs.

Conversely, it is also expected that countries which have rising export rate might witness a rapid increase in employment implying that there may be a positive correlation between employment and export rate. However, one can obtain a negative relationship under certain conditions. First, Nigerian is an oil rich country and might be affected by the 'resource curse' or Dutch disease phenomenon, which might make the relationship between exports and employment to be negative. Intensive exportation of her oil resources might make the real exchange to appreciate strongly, which in turn might make exports to be expensive, unprofitable and therefore globally uncompetitive. This might lead to decline in traditional exports which consequently lead to declining employment in these sectors. Second, one can obtain a negative relationship if the increase in exports is due to increased out of the country border's reprocessing which leads to a declining domestic production.

Foreign direct investment (FDI) can have ambiguous employment effect. It can have significant positive impact on employment if it is directed to labour intensive industries (Brown et al. 2003, Jenkins 2006, Lall 2004, UNCTAD 1994). Conversely, FDI might displace local producers and add to local unemployment if it fails to produce local linkages but instead rely on imports for its inputs. In addition FDI through transnational firms may force existing firms to exit or induce local uncompetitive firms to shed employees, and FDI involving the direct acquisition of local firms may lead some to dismiss labour (Lall 2004).

For a country with surplus labour like Nigeria, the employment effect of FDI is based on the motives of such investments (Dunning 1993). First, if FDI is a resource-seeking one aimed at securing access to factor of production such as the abundant cheap labour of Nigeria, then, FDI will have positive employment effect. Second, if FDI is efficiency-seeking aimed at reducing the labour cost of production, it will have a negative impact on domestic employment. Finally, if FDI is market-seeking to take advantage of Nigeria's high population, there is bound to be a positive impact on employment.

In terms of labour market regulation, while certain regulatory provisions, such as minimum wages, and other employment protection laws can have positive employment effect as they restrict the ability of firms to lay off employees at will and also reduce firms' incentives to adjust labour in the event of supply or demand shocks. However, greater enforcement may come

at the cost of job destruction because the cost equivalent of these provisions raises labour costs consequently constraining the number of workers employed.

When countries are frequently troubled by political instability such as civil war, ethnic clashes etc, rule of law does not prevail and property rights are not well defined. These in turn limit both domestic and foreign investment and job creation. Thus, for Nigeria, her frequent political instability might inhibit employment generation.

Regarding wages, if as wages increase, output increases, then employment is likely to grow as well. However, increase in wages without a correspondent increase in output or exports or labour productivity will reduce employment. In addition, if the increase is transferable to the consumer through increase in prices, then, employment would not be affected. But if it is not transferable, it will increase their cost of production and profits and make their exports to be uncompetitive consequently, implying a decline in employment.

Having done the bivariate relationship, it is essential to do the multivariate linkages among these variables. Since Nigeria's exports are majorly oil which has low capacity to employ labour as it is not labour intensive, rising export intensity might make the exchange rate appreciation strongly via the Dutch disease effects which reduces the competitiveness, profitability and production of these traditional exports causing loss of jobs and unemployment. Furthermore, the exchange rate appreciation will lead to a fall in imports prices; consequently making it cheaper for firms to import raw materials and this can generate employment if a significant portion of the imports constitute labour-intensive inputs. In addition, since imports have become cheaper, high importation may lower firms' costs of production and this may help them in remaining competitive. However, the rising imports may cause unemployment if it eliminates low productivity firms through import competition or if it leads to a decrease in the demand for the country's domestic output.

Unemployment in the country in turn lowers income (wage) level thereby aggravating poverty especially for those unemployed. In addition, rising unemployment and poverty coupled with deteriorating institutions such as poor labour market regulation can stimulate labour uproar leading to political instability. However, the fall in income in turn can lower demand for imports.

Consequently, lower import demand will stimulate domestic production and thereby increasing labour demand.

From the above, we noticed that the effect of each of the explanatory variable cannot be predicted a priori because they have taxonomic effect on employment. Thus, the relationship between employment and trade flows would be an empirical one.

#### **4.7. Definition of Variables**

The analysis here is based on a dataset on measures of employment and trade flows as well as other independent variables for Nigeria for the period 1981 to 2006.

In this study, annual growth rate of aggregate employment is the dependent variable, measured as the annual growth rate of number of persons actively engaged in the formal sector of the economy. Export rate is the annual growth rate of goods and services provided to the rest of the world while imports rate is the annual growth rate of goods and services received from the rest of the world. FDI rate is the annual growth rate of inflows of investment from the rest of the world. Domestic investment rate is the annual growth rate of investment in the country. Real effective exchange rate index is calculated as an annual average of the Nigeria local currency units relative to the weighted average of the basket of her trading partners' currencies.

SAP is measured as a dummy variable which takes the value of one starting from 1986, and zero in the pre-1986 period. Real wage rate is the annual growth rate of compensation of employees. Political instability is a measure of concomitant qualities of democratic and autocratic authority in governing institutions. It spans from fully institutionalized autocracies through mixed, or incoherent, authority regimes to fully institutionalized democracies and captures regime authority spectrum on a 21 point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). The rigidity or regulation of employment measures the regulation of employment, and covers a range of issues such as right to collective bargaining, safety of working conditions, child labour etc. A detailed description of the variables is presented in Appendix I. All data that are in local values were changed to US dollar values by deflating them by the average nominal exchange rate.

