DOMESTIC RESOURCE MOBILISATION AND HEALTH OUTCOMES IN NIGERIA

BY

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15PAF01065

2017

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BEING

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF
ECONOMICS AND DEVELOPMENT STUDIES
IN PARTIAL FULFILMENT OF THE REQIUIREMENTS FOR THE
AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN ECONOMICS
COLLEGE OF BUSINESS AND SOCIAL SCIENCES,
COVENANT UNIVERSITY, OTA, OGUN STATE, NIGERIA

2017

DECLARATION

I, AKHIGBEMIDU, Sarah Adesuwa hereby declare that this dissertation is my original work and that no portion of this work has been or will be submitted in support of an application for another degree or qualification of this or any other Universities or other institution of learning.

AKHIGBEMIDU, Sarah Adesuwa   …………….................................
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CERTIFICATION

This is to certify that this research work, written by AKHIGBEMIDU, Sarah Adesuwa was supervised and approved in partial fulfillment of the requirements for the award of Master of Science (M.Sc.) Degree in Economics of the Department of Economics and Development Studies, Covenant University, Ota, Ogun State, Nigeria.

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DEDICATION

I dedicate this research work to the God almighty and also to my lovely parents, Mr. and Mrs. Steve .I. Akhigbemidu.

ACKNOWLEDGEMENTS

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ABSTRACT

The funding of healthcare in Nigeria has often been described as inadequate with budgetary allocation hardly exceeding 3 percent of the budget. Healthcare spending in Nigeria is segmented into private and public spending. While public expenditure in Nigeria account for 20-30% of total health expenditures, private expenditures accounts for 70-80% of total health expenditure. Most developing countries have been dependent on aid for development financing neglecting opportunities for domestic resource mobilisation. In the light of the lingering challenges with under-five child mortality, this study considered agriculture as a source of Domestic Resources Mobilisation. Agricultural value addition is conceived as a key revenue earner for government to increase healthcare funding. The variables were first tested for stationarity. The study adopts the Cointegration and Vector Error Correction technique to check for long run association and short run dynamics to ascertain the speed of adjustment when a shock occurs in the system. The result revealed that (i) there is a positive and long run relationship between tax revenue and under-five mortality, (ii) Agricultural productivity has an inverse relationship with under-five mortality rate, (iii) Gross capital formation and under-five mortality have a positive relationship, (iv) A positive relationship exists between female literacy rate and under-five mortality rate, (v) there exist a negative relationship between carbon dioxide emission and under-five mortality. Based on the findings, it is suggestive that revenue generation over the period has not been properly channelled. Agricultural Productivity and potential tax revenues will be useful to curb under-five mortality in the long run. Therefore, it is suggested that policy be made to enhance tax administration towards agricultural activities. Moreover, investments in agro-allied industries and infrastructural capacity are suggested to reduce the cost of distribution and waste of agricultural products. This study and its outcomes have significant relevance and implications for achieving Sustainable Development Goals in Nigeria.

Keywords: Agricultural productivity, Domestic Resource Mobilisation, Tax Revenue, Under-five Mortality.

CHAPTER ONE

INTRODUCTION

1.1   Background to the study

Expenditure on health is a part of human capital investment which accounts for the changes in resource-poor countries like South Korea,Taiwan and Singapore while resource-rich ones like Nigeria, Venezuela and Angola are trailing behind (Musango, Nabyong, Elovainio & Cheruiyot, 2013). As such, human capital is an essential key for a nation's financial and political change (Efanga & Nwokomah, 2013). However, one of the challenges confronting developing economies like Nigeria regarding human capital development is insufficient investment in health and education. Public spending on social services, for example, education and medicinal services that are basic to human capital improvement is for the most part low in Nigeria (Riman & Akpan, 2012). Literature reveals that most nations developed or developing share same objective for their health systems (Roberts, Hsiao, Berman & Reich, 2004). These objectives include good health for all, financial risk protection for all, and the satisfaction of the general population, while at the same time striving to maintain an affordable health care system. Each of these three goals has two basic dimensions: level and distribution. These goals go past the typical worries of economic analyses, which tend to concentrate only on effectiveness, however stay quiet on value (Sassi, Le Gran & Archard, 2001).

However, public financing of the health sector in Nigeria was less than 10 percent from 1981 to 2014 which is grossly inadequate (Central Bank of Nigeria, 2014). Due to inadequate health funding, indices such as infant mortality, maternal mortality, number of patients per doctor, ratio of patients to hospital beds are relatively high in developing countries indicating poor health outcomes. Consequently, there have been efforts aimed at identifying the minimum level of health care expenditure required to attain a universally acceptable minimum level of health status. The World Health Organization (WHO) 2013 report on condition of health financing in the African district stipulate that the vast majority of the nations in the locale flop to achieve the Abuja declaration target (allotting 15% of the government spending plan (budget to health) without household expenditure use which is above 40% of health expenditure total. It was also revealed that developing countries need to spend an average of US$44 per capita keeping in mind the end goal to have completely

effective human services framework with fundamental bundle of administrations (Musango, Nabyong, Elovainio & Cheruiyot, 2013).

In many low-middle countries, the low level of health expenditure has been a hindrance in attempts pointed towards universal coverage, whereby everyone would be opportune to use the required health care services. These services can be curative, preventive, promotional or rehabilitation. Also, the anticipated universal coverage should be such that no one undergoes excessive monetary hardship for paying for these services. The cash required for setting up a health financing system that would ensure universal coverage simply is a challenge to general health segment in low-middle income nations.

In the short to medium term, poor countries will need substantial assistance to finance their health sectors. Studies have suggested the need for richer countries to adhere to their aid responsibilities and channel more resources into the advancement of health systems in poorer countries (Thomas J Bossert, 2010). Nevertheless, such external aid has its breaking points. In spite of the fact that development assistance can fill in as an essential impetus for developing countries to finance universal coverage, domestic resources (fiscal, financial, human resources generated internally for example, savings and tax revenue) for health needs to increase to ensure more predictable and sustainable funding. A couple of nation are donor-dependent, but, on average external resources represent less than 25 percent of total health expenditure in low-income countries and the rest is from domestic sources (WHO, 2013). This implies it is basic that countries plan their long haul health financing needs on the premise of domestic resource accessibility. Additionally, this should be done in a way that lessens the monetary hindrances to medicinal services. for example the weight of out-of-pocket(OOP) health expenditure which constitute the greater part of aggregate part of total health spending in low pay nations and 40 percent in middle-pay nations (Musango, Nabyong, Elovainio & Cheruiyot, 2013). The commitment to pay specifically for services at the critical moment displays a boundary to individuals looking for medicinal services when they don't have the monetary means within reach; this has an especially desperate effect on poor people. Moving away from undue dependence on OOPs will be urgent keeping in mind the end goal to evacuate probably the most vital obstructions for access to required healthcare services. Unarguable, in this way, new sources of financing health ought to expect to build the extent of prepaid contribution components over OOP health expenditure.

There is an unequal distribution of resources among different sectors in every country. This is evidenced in the fact that Sub-Saharan Africa countries, where health receives only 10.2 percent of total government spending, whereas about 18.5 percent goes to education(Olaniyan, Onisanwa & Oyinlola, 2013). These figures suggest that there is serious need for additional wealth in the health sector. Domestic resource mobilisation (DRM) has traditionally been a significant challenge for the developing countries (DCs) like Nigeria, notwithstanding the impact of the recent financial and economic crisis. As domestic resource mobilisation boils down to the generation of revenue domestically and channelling them to productive investments, the brunt of domestic resource mobilisation is essentially borne by the generation of government's tax revenues in excess of immediate government expenditures, and the mobilisation of private savings of households and firms, all to be invested into the economy. Domestic resource mobilisation is a dependable and sustainable means of development finance. It is progressively responsible for a large percentage of development finance. Raising more revenue from internal sources helps countries devote needed resources to reduce poverty and hunger, bridge infrastructure gaps and provide public services for example, health and education. DRM also fosters the social contract between the people and the government, facilitates a virtuous cycle of transparency, accountability and efficiency and strengthens democratic engagement and institutions.

However, the growth rate of domestic resource mobilisation (tax, savings, remittance) grew by an average of 3.26 percent from 1981 to 1985, 75.68 percent from 1986 to 1990 and 421.10 percent from 1991 to 1995. Thereafter, it declined to 86.82 percent from 1996 to 2000 and 180.95 percent from 2001 to 2005. Then, it decline to an average of 69.01 percent from 2006 to 2010, and 38.05 percent from 2011 to 2014 (World Development Indicators, 2015), this has been due to some challenges like low savings, capital flight which still remains the absolute most impactful hindrance to DRM, weak administrative systems and organisational capacities etc. Such low levels of revenue have seriously limited Nigeria's ability to sufficiently fund essential public services. This could explain Nigeria's failure to achieve most of the Millennium Development Goals (MDGs). For instance, target 4 and 5 of MDGs: reducing by three-quarters (75 percent) maternal mortality ratio and reduce by two-thirds (67 percent) child mortality ratio between 1990 and 2015 (World Development Indicators, 2015). However, maternal mortality ratio in Nigeria was 1,350 per 100,000 live births in 1990 and 814 in 2015, which is just 40 percent reduction. Also, child mortality ratio was 213 per 1,000

live births in 1990 decline to 108 in 2015 (World Development Indicators, 2015). But, this decline of 49 percent is less than the target of 67 percent.

Moreover, evidence from studies on health expenditure and economic growth shows that significant improvement in health of populations could reduce poverty and inequality between developing and developed economies (Bloom & Canning, 2005; Bloom, Canning & Sevilla, 2004; Carr, 2004; Finlay, 2007; Wagstaff, 2002).Estimates have it that 50-80% of resources needed to finance the sustainable development goals will have to be sourced domestically (WHO, 2015). In the light of the above, it is important for developing countries like Nigeria to look inward for more resources to be invested in the health sector. This is why Domestic Resource Mobilisation becomes an essential tool for improving funding of healthcare in Nigeria. This research looks into domestic resources to incorporate natural, human and financial resources produced inside the home economy. The public and private sectors both have imperative parts in DRM.

1.2   Statement of Research Problem

Despite pooled and un-pooled healthcare financing options in Nigeria, the health care system in many ways have not attained universal coverage while government's budget allocation to expenditure in the health sector have relatively increased but a slow rate. Public healthcare appropriation grew from 1.7 percent in 1991 to 5.6 percent of budget in 2014 (WHO, 2009; NHS, 2011). However, this is still below the international benchmark of 15% percent of total budget pledged by all African heads of government in April 2001, and disproportionately distributed across the health system with regional inequity in healthcare payments (Musango, Nabyong, Elovainio & Cheruiyot, 2013). In recent times, the growth rate in health expenditure has had negative values of 8% in 2009, 14% IN 2011 9 percent in 2013(WDI, 2014). It suffixes to say that the minimal growth rate of health expenditure is attributable to the low level of revenue generated within the economy.

A large body of evidence suggests that domestic resource mobilisation is essential for sustainable development goals (Culpeper and Bhushan; 2008,WHO;2002, Bhushan and Samy;2010) . In spite of this, domestic resource mobilisation in Nigeria has remained very slow, while quite a number of reviews have been done on domestic resource mobilisation on economic growth across Africa, (Wujung, Vukengkeng, Aziseh, Fozoh Isiah, 2015, Fakile, Adeniran Samuel; 2014, Culpeper and Bhushan, 2008). However, the interactive impact of

domestic resource mobilisation and health outcome in Nigeria has remained an unexamined issue in Nigerian reviewed literature. This study tends to examine the effect of domestic resource mobilisation on health outcome in Nigeria and also help in adding to Nigerian reviewed literature.

Most studies on health outcome (Fans and Saurkar (2008); Xu and Saksena (2011); Matthew, 2015) has focused on public expenditure, increasing taxation efficiency or setting minimum budget targets in favour of health without a consideration of necessary outlet to increase government revenue. The most predominant success of revenue generation in Nigeria is Oil and agriculture .Meanwhile, revenue generation has been fully dependent on oil exports in Nigeria which are subject to external shocks. One major cause of decline in domestic resource mobilisation in Nigeria is as a result of the neglect in the agricultural sector. Furthermore, the value of agricultural productivity has declined significantly with a spiral and downward falling value of -16 percent in 2009, -12percent in 2011,-96percent in 2012 and -44 percent in 2014(WDI, 2014). The neglect of the agricultural sector has led to a dwindling movement in the value of agricultural productivity which possesses a challenge to income in revenue generation in the economy and also adequate income for household (private sector). Researches have proven that the best alternative measures to boost revenue especially in developing countries will be via domestic resource mobilisation (Kaseje, 2006; Nwachukwu &Odigie 2009). However no consideration has been given to agriculture sector for mobilising domestic resource. Agricultural sector is a reliable source of domestic resource because government wants to diversify to the agricultural sector and in few years, government can potentially earn increasing tax revenues. Furthermore, agricultural activities are useful avenues for medical or pharmaceutical research and provide employment-thereby reducing unemployment and indirectly child mortality. This study focuses attention on how the anticipated increase agricultural productivity is a potential source of domestic resources that can be channelled to the health sector.

Furthermore, most studies failed to examine how private sector contributes to domestic resource mobilisation concentrating only on the public sector (Ogunleye and Fashina (2012), (Gupta et al., 2001, Gakidou and King (2000), Verhoeven and Tiongson ;1999). Another reason for such could be due to limited empirical research that shows linkages among domestic resources, health expenditure and health outcomes. This limits domestic resource mobilisation. As such, the study questions the relative importance of other domestic resource mobilisation channels for health care. For instance, if domestic resources are adequately

mobilised and more funds channelled to the health sector, would there be a marked improvement in healthcare indicators? This work, therefore, conceptualizes tax revenues from agricultural activities as domestic resource mobilisation for the health sector towards improving under-5 mortality rate (and perhaps other health outcomes).

1.3 Research Questions

1. How essential is domestic resource mobilisation in improving health outcomes in Nigeria?
2. To what extent does agriculture contribute to Domestic Resource Mobilisation in Nigeria?
3. Does Domestic Resource Mobilisation have a long-run relationship with health outcome in Nigeria?

1.4 Research Objectives

Objectives of the study

The primary objective of this research is to examine the effects of domestic resource mobilisation on health outcomes in Nigeria. The specific objectives are-

1. determine whether domestic resource mobilisation is essential for health outcome in Nigeria;
2. examine the extent to which agriculture contributes to domestic resource mobilisation.
3. investigate the long-run relationship between domestic resource mobilisation(tax revenue and agricultural productivity) and health outcome in Nigeria;

1.5 Research Hypotheses

The hypothesis tested in this research, is as follows;

Hypothesis One

H_0: Domestic Resource Mobilisation does not improve health outcomes in Nigeria

H_1: Domestic Resource Mobilisation improves health outcomes in Nigeria.

Hypothesis Two

H_0: Agriculture does not contribute to Domestic Resource Mobilisation in Nigeria

H_1: Agriculture contributes to Domestic Resource Mobilisation in Nigeria.

Hypothesis Three

H_0: There is no long-run relationship between Domestic Resource Mobilisation and Health outcomes in Nigeria

H_1: There is a long-run relationship between Domestic Resource Mobilisation and health outcome in Nigeria.

Where H_0 is the null hypothesis while H_1 is the alternative hypothesis

1.6   Significance of the study

Given the background of poor financing of healthcare in low-middle income countries like Nigeria, confronting widespread poverty, mobilising domestic resources is especially testing , which has driven developing countries to depend on external aid which has led developing countries to rely on foreign aid, foreign direct investment, export earnings and other external resources. The most fundamental reason for carrying out this study is that more prominent dependence on DRM is key to hoisting monetary development, reducing poverty and supporting sustained development. High-growth economies commonly spare 20-30 per cent or greater amount of their income with a specific end goal to finance public and private investment (Khan, 2007).

Therefore, this study will aid health policy analysts in interpreting and implementing health policies in the near future and also the benefit from the assessment of the capacity of the Nigerian government to increment budgetary allocation to the health sector and components that can oblige or improve this limit .There are macro-economic or fiscal factors such as revenue from oil, agriculture and tax which are associated with the capacity for increased government financing of health and its plausible effect on health sector performance, which this study will critically investigate. This study is justified since it provides an understanding of the influence of domestic resource mobilization on health sector performance in Nigeria.

This is the basis for greater focus on DRM which springs from the mission for sustainable growth, poverty reduction, and the need to create "policy space" for improved funding by the government towards health care in the country. This could influence the policy direction in the health sector which could improve health outcomes in the country while fostering macro-economic stability and fiscal sustainability.

It will also assist the government in re-organising its resources to the health sector because of their high propensity to human capital growth. Finally, it will add to existing literature, thus providing relevant information that could guide further research on the topic.

1.7 Scope of the study

The scope of this study covers from 1981 to 2015 making use of secondary data. The study is limited to under-five morality rate as a proxy for health outcome in Nigeria. This work does not cover all the facets that make up with domestic resource mobilisation, but focus only on agricultural productivity and tax revenue as a possible domestic resource channelled towards health outcome.

1.8 Methodology

This study makes use of annual time series data sourced from the Statistical Bulletin by Central Bank of Nigeria and the World Development Indicator by World Bank. The study adopts Augmented Dickey Fuller (ADF) unit root test, Engel and Granger Co-integration test, Vector Error correction Model (VECM) to estimate variables to analyse the Grossman model. The co-integration test is utilised to set-up the presence of a long run relationship among the various variables, the thought of cointegration emerged out of the worry about spurious or babble regressions in time series. The purpose of vector error correction model is to ascertain the speed of adjustment at which the dependent variables returns back to equilibrium when a shock occurs in the system as a result of a change in independent variable.

1.9 Study outline

This study comprises of six chapters outlined as follows; the first chapter covers the background to the study. The second chapter reviews literatures regarding the concepts and theories, empirical reviews; chapter three contains stylized facts while the fourth chapter consists of the methodology employed in the study. Furthermore, interpretation and analysis of results and discussions are in chapter five while is included in summary, conclusion and recommendation are in chapter six.

1.10 Definition of Terms

Health

With the end goal of this study, Health refers to the total condition of an individual's wellbeing taking into account the mortality aspect.

Health Outcome:

These are ups and downs in health resulting from procedures or investments in health care or mediations. Health outcomes/outputs incorporate a patient who has a heart attack at a point of death in a hospital which was avoided. Wellbeing results fuse; maintaining a strategic distance from death after a heart assault through in healing facility mind.

Life expectancy at birth:

This refers to the average number of years that a new-born could hope to live, on the off chance that he or she will be liable to the age-particular death rates of a given period (United Nations, 2007). This indicator measures how long another conceived child is supposed to live on an average, given current age-particular death rates. Life expectancy at birth can serve as a marker of mortality conditions and also substitute for health conditions. Life expectancy at birth can also be referred to as life expectancy of an adult. (WHO, 2015).

Maternal Mortality Rate (MMR):

Maternal mortality rate refers to the amount of women who passes on as a result of one pregnancy issue or the other, or inside 42 days end of pregnancy per 100,000 live births. MMR can be measured per 1000, 10,000, or 100,000. It is also a measure of the performance of the health sector (WHO, 2015).

Physician to population ratio (PPR):

Physician to population ratio refers to the density of healthcare professionals to the population (counting only physicians, nurses and mid-wives) to the population. It is measured by the total population divided by the amount of qualified and duly registered healthcare professionals. (World Health Organization, 2009). This is also refers to as physician density. The higher the ratio, the better for the health system; that is, a ratio of 10:100 is better than a ratio of 5:100.

