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## Impact of National Savings on Economic Growth in Nigeria (1990-2015)

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### **ABSTRACT**

*This research work analyzed the impact of National Savings on economic growth in Nigeria (1990-2015). Secondary data was adopted and sourced from CBN statistical bulletin. Ordinary Least Square with the aid of E-view version 9 was used to determine the effects of National Savings on Gross Domestic Product. The result showed that there is a positive and significant relationship between National Savings and Gross Domestic Product in Nigeria. The study recommends amongst others that; Government should ensure an adequate macroeconomic policies that will open up the economy in order to encourage foreign direct investment inflow and make Nigeria an export platform, where export commodities could be manufactured for established international market; so as to Strengthen Nigeria's term of trade and induce Savings, Proper financial market development that would be able to meet the saving needs of the surging business world.*

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**Keywords:** *National Savings, Economic Growth*

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### **1.1 INTRODUCTION**

Several countries that have achieved rapid economic development since World War II have two common features. First, they invested in education of men, women and in physical capital. Second, they achieved high productivity from this investment by providing efficient capital markets, competitive trade-lending roles, and higher level of economic efficiency driven by technological capabilities, stable polity, appropriate economic policy and economic system (World Bank, 2002). However, as a result of market failure that may likely occur in the process of growth, it may not be ideal to leave the process of economic growth entirely to the market forces especially in the developing economies like Nigeria.

One of the cardinal economic objectives of the developing countries, including Nigeria is to achieve high economic growth that will lead to economic development and reduce poverty from whatever theoretical angle that one may look at it, economic growth indicates the ability of an economic to increase production of goods and services with the stock of capital and other factors of accumulation with the right combination of other factors of production will bring about their higher output growth.

Utemadu (2002) stated that economic growth countries that are able to accumulate high level of capital tend to achieve fast rates of economic growth and development. Secondly, the quality of the government and its economic policies matter a lot. The radical theorist and early proponents of development economics were of the view that growth could be internalized. Developments in

the world economies have shown that it is futile for economies to isolate themselves from rapidly integrating world (Essien & Bawa, 2007).

Therefore, to finance adequate investment required for proper economic growth, every economic needs to generate sufficient savings or borrow from abroad. However, borrowing from abroad is not proper strategy for economic growth, as it may not only have adverse effects on the balance of payment as the loans will have to be serviced in the future, but also carries foreign exchange risks, national savings becomes necessary for economic growth, because, they can provide the domestic resources that are needed to fund the investment effort of a country (Gotera, 2002). Savings which is defined as that part of income not immediately spent or consumed but reserved for future consumption, investment or for unforeseen contingencies, is considered as an indispensable weapon for economic growth and development. Its role is reflected in capital formation through increase capital stock and the impact it makes on the capacity to generate more and higher income.

(Akinbobola & Ibrahim, 2011). Higher savings leads to higher investment, which in turn leads to higher economic growth (Lewis, 1955). The Harrod-Domcar model proposed by Harrod (1939) and Domar (1946) postulates that savings as the major determinant of economic growth depends on marginal propensity to save and capital output ratio.

Economic theories suggest that the national savings of a nation is the aggregate of public savings and private savings. Usually, it is equivalent to the income of a country after subtracting the government buys and expenditures. National savings function according to the economic model of national savings. According to the basics closed economy model, the GDP (Gross Domestic Product or the commodities and services manufactured within a year) can be utilized for three purposes.

It is believed that the people of less developed countries (LDCs) are incapable of high level of individual savings for reasons like; low level of per capital income, indulgence in luxurious and conspicuous consumption by the view who could afford to save. Looking at it by intuition, according to investment, the capital stock will grow faster and a higher growth of income will result but it is instructive to note that the connection among savings and growth is not as simple as it looks (Osundina & Osundina, 2014).

It is widely agreed on one side that countries that save more also tend to grow faster provided the financial system is deep while on the other hand, some analysts fear that a rising savings rate could hamper economic recovery if consumer expenditures from a large component of aggregate demand. Low savings rate has been cited by some study as one of the most serious constraints to sustainable economic growth, one of those studies is that of World Bank that concludes that on the average, third world countries with higher growth rates incidentally are those with higher saving rates (World Bank, 1989). United Nation also maintained that increasing savings and ensuring that they are directed to productive investment are central to accelerating economic growth (UN Department of Economics and Social Affairs, 2005). This makes savings as a macroeconomic variable to attain economic growth a subject of critical consideration.

The expansionary measure introduced by Nigeria's government in the early 70's was aimed at increasing the liquidity in the economy so as to aid the growth of the economy. It is aimed that this will increase the disposable income of the people which is expected to be distributed over both savings and consumption. This is consequently expected to raise the level of investments

and thus increase the growth of the economic (Akinbobola & Ibrahim, 2011).

To many nations and individuals, borrowing may pave way to greatness but to some (those unable to manage debt) it may lead to impoverishment and great sorrows. External debts have thus become one central problem in Nigeria. It has generated much public concern prior to 1980 (Osundina & Osundina, 2014).

There is an implicit belief that the Nigerian economic environment has been unable to attract foreign direct investment to its fullest potentials, given the unstable operating environment, which is characterized by inefficient capital markets, high rate of inflation, unstable polity, stringent policies and fragile financial system, among others. Another major problem is the element of fiscal dominance. A size of fiscal deficit has an implication of national savings and investment and ultimately economic growth, (Uwakaeme, 2015).