#### **4.8. Sources of Data**

Annual data on employment, real effective exchange rate, FDI, are obtained from World Bank World Development Indicators, 2008. Data on exports and imports are extracted from CBN Central Bank of Nigeria Statistical Bulletin, 2008 while wages is obtained from the Nigeria Bureau of Statistics, 2006. Data on political instability was obtained from the POLITY IV database. The indicator of civil liberties and political rights are obtained from the Freedom House at [http://www.freedomhouse.org/uploads/special\\_report/77.pdf](http://www.freedomhouse.org/uploads/special_report/77.pdf), while ILO's conventions ratified by Nigeria are obtained from ILO website.

## CHAPTER FIVE

### 5.0. EMPIRICAL RESULTS

#### 5.1. Introduction

This chapter analyses the data, presents and interprets the results. The data is analysed using E-views 6.0 and STATA 10.0.

#### 5.2. Time Series Analysis

As a starting point, the times series properties and data generating properties of the variables are first established. We test for stationarity of the variables using both formal and informal tests.

#### 5.3. Time Series Stationarity Tests Results

In this study, the informal tests employed are autocorrelation function (ACF) and correlogram. To determine the number of lags we following the normal rule of thumb<sup>9</sup> which is to compute ACF up to one-third or one-quarter the length of the time series and chose 17 lags. The visual inspection of the variables shows that employment, labour rigidity and domestic investment have persistent<sup>10</sup> autocorrelation coefficients while exports, imports, FDI, and real wage do not have persistent autocorrelation coefficients. This led us to conclude that the former variables are stationary and the later are non-stationary. We again performed the ACF test on the first difference of these non-stationary variables. Our results reveal that their autocorrelation coefficients are very low and did not persist but quickly hover around zero as the number of lag increases, implying that that the series are probably stationary at first difference. Due to lack of writing space, the results are not included but available on request from the author.

In addition to informal tests, this study also employed the Dickey-Fuller Generalised Least Squared (DF-GLS) test to determine if the time series data are generated by a stationary process or not. The DF-GLS is an Augmented Dickey Fuller test except that it transforms the time series via a generalised least square regression before performing the test. The choice of this test over other tests is that it corrects for error terms which are not linearly and independently distributed by taking into account autocorrelation in the error term and also, studies have shown

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<sup>9</sup> One can also use the Akaike or Schwarz Information Criteria in determining the lag length.

<sup>10</sup> Persistent autocorrelation can be a sign that a series is non-stationary.



that the test has significantly greater power than previous versions of ADF tests (Elliot et al. 1996).

Although, three different specifications of the DF-GLS tests are available, we chose to use the specification which includes the intercept but excludes the trend term because visual inspection of our variables shows that they are not trendy. The DF-GLS tests the null hypothesis of unit root against the alternative of no unit root (that is,  $H_0: \rho=1$ ) and it is specified as:

$$\Delta Y_t = \beta_1 + \rho Y_{t-1} + \alpha \sum \Delta Y_{t-1} + \mu_t \dots\dots\dots(2)$$

The results of the DF-GLS test<sup>11</sup> reveal that at 5% level of significance, exports rate, import rate, FDI, real wage rate are stationary at levels except employment rate, labour rigidity and real effective exchange rate which are non-stationary at level. This implies that the stationary series are integrated of order zero, I(0). Thus, we reject the null hypothesis of no stationarity except for the employment rate, labour rigidity and real effective exchange rate series. We took the first difference of the non-stationary variables and again performed the DF-GLS test on them. Our results show that at 5% level of significance, all variables are stationary at first difference, meaning that they are integrated of order one, I(1). Thus, we reject the null hypothesis of no stationarity for the differenced series. The results are given in Table 5.1 below.

**Table 5.1: Stationarity Tests at Levels and First Difference**

Variables	Levels	First Difference	Order of Integration
Employment rate	-2.203	-2.617***	I(1)
Export rate	-2.905***	-	I(0)
Import rate	-3.073***	-	I(0)
FDI	-5.438***	-	I(0)
Real Wage rate	-3.065***	-	I(0)
Labour Rigidity	-1.784	-2.598***	I(1)
Real Effective Exchange rate	-0.508	-3.070***	I(1)
Trade Balance	-3.020***	-	I(0)
Total Trade	-2.915***	-	I(0)

**Source:** Author's computation. **Note:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1  
 Critical values of DF-GLS statistic for levels at 1% and 5% significance are -2.658, -2.575 (without trend), respectively. While the values of DF-GLS statistic for first difference at 1% and 5% significance are -2.600, -2.589 (without trend), respectively.

<sup>11</sup> Note that we did not perform the test on SAP and political in/stability series because they are dummies.

Thus, from the choice of our test procedure, all our series are now stationary; export rate, import rate, FDI, domestic investment are all stationary at levels while employment rate, labour rigidity and real effective exchange rate are stationary at first difference.

#### 5.4. Cointegration Analysis and Results

We employ Engel and Granger approach in testing for cointegration. Since not all of our variables are stationary at levels, therefore, we cannot carry out a regression of a non-stationary time series on other non-stationary times series as this will give spurious regression. According to Engel and Granger (1987), if two variables are I(1), their linear combination might be I(0) implying that they have a cointegrating relationship and therefore a regression of these variables would therefore be meaningful. To check if our variables have a long-run relationship using Engel and Granger approach, we specify the following equation.

$$E_t = B_0 + \beta_1 EX_t + \beta_2 IM_t + D_t + V_t + \varepsilon_t \quad \dots\dots\dots(3)$$

All variables are as earlier defined. We did not include a time trend in equation (3) since none of the variables are trendy. Our null hypothesis is that there is no cointegration against the alternative hypothesis that there is. A unit root test is performed on the residual obtained from equation (3) above using the Dickey Fuller unit root test and we further test if the residual is trend stationary. The result of the cointegration test is provided in Table 5.2 below. Our conclusion is that the residuals from equation (3) is I(0); that is the residuals are trend stationary. Thus, this study rejects the null hypothesis of no cointegration.