Hospital Beds to Population (per 1,000 people)

The ratio of hospital bed to population includes patient beds accessible out in public, private, general and specialized clinics and rehabilitation centers in a country. It is measured as hospital beds per 1,000 persons.

Domestic Resource Mobilisation (DRM):

Domestic Resource Mobilisation is the deliberate efforts targeted at increasing revenues generated from domestic savings, taxes, remittances, and other sources, as well as, reducing capital flight in other to boost revenue generation (Ubi & Effiom, 2015)

Domestic Resource Mobilisation (DRM) means the creation of savings from domestic sources and channelling same to economically and socially beneficial ventures. Such resource creation can emanate from both the public and private sectors. The public sector does this through effective and efficient taxation and other different forms of public revenue generation, such as royalties, and excise duties. On the other hand, the private sector does so by reducing consumption, while at the same time increasing savings. (Culpeper, 2008).

Out-of-Pocket Health Expenditure (OOP):

This is any   immediate cost paid specifically by people, which consolidate tips and in-kind payments, to health workers and providers of pharmaceuticals, therapeutic appliances, and different merchandize and ventures whose essential aim is to add to the positive change of the health status of people. (WDI, 2015).

Health Expenditure:

Health expenditure is the amount spent by individuals, groups, private or public organization. (WHO, 2015)

Fiscal Space:

Fiscal space refers to the measure of chance government needs to control both their revenues and their expenditure. At the mid-path point for accomplishing the Sustainable Development Goals (SDGs), clearly meeting them will oblige governments to endeavour social spending that makes utilization of domestic resource(Nancy Dubosse ,2008).

CHAPTER TWO

LITERATURE REVIEW

2.1 Preamble

This section is a review of literature regarding the conceptual relationship, as well as, channels of transmission between DRM and health outcomes. It includes different theoretical explanations, empirical and methodologies of DRM in developed and developing economies.

2.2 Conceptual Issues

2.2.1   Domestic Resource Mobilisation (DRM)

DRM is a way of increasing revenue generated within the economy by the public sector (principally from tax collection) and the private sector(through private savings by households, domestic firms)[North-South Institute(NSI),2010]

DRM also has to do with the internal generation of private savings and investment by households, domestic firms, and governments. An opposed to assembling resources externally (through Foreign Direct Investment, Foreign Aid, Trade, and Debt relief), DRM offers the upsides of more noteworthy policy ownership domestically and greater coherence with domestic needs. It doesn't experience the ill effects of the disservices connected with FDI and outside aid (**Negative Influence on Exchange Rates, higher costs, political and economic stress)** setting the goals of investors and donors externally. Be that as it may, it additionally exhibits clear difficulties in poor nations, to which pulling in outer assets may appear like a less demanding choice. (Culpeper & Bhushan, 2008).

Culpeper and Bhushan(2008) in their study revealed that financial capital, human capital, social capital narrow down to natural resources produced domestically can be referred to as a domestic resource. Therefore, working population, mineral deposits, financial stock and other wealth of a nation can incorporates domestic resource.

Notwithstanding, this paper takes Domestic Resource Mobilization as the deliberate efforts focused at increasing revenues generated from domestic savings, taxes, remittances, and other sources, as well as, lessening capital flight in other to boost revenue generation (Ubi & Effiom, 2015). Their argument is that when capital flight is reduced to the barest minimum

and domestic resources are maximally mobilized, resources will be freed for investment in socially and economically beneficial sectors, including the health sector.

In fact, DRM is vital to Nigeria since it is a conceivably the greatest wellspring of long haul financing for sustainable development and it is an eternal way of governing a state which includes the provision of public goods and services like education, health, infrastructure etc. One vital advantage of DRM is that it strengthens the financial system since steady predictable revenue encourages fiscal planning in the long haul which can help guarantee resources designated to necessary outlets and are transformed into improved results.

2.2.2 Under-five Mortality Rate (UMR)

Under-five mortality rate (UMR) refers to the probability per 1,000 that a new born baby will pass on before approaching five years, if subject to age-particular death rates of the predefined year. Included is the aggregate demise rate, and passings by different sex. There are various measures for under-five mortality rate. It can be measured per 1000, 10,000, or even per 100,000 (WHO, 2015). It is one of the measures of health sector performance, being a health outcome.

2.2.3   Importance of Domestic Resource Mobilisation (DRM):

Nigeria which is categorized as a low- middle income countries; poverty, health, activating domestic resources is particularly a challenge. With all this challenge dealt with by developing countries, they run into the arms of aid, investment, export earnings and other resources sourced externally. All things considered, there are convincing motivations to give a great deal of more attention to DRM. The major explanation behind doing such is that more prominent dependence on DRM is imperative to lifting the growth of the economy, quickening poverty lessening and a continuous development. At least 20 -30 percent of their income is spared in most high growth economies keeping in mind the end goal to fund investment both from the public and private sector (Khan, 2007).

Moreover, it is said national possession is more compatible with DRM other than resources coming externally. Limits and restrictions come with the use of foreign aid. Foreign Direct Investment is suited to the business targets of the speculator, not the central advancement needs of the host nation. Second, compared to foreign assistance and export earnings or FDI, DRM is more liable. DRM is basic to household integration which involves reinforcing

economic linkages between domestic sectors (e.g. agrarian and non-agrarian) and regions (e.g. rural – urban) which can cultivate practical sustainable economic development.

Due to these components, DRM is essential to achieve sustainable development goals which can't be financed with the use of foreign aid. Therefore, DRM is a basic "stay" for every county who wants to be developed. Without a full concentration on DRM, other financial external factors such as aid, FDI, trade may have a negative influence on their development priorities, making it a more troublesome exercise to accomplish national objectives.

2.2.4 Issues Associated with Domestic Resource Mobilisation

Domestic resource mobilisation (DRM) has traditionally been a significant challenge for the developing countries (DCs) like Nigeria, notwithstanding the impact of the recent financial and economic crisis. As domestic resource mobilisation boils down to the generation of savings domestically and channelling them to lucrative investments, the brunt of domestic resource mobilization is essentially borne by the generation of government's tax revenues in excess of immediate government expenditures, and the mobilization of private savings of households and firms, all to be invested into the economy.

➢ **Low Savings**

One major challenge faced in Africa with mobilization of resource is that savings generated are low which is insufficient to encourage required investment. In African countries particularly, Nigeria has a low savings rates compared to that of Asia. According to World bank,2015, in sub-Saharan Africa, the gross domestic savings in 2014 was measured at 17.51% of GDP which was compared to South Asia of about 26% and in East Asia about 45% as well as Pacific countries. The low level of financial movement in the region in the sub-Saharan Africa is due to the little saving rate which leads to slow pace of growth. The low level of financial credit and intermediation which are the different components on the continent with the fact that African savings invested is more than 40% outside Africa.

➢ **Capital Flight**

One of the issues associated with domestic resource mobilisation in most African countries including Nigeria is the capital flight which has remained a hindrance to DRM. Estimate has it that in developing countries, capital flight has been higher than the aggregate inflows from development assistance; it undermines social contracts and harms good governance in

developing economies like Nigeria dwindling DRM. According to the United Nations Conference on Trade and Development (UNCTAD) in 2007, Capital flight created significant harm since African investments worldwide were worth US$400 billion which doubled the whole debt in Africa worth US$215billion. Similarly, a study led in 2015 by Leonce Ndikumana in University of Massachusetts in USA of Economics and Political Economy Research Institute Department, uncovered that capital flight from a sample of 39 African countries bounced to $511 billion within a ten year period of 2000-2010 from $230 billion in the previous decade. (Ndikumana, 2015).

➢ **Large Untaxed Informal Economy**

In developing countries like Nigeria which have an extensive informal economy which is below taxed or totally untaxed. Africa's informal sector has remained a significant wellspring of employment accounting in sub-Saharan African and North Africa 70% and 62% respectively (AFDB, 2013).Job creation and value addition that has driven the informal sector is strengthen, which has risen to about eighty percent in the labour force and also led to the growth of fifty-five percent of the gross domestic product in sub-Saharan Africa (AU,2011) Asian countries and central and South American countries of about 30% and 43% respectively. These information demonstrate that by and large the level of tax avoidance because of the causal part in developing economies is twice of developed nations

Another challenge of large informal sector is as a result of tax spillage which in developing nation is regularly exacerbated by poor working tax authorities as a result of assortment of reasons; under-resourced or unskilled directors, weak tax collection systems, poor legal enforcement legitimate implementation for tax collection and little punishment or fine for non-payment. These factors make open doors for domestic and foreign bodies to misuse the system since tax authorities as often as possible don't have the required specialized abilities to solve problems regarding financial structures that are being used to discharge tax assessment.

➢ **Weak Administrative Systems and Organizational Capacities**

The widespread of informal activities has led to weak administrative systems, scarce and low quality data/information. Inadequate reporting and high illiteracy rate in the overall population and apparently a culture of rebelliousness which is as result of poor DRM. There is an issue of hierarchical limit and resourcing where workers in most tax office in Nigeria do

not have the imperative ability to perform proficiently. Resources to pay adequate wages are not accessible in the private sector. Communication capacity is limited and the fund to buy apparatus and facilities important to encourage effective labour is likewise not accessible. With the low mail service it is difficult to have an effective tax administration. Automation of business procedures is practically limited to few territories.

2.2.5   The Nigeria Health Sector

Nigeria is comprised of no less than 250 phonetic groups (which some depict as ethnic groups), of which 3 are vital groups including more than 60% of the aggregate populace. Although these groups share regular significant full scale culture and large scale customs, each advanced its own particular miniaturized scale culture and smaller scale conventions because of winning natural conditions. Traditional medicine and mending constituted part of the micro cultural advancement.

A development plan for ten years from 1946-1956 was propounded to positively change medicinal services conveyance and this took place before Nigeria became independent in 1960.This plan led to the creation of few health training centres and creation of the ministry of health. By the 1980s, there had been incredible improvement in medicinal services, general doctor's facilities and more than 10,000 of other health centers was already established.

In the year 1987 precisely august, the federal government set-up a primary health care strategy and its major objectives to improve and monitor health data collection, adequate drug availability, better health care personnel, better programs for immunization, better epidemic illness treatment, improve food supply and quality as well as better nutrition, better attention for maternal and infants and family planning, awareness and techniques for preventing and controlling health issues.

However, the set-up in 2005 by decree 35 0f 1999 of the Nigeria Health Insurance Scheme(NHIS) was as a result of efforts made by the government to restore a better health condition, accommodated by the foundation of a governing council that can handle the scheme. The destinations of the plan were to; Guarantee each citizen has entry to great health care services, shield people from the money related weight of hospital expenses, services Constrain the ascent in the expense of health care services, Guarantee effectiveness, Guarantee an equal health expense among various salary bunches; Keep up elevated expectation of health care conveyance services within the scheme, Improve and harness private sector participation in the provision of health care services. Moreover, the program

was followed through with only two states after nine years of start-up. In order to expand the amount of states participating in this program endeavours and techniques were carried out to bring both the informal and formal sector to utilize the program. With the hope that this event is achieved, the importance of the creation of NHIS in order to achieve universal coverage can then be accomplished.

The millennium development goals (MDGs) propounded in October 2008 by the NHIS likewise announced minimal constructive outcome a year later. Thus, the Nigerian economy has stayed immature and the personal satisfaction of the normal subject has coarsened continuously with developing quantities of residents beneath the basic destitution level. The gradual expansion of life expectancy to a level of fifty-three years in Nigeria was accomplished; the male and female life expectancy in 1999 was 48.2 and 46.8 years respectively. The United Nations in 2001 revealed that 38.3 and 38.1 years should a male and female life expectancy respectively. Once more, the increment of infant mortality rate for each 1000 live births in 1990 was 91 passings and increased to 105 passings in the year 1999.This was also in the case of under-five mortality rate in the year 1990 and 1999, where it was 157 and 178 passings for each 100 are best gauges. There is extremely bad conceptive wellbeing circumstance in Nigeria. In 1999, 8.6 and 37 percent was for preventive persuasiveness rate and delivery in medical centres respectively and these was from advanced family arranging. Despite the fact of awareness in Nigeria, the high rate of maternal passings is very striking on the planet as well as the occurrence of contamination through sex is worrisome. The status of immature conceptive wellbeing is poor with an early start sexually; abnormal sexual state of hazardous practices and good quality administration access is absent. Major cases in Nigeria, at the age of eighteen, numerous young ladies are given out forcefully for various unsafe sexual and nonsexual practices without their approval. These incorporate battering by their life partner, female genital cutting and custom and tradition of the husband's village when they become widows (Anyanwu, et al., 2007).

In spite of the solid contention for a National Health Insurance scheme. The Nigerian health sector couldn't be said to perform well when taken a gander at from any point and since it includes the lives of people in the nation this sector ought to be given more thought by the administration both the public and private sector and its kin (Yesufu, 2000)

2.2.6 Domestic Resource Mobilization and Healthcare Financing

This sector surveys health expenditure approach in low- and middle-income countries (LMICs). It talks about the cost of health, the essential elements of health financing systems and the different instruments for effective revenue collection, pooling of resources, and purchase of interventions, challenges to health care financing in Nigeria.

2.2.6.1 The Costs of Health

In 2001, African Union heads of states in the Abuja signed a declaration where they made a promise to at least 15 percent of their yearly budgets be given to the health sector by 2015. (WHO, 2015) However, none of those countries has achieved this target, yet significant progress has been made within domestic financing efforts. In fact, between 2006 and 2011, domestic spending on AIDS, Tuberculosis (TB) and malaria doubled (WHO, 2013), bringing some African countries closer to reaching the Abuja target. However, not enough is being done currently to mobilize domestic resources. Many countries, especially those with the heaviest disease burden like Nigeria, are unable to fund their responses to AIDS, TB and malaria without international support (WHO, 2013) commitment

A portion of the components that influence the health system general performance in Nigeria; health facilities are poor, low level of human resource administration, absence of reasonable and maintainable social insurance, poor compensation and inspiration, defilement, lack of education, as well as nonappearance of coordinated framework for ailment aversion, insufficient instruments for families to get to medicinal services, deficiency of fundamental medications and supplies and insufficient supervision of human services suppliers are among a portion of the determined issues of the wellbeing framework in Nigeria.

2.2.6.2 Challenges to Healthcare Financing in Nigeria

For quite a long time, sub-Sahara Africa is comprehensively known for weak poor health status of an extensive rate of people. However, African's health care emergence has gotten restored thought in light of more conspicuous nature over the past decade with influencing variables and a more noteworthy comprehension of the connection amongst health and economic development   (Lowel et al, 2010).

1. **Poor Laboratory Facilities and Equipment**

In Nigeria, a large portion of the medical laboratories both at the primary and auxiliary health centers need to improve their medical facility to give a secure and suitable workplace for staff and consumers. Some essential health center laboratories in some states in Nigeria are better equipped than others but yet the equipment is frequently negligible. Also, the low rate of qualified staff in the primary health care has led to no minimal quality control of laboratory since they need suitable expert supervision.

2. **Insufficient Essential Infrastructure and Equipment**

In most low-income and middle health system, essential life-saving products are hard to come by. This is to a limited extent, a result of resource deficiencies, at the same time, there are still issues notwithstanding when considerable increment in subsidizing are accessible, on account of Global fund to battle AIDS, Tuberculosis and Malaria. A successful and responsible national acquisition and medication administration framework is an expanding segment for the agenda action of health system. The accessibility of standard supplies of drugs and facilities is one of the keys to a good health services. The health care system in Nigeria, especially at the primary health care level lack maintenance in health facilities and lack the necessary infrastructure, for example, buildings, materials, electricity, delivery of medicated drugs and biased appropriation of accessible offices is the standard in many spots

In some state in Nigeria, especially in the rural area, where the hospitals are far and mostly cited in political expediency, individuals head out or travel more than 5 kilometres to get health services. The out-of- stock syndrome is one issue tormented in the drug system. Across Nigeria, fake, expensive drugs due to importation become the story of the day. This poor medication supply framework has likewise prompted tranquilize resistance, the imperviousness to hostile to jungle fever sedates by the infection pathogens is clear case, (HERFON, 2006; FMoH, 2004; Travis et al, 2004).

3. **Low Level of Human Resources and Management**

The Nigeria society has been categorized to have weak human resources and management, for example scarce and inequitable distribution of health workers at various levels in Nigeria, especially in remote part of Nigeria. The provider-client relationship is also weak, while motivation and compensation for health staff are getting worse leading to a brain drain syndrome and also the rejection of health personnel to accept being posted to remote

or rural areas. For there to be an effective health system, health workers should be give sponsored to enhance their skills as well as rewarded for example, sending them on an expense paid vacation trip, this could improve productivity and the zeal of workers to do a better job, enhancing health outcomes.

4. Insufficient Remuneration and incentives

Nigeria has been known over the years to possess low level of remuneration and motivation of health workers and this has led to brain drain in the health sector such that more than 21000 of Nigerian health workers, for example doctors and nurses, travel abroad to practice because of the advantage and opportunity they have over. The reason for this migration is as a result of the meager salaries which are about 75% lower than that of a health worker in most part of the world even in Eastern Europe, working insecure areas with little or no security with heavy workloads but also lack the basic resource to carry out their duties. The health workers in Nigeria complain of "brain waste" because of the little or no chance of improving their career and skills, therefore, these doctors go as far as travelling to a farther countries because of better chances for professional development, including better and sufficient medical infrastructure. According to Lambo, 2006, who identified that Nigeria has majority of exporting health-staff compared to other countries in Africa such that legally migrated nurses of about 432 work in the united kingdom between April 2001 and March 2002 out of a sum of 2000 African nurses who emigrated, this is a threat perceived by the Nigerian government in achieving a sustainable health care delivery.

5. Widespread Corruption

The high corruption rate in Nigeria, has not only manifested to other sector but also in the health sector, this has led to the distribution of fake drugs, poor equipment, embezzling of budget funds that's meant to be channelled to the health sector, expensive and diversion of medications, partiality treatment and schedules in view of people's prestige or political support. A few cases happened in 2008, the Canadian government through its respective help transferred vitamin A supplement and it's presently found in most nomad pharmacy's across states (UNICEF, 2007). In 2008, Adenike Grange (a former minister of health) was dismissed as a result of her involvement in the embezzlement of ₦300 millions fund for the health sector. In fact corruption is not only bad but also denies and destabilize the general public and the health sector especially fundamentally required funds and resources (Thisday, 2008). In fact, the world bank in 2006 identified that as a result of high

corruption rate in Nigeria, Nigeria has lost about £225 billion from the period of 1990-2005 while the Nigeria's debt management office (DMO) likewise demonstrated that US$300 billion was squandered amid the period (World bank,2006;DMO,2006).

Given the widespread of corruption in Nigeria, the outcome of corruption for both the public and private sector involves real enthusiasm to health experts and researchers. Some opinions concerning the widespread of corruption in most African countries have proposed that corruption should be attended to as an ailment that harrows the African's condition.

6. **High household Spending on Health**

Low government spending and resources dedicated to the health sector is low which led to the high out-of pocket health expenditure which has worsened the unfavourable economic state of the poor people. In 2004, the Nigeria living standard survey (NLSS) did a research on household health expenditure and gathered data of about 19,159 households from a representative sample. The average annual per capita out-of-pocket spending on health estimated in Naira was about 2,999 which is around US$22.50. The overview assessment showed that 8.7 % accounts for total private spending on health care which combines transportation to hospitals, consumption on outpatient care.

The household expenditure has one of the biggest shares or portion of health expenditure in developing countries including Nigeria.

Household spending as a proportion of private health expenditure (PHE) was 95.7 percent in 2010 and 2011, fell to 95.5 percent in 2012 and rose to 95.8 percent in 2013 (WDI, 2014). Also, Out-of-pocket health expenditure as a part of health expenditure in total (THE) was 70.4 percent in 2010, fell to 65.9 percent and 63.9 percent and in 2011and 2012 respectively but rose to 69.3 percent in 2013 (WDI, 2014). This reveals that in Nigeria, the highest weight on health expenditure comes from the household.

7. **Absenteeism of medical system.**

The issue of low performance of medical system has led to a weak prevention, survey and cure of illness leading to a great influence in health awareness and promotion and sickness aversion exercises intended to contact the general population where they are located. This has brought about low immunization coverage mostly in rural areas, pre-natal care screening. The public health is now in a latent mode, with little or no movement intended to inspire individuals to change their conduct or to embrace states of mind that lessen their hazards to

sickness. The outcome of this challenge is that numerous children are yet not immunized, expectant mothers don't get the pre-natal care they require, aged men and women don't have the customary screening they require to check their blood sugar level and cholesterol, for breast and cervical cancer. In Africa, at the point when experts in health refer to low incidence rate for cancer, they overlook that what is not screened for is not announced; no big surprise as to why the revealed occurrence and frequency rate reported is low, this is as a result of low screening rates for cancer, diabetes, hypertension and other incessant and transferable diseases.

2.2.6.3 Global Health Spending Gaps

Several studies revealed that there is an increasing global health spending gap between developed and developing countries. In various developed countries, there have been dramatic increases in government expenditure on health. The current global expenditure on health is estimated to be about $4.1 trillion while the OECD countries account for about 80 percent of this amount. The United States spends 14.6% of GDP on health with a per capita health expenditure of US$ 8,000. Public health expenditure per person in Norway is US$ 4,508. Germany spends about 10.9 percent of its GDP on health while France spends 9.7 percent of its GDP on health. Canada, Australia and Sweden spend 9.6 percent, 9.5 percent and 9.2 percent, respectively, of their GDP on health (Ichoku & Okoli, 2015). The high proportions of total income of developed countries to health contrast sharply with the situation in LICs particularly in Sub-Saharan Africa (SSA). For example Burundi with US$0.70 has the lowest public expenditure per capita in the world. The annual total government expenditure on health in Republic of Benin is US$ 86 million or US$10.5 per capita (Ichoku & Okoli, 2015).

This revealed that many African countries devote meager percentage of their income to health and these accounts for the dismal health profiles in these countries. WHO (2006) also estimates that the global total per capita expenditure is US$ 63 but there are 64 countries (most of these are SSA countries) where annual per capital expenditure on health is less than US$ 50.15 Yet recent studies also show that low income countries (LIC) account for 59.2 percent of total global Disability Adjusted Life Years (DALYs) lost as against 7.9 percent lost by high income countries indicating possible high level of correlation between expenditure on health and burden of disease (Ichoku & Okoli, 2015). The correlation between a country's health expenditure and life health outcomes has also been established in literature.

For example, Obrizan and Wehby (2012) show that a country's health expenditure is related to its life expectancy outcome particularly for countries with low levels of life expectancy.

The health sector is generally poorly funded in many low income countries (LIC). Several multilateral and regional organizations often stipulate minimum benchmarks for the funding of the health sector for countries but these are in reality hardly ever met in SSA countries. For example, the Macroeconomic Commission on Health (2001) stipulated that LIC should spend a minimum of 2% of their GDP on funding of their health sector but most LICs hardly ever meet this minimum benchmark. WHO (2006) estimates that at least USD35-USD 50 should be put aside yearly for each person's basic upkeep. Yet most SSA countries are far from meeting this benchmark. Similarly, the Abuja Declaration requires SSA countries to devote a part of the yearly budget at least fifteen percent to fund the health sector. Fourteen years after the Abuja Declaration, no sub-Saharan African country has met this minimum benchmark. At the global level it was estimated in 2005 that only $280 billion of global health expenditure of $2.5 trillion is spent in middle- and low-income countries. Developing countries have annual health expenditure shortfall of between $30 billion and $60 billion (Preker, Carrin, Dror, Jakab, Hsiao & Arhin-Tenkorang, 2004). The key goal for this research is to look into the potentials for increasing the fiscal space for health financing in Nigeria not only to meet the requirements of international declarations on health financing but more importantly to meeting the increasing health needs of the population. This is particularly important as the health profile of the country has been of concern not only to the citizens but also to the international community. The Nigerian health indicators are in several dimensions below the African average. If Nigeria is to meet up with even African average health indicators, then there is compelling need to increase investment on health above the current rate. Furthermore, there are indicators that the health needs of the country are likely to grow in the future and therefore requiring increased investment. Yet it is also realized that health financing is low on the scale of politicians in the country, requiring therefore increased pressure and advocacy to increase resources to the health sector.

2.3   Theoretical Review

In light of the theory, life cycle hypothesis (Modiglani, 1988; Kotlikoff, 1988) Grossman (1972), have created models in which domestic resource mobilisation is viewed as a significant variable for health outcome. Different propositions identifying with the issue of domestic resource mobilisation and health outcome are presented here.

2.3.1 Grossman theory

Grossman built up a model in 1972 in the interest for human services that was worried with the way by which individual resources are distributed to produce health and also has the idea that individuals are not only consumers but also makers of health. The model likewise has putting resources into human capital which comprises of health and education. Health here is viewed as a capital good that can devaluate at a non-constant rate.

The role of variables, for example age, income and education on the demand for health care was perceived as ageing raises the deterioration rate consequently expanding the cost or cost of human capital making individuals lessen the demand for health care but the demand for health care can also increase due to the inelastic demand curve for health. Education plays a fitting part in contributing to the efficiency of human capital which raises the demand for health care furthermore the health stock since better educated persons demand more health care because of the presence of information, knowledge and awareness about the value. Income likewise builds the capacity of an individual to demand for health care as they have more resources to dedicate to healthcare and other activities

Some key assumptions to this model are:
  i. Individuals value their health however their conduct does not demonstrate that they have it over each other thing else if not, they would not smoke excessively, drive too fast or drink excessively.
 ii. The second assumption is that individuals have constrained income to finance both health and other goods or activities.
iii. The third assumption is that individuals have much control over their health as they can impact their method of utilization, the way they use their health and their surroundings.

Grossman's model on the demand for health also viewed health demand comprises of two components which are the consumption and investment effects. The consumption effects has an immediate impact or satisfaction and are for the most part fleeting in nature one may eat good food just to feel better and healthier while the investment effect has a long term effect or an indirect utility for example one may take part in good exercise just for increased life span.

Matthew, Adegboye and Fasina(2014) analysed spending on health and its impact on health outcomes in Nigeria. It was seen that several factors such as air contamination,

hospitals, availability of satisfactory medications among others were recognised as being imperative in determining a better health outcomes in Nigeria. This proved the Grossman health production functions holds true for the lifetime investment in health in Nigeria. Lalitagauri (2015) in his study Health Inputs, Health Outcomes and Public Health Expenditure: Evidence from the BRICS Countries utilizing the Grossman model, as seen by Grigoli and Kapsoli (2013), just expanding public expenditure in the health sector, may not essentially influence health outcomes if the effectiveness of this spending is poor. The outcomes proposed that African economies have the most reduced productivity. At current spending levels, they could support life expectancy up to about five years in the event that they took after prescribed procedures.

As indicated by Dolan (2003) some of the criticisms of the model include the assumption that health care is a consistent life time investment, the insurance markets were not recognised, perfect information is assumed on the part of consumers about the MEC (marginal efficiency of capital) of health care, depreciation and interest rate now and later on and it is likewise deterministic by getting the decision of when to die.

2.3.2 Harrod-Domar Growth Model

It was propounded in the year 1939 and 1946 by Roy F.Harrod and Evsey Domar respectively; regardless an equivalent model had been proposed by Gustav Cassel in 1946. The model was from an initial post-Keynesian model of economic growth.

The model concentrates on enhancing financial matters to clear up economy growth rate similar to savings level and efficiency of capital. The model prescribes that an economy has no trademark reason behind balanced growth. The exogenous growth model was pioneered by this model. Both profounder are keen on finding continuous working of the economy (Jhingan, 2007). It was expressed in this model that savings total are coordinated with investment. The rate of growth any economy is subject to two imperative elements which are the rate of savings and capital-output ratio of the economy.

 Some assumptions of the Harrod-Domar model are as follows;

> ➢ The level of savings in the economy is equivalent to the level of investment put into the system.
> ➢ Full utilization of capital stock in the economy.
> ➢ Absence of government intervention (closed economy).

The fundamental equation of Domar's model is given by

$$\Delta I(I/\alpha) = Ir \quad that\ is \quad \Delta I/I = \alpha r$$

Where;

ΔI is the change in rate

α is marginal productivity to save

r is productivity rate of capital

The equation uncovers that there is full job creation, high expansion of net autonomous investment." $\Delta I/I$ must be .equal to "αr" i.e., marginal propensity to save multiplies the productivity rate of capita. This is describes the amount at which full job creation must reach a certain growth rate that guarantees the utilization of potential capacity keeping in mind the development of investment.

The initial essential Equation in the model for Harrodian is GC equals S. Where the rate of output the given period of time stands for G and can be expended as $\Delta Y/Y$. while the capital net addition is C i.e. $V\Delta Y$ and the propensity to save averagely i.e. S/Y. Putting these ratios in the equation above;

$$\frac{\Delta Y}{Y} x \frac{I}{\Delta Y} = \frac{S}{Y} \ or \ \frac{I}{Y} = \frac{S}{Y} \quad I=S$$

In the Harrod growth model, the supply of goods and services including demand will always remain at equilibrium that is when the producers will be content with what they are carrying out, given the propensity to save. One major challenge of the model above making its application in a sort of way mostly not used is to a great extent based on its improbable assumptions. By the by, its system incorporates a form of domestic resources which is savings and can be channelled to achieve economic growth. In as much as this model considered savings as an element of domestic resource, it is said that there other ways economic growth can be enhanced using other components of domestic resource

Wujung, Vukengkeng, Aziseh, Fozoh Isiah Andrew (2015) in the study "Assessing the effect of domestic resource mobilization on the economic growth of Cameroon" emphasizes that Growth models underlines capital accumulation hold that higher savings rates ought to cultivate growth on the grounds that higher savings suggest higher capital investment. In fact, the model, the gross domestic product was connected significantly with propensity to save averagely. Accordingly, the increase in the rate of gross domestic product is a result of more savings or investment in any nation. For sure, it is considered that accumulated savings can be considered as the component of financial stock which assume a vital part in making job creation

.

2.3.3 The Solow Neoclassical Growth Model

A typical representation of the neoclassical ideology on growth is the well-known Solow growth model by Robert Solow (1956). It developed the Harrod-Dormar formulation by including labour and technology which the author thought to be an independent variable to the growth equation (and that, its progress is determined exogenously). A cobb-douglas production function was adopted in his model which is categorized by constant returns to scale in his assumption.

Production function at any time t is:

$$Q = A \, K^a \, L^b$$

where;

Y = total output in the economy,

K = the available capital,

L = labour and

A = the productivity of labour (also technological progress).

The model infers that economies will restrictively unite to a similar level of income in the event that they have similar rates of savings, devaluation, work drive development and productivity growth. The Solow growth model is a change made out of the Harrod-Domar growth model as it takes into account substitution amongst capital and labour supposing that there are diminishing returns to these inputs

Also, the long run rate of growth is exogenously determined. Xi Liu Wisdom. C. Peters (2012) had a significant impact after adding human capital as a variable on economic growth and this was an improvement on the Solow growth model. This was also found in the works of (Rico et al., 2005) and (Bloom et al., 2004) used the Solow growth model with human capital added to it.

Some of the criticisms of the Solow neoclassical growth model include: lack of strong empirical support for the model as it has been observed that developed economies have grown faster than developing countries and this contradicts the convergence expectation except for exceptional countries like Japan that appear to have

converged with developed economies, failure to take account of innovation or entrepreneurship and the strength of institutions which helps in driving growth. It also does not explain how or why technological progress occurs.

2.3.4 Life Cycle Hypothesis (LIH)

The life-cycle hypothesis theory explains that the amount of lifetime income depends on the consumption pattern of individuals in every period. It has similar traits like the permanent income model. The model assumes that consumption does not rely upon present or recent income but instead on present estimation of income or riches. It was propounded by Albert Ando and Franco Modigliani.

Nwachukwu and Egwaikhide (2007) proposed that the model's primary assumption is that an individual exploits his present value of lifetime consumption as a result of his budget constraint. They uncovered that the current net worth including work's present value of expected income over the remaining working life of a person all equates the budget constraint. The profounder believed that the decisions that an individual's endeavour to equally share out their utility over their lifetime so that savings are made not to be as a result of their income but from earnings of a total lifetime and also earnings cycle stage that can be gotten. Deaton, 1990 in his study revealed that a person's choice of lifetime ability to consume and save has to do with his value of present consumption equivalent to his vale of present earning and inheritance of a lifetime.

This theory is applied in health economics since contribution made towards life expectancy is made by the total rate of savings influenced by each person's level of savings (Kageyama, 2003). The death rate of an overall population reflects the life expectancy at birth. It gives a brief summary of the event of passings that occur in all age groups in children and adolescents, adult and the aged in a given year. The high rate of household expense on health is at an increase day by day compared to the value of payments on pension in most countries, Nigeria is not exempted, in cases like this it is expected there will be little or no savings after retirement. At a point in time the value of their pension may be too low to pay for the health care services among the aged population since the increase in health price and long-term care expenditure are bound to occur.

Theoretically, as has been debated between Modiglani (1988) and Kotlikoff (1988) that uncertainty of lifetime or highly probability of death (that is life expectancy at birth) and

bequest motives are suspected as the prime reasons for this low dissaving behaviour. Kageyama (2003) in a cross-country study of 126 economies found empirically evidence that increase in life expectancy has positive effect on various saving rate.

Given the variation of span of an operator's life as a result of their income, the behaviour of savings is a critical variable to achieve a phase in lifecycle. Hence, in order to cover utilization in his lifetime, an individual has to save more in his youthful age and a net borrower in his old age (Modigliani, 1986). The LIH stresses the heaviness of the age dispersion of family units in savings decision. The ratio of savings is seen to be conversely identified with the dependency rates. The dependency rate is accepted to fall between 0-14 and 65 and above

Conclusively, according to World Development Indicators (2015), the proposition of out-of –pocket expense is over two-third of the aggregate health expenditure in Nigeria which is usually incurred by the adult in the population that make savings decision. Therefore, life cycle hypothesis is inappropriate for assessing the effect of domestic resource mobilisation on selected health outcome (including life expectancy at birth).

2.4   Empirical Review

Diverse results have been gotten from a few takes on domestic resource mobilisation and health outcome utilising various health indices for example, life expectancy, maternal mortality, under 5 mortality and others at different levels and utilizing distinctive techniques consequently, this section gives a review of these works.

Studies on expenditure on health as well as the performance of the health sector which is normally measured by health status uncover that poor and rich countries differences in health outcomes is differentiated by the amount of public expenditure on health
Cyprus (2015) fundamentally assesses domestic resource mobilization in Caribbean district. The study employed descriptive analysis and found that tax revenues represent the most significant source of development financing for most developing countries including Caribbean developing countries and by far the largest component of domestic resource mobilisation.

Amusa, Monkam & Viegi (2015) evaluate in Nigeria the non-resource tax revenues and examined if aid sourced externally can improve domestic resource mobilisation using an

empirical perspective. The GMM technique was adopted using secondary time series data from 1980-2013. The study found out that the most effective tool for enhancing domestic resource mobilisation is by the use of external aid in the form of loans. Also, Fakile, Adegbie and Faboyede (2014) assessed how domestic resources can be mobilised for sustainable development in Africa. The study employed descriptive method of analysis. They found that domestic resource mobilisation could be an antitoxin to help aid reliance in developing countries which provides fiscal reliance and sustainability that is expected to promote growth. It was revealed that the two objectives looked out for by developing countries in domestic resource mobilisation are predictable and sustainable financing from one view and a decrease in long-term aid reliance

Wujung, Vukengkeng, Fozoh (2015) in his study in Cameroon looks at how well domestic resource mobilisation can influence economic growth. The study revealed that despite the zeal to enhance domestic resource mobilisation in Cameroon yet the growth rate of the economy does not appear to develop at the similar rate. An empirical investigation is done utilising information from the year 1980-2013 gotten from the 2014 world development indicator from World Bank. A descriptive statistics was adopted and an Instrumental Variable Generalised Methods of Moments (IVGMM) for regression analysis. It was concluded that the a number of element of domestic resources positively and significantly influence the growth of the economy in Cameroon

Matthew, Adegboye and Fagbeminiyi. (2014) then again analysed in Nigeria, public health expenditure and health outcomes to find out if there's a relationship. The review takes a gander at government spending on wellbeing and its impact on wellbeing results in Nigeria This review made utilization of co-integration by Johansen and the Vector Error Correction Model (VECM) econometric system to decide the long and short run association between public spending on wellbeing and wellbeing results in Nigeria. The review discovered that health spent publically on health has a noteworthy association with health outcome/wellbeing results in Nigeria. It was additionally found that natural variables, for example, carbon dioxide discharges which was utilized as a part of this review influences people's health.

Batyra (2012) on the other hand examine the challenges in domestic resource mobilisation in the Less Developed Countries. The study attempted to portray the challenges that Less Developed Countries (LDCs) face when mobilising resources for development domestically, both in terms of private savings and public revenue. The author employed an exploratory

review of literature and descriptive analysis. The study concludes that challenges to domestic resource mobilisation in LDC are unquestionably significant. While LDCs financing needs are unlikely to be met in a near future entirely by domestic resources, protracted reliance on external finance poses dangers that take form of volatility, unpredictability and economic and political dependence.

Ogunleye and Fashina (2012) evaluate that post-crisis recovery and the growth in sub-Saharan Africa (SSA) can be sustained through the important use of domestic resource mobilisation. The research emphasised the range of issues encompassing in the SSA and the reason why there's need for DRM. Arellano-Bond GMM technique on a panel of 38 SSA countries was adopted. The result showed that savings and investment end are the main factors of DRM that contribute positively to the growth of the economy while all tax revenue variables considered has no influence. It was suggested that there's a need for enhancing DRM Procedure. Kagina (2012) looking at the importance of aid sourced externally for DRM in some African countries such as Ghana, South Africa, Tanzania, Uganda and Zambia.

The tax administration in Ghana has relied on long-term support from donors for example the implementation of the automated systems for customs data (ASYCUDA) presented by the customs, excise and preventive service (CEPS) by the United Nations (UN) to a partnership jointly made between the Harvard institute of development and in 1989 a visibility study on Value Added Tax (VAT) by the five crown agent of the United Kingdom

Culpeper (2008) examined the reasons behind enhancing domestic resource mobilisation stabilisation. A study focusing on 70 developing and transition economies in Gupta. The paper employed exploratory review of literature. The paper conclude that trade-offs and interrelations with financing using various elements should be acknowledged and accommodated in a way predictable with every nation's objectives and needs as a result of the importance of DRM.