**Table 5.2: Cointegration Test**

Variable	Test Statistics	Critical Value (1%)	Critical Value (5%)	Critical Value (10%)	Decision
Residual	-4889***	-3.750	-3.000	-2.630	Stationary, I(0)
Residual (Trend)	-4.773***	-4.380	-3.600	-3.240	Stationary, I(0)

Source: Author's computation. Note: \*\*\* p<0.01

The cointegration test shows that the variables are cointegrated and equation (3) is a cointegrating regression, therefore, this regression is not spurious. Though, some of the variables are non-stationary at levels, there seems to be a stable long-run relationship between them; implying that they will not wander away from each other indefinitely.

**Table 5.3: Long Run Estimates**

Dependent Variables is Employment growth rate				
VARIABLES	Model (1) Base-line Regression		Model (2) Heteroscedasticity Corrected Model	
	Base-Line Coefficients (%)	Standard Errors	Long-run Coefficients (%)	Standard Errors
Export rate	-0.00567	-0.00725	-0.00567	(0.011)
Import rate	0.00279	-0.00744	0.00279	(0.0114)
Domestic Investment	0.02	-0.0145	0.02	(0.0125)
FDI	-0.00419*	-0.00233	-0.00419**	(0.00168)
Real wage	-0.000425	-0.000414	-0.000425*	(0.000239)
Labour regulation	0.0344**	-0.0152	0.0344**	(0.0125)
SAP	-4.800*	-2.532	-4.800***	(1.568)
Political Stability	0.200***	-0.065	0.200***	(0.0677)
Exchange Rate	-0.00837*	-0.00428	-0.00837***	(0.00256)
Constant	3.618	-2.103	3.618**	(1.298)
Observations	26		26	
R-squared	0.618		0.618	
Adjusted R-squared	0.4038		0.4038	
Prob > F	0.0312		0.0000	

Source: Author's computation. Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

First we ran a base-line regression of equation (1) and the results is given in column 2 of Table 5.3 with the standard errors given in column 3. Also, we performed some post-estimation tests and rejected the null hypothesis of homoscedasticity in the base-line regression. Thereafter, we corrected for the heteroscedasticity in the error term using the Newey-West standard error. Column 5 now provides the heteroscedasticity corrected error from the first regression while column 4 gives the long-run coefficients which are interpreted below.

### Interpretation

Though, not all the coefficients are statistically significant, but they are jointly significant at 1%. The R-square of the model is given as 0.618, implying that our model is able to explain about 62% of the total variations in the dependent variable.

The constant of the equation is both significant and positive and its coefficient implies that grow rate of employment will increase by 3.6% when other explanatory variables are kept

constant. This means that in the long-run, the absence of trade flows in Nigeria will not negatively affect the growth of the employment.

In the long run, on average, both growth rate of exports and import growth rate do not have any significant effect on employment rate. This result is similar to Badwin (1995) and OECD (1992) who found that international trade has little or no link with employment although the countries they studied are not oil-rich countries. In spite of the large rents from oil exportation, export growth rate does not contribute meaningfully to employment growth in the country, implying that the large revenue from oil is not used to generate employment for Nigeria's surplus labour.

The EU is the largest trading partner of the Nigeria, and a reciprocal trade agreement known as EPA which will provide enlarged reciprocal access to EU markets is in the process of being signed. Judging by our results, the prospect EPA in generating employment in Nigeria and thus, Africa is vague; the increase in export to and import from the EU due to the increased market access from EPA might not have any employment effect.

However, FDI has a negative effect on employment, albeit a small magnitude and it is significant at 5%. On average, a one percent increase in FDI will destroy jobs by 0.42% in the long-run. Although FDI is suppose to create employment in Nigeria given her available surplus labour through local forward and backward linkages and multiplier effects in the domestic economy, however, FDI to Nigeria usually bring with them foreign technology and expatriates whereby they substitute foreign workers for local one and use foreign technology. Also, domestic capabilities are weak as it fails to produce these local linkages which make these transnational firms to depend on imports for their inputs. Thus, FDI displaces local producers and add to local unemployment.

Other reasons for the negative effect of FDI on employment in Nigeria can be attributed to FDI being directed towards the direct acquisition of local firms as against new ones (especially during privatization process when foreign firms took over local ones in Nigeria), and this entry of foreign force existing local firms who are usually uncompetitive to shed employees. Therefore, in Nigeria, this implies that the crowding-out effects of FDI when foreign firms

displace local competitors offset the crowding-in effect of FDI in creating new markets for local investors.

Domestic investment is also not statistically significant in explaining employment in Nigeria. This is due to the fact that large proportion of investment in Nigeria is not directed towards labour intensive and real good productions such as agriculture and manufacture. Instead, investment is mostly directed to services investment which is not labour intensive in nature.

Real wage rate is also negative but it is not significant at the 5% conventional level, however, it is significant at 10%. It implies that a one percentage increase in worker's real wage will decrease employment by 0.043% in the long-run. Although, its magnitude is small, it however confirms (Olaleye 1974, Owoye 1984) argument that wage increment in Nigeria is usually followed by threat of reduction in government workforce which in some cases has actually resulted into massive layoff in the civil service.

The case of labour market regulation (such as difficulty of hiring, safe working conditions etc) seems to be different. It has a positive and significant relationship with employment at 5% level of significance. It implies that on average, an improvement in labour market regulation will increase employment by 3.4%. This result is expected as Nigeria has a very active labour market body called the Nigeria Labour Congress which seeks to regulate the discrimination in employment, undue firing of workers and safe working conditions etc all of which prevent loss of jobs.

The SAP dummy variable which captures the periods of trade liberalization is also significant at 1% but has a negative effect on employment rate. This implies that the country's adoption of trade liberalization measures starting from 1986 till date has made employment to be lower by 480% than the period when the measure was not adopted (pre-SAP period).

SAP appears to be one of the most important determinants of employment out of all the variables as it has the largest negative effect on employment growth in Nigeria. Although, freer trade is said to be beneficial in terms of employment and growth, the negative effect on employment might imply that the country is not competitive in its trade and that allowing freer

trade while the bulk of the country's exports is oil product which is highly volatile will affect employment negatively. The negative result also points out that freer trade will be negative on employment unless the country diversifies its exports away from only oil product.

Dummy for political stability (ranging from hereditary monarchy to consolidated democracy) is positive and statistically significant at 1%. It implies that as Nigeria political climate becomes more stable and more democratic (in terms of reduction in civil wars, coup d'état, political violence events, including interstate conflicts etc), employment will increase by 20%. Nigeria adopts a democratic status in 1999, the employment effect of her being democratic implies that that with democracy, there would be rule of law and well-defined property rights which create a right investment climate for both foreign and local investors to invest and hire more labour for their firms.

Contrary to our apriori expectation, real effective exchange rate has a negative relationship with employment growth rate and it is significant at 1%. Its magnitude implies that a one percent increase (depreciation) in real effective exchange rate will decrease employment growth rate by 0.84%. Conversely, a one percent decrease (appreciation) in real effective exchange rate will increase employment growth rate by 0.84%. This positive employment effect might point to the fact that Nigeria is not affected by the Dutch disease effect. This might be because the Naira has been occasionally undervalued.

However, the magnitude of the effect is relatively small (i.e. 0.84%). The small magnitude might be due to various efforts by the government to diversify the economy from oil exports. These efforts are contained in the developmental plans of each regime such SAP and NEEDS which aimed to diversify the productive base of the economy. These efforts might have attenuated the Dutch disease effect.

## **5.5. Short-Run Dynamics**

According to Engel and Granger (1987) representation theorem, if two or more variables have a cointegrated relationship, this relationship can be represented using an error correction model (ECM). The ECM gives the short-run relationship between the dependent variable and all the explanatory variables. Thus, in estimating the short-run relationship between employment rate and all the explanatory variables, we ran the ECM and included the lag of the residual gotten

from equation (3) above. The specification of the ECM used is given below in equation (6). We chose to include a trend term in our ECM because the residual from the cointegration equation appears to be trend stationary (see Table 5.3. above). In addition, we did not include SAP dummy because we can only include it if it captures a short-term structural break (c.f. Karagol 2005).

$$\alpha\Delta E_t = B_0 + \beta_1 EX_t + \beta_2 IM_t + \beta_3 DI_t + \beta_4 FDI_t + \beta_5 RW_t + \beta_6 \Delta LR_t + \beta_7 P_t + \beta_8 \Delta ER_t + \beta_9 t + \beta_{10} \varepsilon_{t-1} \dots\dots\dots(4)$$

Where  $\Delta E$  is the change in employment overtime, EX is export growth rate, IM is import growth rate, DI is domestic investment, FDI is foreign direct investment, RW is real wage rate,  $\Delta LR$  is the change in labour regulation, P is political stability,  $\Delta ER$  is the change in index of real effective exchange rate, t is the time trend and  $\varepsilon_{t-1}$  is the error correction term. All variables remain as earlier defined.

**Table 5.4: Short Run Estimates**

<b>Dependent Variables is Employment Growth Rate (First Difference)</b>		
<b>VARIABLES</b>	<b>Short-run Coefficients (%)</b>	<b>Standard Errors</b>
Export rate	-0.00336	(0.0106)
Import rate	0.00457	(0.0109)
Domestic Investment	0.0141	(0.0235)
FDI	-0.00144	(0.00316)
Real wage rage	-0.000316	(0.000512)
Difference labour regulation	0.0114	(0.014)
Political	-0.0464	(0.0723)
Difference exchange rate	-0.00139	(0.00385)
ECM <sub>t-1</sub>	-1.230***	(0.398)
Time trend	0.0313	(0.0649)
Constant	-0.609	(0.943)
Observations	25	
R-squared	0.517	
Adjusted R-square	0.1728	
F statistics	0.2365	

Source: Author's computation. Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

All our variables are not statistically significant apart from the error correction term (ECM<sub>t-1</sub>). This implies that the variables do not have any short-run relationship with employment

growth rate. This might probably be attributed to inertial conditions as it might take time for employment rate to respond to these policy variables. It might not respond in the short-run but only in the long-run because supply of labour is more elastic in the long-run. Also, in the ECM model one often gets statistical insignificance if there are less than 50 observations. This prompts us to interpret the ECM coefficients.