Likewise Bokhari (2006) using an econometric proof connecting a nation's capita pay (gross domestic product per capita (gdppc) to two health outcomes: under-five and maternal death rate. Their discoveries demonstrate that, the versatility of death rate among children under the age of five ranges from - 0.25 to - 0.42 with a -0.50 mean estimation. As per the creators, for developing nations, the outcome suggests that while economic growth is positively a critical giver to health outcome, an essential variable on health is government spending.

Bloom, Canning and Graham (2003), the study incorporate health and longevity to a standard model of life-cycle using panel data of 68 countries covering period from 1960 to 1997. They found that at every age, the rise in level of savings is as a result of an increase life expectancy even at retirement. Similarly, Lee, Mason and Miller (2000) asserted in the East Asia region that the motive for the flow in savings is due to speedy improvement in life expectancy. Kageyama (2003) examine the effects of savings of a continuous raise in life expectancy on the level of savings in a cross-country study of 126 economies (including Nigeria) using Ordinary Least Square regression techniques. The study concluded that raising life expectancy at birth has a direct result on various saving rates in most of the economies studies.

Baldacci et al. (2003) and Gupta et al. (2002) is his study uncovered that one primary component for results in health and education is social spending. These studies find that the impact of social spending on human development pointers is into more of cross-sectional cases than when the time measurement is likewise included. It was discovered that education spending greatly affects social markers than health expenses. The beneficial outcome of social spending on social markers is likewise upheld by Anand and Ravallion (1993), Hojman (1996), and Bidani and Ravallion (1997). Gupta et al. (2003) likewise locate constructive connection between public expenditure on health care and the health status of destitute individuals.

Verhoeven and Tiongson (2001) in his study compared health care spending between countries of the rich and the non-rich and it was concluded that the non-rich are firmly influenced by health care in examination of the rich and that the distinction in the effect of spending between the rich and the non- rich people could be significant. In the review by Gakidou and King (2000), health expenditures per capita and health imbalance, among different factors were observed to be adversely related. The impact of public spending on health is generally ascertained by health outcome indices, for example infant or under-five death as well as life expectancy and this has indices has been examined by several scholars. While some studies did not discover any backing that support health expenditure in death rate, others uncover that spending on health care has gainful results as far as lessening infant and under-five passings.

Anand and Ravallion (1993) in his study in 1985 used 22 developing countries making use of cross-sectional data discovered that health expenditure is an essential factor that boost life

expectancy. In a World Bank study in 1995 done on Philippines agreed with Anand and Ravallion study, also revealed that public health expenditure added to the lessening in infant death rates in the poorer areas in Philippines, yet not in the wealthier districts. In the fifty developing countries included in the review, Gupta, Verhoeven and Tiongson (1999) discovered confirmation empirically to bolster that more prominent public spending diminished child death rate. In a further study by these authors (Gupta et al., 2001) identifying with public health care spending for a bigger sample using 70 developing nations, discovered some evidence that a reduction in child mortality is as a result of health expenditure. Hojman's (1996) in his research including Central American and Caribbean countries uncovered a factually huge impact on health status is through public health spending. The study done in 1997 by Bidani and Ravallion additionally located that public spending has a useful effect on non-wealthy people health state.

However, some other studies did not discover any measurably inconsequential backings for expenditure on health lessening the amount of death. Studies like Kim and Moody (1992) and Musgrave (1996) found that the effect of public spending on health status using indices like infant and child mortality rate was statistically. Le Grand (1987) discovered health inequality and share of public spending in health had a feeble an adverse association. Filmer, Hammer and Pritchett (1998) endeavoured to address the distributing health sector challenge together with primary health care involvement with government spending utilising cross-section analysis of health factor of death rates of infant was statistically insignificant. Filmer and Pritchetts's (1999) in his study using 98 countries not developed to examine the influence of government health expenditure on under-five mortality was insignificant. In his study in India utilised a state panel from 1980-99 discovered that there is no impact of current health expenditure on mortality rate (Deolalikar (2005)

Furthermore, there are not many empirical studies that establish a linkage, or lack thereof, between increased DRM in Nigeria and health outcome while the rising cost of domestic resource mobilisation has been an intriguing addressing issue, less consideration has been put on the relationship on health outcomes in Nigeria. This is amazing, since alongside perpetually expanding finances on health uses the need to assess their adequacy. The research aim therefore is to explore if domestic resource mobilised to health can explain differences in under-five or infant amount of deaths in Nigeria.

Summary and Gap

From the various literatures that have been reviewed under this chapter, it is discovered that a large body of evidence suggests that domestic resource mobilisation is vital for sustainable development. However, credence is given to various works, quite a number of studies conducted in Nigeria focused there conceptual ideation of domestic resource mobilisation to be restricted only to effective tax administration, in similar vein others tailored towards analysing domestic resource mobilisation and economic growth as well as sustainable development. Furthermore, research works on financing the health sector has basically been viewed from the angle or stand point of increasing government expenditure towards the health sector without a consideration of necessary outlet to increase government revenue.

From the aforementioned it becomes imperative that addressing the issues of deficit led budget to a mild fiscal debt is of necessity. Most African countries experience deficiency or insufficiency in funding most developmental project. Therefore, the idea of inward revenue generating strategy becomes key and a driving force towards achieving developmental plans. This work seeks to conceptualize domestic resource mobilisation from a different point of view. In this context, domestic resource mobilisation is viewed as any economic activity that springs up pocket industries in form of subsidiaries in the value chain cycle. As a means of policy direction towards economic diversification to avoid dependency in oil and also increase the revenue base of the economy. The agricultural sector is pivotal to the achievement of the set goals and targets. The repose effect of value addition in agricultural output generates series of value of addition processes and in turn industries are established thereby leading to employment opportunities, income generation, and revenue to the government via corporate company tax well as personal income tax. These in turn, increases the revenue base as well as the proportion of funds allocated towards health.

2.5 Summary of Empirical Review

Years	Authors	Objective of Study	Data	Results	Reviews/Critics/ Appraisal
2015	Cyprus	Evaluates domestic resource mobilisation in Caribbean region	Secondary data	The volatility of foreign institutional investment, short term debt to reserves and the fiscal deficit to GDP significantly explains the variations in risk premium.	Most of public debts are either medium term or long term

2015	Amusa, Monkam & Viegi	To evaluate if foreign aid does enhance domestic resource mobilisation concentrating on non-resource tax revenues in Nigeria	The study adopted the GMM technique using secondary time series data from 1980 to 2013.	It was concluded that a more essential tool for DRM is through foreign aid in the form of loans	The study focused only on taxation,
2014	Matthew, Adegboye &Fasina	Focused on public health expenditure and its relationship with health outcomes in Nigeria.	The study covered the period from 1979-2012 making use of secondary data adopting the Johansen Co-integration technique	The study found out that government spending on health was insignificant with health outcomes in Nigeria. It was also discovered that environmental factors such as carbon dioxide emissions which was used in this study affects Individuals' health.	The study focused on only public sector, far back data.
2014	Fakile, Adegbie & Faboyede	How domestic resources can be mobilised for sustainable development in Africa	Secondary Data from 1970 to 2008	domestic resource mobilisation could be a cure to aid reliance in developing countries growth	This study examined only 15 out of 54 countries in Africa without specifying the rationale for selection. No econometric analysis
2012	Batya	Portray the challenges that Less Developed Countries (LDCs) face when mobilizing resources for development	Employed an exploratory review of literature and descriptive analysis.	Found that challenges to domestic resource mobilisation in LDC are unquestionably significant.	It was a descriptive work no econometric analysis was carried out
2012	Ogunleye & Fashina	Assessing domestic resource mobilisation for sustained post-crisis recovery and growth in sub-Saharan Africa (SSA).	Employing Arellano-Bond GMM technique on a panel of 38 SSA countries, savings and investment turn	Only DRM variables that contribute positively and significantly to economic growth while all the tax revenue variables are insignificant	Inconclusive result

Year	Author	Focus of Study	Data	Findings	Limitations
2008	Culpeper	Examined the reasons for enhancing domestic resource mobilisation. The paper employed exploratory review of literature	Not specified	conclude that given the strategic importance of DRM, trade-offs and interrelations with other sources of financing should be recognised and reconciled in a manner consistent with each country's development objectives and priorities	No scope of study lacks theoretical framework and no statistical method of analysis.
2003	Kageyama	Examine the effects of continuous increase in lifetime (life expectancy at birth) on savings	Annual data from 126 countries covering periods from 1960 to 1995	found that raising life expectancy at birth has a direct effect on various saving rates in most of the economies studies	The increase in life expectancy was smooth for several countries due to data limitation, as majority of the developing countries do not publish life expectancy data on annual bases
2003	Bloom, Canning & Graham	The impact of longevity on life-cycle savings	Annual panel data of 68 countries covering periods from 1960 to 1997	increases in life expectancy lead to higher savings rates at every age, even when retirement is endogenous	Outdated Data
2001	Gupta, Verhoeven & Tiongson	Public spending on health care and the poor.	70 developing and transition economies	Poor are more strongly affected by health care in comparison with the non-poor and that the difference in the impact of spending between the poor and non-poor could be substantial	No econometric Analysis
1999	Pritchetts	study on government health expenditure on infant and under-five mortality	Employed secondary data from sampled in 98 developing countries	Health expenditure on infant and under-five mortality in 98 developing countries reveal statistically insignificant effect	Concentrated only public sector
1993	Anand & Ravallion	Health Expenditure and Life expectancy	Employed cross-sectional data for 22 developing countries in 1985	that health expenditure raises life expectancy	Inadequate literature review

CHAPTER THREE

STYLIZED FACTS

3.0   Preamble

This section consists of tables and figures or trends telling how aggregate savings, revenue from taxation, revenue from remittances, maternal mortality rate, physician density and life expectancy in Nigeria behaved over a period of time.

3.1   Domestic Resource Mobilisation and Selected Health Outcomes

Table 1: Average Performance of the Variables of Interest

YEARS	SAVINGS (% change)	TAXREV (% change)	REMIT (% change)	LIFE (years)	MAT	DOCPAT
1981-1985	16.85	NA	-13.59	46.2	NA	17
1986-1990	19.35	NA	56.33	46.1	1333.33	17
1991-1995	31.17	375.29	14.63	46.1	1284.00	19
1996-2000	29.24	39.14	18.44	46.4	1216.00	22
2001-2005	29.10	25.17	126.67	47.7	1040.40	30
2006-2010	36.62	26.03	6.36	50.3	870.60	40
2011-2014	23.17	12.52	2.36	52.7	830.92	40

Source: Researcher*'s Computation from CBN (2015); WDI (2015)*

Note: SAVINGS stand for aggregate savings, TAXREV stand for Tax revenue, REMIT stands for Remittances, LIFE stand for life expectancy at birth, and MAT stands for maternal mortality rate, DOCPAT stand for physician density

Table 1 revealed that aggregate savings grew by average of 16.85 percent from 1981 to 1985 rose to average of 19.35 percent from 1986 to 1990 and average of 31.17 percent from 1991 to 1995 but fell to average of 29.24 percent from 1996 to 2000. It fell further to average of 29.10 from 2001 to 2005 and rose to average of 36.62 percent from 2006 to 2010 but decline again to average of 23.17 percent from 2011 to 2014 (see Table 1).

Tax revenue grew most in periods from 1991 to 1995 by average of 375.3 percent; fell to average of 39 and 25 percent from 1996 to 2000, and 2001 to 2005. Average tax revenue was average of 26.03 percent from 2006 to 2010, and 12.52 percent from 2011 to 2014. Revenue from tax was least from 2011 to 2014; the dwindling growth of tax revenue generation in Nigeria makes it difficult to use tax as an instrument of fiscal policy for the achievement of economic development. Another channel for domestic resource mobilization is remittances, which had the least growth among other channels for resources mobilisation in Nigeria;

especially periods from 2006 to 2014 (see Table1 and Figure 1-3). The extent to which remittances contribute to development is not clear. Remittances do constitute a significant source of finance for many emerging economies because of their counter-cyclical nature. They rise during recessions in the recipient economy, unlike capital flows such as foreign direct investment (FDI), and so play an important role in alleviating economic shocks. Yet, their current development impact is disputed. Remittances are often spent on meeting the daily needs of families, including health care and education, and to a lesser extent on construction and productive investment.

Life expectancy at birth was average of 46.2 years from 1981 to 1985 but fell to average of 46.1 years from 1986 to 1990 and 1991 to 1995. It improves from average 46.1 years, to 46.4 years, 47.7 years, 50.3 years, and 52.7 years from 1996 to 2000, 2001 to 2005, 2006 to 2010 and 2011 to 2014 respectively. Maternal Mortality rate also improves from 1,333 per 100,000 from 1986 to 1990 till average of 830.92 from 2011 to 2014. There were average of 17 doctors per 100,000 people from 1981 to 1990 which rose to 19 and 22 doctors from 1991to 1995 and 1996 to 2000, respectively. Also, it further increase to average of 30 doctors per 100, 000 people between 2001 to 2005 but stagnate at 40 doctors from 2006 to 2014 (see Table 1; Figure 1-3).

Beginning with a sum of ₦6.56 billion in 1980, it rose to ₦29.6 billion in 1990. During the 80s, it could be observed that savings was fairly stable ranging from ₦6.5 billion to about ₦23 billion. The immediate change in monetary policy stance from direct to indirect controls led to an improvement in savings and efficiency of resource allocation due to responsiveness of market forces. Nwachukwu (2009) noted that the deregulation of the exchange rate system in August 1987 to a market-based system enabled banks determine their deposit and lending rates in accordance to market conditions through negotiations with customers, though the Minimum Rediscount Rate (MRR) continued to be determined by the Central Bank of Nigeria. By 2000, the figure had climbed to ₦385.1 billion, rising further by 2005 to ₦1.3 trillion. For the year 2006 the figure doubled to ₦2.6 trillion, ₦4.1 trillion in 2008. As at 2009, the figure stood at ₦5.7 trillion. Within the period 1980-1985 it could be seen that life insurance funds were inexistent in the total financial savings, 1991-2005 National provident fund, federal mortgage bank and life insurance funds along with time and savings deposit were of relevance to total financial savings of which time and savings accounted for the majority. In subsequent years' time and savings of Deposit Money Banks (DMBs) became the only recognized portion of total financial savings.

Domestic mobilisation through aggregate savings could be said to be fairly stable in the 1980's and early 1990's while periods from 1993 to 2004, there had been a stable rise in savings. Nnanna (2003) reported the efforts of the monetary authorities in the promotion of savings and investment culture in the Nigerian economy over the years stating that among recent efforts in 2003 included the introduction of savings and investment instruments and schemes; stimulation of financial intermediation and promotion and sustenance of macroeconomic stability. Nwachukwu (2009) asserted that Life insurance funds were established in the same year 1989 with the sum of ₦1.1 billion. The figure rose sharply to ₦19.4 billion in 1994 thereafter witnessing a rapid decline. The amount mobilised stood at ₦8.5 billion in 2002 when the federal government scrapped it. In the year 2004 the banking sector consolidation that was initiated by the CBN ensured a sustainable and stable financial system to support the economy's real sector. This consolidation could explain the increase in average saving from 2005 to 2010 while the global financial crisis in 2009 could be responsible for the decline in average savings, tax revenue and remittances from 2011 to 2014.

An evaluation of the trends of the variables of interest revealed that among the three channels of domestic resource mobilization in Nigeria, aggregate savings outweigh tax revenue and remittances. Yet, revenue from remittances was more than the revenue from tax due to the structural defects in the country's tax system. Nigerian tax system is concentrated on petroleum and trade taxes while direct and broad-based indirect taxes like the value-added (VAT) are neglected. This is a structural challenge in the country's tax system. Although direct taxes and VAT have the potential for expansion, their impact is limited because of the dominance of the informal sector in the country. Furthermore, the limited formal sector is supported with strong unions that act as pressure groups to deter any appreciable tax increment from gross income.

Although, the percentage changes in domestic resource mobilisation oscillated upwards and downwards, there was steady improvement in the selected health outcomes (maternal mortality rate, physician density and life expectancy at birth). Hence, what are the long run relationship between domestic resource mobilisation channels (DRM) and the selected health outcome in Nigeria? Also, does DRM exert influence on the selected health outcomes in Nigeria during the period reviewed?
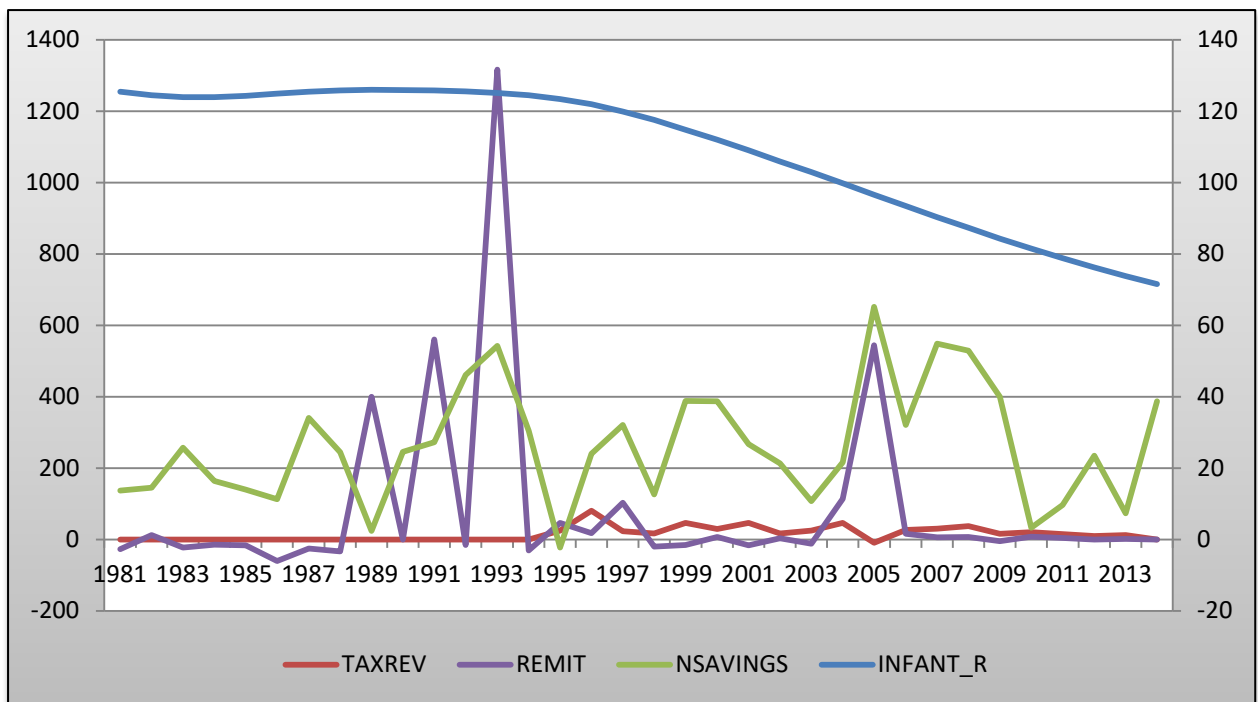
Source: *Author's Computation from CBN (2015); WDI (2015)*