The R-square of the model is given as 0.517, implying that our model is able to explain about 52% of the total variation in the dependent variable. The constant of the equation though not significant, it is negative and its coefficient implies that employment will decrease by 60.9% when other explanatory variables are kept constant. This means that in the short-run, the absence of trade flows in Nigeria will negatively affect the growth of employment.

Similar to what was obtained in the long-run, all our variables apart from political stability have the same signs with the long-run estimates. Exports have a negative relationship with employment and the magnitude implies that a one percentage increase in export growth will decrease employment by 0.34%. This negative relationship is expected as the bulk of Nigeria's export is oil which hardly generates any employment particularly as most of the oil is exported in the unprocessed form. However, imports have a positive relationship with employment albeit a small magnitude; a one percentage increase in import rate will lead to a 0.46% increase in employment. This is not surprising as Nigeria is highly dependent on imports for most of its raw materials inputs (CBN 1993) for most of its labour intensive industries. Regarding investment, while a one percent increase in domestic investment can stimulate a 1.4% increase in employment, a one percent increase in FDI will lead to job loss of 0.14%. Furthermore, a one percent increases in real wage lead to job loss of about 0.03%.

Furthermore, in the short-run a one percentage change in exchange rate appreciation will lead to a 0.14% increase in employment while a positive change in labour market regulation generates about 0.01% jobs. Contrary to the long-run estimate, political stability dummy is now negative implying that in the short-run, in a situation when the political climate becomes more stable, employment can also decrease by 4.6%.



The error correction term is negative and statistically significant at 1%. It implies that when there is a disequilibrium or shock in the model which affects employment, about 123% of this deviation from the long-run equilibrium would be corrected in each year.

## 5.6. Robust Checks

We checked both the long-run and short-run models for normality, heteroscedasticity and autocorrelation and white noise. For the base-line regression, our tests reject the null hypothesis of homoscedasticity and we therefore corrected for the standard errors using Newey-West transformation. For both the cointegration model and ECM, our tests did not reject the null hypotheses of normality of the error term and no autocorrelation and homoscedasticity and white noise error term (implying that the error term of both models is linearly and independently distributed with zero mean and constant variance).

In addition, we used Ramsey Reset test to check whether our models suffer from omitted variable bias or model misspecification since we had not used a double log model or a log linear model. We did not reject the null hypothesis of no omitted variable suggesting that our regression model was correctly specified. The results are presented in Table 5.5 below.

**Table 5.5: Robust Check for the Long-run and Short-run results**

Post-estimation Tests	Long-run (Probability Value)	Short-run (Probability Value)	Null Hypothesis	Decision
Ramsey RESET test for omitted variable	0.2377	0.4292	model has no omitted variables	Do not reject Ho
Breusch-Pagan/Cook-Weisberg test for heteroskedasticity	0.8950	0.4202	Constant variance	Do not reject Ho
Durbin's alternative test for autocorrelation	0.9202	0.1094	no serial correlation	Do not reject Ho
Bartlett's Periodogram-based white noise test	0.9549	0.9876	Error term is IID (White noise)	Do not reject Ho

Source: Author's computation. Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5.7. Alternative Specification/Sensitivity Analysis

We also checked if our model is sensitive to the inclusion of variables. We did this by interchanging export rate and import rate with growth rate of trade balance and then growth rate of total trade. The regression results are provided in Appendix II and Appendix III.

We ran the two regressions by including trade balance and total trade separately in each of the two regressions and also performed a unit root test on each model. Both regressions signify a long-run relationship among the variables. The results are in Appendix IV.

#### **5.7.1. Long-run Estimation using Growth Rates of Trade Balance and Total Trade as Key Independent Variables**

Apart from real wage rate which has now become insignificant, FDI, labour regulation, SAP, Political stability, real effective exchange rate are significant at 5% just as in our previous model and with similar sign; while domestic investment has become significant but at 10%. However we are mainly concerned with trade balance and total trade, so we did not give any interpretation on this. The main variables capturing trade flows which are growth rates of trade balance and total trade remain insignificant; buttressing our earlier findings that international trade flows has no link with employment

#### **5.7.2. Short-run Estimation using Growth Rates of Trade Balance and Total Trade as Key Independent Variables**

We also ran an ECM and included the lag of the residual gotten from the long-run equations when we included trade balance and total trade. We also included a trend term in our ECM because the residual from the cointegration equation appears to be trend stationary (see Appendix IV).

The results also buttress our earlier findings because none of our models have short-run relationship as none of the variables are statistically significant. In addition, similar to our earlier finding, the error correction terms of the two regression models are significant and positive. This implies that for the regression model with trade balance as key independent variable and the regression model with total trade as the key independent variable, when there is a disequilibrium or shock in the models which affects labour market and employment, about 104% and 124% of this deviation from the long-run equilibrium would be corrected in each year respectively. In a nut shell, these results imply that our model is not sensitive to the inclusion of these other measures of trade flows.

In summary, both our long-run and short-run estimates points out that there is no link between trade flows and employment. Rather, external factors (such as FDI, real effective exchange rate, SAP) and internal factors (such as political stability, labour regulation and real wage) are more important factors in explaining employment rate in Nigeria.

### 5.8. Granger Causality Test

The existence of correlations, signs and coefficients in the above regression equations do not imply causality. This therefore informs the need for a causality test. The Granger causality test examines whether the current values is related to past values of itself and the second variable. If otherwise, then we conclude that E (employment) does not Granger cause EX (Exports). To determine whether causality runs in the other direction (i.e. from EX to E), one simply repeats the test but with E and EX interchanged.

The test involves estimating the following pair of regressions:

$$E_t = \sum_{i=1}^n \alpha EX_{t-i} + \sum_{j=1}^n \beta_j E_{t-j} + \mu_{1t} \dots\dots\dots(5)$$

$$EX_t = \sum_{i=1}^n \alpha E_{t-i} + \sum_{j=1}^n \beta_j EX_{t-j} + \mu_{2t} \dots\dots\dots(6)$$

Where we assume that the disturbances  $u_{1t}$  and  $u_{2t}$  are uncorrelated and all variables are as earlier defined. Similar equations are also set up to determine the direction of causality between employment and three other measures of trade flows: imports, trade balance and total trade. These equations were estimated by taking the first difference of the non-stationary series to make them stationary, we included one lag in each equation using general to specific method to determine the number of lags to use.

**Table 5.8.: Granger Causality Test Results**

Null Hypothesis	Prob.	Decision	Causality
Exports does not granger cause Employment	0.5126	Accept H <sub>0</sub>	Independent
Employment does not granger cause Exports	0.5428	Accept H <sub>0</sub>	
Imports does not granger cause Employment	0.8783	Accept H <sub>0</sub>	Independent
Employment does not granger cause Imports	0.2202	Accept H <sub>0</sub>	
Trade Balance does not granger cause Employment	0.0216**	Accept H <sub>0</sub>	Unidirectional Total trade→ Employment
Employment does not granger cause Trade Balance	0.9388	Accept H <sub>0</sub>	
Total Trade does not granger cause Employment	0.6398	Reject H <sub>0</sub>	Independent
Employment does not granger cause Total Trade	0.4092	Accept H <sub>0</sub>	

**Source:** Author's computation. **Notes:** \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The results of the Granger causality tests show that there is independent causality between exports rate and employment and; import rate and employment, total trade and employment; which means that they do not cause any changes in one each other. The implication of this is that export rate, import rate and trade balance all have no effect on the employment rate in Nigeria and vice versa.

However, the direction of causality between trade balance and employment signifies a unidirectional causality which runs from total trade to employment implying that increased trade balance at any point in time in Nigeria has the potential of generating employment. Apart from trade balance causality result, these later results also buttress our earlier findings that trade has no link with employment.

## CHAPTER SIX

### 6.0. SUMMARY, RECOMMENDATIONS AND CONCLUSION

#### 6.1. Introduction

This chapter summarizes, provides appropriate recommendations and concludes the study. It also outlines the limitations encountered during the course of the study while suggesting areas for future researches.

#### 6.2. Summary

This study has empirically determined the effect of trade flows on employment in Nigeria between 1981 and 2006. It also investigated the sensitivity of the results to the inclusion of variables using trade balance and total trade.

The study analysed in details the employment patterns of the Nigeria and discovered that although the absolute numbers of total employment in the country has been on the increase since 1980, the growth of employment is hazardous. In addition, the share of employed workers in total labour force has been below 70% since 1986 to 1990 period which is an indication of high unemployment as more than 30% of its active population are unemployed.

This study also reviews the trade patterns and performance of trade flows. Exports and import as well as their growth rate performance have been fluctuating over the years. In particular, the trend revealed that oil exports dominate the country's export baskets amounting to about 95% in each period. On the basis of this, Nigeria's exports might have no impact on employment, particularly as most of the country's oil is exported in unprocessed form. Furthermore, we provided a detailed review of both theoretical literature and past empirical works on the study at hand with the latter confirming that employment effects of trade differ across countries.

The study employed a time series analysis using the Engel and Granger (1987) approach. DF-GLS unit root test show that all the variables are stationary at levels except for labour regulation, real effective exchange rate and domestic investment which are stationary at first difference. Furthermore, the result of the cointegration test revealed that the variables have a

long-run relationship while that of the granger causality test shows that apart from trade balance which granger cause employment, there is no causality between trade flows (exports rate, import rate, total trade) and employment.

Both the long and short run results show that there is no significant link between trade and employment in Nigeria while external factors and internal factors are more important factors in explaining employment rate in Nigeria. It was identified that the prevalence of SAP has limited the performance of exports and imports in generating employment.

At this point, it is important to know that all the objectives, research questions and hypotheses of this study have been adequately treated and accomplished.

## **6.2. Recommendations**

To help Nigeria derive positive employment benefits from trade, the following policies recommendations are worth emphasizing:

First and foremost, improving employment effect of trade and labour standards in the country, requires a process of diversification of the economy from oil exports and low-competitive activities and traditional primary activities, which currently predominate, to relatively high-competitive modern sector activities and non-oil exports and activities as trade expansion will improve economy-wide employment only if it stimulates growth of modern sector activities such as agriculture and manufacture which can absorb the country's surplus labour.

The trade reforms or freer trade when combined with complementary actions such as diversification of the productive base of the nation away from oil and other primary products will not only spur investment, it will also make her exports to become more competitive, and lead to faster aggregate employment growth.

In addition, for an effective and result-oriented employment effect from trade, government should fortify enabling institutional policy and regulatory environment to boost non-oil export sectors (diversification) and associated private sector development, supplemented

by export processing zones or competitiveness clusters. This is because freer trade in a weak or ineffective regulatory and supervisory environment may not yield any employment effect.

Furthermore, although efforts have been made to diversify the economy as evident in the SAP policy and each regime's developmental goals, however, implementation has always been a problem. Thus, political and social commitments to principles of competition and diversification needed to be strong and result oriented if trade is to generate positive employment effects.