Figure 1: Percentage growth of Tax Revenue, Remittances, National Savings and Infant Mortality
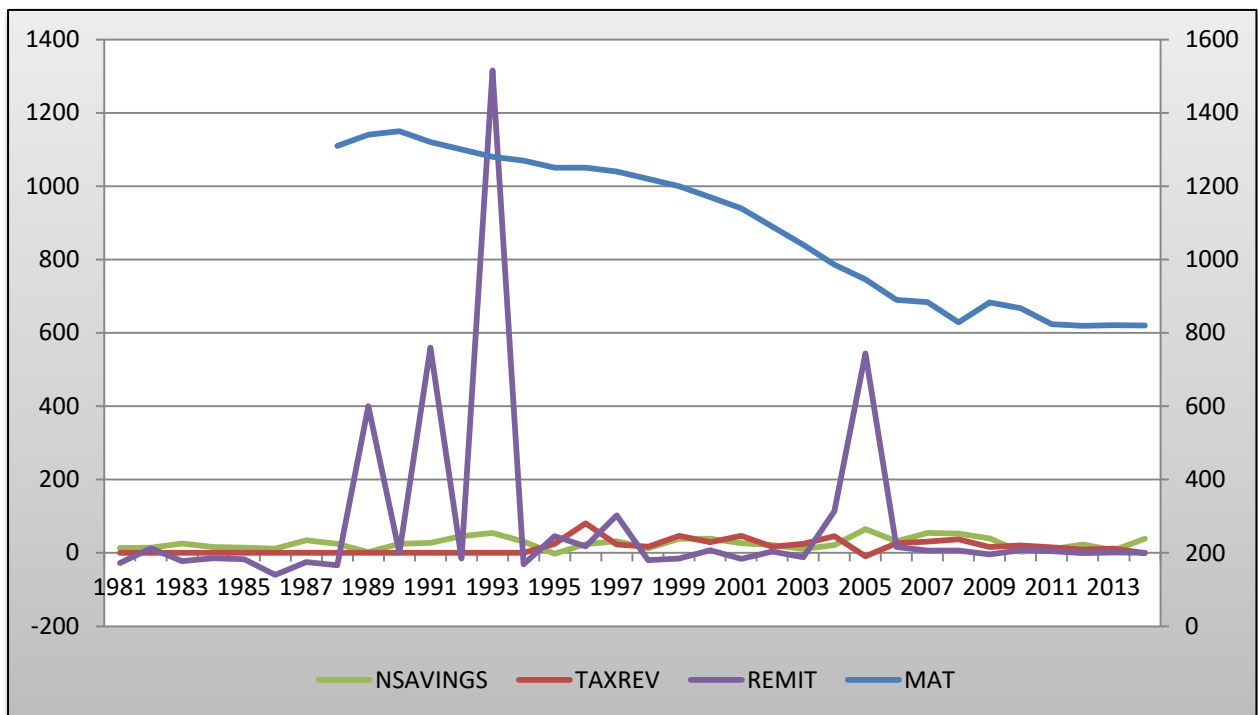
Source: *Author's Computation from CBN (2015); WDI (2015)*

Figure 2: Percentage growth of Tax Revenue, Remittances, National Savings and Maternal Mortality
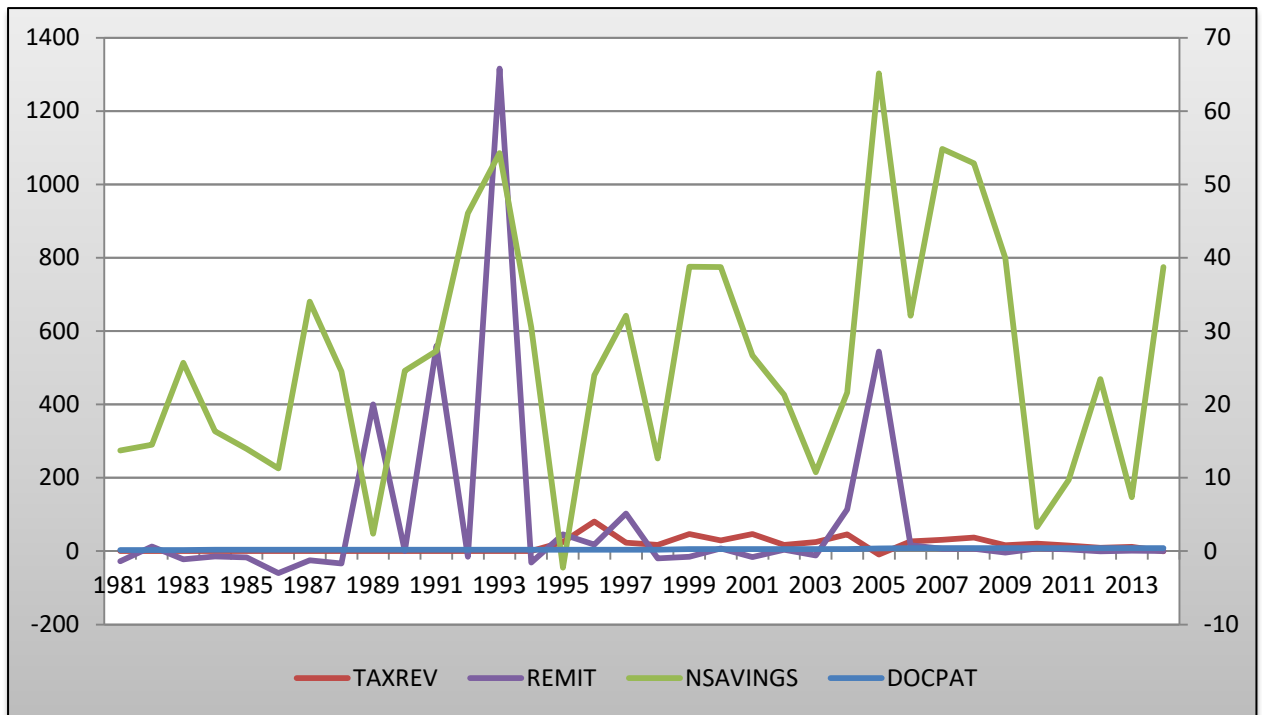
Source: *Author's Computation from CBN (2015); WDI (2015)*

Figure 3: Percentage growth of Tax Revenue, Remittances, National Savings and Doctor to Patient

CHAPTER FOUR

METHODOLOGY

4.1 Preamble

This section consists of the theoretical framework and method of research employed in this research work. It covers the theory that provides the framework for the analysis of the causal link between domestic resource mobilisation and health outcomes in Nigeria. Also, explained here is the model to be used, data sources, description, techniques of estimation and model to be used as well as methodological issues.

4.2 Theoretical Framework

The mechanism linking domestic resource mobilisation and health outcome is yet an open question in the theoretical literature. The study employ Grossman health production model developed by Michael Grossman in 1972.The model indicates that an individual is both a producer and a consumer of health. Grossman model state that health is treated as a stock which degrades over time in the absence of "investments" in health, so that health is viewed as a sort of capital. The model acknowledges that health is both a consumption good that yields direct satisfaction and utility, and an investment good. The utility yields satisfaction to consumers indirectly through increased productivity, fewer sick days, and higher wages. Investment in health is could be as consumers may trade off time and resources devoted to health, such as exercising at a local gym, against other goals. These factors are used to determine the optimal level of health that an individual will demand. The model makes predictions over the effects of changes in prices of healthcare and other goods, labour market outcomes such as employment and wages, and technological changes. This will specifically permit us to ascertain which variables exhibit a positive relationship of domestic resource mobilisation and health outcome.

The Grossman health production model (1972a, 1972b) is used to analyse household health production function includes social, economic and environmental factors as input to production function. Grossman (1972a) utilised same health production function to measure the health outcome of industrialised countries. In attempt to utilise the household model, the

study adopts infant mortality rate as a proxy for health output/outcomes. The health outcome function as specified in equation (1) is as follows;

$$Y = f(H) \tag{1}$$

Where:

Y is the expected health output/outcome

H is the vector for economic variables

4.3 Model Specification

The main objective of this study is to examine the effect of domestic resource mobilisation and health outcome in Nigeria. Thus, the model of this study is specified as;

$$Y = f(H) \tag{1}$$

Where Y is a social indicator reflecting health outcome (measured by under 5 mortality rate), H is the vector for explanatory variables.

Expressing the model in implicit form

$$UMR = f[TR, AP, GCF, FML, CO2] \tag{2}$$

Thus equation 2 can be re-specified explicitly as follows:

Equation (2) was rewritten using the dependent variables to capture health outcome

$$UMR = \alpha_0 . TAXREV^{\alpha_1} . AP^{\alpha_2} . GCF^{\alpha_3} . FML^{\alpha_4} . CO2^{\alpha_5} \tag{3}$$

From the equation 3 it depicts a typical heath production function as proposed by Grossman, however, a precondition for regression analysis for the model to be linearized or transformed. Hence, taking the log function linearizes the above function in equation 3.

From equation 3, the transformation follows as indicated in equation 4 below.

$$lnUMR = \alpha_0 + \alpha_1 lnTAXRV + \alpha_2 lnAP + \alpha_3 lnGCF + \alpha_4 lnFML + \alpha_5 lnCO2 + Ut \tag{4}$$

WHERE;

UMR= under-five mortality rate

TR=tax revenue

AP= Value of Agricultural Productivity

GCF= Gross capital formation

FML= Female literacy rate

CO2= Carbon dioxide emission

α : Intercepts are parameter estimates of the explanatory variables.

t: Time element to illustrate the time-series structure of the data;

$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ are parameters to be estimated.

Apriori Expectation

In accordance with the literature reviewed earlier, domestic resource mobilisation as an indicator of the volume of resources streaming into health is expected to have a negative impact on under-five mortality rates. It is important to note the expected signs of the parameters.

The variables expected on apriori ground are to be signed as follows;
$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5 < 0$

All the explanatory variables are expected to have a negative impact on the health outcomes i.e. an inverse relationship(an increase in the explanatory variable will bring about a reduction in under 5 mortality)since they represent economic catalyst that can reduce the selected health outcomes.

4.4 Variable Definition and Source

The variables that were incorporated in the model are defined in table below and the sources were additionally exhibited.

Table 2: Data Description and Sources

Variable	Identifier	Definition	Source
Under-five mortality rate	UMR	Under-five mortality rate is the probability per 1,000 that a new-born baby will die before reaching age five, if subject to age-specific mortality rates of the specified year.	World Development Indicator(WDI) 2015
Tax Revenue	TAXREV	Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue.	Statistical bulletin (CBN) 2015
VALUE of agricultural productivity	AP	Agricultural productivity is measured as the ratio of agricultural outputs to agricultural inputs.	World Development indicator(WDI) 2015
Female Literacy rate	FML	Total female enrolment in primary education, regardless of age, expressed as a percentage of the female population of official primary education age.	World Development Indicator(WDI) 2015
Gross capital formation	GCF	Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories.	World Development Indicator(WDI) 2015
Carbon dioxide emission	CO2	They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.	World Development Indicator(WDI) 2015

4.5. Justification of Variables

<u>**Dependent Variables**</u>

I. Under-five mortality rate

Under-five mortality rate is the most sensitive indicator of health outcome. Children are important national assets and therefore, investment in them lays the foundation for a just society, a strong economy and a world free from poverty, hunger and disease. This study is therefore not just analysis of children but also, analysis of future leaders of Nigeria. High child death rate mirrors the nearness of troublesome social, economic, and ecological conditions amid the primary year of life The MDG-4 calls for lessening in under five mortality by 66% in the vicinity of 1990 and 2015 .With an end goal to diminish child mortality, gigantic speculation has been made to enhance access to health care, sustenance, cleanliness and sanitation, and advance selective breastfeeding

<u>**Independent Variables**</u>

<u>**Domestic resource Mobilisation Variables**</u>

I. Tax Revenue

Revenue from tax is another channel for domestic resource mobilisation in the country since more revenue from tax raises the liquidity capacity of the government and vice versa. Thus, increase in the possibility of public spending on healthcare services. This study employed revenue from internally generated revenue to proxy tax revenue sourced from Central Bank of Nigeria Statistical Bulletin (2015).

II. Value of Agricultural Productivity

Agriculture value added per worker is a measure of agricultural productivity. Since the birth of Nigeria, agriculture has been the backbone of the economy and its revenue potentials has to be emphasised. Currently it is the key focus of government's diversification drive to achieve sustainable development goals. Agriculture is a good source of domestic resource because it is the key focus of government diversification drive to achieve sustainable development goals and in few years, government can impose tax when fully developed. Also, agriculture can form a good source of medical research, provides opportunity for employment. Corinna & Marie (2006) in their study revealed that agriculture is fundamental

for good wellbeing that produces nourishment, fibre and materials for haven and can deliver medicinal plants. An expansion in an agricultural productivity infers a more effective circulation of scarce resources. It is estimated that 55 percent of the nearly 12 million deaths each year among under five-year-old children in the developing world are associated with malnutrition (UNICEF, 1998) in numerous nations.

III. Female Literacy rate

Gross enrolment ratio, primary female (%) used as proxy for female literacy rate. It is likewise contended that female literacy is an essential determinant of the health status of infants and children, as well as the population in general (see Baldacci et al., 2004; World Bank, 2004; Schulz, 1993). Literacy is straightforwardly identified with the status of a woman, her age at marriage, her decision power and to specify particularly, capacity to get access to health care services .For sure, in developing countries, women play a more vital part in family health and sanitation very separated from the way that female training is emphatically related with infants' wellbeing and adversely connected with fertility rates. Also, educated mothers are more likely to be aware of nutrition and their children's health (Gubhaju, 1986; Zakir and Wunnava, 1997; Currie and Moretti, 2003). A woman's socio-economic status has long been believed to affect her children's survival chances. Indeed, one of the most frequent explanatory variables in the literature has been women's education. Studies have consistently found that the children of women with some education do better, though the thresholds of the effect vary between study populations.

IV. Gross capital formation

Gross capital formation formally referred to as gross domestic investment is a fundamental way to enhance health outcomes which is done improving in investment in capital goods/ physical infrastructure like electricity, water, roads, health facilities, including health workers, this investment can enhance a better health outcomes.

V. Carbon dioxide emission

These are polluting carbon substances or environmental pollution released into the air which is produced by motor vehicles and industrial processes.

4.6 Validation of Parameters

The appropriateness of the parameters of the model was tested on the basis of economic or a priori criteria, the statistical or first-order test and the econometric or second-order test. The economic or a priori test enabled us to determine the magnitude (size) and direction (sign) of the estimated parameters. The statistical test confirmed the statistical significance and the explanatory power of parameters and estimates produced. Statistical problems associated with regression analysis, especially autocorrelation or serial correlation was tested by means of the Durbin-Watson test. A test for autocorrelation, stationary, and unit root was carried out using the Dickey-Fuller (DF) test, as well as a test for causality and robust standard errors to test for heteroskedasticity.

4.7. Estimation Techniques

This refers to test that must be conducted to derive solutions from the analysis of data to enable the verification of both theoretical and statistical validity of our coefficients. This study engaged a three step procedure in order to determine the relationship between domestic resource mobilisation and health outcomes in Nigeria; these procedures are unit root test by Augmented Dickey Fuller (ADF) using E-views, Johansen co-integration technique and Vector error correction model (VECM) using E-views 8.

4.7.1 Unit Root Test (Test for Stationarity)

One of the assumptions of the standard regression analysis is the condition that the variables being tested are stationary. However, many macroeconomic time series variables are often not stationary, they trend up and down over time (Fleegler, 2006). Therefore, before regression analysis can be carried out on time series variables, test for stationarity must be done to avoid getting bias estimates or spurious results. According to Nkang *et al* (2006), stationary series is one where $/\rho/<1$; the series have a finite variance, transitory innovations from the mean and a tendency for the series to return to their mean value. In other words, a stationary series has a mean, variance and autocorrelation that are constant over time, implying that the error structure is time invariant.

On the other hand, a non-stationary series is one where $/\rho/\geq 1$; it has a variance which is asymptotically infinite (the series rarely crosses the mean and innovations to the series are permanent). So any stochastic shock may not return to a proper mean level. A non-stationary

series is however a random walk where absolute value of ρ= 1(that is ρ is unity). It can then be said that such variable has a "unit root". This study carries out the unit root test for stationarity by using the Augmented Dickey fuller (ADF) test to examine each of the variables for the presence of unit root(or non-stationarity) or otherwise.

➢ **Augmented Dickey Fuller Unit Root Test**

Testing for unit root is carried out by using Augmented Dickey Fuller (ADF) test. This is the first step and the most important, in the literature, most time series variables are non-stationary and using non-stationary time series on another non-stationary time series in the model might lead to spurious regression (Granger, 1996). The first or second different terms of most variables will usually be stationary if it has constant mean value equilibrium, where there is disequilibrium as well as zero order of integration I (0). The ADF is conducted by adding the lagged values of the dependent variables with the independent variables in the regression.

This is based on the regression equation in the form below:

$$\Delta y_t = \alpha_0 + \alpha_1 \beta y_{t-1} + T + \sum_{j=1}^{m} \beta_j \Delta Y_{t-k} + \varepsilon_t \qquad (1)$$

Where Y_t is the time series, Δ is the first difference operator, T is the linear trend, α_0 is a constant and ε_t is the error term.

$H_0: \beta = 0$

$H_1: \beta \neq 0$

The null hypothesis of existence of unit root is β equal 0. The significance of ρ will be tested against the null (ρ=0) based on t-stat on ρ obtained from the OLS estimates of the above equation. Thus, if the null hypothesis of non-stationarity cannot be rejected, the variables are differenced until they become stationary. It is after that the study will proceed to test for co-integration. The most famous test is the one specified above another test is the Phillip Peron test. Both use the existence of a unit root as the null-hypothesis.

4.7.3 Co-Integration

This theory of Johansen co-integration, as propounded by Johansen and Joselius provides a nexus or connection among integrated processes and the notion of long-run equilibrium. The

concept of co-integration creates the link between integration process and the concept of steady state equilibrium (Granger, 1981, 1986; Mill, 1990).

In econometrics analyisis, it is common to think that there exists a long run relationship between many variables of interest. Even though each of the variables may follow random walks, it seems reasonable to expect that there is a long run relationship between the two variables. According to Arize and Malindretos (2008), the basic idea of co-integration is that two or more non-stationary time series may be regarded as defining a long-run equilibrium relationship if a linear combination of the variables in the model is stationary(that is converges to any equilibrium over time). Engle and Granger (1987) also pointed out that a linear combination of two or more non-stationary series may be stationary. If such stationary linear combination exists, the non-stationarity time series are said to be co-integrated. The purpose of a co-integration test is to determine whether a group of non-stationary series are co-integrated or not. This study tests for the presence of long run equilibrium relationship between selected health outcomes and their explanatory variables with the Johansen co-integration approach. According to Tang (2010), the major advantage of using co-integration is that it has superior properties in particular for two or more variable system.

Johansen (1991) proposes two different likelihood ratio tests of significance of theses economical correlations and thereby the reduced ranks of the matrix. These are the trace tests and the maximum Eigen value tests. The trace test statistics tests the null hypothesis "there are at most r co integrating relations" against the alternative hypothesis of "m co-integrating relations" (that is, the series are stationary), r = 0, 1, 2, .., m-1. The maximum Eigen value on the other hand test the null hypothesis "there are co-integrating relations" against the alternative hypothesis "there are r + 1 co-integrating relations".