We argue that FDI has failed in generation employment due to weak or missing links as FDI to Nigeria comes with their own labour with no or little backward and forward linkages with the domestic economy while instead they rely on imports for their backward linkages. Effective measures and rules needed to be formulated to only allow FDI that will forge these linkages so as to provide employment for the country's surplus labour instead of depending solely on expatriates. Considering the economy-wide implication of FDI in generating employment, FDI may be more useful if they are re-oriented in building the foundations for trade intensification, jobs and growth in the country. Therefore, government should play a proactive role by making FDI inflows conditional on employment generation as this will increase employment rate.

Furthermore, the EU is the single largest trading partner of Nigeria and a number of trade agreements have been signed while others such as EPA are in progress. This agreement will provide enlarged reciprocal access to the EU markets and will help the country in integrating faster. In order to ensure a large beneficial impact, it is imperative for the country to diversify its productive base in order to make it become competitive and compete favourably with the EU. In respect to the results of this study that trade has no link with employment, further trade negotiations and agreements such as EPA should be anchored and conditional on employment generation and respect for labour standards in the country.

In addition, because trade does not have any link with employment, it is likely that interest groups in Nigeria will resist further efforts to ensure market access to its trade especially in sensitive sectors. Therefore, there should be the implementation of labour market policies

such as unemployment benefits and insurance targeted at reducing adjustment costs so as to help curtail such pressure.

The final point is that the country lacks adequate labour market institutions to provide retraining facilities and assistance in job search, and other institutions that are required to deal with problems generated by the increased labour market churning associated with trade flow. It is therefore imperative for government to improve employment conditions and help in developing such institutions through well-designed labour market interventions by putting effective social protection systems in place that will help minimise the social costs associated with the adverse effects of both wage increment and trade on employment.

### **6.3. Conclusion**

The relationship between trade flows and labour market outcomes has generated active debates and has been a source of concern to policy makers and the common man, especially as most fear that trade integration may result in significant job losses for developing countries. However, in the case of Nigeria, this concern is contradicted by the empirical evidence as both our long-run and short-run estimates points out that there is no significant link between trade flows and employment. Rather, external factors (such as FDI, real effective exchange rate, SAP) and internal factors (such as political stability, labour regulation and real wage) are more important factors in explaining employment rate in Nigeria.

Although, Nigeria's exports and imports are highly labour intensive, their capacity to generate employment for the country's surplus labour has been watered down. The adoption of the trade liberalisation policies following SAP and the consequent opening up of the economy to freer trade has dampened employment generation capability of exports and imports by 480%. Although freer trade has been identified to be beneficial in terms of increased growth and employment, however, the simultaneous liberalization of the economy by most African countries who trade majorly in primary exports with imported manufactures constituting the bulk of their imports make their products to be less competitive in the world market. Thus, freer trade without being competitive will not yield the desired effects, and non-diversification of the country's exports away from oil which is highly volatile will affect employment negatively.



In conclusion, job creation is likely to be aided by fortifying appropriate and enabling institutional and regulatory measures to enhance the diversification and competitiveness of Nigeria trade, the removal of impediments to labour market participations and labour market interventions such as putting effective social protection systems in place and political and social commitments to policies implementations. Trade can then bear fruits if these measures are put in place. The answer is not to reverse the open trade regime that the country introduced some two and a half decades ago.

#### **6.4. Limitations of the Study and Suggestions for Further Studies**

A limitation of the study is the non-availability of data. For instance, data was not available prior to 1980 for employment which made us to start our analysis from 1981. The study has focused on country analysis; future efforts should be made to explore the link between trade and employment from a cross-country perspective especially for African countries as there is dearth of study on Africa. Our analysis covered 26 time series; however, large sample analysis is important in time series contexts because of the desirable finite sample properties of OLS for time series data. Hence, future research is clearly needed when there is longer time series observation. However, significant advances along this path require an improvement in the data quality and availability. Thus, there is still more scope for improving the understanding of the links between international trade and employment in Nigeria.

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# APPENDICES

## Appendix I

### The Data and Variable Description

The analysis in this paper is based on a dataset on measures of employment and trade flows as well as other independent variables for Nigeria for the period 1981 to 2005.

In this study, annual growth rate of aggregate employment is the dependent variable, measured as the annual growth rate number of employees or persons actively engaged in all sectors of the economy. Export rate is the annual growth rate of goods and services provided to the rest of the world while imports rate is the annual growth rate of goods and services received from the rest of the world. FDI rate is the annual growth rate of inflows of investment from the rest of the world to Nigeria in current U.S. dollars. Domestic investment rate is the annual growth rate of investment in the country. Real effective exchange rate is the period average calculated as an annual average based on monthly averages based on the local currency units relative to the U.S. dollar.

SAP is measured as a dummy variable which takes the value of 1 in 1986, and zero in the pre-1985 period. 1986 is used as the reference year because it is the period of extensive economic liberalization, not only trade liberalization.

Political instability is a measure of concomitant qualities of democratic and autocratic authority in governing institutions. It spans from fully institutionalized autocracies through mixed, or incoherent, authority regimes to fully institutionalized democracies and captures regime authority spectrum on a 21 point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). The index takes into consideration, important political violence events, including interstate and independence war, ethnic and revolutionary war, and genocide and politicide. It also includes including autocratic backsliding, executive auto-coup or *autogolpe*, revolution, collapse of central authority (state failure), and successful military coups.

The rigidity or regulation of employment measures the regulation of employment, and covers a range of issues such as right to collective bargaining, discrimination in employment, safety of working conditions, child labour etc. I chose to use the number of International

Labour Organization (ILO) Conventions ratified at a given point in time in Nigeria as a proxy for a country extent of labour market regulation as a country with less (more) ratifications can be considered as having more rigid (flexible) labour market. The ILO Convention seems appropriate as it relates to the terms and conditions of employment and covers a range of issues such as right to collective bargaining, discrimination in employment, safety of working conditions, child labour etc.

However, this measure is inadequate as the fact that a Convention is ratified by Nigeria does not necessarily guarantee its full enforcement. This is possible as the ILO does not power to compel enforcement but merely relies on persuasion and voluntary compliance. However, as noted by Rodrik (1996), non-ratification does not imply country does not comply with the Convention. *Ibid* (p. 16) noted that although Cameroon has ratified the 1986 Asbestos Convention while United State has not, however, workers are more likely to be exposed to asbestos in the workplace in Cameroon than in the US which has not ratify the Convention.

Therefore, we intend to rectify this likely problem by adjusting the number of ILO Conventions ratified by interacting them with an indicator of civil liberties and political rights following Helliwell (1994), Rodrik (1996) and Hasan (2001). The choice of the indicator of civil liberties and political rights is based on the premise that countries which have safeguard their citizen's civil liberties and political rights are more likely to enforce these international labour standards. Thus, countries with a high score on the indicator of civil liberties and political rights are likely to be more committed to the enforcement of the Conventions it ratified.

The indicator of civil liberties and political rights are obtained from the Freedom House and range from a value of 1 (maximum rights/liberties) to 7 (minimum rights/liberties). We averaged the two indicators and then interacted it with ILO Conventions ratified to arrive at a measure of labour market regulation. The data that were in local currency (Naira) were converted to dollar values by deflating them by the average nominal exchange rate.



## Appendix II

**Long-run Coefficients for Growth Rates of Trade Balance and Total Trade**

Dependent Variables is Employment growth rate				
VARIABLES	Regression with Trade balance as key variable		Regression with Total Trade as key variable	
	Long-run Coefficients (%)	Standard Errors	Long-run Coefficients (%)	Standard Errors
Trade Balance	-0.00239	(0.00165)		
Total Trade			-0.0031	(0.0036)
FDI	-0.00372*	(0.00203)	-0.00459**	(0.00217)
Domestic investment	0.0237*	(0.012)	0.0235*	(0.0125)
Real Wage	-0.000402	(0.000373)	-0.000391	(0.000401)
Labour Regulation	0.0351**	(0.0126)	0.0347**	(0.0148)
SAP	-5.169**	(2.115)	-5.130**	(2.408)
Political Stability	0.205***	(0.0611)	0.197***	(0.0635)
Real Effective Exchange Rate	-0.00908**	(0.00364)	-0.00884**	(0.00412)
Constant	3.957*	(1.899)	3.932*	(1.984)
Observations	26		26	
R-squared	0.639		0.611	
Adjusted R-square	0.4685			
F statistics	0.0104			
Periodogram white-noise test	0.9280			
Durbin's alternative test for autocorrelation	0.7612			

Source: Author's computation. Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix III

### Short-run Coefficients for Growth Rates of Trade Balance and Total Trade as Key Independent Variables

Dependent Variables is Employment growth rate (First Difference)				
VARIABLES	Regression with Trade balance as key independent variable		Regression with Total Trade as key independent variable	
	Short-run Coefficients (%)	Standard Errors	Short-run Coefficients (%)	Standard Errors
Trade Balance	-0.000488	(0.00226)		
Total Trade			0.00128	(0.00367)
FDI	-0.00202	(0.00332)	-0.00154	(0.00292)
Domestic Investment	0.0187	(0.0229)	0.014	(0.0202)
Real Wage Rate	-0.000125	(0.000539)	-0.000367	(0.000488)
Difference labour regulation	0.0134	(0.0159)	0.00854	(0.0137)
SAP	0.11	(1.708)	-0.262	(1.519)
Political Stability	-0.0351	(0.0954)	-0.0599	(0.0859)
Difference Real Effective Exchange Rate	-0.00182	(0.00427)	-0.00116	(0.00377)
Time Trend	0.023	(0.096)	0.0431	(0.0846)
ECM trade balance	-1.042**	(0.406)		
ECM total trade			-1.244***	(0.357)
Constant	-0.588	(1.079)	-0.56	(0.951)
Observations	25		25	
R-squared	0.4274		0.5504	
Adjusted R-square	0.0185		0.2293	
F statistics	0.4574		0.1730	
Periodogram white-noise test	0.9874		0.9722	
Durbin's alternative test for autocorrelation	0.9582		0.1690	
dwatson	2.0048		2.298485	

Source: Author's computation. Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix IV

### Cointegration Test: Checking for the Stationarity of the Residual from the Cointegrating Equation

Variable	Test Statistics	Critical Value (1%)	Critical Value (5%)	Critical Value (10%)	Decision
Residual (Trade balance)	-4.449***	-3.750	-3.000	-2.630	Stationary, I(0)
Residual (Trend)	-4.348**	-4.380	-3.600	-3.240	Trend Stationary
Residual (Total Trade)	-4.818***	-3.750	-3.000	-2.630	Stationary, I(0)
Residual (Trend)	-4.704***	-4.380	-3.600	-3.240	Trend Stationary

*Source:* Author's computation. Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1