4.7.4 Vector Error Correction Model (VECM)

The short run adjustment dynamics can be usefully described by the vector error correction model (VECM). Vector Error correction models are categories of multiple time series models that directly estimate the speed at which a dependent variable returns to equilibrium after a change in an independent variable (Robin, 2008). They are useful for estimating both short term and long term effects of one time series on another. The VECM coefficient shows how quickly variables return to equilibrium. The basic structure of VECM is given as:

$$D(InUMR)_t = \beta_0 + \beta_{1t}\, D(InTAXREV)_{t-1} + \beta_{2t}\, D(InAP)_{t-1} + \beta_{3t}\, D(InGCF)_{t-1} + \beta_{4t}\, logD(InFML)_{t-1} + \beta_{5t}\, logD(InCO2)_{t-1} + \delta ECM_{t-1} + \mu_t$$

Where $VECM_t$ is the error correction component of the model and measures the speed of adjustment back to equilibrium. The greater the coefficient of the parameter, the higher the speed of adjustment of the model from the short runs to the long run. However, the sign of the coefficient must be negative and statistically significant to be acceptable.

D = difference parameters

$VECM_{t-1}$ = one period lagged value of the error from the co-integrating initial regression

$\beta_1 - \beta_5$ = Parameters estimates

μ_t = A random error term.

In simple term, the VECM involves using lagged residual to correct for deviations of actual values from the long-run equilibrium values.

In applied work we require that the coefficient of VECM be significant and negative. It sign should be negative if it plays the role of error correction. Specifically, if actual equilibrium value is too high, the error correction term will reduce it while if it is too low, the error correction term will raise it, Dickey Fuller (1981). The VECM according to Henry and Richard (1983) is very appealing due to its ability to induce flexibility, by combining the short run and long run dynamics in unified system.

CHAPTER FIVE

RESULT AND DISCUSSION

5.1 Preamble

This chapter is an important aspect in any research work. It serves as the deciding point for any research effort because it gives meaning and shape to the raw data collected during the research activities. The critical position occupied by data presentation, analysis and interpretation is given to the fact that conclusion and recommendations concerning a research work are derived from this chapter.

5.2 Presentation of result

Table 3: Summary of Descriptive Statistics

	UMR	TR	AP	GCF	FML	CO2
Mean	179.4571	64733.92	2112.397	12.58818	85.43854	17.99365
Median	197.0000	29.21390	1366.936	11.74670	83.86050	18.80778
Maximum	212.6000	461224.5	4760.310	34.02084	99.47595	28.84898
Minimum	108.8000	0.038000	685.4052	5.467015	72.43542	5.661769
Std.dev.	36.19679	125787.5	1402.770	6.122224	7.800158	5.821172
Skewness	-0.689853	2.098858	0.692832	1.837585	0.282647	-0.224335
Kurtosis	1.938119	6.224250	1.910239	6.809332	1.990531	2.708105
Jarque-Bera	4.420473	40.85755	4.531982	40.85941	1.952103	0.417824
Probability	0.109675	0.000000	0.103727	0.000000	0.376796	0.811467
Sum	6281.000	2265687.	73933.89	440.5864	2990.349	629.7778
Sum sq.Dev.	44547.07	5.380011	66903972	1274.375	2068.644	1152.126
Observations	35	35	35	35	35	35

Source :Author computation 2015, using E-views

From the above results this indicates the total summary of descriptive statistics the major idea is to establish the normality test of variables used. That is to check if the distributions of the variables used conform to the assumed normally distributed population or not. From above the yearly sum of observations of the variables are 35. The basic idea is checking the outliners which give signal for residual error especially those with high deviations. The mean value of variables are; 179.4571, 64733.92, 2112.397, 12.58818, 85.43854, 17.99365 for UMR, TR, AP, GCF, FML, CO2 respectively. Similarly, the standard deviation;

36.19679, 125787.5, 1402.770, 6.122224, 7.800158, 5.821172(UMR, TR, AP, GCF, FML, CO2).Furthermore, the skewness of the variables are all positive except for u5mort and co2 which is negatively skilled, implying that the mean of the observation drawn towards the left and for the positive the right. Examining the kurtsios, all have their entire kurtosis coefficient >0 which shows they are leptokurtic. The Jarque-Bera test is used as a test from the probability values the rule is that the p-value should be less than the 0.05% from the results looking at the p-values it would be said that only tax revenue and gross capital formation are normally distributed.

5.3 Unit Root Test

The initial stage in the johansen procedure is to test whether the time series is stationary. In this study one informal test for stationarity and one formal test are employed.

Table 4: Results of the Augmented Dickey Fuller Unit Root Test

Variables	ADF test stat		Critical Value			Order Of Integration	Remarks
	Level	1st diff	1%	5%	Pvalue		
InUMR	-	-5.878420	-3.724070	-2.986225	0.0001	I(1)	Stationary
InAP	-	-5.524980	-3.653730	-2.957110	0.0001	I(1)	Stationary
InTR	-	-5.481156	-3.646342	-2.954021	0.0001	I(1)	Stationary
InGCF	-	-5.741673	-3.653730	-2.957110	0.0000	I(1)	Stationary
InCO2	-	-5.763870	-3.646342	-2.954021	0.0000	I(1)	Stationary
InFML	-	-7.258463	-3.646342	-2.954021	0.000	I(1)	Stationary

Source Authors Computation 2015, using E-views

As a precondition to carry out the Johansen test for Co-integration test which is finding out if a long run association exist amongst the variables of interest, it become imperative that a unit root test be carried out to ascertain the state of stationarity amongst the variables. As usual, the rule of thumb is that null hypothesis of unit root should be accepted if the augmented dickey fuller (ADF) statistics is less negative than the critical value. The result from the table above indicates that all the variables stationary at their levels, there are non-stationarity because the absolute value of ADF values of the variables were subjected to first differencing to be able to induce stationarity at 1st differencing haven check all the necessary criteria using the critical value and the probability values , the hypothesis of non-stationarity were rejected for the entire variable, this means that any shock or disturbance in them will be sustained for a short period.

This test is highly important in order to guide against spurious results that is why all the variables in this model were subjected to unit root test. The unit root test can also be called "**determination of stationarity of variables**" Any variables that have unit root indicate non-stationarity. According to Engle and Granger (1987), any variable that is stationary has no unit root, this therefore means that any non-stationary variables will produce spurious data that maybe very bad for forecast; this test is very relevant to the reliability of the result obtained from this research work. Observably all the p-values are less than 0.05% this is a desirable result there we can go ahead to carry out the co-integration test

5.4 Unrestricted Co-integration Rank Test Result

The co-integration test were undertaken based on the Johannsen (1988) and the Johasen and Juselius (1990) maximum likelihood framework. The essence was to establish whether long-run relationship exit among the variables of interest. The Johannsen technique was chosen not only because it is vector auto-regression based, but also because it performs better than the single equation and is alternative multivariate methods. This method produces asymptotically optional estimates since it incorporates a parametric correction for serial correlation. The nature of this estimator means that the estimates are robust to simultaneity bias, and it is robust to departure from normality.

Table 5a: Co-integration Rank Test Result

Ho	Ha	Eigen value	$\lambda \max test$	$\lambda \max(0.95)$	P-Value	Trace test	p-value	Trace(0.95)
r=0	$r = 1$	0.949349	86.50122	40.07757	0.0000	224.9153	0.0000	95.75366
$r \leq 1$	$r = 2$	0.823867	50.35904	33.87687	0.0000	138.4141	0.0000	69.81889
$r \leq 2$	$r = 3$	0.699730	34.88910	27.58434	0.0048	88.05506	0.0000	47.85613
$r \leq 3$	$r = 4$	0.464002	24.09327	21.13162	0.0186	53.16595	0.0000	29.79707
$r \leq 4$	$r = 4$	0.315347	18.08623	14.26460	0.0119	29.07268	0.0003	15.49471
$r \leq 5$	$r = 5$	0.378475	10.98645	3.841466	0.0009	10.98645	0.0009	3.841466

Source: author's computation, 2015 using E-views

From the results obtained above the Johansen method dictates a number of co-integrating vectors in non-stationary time series. It allows for the hypothesis testing regarding the elements of co-integrating vectors and loading matrix. The co-integrating test include under-5mortality rate, agricultural product, tax revenue, gross capital formation, female literacy rate, carbon dioxide emission. The outcome of the test suggests that from the trace statistics there exist at most six integrating equations significant at 0.05% level of significance. Furthermore the Max-eigenvalue test indicates six co-integrating equations at the 0.05 level. In conclusion it indicates that there exists a long run association amongst the variable of interest.

Table 5b: Normalized co-integrating result

Co-integrating Equation Log likelihood Normalized co-integrating coefficients (standard error in parentheses)					
Under-5 mortality	**TR**	**AP**	**CO2**	**FML**	**GCF**
1.000000 **S.E** **T-Stat**	-0.023850 (0.01534) 1.554759	0.360133 (0.12689) 2.838151	0.077264 (0.09360) 8.254701	-1.436376 (0.40918) 3.510377	-0.794195 (0.07238) 10.972575

Source: Author's Computation, 2015

The long-run equation is therefore specified as follows (The sign of the co-efficient in the equation below is a reversal of the table above)

u5mort= 0.023850*IGR – 0.360133*AP - 0.077264*CO2+1.436376*FML+0.794195*GCF

From the above table shows the normalized long run co-integrating result amongst the variables, it follow that from above holding other variable constant the long run impact of a unit change in tax revenue would positively affect infant mortality by a magnitude of 0.023 which does not follow the apriori expectation, from the t-statistics which is 1.6 implies that it is statistically not-significant. By implication, tax revenue in the Nigerian situation has experienced poor performance, low level of tax administration, weak capacity for implementation. Thus, tax revenue increase has not been reflective in the proportion of increase in government expenditure on health to reduce under-5 mortality rate. Also, from the model, it shows that if mitigation is not made tax revenue will have little or no impact on under-5 mortality rate.

Similarly from the above table the valuation of Agricultural productivity (AP) holding all other variables constant, a unit change in AP would in the long run negatively affect Infant Mortality that is to say it would reduce infant mortality by a magnitude of -0.36, and from the t-statistics above, it is significant at 2.84 which is greater than 2. This is imperative because it implies that when the value of Agricultural productivity increases it has the potency of reducing under-5 mortality rate. Furthermore this make more meaning in many fronts, agricultural value addition create a wide range of pocket investment in form Agro-industries in the value addition cycle, these process avails opportunity for job creation income generation and also more revenue to the government; implying more mobilisation of revenue and increase in general welfare.

Carbon dioxide emission (Co2) indicates motor vehicles and industrial processes which constitute air pollution that is not good for human beings. Form the above long run equation result it indicate that a reduction in Co2 would impact on infant mortality negatively by a magnitude of -0.077 this also holds true when carbon dioxide emission decrease it will reduce under 5mortality, from the t-statistics which is 8.3 implies that it is statistically significant. It implies that over period significant effort has been made from policy perspectives on programs and campaigns on the effect of carbon dioxide emission and environmental pollution. From the model, the negative sign implies that in the long-run if adequate measure is made on greenhouse emission its effect on health would go a long way to reduce health related issues on unde-5 mortality resulting from air pollution.

Furthermore, female literacy rate will affect under-5 mortality positively with a magnitude of 1.436 which does not fit in with the apriori expectation. However its t-statistics is significant with a value is 3.5 which is greater than the threshold 2. This therefore means that female literacy is statistically significantly on under-5 mortality. This type of result has been explained by Zainab Ijaz(2012) by the positive effects of female literacy on under-5 mortality rate. One of the arguments for female literacy remaining ineffective tool to reduce under five mortality justified on the grounds, that women especially in the rural area even if educated lack freedom of expression and decision making authority. This suggest therefore the importance of the education of a female child and the need for them to be encouraged as they are trained during extra curriculum at various stage of education regarding personal hygiene, infant upbringing and health in general and hence these reduces the risks of young children or infants dying due to carelessness or neglect.

Lastly gross capital formation from the equation indicates that it positively affect infant mortality rate by 0.794, this is not desirable. However it is statistically significant since its t-statistic value 10.97 which is greater than the threshold 2. From the above model, it depicts that in the long run gross capital formation would increase under-5 mortality. This holds true, infrastructure in Nigeria overtime has been poorly financed, public sector mismanagement has greatly affected increase in sectorial infrastructure especially in the health sector which is dominating by obsolete technology, low capacity building and unseasoned strikes, thus affecting the ability "capital" to reduce under-5 mortality.

5.5 VECTOR ERROR CORRECTION MODEL (VECM)

In other to capture short run deviations that might have occurred in estimating the long-run co-integrating equations, a dynamic vector error correction model is formulated. The error correction term depicts the speed of adjustment heralding to equilibrium when the system equation is shocked.

Table 6: Vector Error Correction Model (VECM)

Error Correction:	D(UMR)	D(TR)	D(AP)	D(FML)	D(GCF)	D(CO2)
CointEq1	-0.006255	1.530268	0.031011	0.066534	0.254905	0.256288
p-value	(0.00064)	(1.15945)	(0.05348)	(0.04114)	(0.13454)	(0.15086)
T-STAT	[-9.77343]	[1.31982]	[0.57982]	[1.61720]	[1.89460]	[1.69887]

Source: Author's Computation, 2015

From the above error correction term for InU5mort is -0.00642 approximately signifying 0.63% speed of adjustment in the system when disequilibrium occurs. The sign of the error correction term is as expected to be negative, this confirms to the a-prior expectation. The magnitude however is very weak by implication the responsiveness of error made in previous year can only be corrected for the following year by 0.63% which is very low for the above model in explaining resource mobilisation and health outcomes. By implication, it indicates with response to the independent variable within the system in influencing a recovery as a result of a shock in the dependent variable (It means that the above independent variables in the short-run are weak to respond to a shock in under-5 mortality rate). All the independent variables are not significant responding to the short-run dynamics in the above model. From the above making reference to the p-value in the appendix the error term for Intr, Inap, Infml, Ingcf, Inco2 is not significant the p-value is greater than 0.05% thus implying that there is no long run causality. This shows that there are lots of flaws in policy response towards under-5 mortality rate or health sector in general as it relates to the long run association of the estimated variables of interest the significance of the error term is also very important it give information about the long run causality.

5.6. Economic Implication

The influence of tax revenue on the under-five mortality in Nigeria could be regarded as mixed which is positive but doesn't affect under-five mortality rate .This could be due to the poor tax administration, weak capacity implementation and embezzlement of this tax that should be channelled to the health sector in the economy Also, domestic resource

mobilisation through agricultural productivity strongly influences under-five mortality rate. Therefore, there is need for quality expansion in domestic resource mobilisation through agriculture in Nigeria. Though, the general picture suggests some improvements in tax revenues in the country but closer examination shows poor performance regarding its growth rate. In fact, the major challenges to equitable and efficient healthcare financing in the country are the dwindling revenue, lack of political commitment to health sector and the high prevalence of systemic corruption. All these could explain its insignificant effect on under-five mortality rate.

Furthermore, the economic growth of the country has been regard as jobless and non-inclusive growth, which could explain insignificant impact on the health outcome. There is evidence that the economic growth of the country further raises the unemployment rate and widens the spread of poverty thereby worsen under- five mortality rate.

In Nigeria, domestic resource mobilization is challenged by shallow domestic revenue base. The bulk of the country's population is engaged in the informal sector while several others are experiencing different forms of unemployment. In fact, industrial, manufacturing and general corporate activities are very limited with informal sector accounting for around 90 percent of employment and close to half of total economic activities (Adamu, 2006). This suggests that the bulk of activities going on in these very important sectors are untaxed either through direct taxes or VAT. The current wave of Export Processing Zones among Sub-Saharan countries with its accompanied tax exemptions and waivers tend to further reduce the tax base of the economies. The existence of the exemptions such fuel corrupt, tax evasive and tax avoidance schemes seriously minimise tax mobilisation.

CHAPTER SIX

RECOMMENDATIONS AND CONCLUSION

6.1 Summary of Work

This study examines domestic resource mobilisation and health outcome in Nigeria from the period of 1981-2015. The explanatory variables used in this study are tax revenue, agricultural productivity, gross capital formation, female literacy rate, carbon dioxide emission. The proxy for health outcomes is under 5 mortality rate in this study. The johansen co –integration test and the vector error correction methodology was preferred to estimate the model employed in the study because of its several advantages over those alternative techniques by using these technique we initially assessed the time series properties of the data, by applying the formal tests for stationarity (augmented dickey fuller).All the time series were found to be stationary at order 1. Johansen co-integration test on alternative model specification provided evidence that there is co-integration between domestic resource mobilisation and selected health outcome.

In order to adequately comprehend and understand this topic, the research work was proficiently divided in to five chapters. In the first chapter, a general overview and background of the study was examined including the statement of the research problem, the research questions, the research objectives, hypothesis among others. Also, a thorough review of existing literature on the domestic resource mobilisation and health outcome and this consist of the conceptual, theoretical and empirical issues and stylized facts of key variables were examined in chapter three. In chapter four, the theoretical foundation of this work which is the Grossman health production model was examined which states Grossman's model views each individual as both a producer and a consumer of health. Health is treated as a stock which degrades over time in the absence of "investments" in health, so that health is viewed as a sort of capital. The model indicates that health is not just a consumption good that yields direct satisfaction and utility but also an investment good, which yields satisfaction to consumers indirectly through increased productivity, fewer sick days, and higher wages. Investment in health is costly as consumers must trade off time and resources devoted to health, such as exercising at a local gym, against other goals. This supports this study and implies that since health is a form of capital which is the human capital, the more health possessed by a worker, the more output the worker can produce. The

fifth chapter consist of the data analysis and presentation in which both the descriptive and econometric analysis was conducted. The summary of findings, economic interpretation of results and policy implications were examined in the sixth chapter.

6.2 Findings

Based on the results, the influence of tax revenue as source of mobilisation has a positive relationship on under5 mortality. This implies that the current and past tax revenue has significant impact on the economy but does not reflect in the efficiency of health outcomes which is proxied by under-5 mortality rate in this study. Though, the general picture suggests some improvements in tax revenues in the country but closer examination shows poor performance regarding its growth rate. In fact, the major challenges to equitable and efficient healthcare financing in the country are the dwindling revenue, lack of political commitment to health sector and the high prevalence of systemic corruption. All these could explain its insignificant effect on the selected health outcomes.

In Nigeria, domestic resource mobilisation is challenged by shallow domestic revenue base. The bulk of the country's population is engaged in the informal sector while several others are experiencing different forms of unemployment. In fact, industrial, manufacturing and general corporate activities are very limited with informal sector accounting for around 90 percent of employment and close to half of total economic activities (Adamu, 2006). This suggests that the bulk of activities going on in these very important sectors are untaxed either through direct taxes or VAT. The current wave of Export Processing Zones among Sub-Saharan countries with its accompanied tax exemptions and waivers tend to further reduce the tax base of the economies. The existence of the exemptions such fuel corrupt, tax evasive and tax avoidance schemes seriously minimize tax mobilization.

Furthermore, the result also shows a significant relationship between agricultural productivity a source of domestic resource mobilisation and health outcome in Nigeria. AP would in the long run negatively affect Infant Mortality that is to say it would reduce under-5 mortality rate. This is imperative because it implies that when value added agricultural output increases it has the potency of reducing under 5 mortality rates. Furthermore this make more meaning in many fronts, agricultural value addition create a wide range of pocket investment in form Agro-industries in the value addition cycle, these process avails opportunity for job creation income generation, more revenue to the government and also form a good source of medical

research; implying more mobilization of revenue and increase in general welfare when fully developed.

Furthermore, the results also showed that there is a statistically significant relationship between carbon dioxide emissions and under 5 mortality Carbon dioxide emissions have a negative relationship with under 5mortality rate that is; it is negatively related to health outcomes. This supports theoretical assertion of negative relationship between carbon dioxide emissions and under5 mortality. Carbon dioxide emissions are produced by motor vehicles and industrial processes which constitute air or environmental pollution that is not good for human beings. The negative sign implies that in the long-run if adequate measure and policy are made on greenhouse emission its effect on health would go a long way to reduce health related issues on unde-5 mortality resulting from air pollution

However, female literacy rate showed a positive relationship to under5 mortality which is not meant to be so on the grounds of the apriori expectations. This could be as results of not all women are educated especially in the rural areas on personal hygiene. In order to make education more effective in case of females, the curriculum taught at various educational levels needs to be reviewed in the international standards. The current state of the curriculum is lacking knowledge related to health and hygiene. This means that a female who goes to school is simply being taught basic subjects such as language, science and mathematics, etc., but she is not informed or imparted with the knowledge of improving her and her children's health. There is a need is for proper curriculum designed to ensure that knowledge related to all elements of health, hygiene, and sanitation related problems are incorporated.

Lastly, gross capital formation from the equation indicates that it positively affect infant mortality. Gross fixed capital formation was largely insignificant. This indicates that the government has paid less attention from investing in physical infrastructure for example electricity, clean water, good roads, health workers, health facilities (laboratories); this could be as a result of mismanagement or embezzlement of funds, out-dated technology

6.3 Recommendations

The framework delivering health to Nigerian people require radical change, with clear unequivocal goals and objectives against which advance can be measured not just by civil servant but also by the everyday citizens. The health of the Nigerian people ought to never again be measured regarding what number of hospitals are built or how many teaching hospitals are repaired or surely what number of tones of fake medications is signed, yet as far there is a genuine quantifiable change in sickness weights and mortality. Change in health sector, should not be dubious to logical term that makes no difference too vague to the average Nigerian yet a gathering of quantifiable approaches/ policies and methodologies with very much characterized, quantifiable outcomes. .

In as much as it has been concluded that domestic resource mobilization is responsible for better health outcomes, steps should be taken to make it take full advantage of all its potentials in that regard; With the existence of a significant relationship between domestic resource mobilization and health outcome, it is industrious to recommend that there should be sustained effort and push to invigorate productivity in both the public and private sectors.

Federal Government

The federal government should strengthen more efforts in generating tax revenue, establishing making a strong fiscal responsibility and also a transparent system in the country there motto, adopt tax reforms that would encourage increase in investment especially in infrastructure so as to boost the health system and also the formal organization should be incorporated .A newly passed sin tax reform bill should be implemented to increase taxes on all tobacco and alcohol projects. This revenue gotten from sin tax should be embarked for specific programmes. 20 percent should be allocated towards programmes to support tobacco farmers and workers. The remaining 80 percent should go to health care to upgrade medical facilities, and further health workers studies, providing a new injection of funding that will enable the Nigerian government to enrol more people in universal health care.

There should be monitoring and evaluation of sectorial budget as it relates to the program geared towards growth and development.

As for agricultural productivity, increased financing of value addition in agricultural productivity as well as enhancing infrastructural capacity to finance agricultural value chain. Government should design fiscal regime to generate more tax revenue in the rural area.

However, the fiscal regime shouldn't be burdensome to task where it becomes challenging to workers to invest in health.

Healthcare providers and Analyst

In order to increase female literacy rate to enhance health outcomes especially in the rural area, there is need for a review and restructure of curriculum taught at various educational level. The current state of the extra curriculum is lacking knowledge related to personal hygiene and health. There is need for proper curriculum designed to ensure that knowledge related to all elements of health and sanitation issues are included. This activity needs collaborative effort on the part of ministry of health of Nigeria. The federal ministry of health can identify the information that needs a part of the curriculum to handle such issues and the education ministry can develop a curriculum for various levels of education on the basis of this information. Health and hygiene related programmes for imparting information to students are a part of almost all the good institutions of the developed world.

To Increase Agricultural Productivity

People and institution involved with agriculture and health nexus should gather present proof of accomplishment or failures and share their insight experience. Second, institutions with common interest with worldwide health and agribusiness should assemble capacity, policies and administrative structures and research environment in which joint cooperation and partnership can thrive across sectors and also to encourage connected methodologies, beginning by setting up forums to bring stakeholders together. Agricultural and health researchers could collaborate to identify research gaps or needs, and research agenda distinguish and organize research gaps and needs, and build up a joint research agenda;

Partnerships between the private and public sectors play an especially important role in improving the efficiency of post-harvest value chains. A more collaborative approach should start with cross-sectoral training and education programmes alongside clear stakeholder guidelines and responsibilities. Everyone in Nigeria (government, households, and organizations) needs to take concrete actions to help overcome poor health and malnutrition. An important step in this direction is a new path for agricultural development, one where agricultural growth is used not only to increase food production but also to enhance nutrition and health.

6.4. Conclusion

This study has provided reliable evidence of the effects of domestic resource mobilisation and health outcome(under-five mortality) in Nigeria from the period of 1981-2015 and variables includes, tax revenue, agricultural productivity, carbon dioxide emission, gross capital formation and female literacy were used as explanatory variables while under-5 mortality as the dependent variable.

The findings of this study point out that tax revenue, one of the variables for domestic resource mobilisation had a positive relationship with under-5 mortality rate which wasn't on the ground of the apriori expectation, while agricultural productivity, the second variable used to classify domestic resource mobilisation had an inverse relationship which was on ground with the apriori expectation, hereby rejecting the null hypothesis (H0) and accepting the alternate hypothesis (H1) in Hypothesis 1: that there is a significant relationship between domestic resource mobilization and health outcome in Nigeria. It will pay for Nigeria to invest in health outcomes by putting more effort in agricultural sector which will serve as a means of income for household, revenue for the government and also medicinal drugs.

Nevertheless, to achieve high and sustainable health outcomes, suggested policy recommendations was viewed which when properly implemented will surely stimulate an effective domestic resource mobilization on health outcomes. Paying attention to health outcomes is not merely of political value, but an interest of national and global economic development. Health status has an impact on national economy, households and individuals. Therefore putting health high on the political agenda and implementing the necessary health policy will uplift national productivity because, healthier people work more and are physically and cognitively stronger.

6.4.1 Limitations of the study

The findings of this study came with some limitations. Due to the nature of data used which is the secondary data, the problem of errors occurring in the data estimation process cannot be overruled; there was insufficient data of some variables in Nigeria and with this they were proxied using similar variables. This study was also unable to take into consideration all the domestic resource In Nigeria due to the unavailability of data

Suggestions for further studies

The following suggestions are made for further studies:

1. Mobilising Agricultural resources to improve health outcomes in sub-Sahara Africa can be examined.

2. A study on domestic resource mobilisation and sustainable development in Nigeria can be looked into for further research.

REFERENCES

.A.S.Bokhari, F., Gai, Y., & Gottret., P. (2006). Government health expenditure and health outcomes. *Health economics Volume 16,issue 3*, 257-273.

African Development Bank. (2013). Annual report for 2013. *African Development Fund,2013*.

Amusa.K., Monkam.N, & Viegi.N. (2015). Can foreign aid enhance domestic resource mobilization efforts in Nigeria? *Department of Economics,University of Pretoria.*

Anand.S, & Ravallion.M. (1993). Human development in poor countries;The role of private incomes and public services. *Journal of Economic Perspectives*.

Anyawu.J, & E.O.Andrew. (2007). Health Expenditure and Health Outcomes in Africa. *African Development Bank Economic Research Paper*, 12-15.

Arize.A.C, & Melindreros.J. (2008). Dynamic Linkages nd Granger causality between trade deficits and budget deficits:Evidence from Africa. *African Journal of Accounting,Economics,Finance and Banking Research*, 2(2).

Baldacci.E. (2004). Social spendin, human capital and growth in developing countries:Implication for achieving MDGs. *IMF Working paper*.

Baldacci.E. (2004). Social spending,human capital and growth in developing countries:Implication for achieiving MDGs. *IMF Working Paper*.

Batyra.A. (2012). Challenges in domestic resource mobilization in the less developed countries. *LDC IV Monitor*, 1-20.

Bidani, B., & Ravallion, M. (1995). Decomposing social indicator using distributional data. *Policy research department,World Bank*.

Bloom.D, Canning.D, & Sevilla.J. (2004). The effect of health on economic growth:A production function approach. *World Development* , 32,1-19.

Bossert.T. (2010). Institutional Capacities and Decentralization of Health systems in Latin America:Need for More Evidence. *Americas Quarterly Summer*.

Carr.D. (2004). Improving the health of the world's poorest people. *Health Bulletin1,Washington DC;Population Refrence Bureau.*

Central Bank of Nigeria. (2014). Annual statistical Bulletin for 2014.

Culpeper, & Bhushan. (2008.). Enhancing Domestic Resource Mobilization. *G-24 Policy Brief,*, 25,1-3.

Currie, J., & Moretti, E. (2003). Mother's education and the intergenerational transmission of human capital:Evidence from college openings and longitudinal data. *NBER Working Paper No.9360*.

Cyprus.R. (2015). Domestic Resource Mobilization . *A Discussion Paper Prepared for G20 Development Working Group (DWG),*, 2-13.

David.E.Bloon, Canning, D., & Sevilla, J. (2003). The Demographic Dividend: A new perspective on the economic consequences of population change. *RAND*.

Deaton.A. (1990). Savings in developing countries:Theory and practice . *Proceedings of the world bank annual conference on Development Economics 1989,Washington DC:The World Bank*.

Deolalikar.A. (2005). Attaining the millennium development goals in india:How likely and what will it take to reduce infant mortality,child malnutrition,gender disparities and hunger-poverty and to increase school enrolment and completion. *Oxford University Press:New Delhi*.

Dolan, P. P. (2003). Grossman's theory of the demand for health care. *Health Economics.oslo,Sept 2003*, 1-8.

Dubosse., N. (2008). The IMF,Fiscal space and development programmes. *Brettonwoods Project*.

Efanga.S.I, & Nwokomah.J.M. (2013). Investment in human capital for sustainable development in Nigeria. *Educational Research International* , 2(2),134-138.

Engle.R.F, & Granger.C.W.J. (1987). Cointegration and error correction: Representation estimation and testing. *Econometrica*, 55,251-276.

Fakile.A.S, Adegbie.F.F, & Faboyede.O.S. (2014). Mobilizing domestic revenue for sustainable development in Africa. *European Journal of Accounting Auditing and Finance Research.*, 2(2),91-108.

Fan.S, & Saurkar.A. (2008). Public spending in developing countries: Trends,Determination and impact.

Federal, ministry, of, & Health. (FMoH,2004). Health sector reform program: Strategic thrusts and log frame .

Filmer.D, & Pritchett.L. (1999). The impact of public spending on health: does money matter? *Social science and Medicine* , 49(10),1309-1323.

Finlay.J. (2007). The role of health in economic development.Program on the global demography of aging,. *Working paper*, 21,1-21.

Fleegler.E. (2006). The Twin Deficits Revisited:A cross country empirical approach. *Being honours thesis submitted in partial fulfillment of the requirements for graduation with distinction in Economics in Trinity college of Duke University*.

Gakidou.K, & King.G. (2000). An individual level approach to health inequality:Child surivival in 50 countries. *Global programme on evidence for health policy discussion paper No.18.*

George.T.Abed, & Gupta, S. (2002). Governance,corruption and economic performance. *International Monetary Fund,september 23,2002.*

Grand.J., L. (1987). Inequalities in health:Some international comparisons. *European Economic Review,*, 31,182-191.

Granger.C.W. (1986). Development in the study of co-integrated economic variables. *Oxford Bulletin of Economic and Statistics*, 48(3),213-228.

Grigoli, F., & Kapsoli, J. (2013). Waste not,want not:The efficiency of health expenditure in emerging and developing economies. *IMF working paper.No 13/187.*

Grossman.M. (1972a). The demand for health: A theoretical and empirical investigation. *New York Columbia(for the National Bureau of Economic Research).*

Grossman.M. (1972b). On the concept of health capital and the demand for health. *Journal of Poliitical Economy*, 8,223-255.

Gupta.M. (2003). A critical appraisal of evidence-based medicine:Some ethnical considerations. *Journal of Evaluation in clinical practice Vol.9,issue 2*, 111-121.

Gupta.S, Verhoeven.M, & Tiongson.E. (1999). Does government spending buy better results in education and health care? *IMF Working paer No.WP/99/21.International Monetary Fund,Washington,D.C.*

Gupta.V.A. (2001). Public spending on health care and the poor. *IMF working paper,fiscal affairs apartment.*

Harro, & Domar. (1948). Towards a Dynamic Economics:Some recent developments of economic theory and their application to policy. *London:Macmillan.*

Harrod, & Domar. (1939). An essay in dynamic theory. *Economic Journal,Vol.49*, 14-33.

Hawkes, C., & Ruel., M. (2006). The links between agriculture and health:an intersectoral opportunity to improvve the health and livelihoods of the poor. *International Food Policy Research Institute;Bulletin of the world health organization.*, 985-991.

Hendry.R.F.E, & Richard.J.F. (1983). Exogenity. *Economerica*, 51(2),277-304.

HERFON. (2006). Nigeria Health Review.Health Reform foundation of Nigeria. *Kenbim press Ltd,Ibadan.*, 10-12,130-191.

Hojman.D. (1996). Economic and oher determinants of Infant and child mortality in small developing countries;The case of Central America and the Caribbean. *Applied Economics,Vol.28*, 281-290.

Ichoku.H, & Okoli.C.I. (2015). Fiscal space for health financing in Nigeria. *African Journal of Health Economics*, 1-18.

Ijaz, Z. (2012). Impact of female literacy rate and health facilities on infant mortality rate in Pakistan. *International journal of humanities and social science Vol.2,No.13,July 2012*.

Jhingan.M.L. (2007). Advanced Economic Theory. *Twelfth Revised and Enlarge Edition,Vrinda publications LTD*, 1074-1075.

Johansen. (1988). Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamics and Control_North Holland*, 231-254.

Johansen, S., & Juselius., K. (1990). Maximum Likelihood estimation and inference on cointegration-with applications to the demand for money. *Oxford Bulletin of Economics and Statistics*, 169-210.

Kageyama.J. (2003). The effects of a continouns increase in lifetime on savings. *Review of Income and Wealth,*, 49(2),163-183.

Kagina, & Allen. (2012). Aid as a Catalyst to increase Domestic Revenue Mobilization in sub-Saharan Africa. *Background study for the 2012 DCF-Aid as a catalyst,Development Cooperation Policy,United Nations Economic and Social Council (ECOSOC)*.

Ke, X., Saksena, P., & Holly, A. (2011). The Determinants of Health Expenditure: A country-level panel Data Analysis. *Publication and Resources working papers*.

Kim.K, & PM, M. (1992). More resources better health? A cross-national perspective. *US National Library of Medicine-National Insitutes of Health*, 34(8):837-42.

Kotlikoff.L.J. (1988). Intergenerational transfers and savings. *Journal of Economic Perspectives Spring,*, 2,41-58.

Lee, R., Mason, A., & Miller., T. (2000). Life cycle saving and the demographic transition:The case of Taiwan. *Population and Development Review*, 194-219.

M.J, R., Hsiao.W, Berman.P, & Reich.M.R. (2004). Getting Health Reform Right. *New York:Oxford University Press*.

Modigliani, F. (1986). Life cycle,Individual Thrift,and the Wealth of Nations. *American Economic Review,1986,vol.76,issue 3,*, 297-313.

Musango.L, Nabyong.J, Elovainio.R, & Cheruiyot. (2013). State of health financing in the African region. *World health organisation regional office for Africa.*, 5-46.

Musgrave, R. (1996). The role of the state in fiscal thoery. *International tax and public finance,1996,Vol.3,issue 3*, 247-258.

Mushtaq.H.khan. (2007.). Governance,Economic Growth and Development since the 1960s. *DESA Working Paper No.54,August 2007,*.

Ndikumana.L. (2015). Savings,Capital flight and African Development. *Oxford Handbook of Africa and Economics,Volume 2.Oxford university press.*

Nkang.N.M, Abang.S.O, Akpan.O.E, & Ofon.K.J. (2006). Co-integration and Error correction modelling of Agriculture Export Trade in Nigeria:The case of Cocoa. *Journal of Agriculture and Social Sciences*, 249-255.

Nnanna, O. (2003). Promoting savings and investment culture for National Development. *Central Bank of Nigeria Economic and Financial Review.Vol.4.No.3.september.*

North, South, & Institute. (2010). Domestic Resource Mobilization. *The North-South Institute,Ottawa,Canada.*

Nwachukwu.T.E, & Egwaikhide.F.O. (2007). An error-correction model of the determinants of private saving in Nigeria. *A paper presented at the African Economic Society(AES) Conference,July 2007.*

Nwachukwu.T.E, & Odigie.P. (2009). "What Drives Private Saving in Nigeria". *A Paper presented at the centre for the Study of African Economies (CSAE) conference,University of Oxford,March 2009.*

Obrizan.M, & Wehby.G.L. (2012). Health Expenditures and Life Expectancy around the World:A Quantile Regression Approach. *Kyiv School of Economics and Kyiv Economics Institute,Discussion Paper Series.*

Ogunleye, E., & Fashina.D.A. (2012). The imperatives for domestic resource moilization for sustained post-crisis recovery and growth in sub-Saharan Africa. *African Center for Economic Transformation,*, 1-23.

Olaniyan, O., Onisanwa, I. D., & Oyinlola, A. (2013). Health care expenditure in Sub-Saharan African countries:Evidence from panel data. *Paper submiitted for presentation at the 2013 centre for the study of African Economies Conference on Economic Development in Africa,March 2013.*

Oluwatoyin.A, M., Folasade.B, A., & Fagbeminiyi.F., F. (2015). Public health expenditure and health outcomes in Nigeria. *International Journal of Financial Economics Vol.4.No.1*, 45-56.

Oluwatoyin.A, M., Folsade.B, A., & Fagbeminiyi.F., F. (2015). Public health expenditure and health outcomes in Nigeria. *International Journal of Financial Economics.Vol.4.No.1.*, 45-56.

Preker.A.S, Carrin.G, Dror, D, Jakab.M.Hsiao, W., & Arhin-Tenkorng.D. (2004). Rich-poor differences in healthcare fianancing.In health financing for poor people:Resource

mobilization and risk sharing. *Preker.A.S and Carrin.G.(eds) Wahington D.C:The World Bank.*

Riman.H.B, & Akpan.E.S. (2012). Healthcare financing and health outcomes in Nigeria:A state level study using multivariate analysis. *International Journal of Humanities and Social Science*, 2(15),296-309.

Robert.M.Solow. (1956). A contribution to the theory of Economic Growth. *The Quarterly Journal of Economics,Vol.70.No.1.Feb 1956*, 65-94.

Samy, Y., & Bhushan., A. (2010). Progress and missteps in foreign aid plans.

Sassi.F, Gran.J, L., & Archard.L. (2001). Equity versus efficiency: A dilemma for the National health scheme. *British Medical Journal*, 323,762-763.

Schneider., F. (2007). Shadow Economies and Corruption all over the World:New estimates for 145 countries. *The Open Access,Open Assessment E-Journal,July 24,2007.*

Tang.C.F. (2010). An examination of the government spending and economic growth nexus for Malaysia using the leveraged bootstrap approach. *Global Economic Review*, 38(2),215-227.

Terence.H.Hull, & Gubhaju, B. (1986). Multivariate Analysis of infant and child mortlaity in Java and Bali. *Journal of Biosocial Science*.

Travis.P, Bennett.S, Haines.A, & Pang.T. (2004). Overcoming health-systems constraints to achieve the milennium development goals. *Pubmed.gov*, 900-6.

Ubi.P.S, & Effiom.L.E. (2015). Domestic resource mobilization and industrial output in Nigeria. *West African Financial and Economic Review,*, 13(2),4-15.

UNICEF. (1998). The state of the world's children:Focus on Nutrition. *Oxford University Press*.

UNICEF. (2007). Level and trends of Child mortality. *United Nations Childern's Fund Report,2007*.

United Nations. (2007). World Population Prospects:. *The 2000 Revision,New York:United Nations.*

World Bank. (2014). world devlopment indicator for 2014.

World Health Organisation. (2009). Achieving health equity:from root causes to fair outcomes.Interim Statement. *Commission on Social Determinants of Health.*

World Health Organisation. (2015). World Health Statistics 2015.

World Health Report. (2002). Reducing Risks,Promoting Healthy Life. *World Health Organization 2002*.

World Health Report(2013). Health system financing.The path to universal coverage. *http://www.who.int/whr/2010/whr10_en.pdf.(accessed 9th November,2013)*.

WorldHealth Report. (2006). Working together for health. *World Health Organization*.

Wujung, Andrew, Y., Aziseh, & Isiah, F. (2015). Assessing the effect of domestic resource mobilization on the economic growth of Cameroon. *The IEB International Journal of Finance.*

Yesufu.M. (2000). The Human Factor in National Development. *Spectrum Books*, 17-21.

APPENDIX

UNT ROOT TEST.

1st difference

Null Hypothesis: D(LOG(UMR)) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.878420	0.0001
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOG(UMR),2)
Method: Least Squares
Date: 03/17/17   Time: 22:42
Sample (adjusted): 1991 2015
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(U5MORT(-1)))	-0.132578	0.022553	-5.878420	0.0000
D(LOG(U5MORT(-1)),2)	0.056889	0.177328	0.320814	0.7528
D(LOG(U5MORT(-2)),2)	0.258185	0.166013	1.555210	0.1407
D(LOG(U5MORT(-3)),2)	0.149420	0.173793	0.859753	0.4035
D(LOG(U5MORT(-4)),2)	0.065493	0.172886	0.378820	0.7101
D(LOG(U5MORT(-5)),2)	0.015779	0.178620	0.088340	0.9308
D(LOG(U5MORT(-6)),2)	-0.342347	0.164981	-2.075069	0.0556
D(LOG(U5MORT(-7)),2)	0.407254	0.156181	2.607572	0.0198
D(LOG(U5MORT(-8)),2)	0.469046	0.163234	2.873463	0.0116
C	-0.003212	0.000625	-5.138470	0.0001

R-squared	0.913392	Mean dependent var	-0.001319
Adjusted R-squared	0.861426	S.D. dependent var	0.001845
S.E. of regression	0.000687	Akaike info criterion	-11.43991
Sum squared resid	7.08E-06	Schwarz criterion	-10.95236
Log likelihood	152.9989	Hannan-Quinn criter.	-11.30469
F-statistic	17.57702	Durbin-Watson stat	2.047961
Prob(F-statistic)	0.000002		

Null Hypothesis: D(LOG(AP)) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.524980	0.0001
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOG(AP),2)
Method: Least Squares
Date: 03/17/17   Time: 22:43
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(AP(-1)))	-1.006349	0.182145	-5.524980	0.0000
C	0.059144	0.017817	3.319424	0.0024

R-squared	0.504340	Mean dependent var		0.000526
Adjusted R-squared	0.487818	S.D. dependent var		0.113145
S.E. of regression	0.080974	Akaike info criterion		-2.128912
Sum squared resid	0.196704	Schwarz criterion		-2.037303
Log likelihood	36.06259	Hannan-Quinn criter.		-2.098546
F-statistic	30.52541	Durbin-Watson stat		2.001100
Prob(F-statistic)	0.000005			

Null Hypothesis: D(LOG(FML)) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.258463	0.0000
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOG(FML),2)
Method: Least Squares
Date: 03/17/17   Time: 22:43
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(FML(-1)))	-1.238870	0.170679	-7.258463	0.0000
C	-0.008403	0.011952	-0.703038	0.4873

R-squared	0.629564	Mean dependent var		-0.001486
Adjusted R-squared	0.617615	S.D. dependent var		0.110678
S.E. of regression	0.068440	Akaike info criterion		-2.467025
Sum squared resid	0.145205	Schwarz criterion		-2.376327
Log likelihood	42.70590	Hannan-Quinn criter.		-2.436508
F-statistic	52.68528	Durbin-Watson stat		2.053331
Prob(F-statistic)	0.000000			

Null Hypothesis: D(LOG(GCF)) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.741673	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOG(GCF),2)
Method: Least Squares
Date: 03/17/17   Time: 22:44
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(GCF(-1)))	-1.270129	0.221212	-5.741673	0.0000
D(LOG(GCF(-1)),2)	0.400482	0.165296	2.422820	0.0219
C	-0.018539	0.039434	-0.470124	0.6418

R-squared	0.557707	Mean dependent var	0.008974
Adjusted R-squared	0.527204	S.D. dependent var	0.321708
S.E. of regression	0.221207	Akaike info criterion	-0.090375
Sum squared resid	1.419045	Schwarz criterion	0.047038
Log likelihood	4.446000	Hannan-Quinn criter.	-0.044827
F-statistic	18.28373	Durbin-Watson stat	1.671670
Prob(F-statistic)	0.000007		

Null Hypothesis: D(LOG(TR)) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.481156	0.0001
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOG(TR),2)
Method: Least Squares
Date: 03/17/17   Time: 22:46
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(IGR(-1)))	-0.980929	0.178964	-5.481156	0.0000
C	0.274384	0.326477	0.840437	0.4071

R-squared	0.492162	Mean dependent var	0.017739
Adjusted R-squared	0.475780	S.D. dependent var	2.563540
S.E. of regression	1.856081	Akaike info criterion	4.133503
Sum squared resid	106.7961	Schwarz criterion	4.224200
Log likelihood	-66.20280	Hannan-Quinn criter.	4.164020
F-statistic	30.04307	Durbin-Watson stat	2.006532
Prob(F-statistic)	0.000005		

Sample (adjusted): 1983 2011
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: LUMR LTR LAP LCO2 LFML LGCF
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.949349	224.9153	95.75366	0.0000
At most 1 *	0.823867	138.4141	69.81889	0.0000
At most 2 *	0.699730	88.05506	47.85613	0.0000
At most 3 *	0.564301	53.16595	29.79707	0.0000
At most 4 *	0.464022	29.07268	15.49471	0.0003
At most 5 *	0.315347	10.98645	3.841466	0.0009

 Trace test indicates 6 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.949349	86.50122	40.07757	0.0000
At most 1 *	0.823867	50.35904	33.87687	0.0003
At most 2 *	0.699730	34.88910	27.58434	0.0048
At most 3 *	0.564301	24.09327	21.13162	0.0186
At most 4 *	0.464022	18.08623	14.26460	0.0119
At most 5 *	0.315347	10.98645	3.841466	0.0009

 Max-eigenvalue test indicates 6 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

LUMR	LTR	LAP	LCO2	LFML	LGCF
3.120674	-0.074428	1.123859	0.241116	-4.482461	-2.478424
22.92087	-0.108043	0.319553	-2.769685	-14.62955	3.372257
-6.805798	0.457276	-2.838398	6.192955	21.84632	0.119296
27.33380	-0.772447	11.84333	-2.217668	-0.071997	0.736086
11.05280	-0.201700	0.336130	-2.623633	3.663188	-1.920575
-25.93004	-0.434750	-6.699598	1.864718	-1.351321	-2.678075

 Unrestricted Adjustment Coefficients (alpha):

D(LUMR)	-0.002004	-8.42E-05	-0.000519	-6.51E-06	-7.36E-05	0.000295

D(LTR)	0.490365	-0.237251	0.499929	0.347535	0.911795	0.378725
D(LAP)	0.009937	0.012077	-0.027679	-0.035161	0.035009	-0.004318
D(LCO2)	0.082126	-0.092805	-0.108658	0.041607	0.049930	-0.063897
D(LFML)	0.021320	0.044012	-0.019778	0.014864	-0.011035	0.004403
D(LGCF)	0.081683	-0.091092	-0.072111	-0.047634	-0.032427	0.068519

1 Cointegrating Equation(s):　　　Log likelihood　　204.0008

Normalized cointegrating coefficients (standard error in parentheses)

LUMR	LTR	LAP	LCO2	LFML	LGCF
1.000000	-0.023850	0.360133	0.077264	-1.436376	-0.794195
	(0.01534)	(0.12689)	(0.09360)	(0.40918)	(0.07238)

Adjustment coefficients (standard error in parentheses)

D(LUMR)	-0.006255
	(0.00064)
D(LTR)	1.530268
	(1.15945)
D(LAP)	0.031011
	(0.05348)
D(LCO2)	0.256288
	(0.15086)
D(LFML)	0.066534
	(0.04114)
D(LGCF)	0.254905
	(0.13454)

2 Cointegrating Equation(s):　　　Log likelihood　　229.1803

Normalized cointegrating coefficients (standard error in parentheses)

LUMR	LTR	LAP	LCO2	LFML	LGCF
1.000000	0.000000	-0.071335	-0.169634	-0.441666	0.378999
		(0.04795)	(0.03499)	(0.16133)	(0.02676)
0.000000	1.000000	-18.09097	-10.35217	41.70704	49.19070
		(6.19013)	(4.51729)	(20.8249)	(3.45395)

Adjustment coefficients (standard error in parentheses)

D(LUMR)	-0.008186	0.000158
	(0.00476)	(2.7E-05)
D(LTR)	-3.907728	-0.010863
	(8.51071)	(0.04827)
D(LAP)	0.307816	-0.002044
	(0.39175)	(0.00222)
D(LCO2)	-1.870893	0.003915
	(1.01539)	(0.00576)
D(LFML)	1.075330	-0.006342
	(0.20891)	(0.00118)
D(LGCF)	-1.833008	0.003762
	(0.88498)	(0.00502)

3 Cointegrating Equation(s):　　　Log likelihood　　246.6248

Normalized cointegrating coefficients (standard error in parentheses)

LUMR	LTR	LAP	LCO2	LFML	LGCF
1.000000	0.000000	0.000000	-0.028768	-0.444999	0.093655
			(0.02489)	(0.10920)	(0.02001)
0.000000	1.000000	0.000000	25.37248	40.86190	-23.17441
			(3.42494)	(15.0284)	(2.75326)
0.000000	0.000000	1.000000	1.974723	-0.046716	-4.000067

		(0.38685)	(1.69748)	(0.31098)

Adjustment coefficients (standard error in parentheses)

D(LUMR)	-0.004656	-7.89E-05	-0.000808
	(0.00414)	(8.2E-05)	(0.00053)
D(LTR)	-7.310146	0.217742	-0.943712
	(8.47244)	(0.16715)	(1.07851)
D(LAP)	0.496196	-0.014702	0.093593
	(0.38149)	(0.00753)	(0.04856)
D(LCO2)	-1.131388	-0.045772	0.371056
	(0.89071)	(0.01757)	(0.11339)
D(LFML)	1.209933	-0.015386	0.094162
	(0.19129)	(0.00377)	(0.02435)
D(LGCF)	-1.342238	-0.029212	0.267370
	(0.84084)	(0.01659)	(0.10704)

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4 Cointegrating Equation(s):	Log likelihood	258.6715

Normalized cointegrating coefficients (standard error in parentheses)

LUMR	LTR	LAP	LCO2	LFML	LGCF
1.000000	0.000000	0.000000	0.000000	-0.688648	-0.058731
				(0.09732)	(0.02521)
0.000000	1.000000	0.000000	0.000000	255.7543	111.2255
				(35.9311)	(9.30756)
0.000000	0.000000	1.000000	0.000000	16.67821	6.460188
				(2.27824)	(0.59015)
0.000000	0.000000	0.000000	1.000000	-8.469506	-5.297076
				(1.63754)	(0.42419)

Adjustment coefficients (standard error in parentheses)

D(LUMR)	-0.004834	-7.38E-05	-0.000885	-0.003448
	(0.00626)	(0.00016)	(0.00210)	(0.00123)
D(LTR)	2.189316	-0.050711	3.172264	3.100667
	(12.5053)	(0.31124)	(4.19753)	(2.45012)
D(LAP)	-0.464886	0.012458	-0.322830	-0.124494
	(0.50432)	(0.01255)	(0.16928)	(0.09881)
D(LCO2)	0.005889	-0.077911	0.863822	-0.488341
	(1.30512)	(0.03248)	(0.43808)	(0.25571)
D(LFML)	1.616214	-0.026867	0.270198	-0.272204
	(0.26389)	(0.00657)	(0.08858)	(0.05170)
D(LGCF)	-2.644269	0.007583	-0.296781	-0.068949
	(1.21326)	(0.03020)	(0.40724)	(0.23771)

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5 Cointegrating Equation(s):	Log likelihood	267.7146

Normalized cointegrating coefficients (standard error in parentheses)

LUMR	LTR	LAP	LCO2	LFML	LGCF
1.000000	0.000000	0.000000	0.000000	0.000000	0.041395
					(0.02445)
0.000000	1.000000	0.000000	0.000000	0.000000	74.04015
					(7.14160)
0.000000	0.000000	1.000000	0.000000	0.000000	4.035260
					(0.45503)
0.000000	0.000000	0.000000	1.000000	0.000000	-4.065652
					(0.31516)
0.000000	0.000000	0.000000	0.000000	1.000000	0.145395
					(0.03103)

Adjustment coefficients (standard error in parentheses)

D(LUMR)	-0.005648	-5.90E-05	-0.000909	-0.003254	-0.001383

	(0.00651)	(0.00016)	(0.00209)	(0.00130)	(0.00460)
D(LTR)	12.26720	-0.234619	3.478746	0.708452	15.50950
	(10.6456)	(0.25975)	(3.42084)	(2.12645)	(7.52468)
D(LAP)	-0.077936	0.005397	-0.311063	-0.216346	-0.695135
	(0.43938)	(0.01072)	(0.14119)	(0.08777)	(0.31057)
D(LCO2)	0.557761	-0.087982	0.880605	-0.619341	-1.204294
	(1.29913)	(0.03170)	(0.41746)	(0.25950)	(0.91827)
D(LFML)	1.494246	-0.024642	0.266488	-0.243252	-1.213007
	(0.26005)	(0.00635)	(0.08356)	(0.05195)	(0.18381)
D(LGCF)	-3.002674	0.014124	-0.307681	0.016127	-0.724209
	(1.23883)	(0.03023)	(0.39808)	(0.24746)	(0.87565)

Vector Error Correction Estimates
Date: 03/20/17   Time: 23:39
Sample (adjusted): 1983 2011
Included observations: 29 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LUMR(-1)	1.000000
LTR(-1)	-0.023850
	(0.01534)
	[-1.55483]
LAP(-1)	0.360133
	(0.12689)
	[2.83804]
LFML(-1)	-1.436376
	(0.40918)
	[-3.51037]
LGCF(-1)	-0.794195
	(0.07238)
	[-10.9729]
LCO2(-1)	0.077264
	(0.09360)
	[0.82546]
C	0.315689

Error Correction:	D(LUMR)	D(LTR)	D(LAP)	D(LFML)	D(LGCF)	D(LCO2)
CointEq1	-0.006255	1.530268	0.031011	0.066534	0.254905	0.256288
	(0.00064)	(1.15945)	(0.05348)	(0.04114)	(0.13454)	(0.15086)
	[-9.70954]	[1.31982]	[0.57982]	[1.61720]	[1.89460]	[1.69887]
D(LU5MORT(-1))	0.991488	21.03798	-1.295452	0.379437	-2.018248	4.414133
	(0.01429)	(25.7124)	(1.18609)	(0.91236)	(2.98366)	(3.34547)
	[69.3983]	[0.81820]	[-1.09220]	[0.41589]	[-0.67643]	[1.31944]
D(LIGR(-1))	9.46E-05	0.050941	0.000722	-0.002748	0.005428	-0.044033
	(0.00016)	(0.28457)	(0.01313)	(0.01010)	(0.03302)	(0.03703)
	[0.59804]	[0.17901]	[0.05503]	[-0.27214]	[0.16438]	[-1.18926]
D(LAP(-1))	0.003885	-1.181043	-0.086630	0.228507	1.047830	0.257666
	(0.00272)	(4.90113)	(0.22609)	(0.17391)	(0.56873)	(0.63769)

	[1.42673]	[-0.24097]	[-0.38317]	[1.31395]	[1.84241]	[0.40406]
D(LFML(-1))	-0.003080	8.306913	-0.013718	-0.154350	-0.213424	-0.589821
	(0.00302)	(5.43879)	(0.25089)	(0.19299)	(0.63112)	(0.70765)
	[-1.01924]	[1.52735]	[-0.05468]	[-0.79980]	[-0.33817]	[-0.83350]
D(LGCF(-1))	-0.002369	-1.291295	-0.035799	0.046943	0.058890	0.251363
	(0.00091)	(1.63309)	(0.07533)	(0.05795)	(0.18950)	(0.21248)
	[-2.61030]	[-0.79071]	[-0.47520]	[0.81010]	[0.31076]	[1.18297]
D(LCO2(-1))	-0.000209	-0.713392	0.003386	-0.106113	-0.022716	-0.188933
	(0.00090)	(1.61539)	(0.07452)	(0.05732)	(0.18745)	(0.21018)
	[-0.23295]	[-0.44162]	[0.04545]	[-1.85126]	[-0.12118]	[-0.89891]
C	-0.001474	0.711233	0.042638	-0.010544	-0.119791	0.097318
	(0.00034)	(0.60846)	(0.02807)	(0.02159)	(0.07061)	(0.07917)
	[-4.35954]	[1.16891]	[1.51911]	[-0.48837]	[-1.69661]	[1.22927]
R-squared	0.996773	0.211707	0.083829	0.271723	0.369267	0.239649
Adj. R-squared	0.995697	-0.051057	-0.221562	0.028964	0.159022	-0.013802
Sum sq. resids	2.60E-05	84.06707	0.178887	0.105846	1.131986	1.423163
S.E. equation	0.001112	2.000798	0.092295	0.070995	0.232173	0.260326
F-statistic	926.5975	0.805692	0.274497	1.119310	1.756369	0.945544
Log likelihood	160.7843	-56.58185	32.63105	40.24025	5.878952	2.559783
Akaike AIC	-10.53685	4.453920	-1.698693	-2.223466	0.146279	0.375187
Schwarz SC	-10.15966	4.831105	-1.321508	-1.846281	0.523464	0.752372
Mean dependent	-0.017686	0.304298	0.060356	-0.005926	-0.020921	0.011405
S.D. dependent	0.016948	1.951597	0.083507	0.072046	0.253174	0.258548

Determinant resid covariance (dof adj.)	2.17E-13
Determinant resid covariance	3.13E-14
Log likelihood	204.0008
Akaike information criterion	-10.34488
Schwarz criterion	-7.798882