In Nigeria, the main factor underlying these outcomes is the volatility of government expenditure arising from the boom and burst cycle of government revenue which is derived mainly from single export commodity (oil), whose price is also volatile. To worsen the problem, these expenditures are not channeled to productive sectors of the economy (Yesuf, 1996). Thus, this low level of savings in Nigeria is a result of high incidence in poverty and low level of disposable income, underdeveloped saving channels reflecting underdeveloped capital markets, conspicuous. Consumption and unfavorable economic environment characterized by high unemployment and inflation (Ahortor & Adenutsi, 2009).

## 1.2 Objectives of the Study:

The general objective of this study; is to examine the effects of national savings on economic growth in Nigeria, but specifically;

- i. To determine the effect of national savings on GDP in Nigeria.
- ii.

## 1.3 Research Questions

In other to achieve the above objectives, this study will be guided by the following questions:

- i. To what extent do national savings affect GDP in Nigeria?

## 1.4 Statement of Hypotheses

From the research questions presented, the hypothesis is presented in Null ( $H_0$ ) and Alternate ( $H_1$ ) form:

- i.  $H_0$ : GDP has no positive effect on National Savings in Nigeria.  
 $H_1$  GDP has positive effect on National Savings in Nigeria.

## 1.5 Significance of the Study

However, this study will be significant to policy makers to draw conclusion on where to strengthen the effort of investors. It will form a measuring tool to access the efforts of the financial sector as well as government agencies in managing polices that affect savings positive in recent years.

It will also act as a source of information on various factors that can determine national savings. It will also help the students and researchers to do further work related to the research project in creating a fountain of knowledge.

This study will extend the frontiers of the existing literature by emphasizing the roles of savings on economic growth.

## 1.6 Scope of the Study

This research work is designed to look into National Savings, capital formation, GDP, market capitalization in Nigeria. The study covers a period of (1990-2015).

## 2.0 REVIEW OF RELATED LITERATURE

Ayanwu & Oaikhenan (1995) defined savings as the amount of income per capital time period that is not consumed by economic units. For the household, it presented that part of disposable income not spend on domestically produced or imported consumption goods and services. For the firm, it represents undistributed business profits. Savings is a flow variable being measure overtime. Concisely, savings may be defined as after tax income not spent. It may rightly be referred to or presumed “deferred consumption”, being income left over for the future consumption on capital investment or for precautionary and speculative motives. Succinctly, savings is summed as “disposable income less consumption”. In developing countries and Nigeria in particular, private savings constitutes the main source of capital accumulation for investment purposes.

Nkah (1997), savings is seen as the amount of income per time that is not consumed by economic units. Accordingly, Samuelson at el (1998) defined savings as income minus consumption following from the above, savings can be made by individuals (personal or private saving) or by corporate organizations such as firms (corporate savings or retained savings). Personal savings is that part of disposable income that is not consumed, while corporate savings is that part of the firm’s profit that is not distributed as dividends to shareholders. Therefore, for a country, the total supply of available savings is simply the sum of domestic savings and foreign savings. Smith (1976) recognized the importance of savings when he observed that capital is increased by parsimony and diminished by prodigality and misconduct. Prior to 1936, the classical economists propounded their theory on the savings, and asserted that a negative relationship existed between savings and interest rates is the equilibrating force between savings and investments and the decision to save or invest, depend solely on the rate of interest. Thus, at any particular level of income, the amount saved will increase with any rise in the rate of interest.

Following Mckinnon (1973) and Shaw (1973) argued that for the typical developing country, the net impact of a change in real interest on saving is likely to be positive. This is because, in the typical developing economy where there is no robust market for stocks and bonds, cash balances and quasi-monetary assets usually account for a greater proportion of household saving compared to that in developed countries. In addition, in an environment where self-financing and bank loans constitute the major source of investment funds, accumulation of financial saving is driven mainly by the decision to invest and not by the desire to live on interest income. Given the peculiarities of saving behavior, in addition to the fact that bulk saving comes from small savers, the substitution effect is usually larger than the income effect of an interest rate change.

Lewis (1955) noted that people would save more if saving institutions were nearer to them than if they were farther. As a result, a negative relationship is assumed to exist between population per bank branch and household financial saving. However, whether increased financial intermediation itself significantly increases the overall propensity to save depends also on the degree of substitution between financial saving and other items in the household’s asset portfolio.

The total supply of available savings is simply the sum of domestic savings and foreign savings. However, domestic savings could be further broken into two components, which include

government or public sector savings and private domestic savings. Amongst other things, savings serve as the main source of financing investment and related economic activities.

Igbatayo & Agbada (2012) noted that higher level of national savings leads to higher investment and consequently higher output. This is so because the level of savings determines the magnitude of capital accumulation. On the other hand, the magnitude of total earnings depends on the level of total output, thus output also determines the level of savings (capital accumulation) and investments by households and business.

Government savings originates from the surplus budgeting, but very few countries make part of their public sector savings from savings or profit of the government owned enterprises. There are also two aspects of private domestic savings. These include corporate savings and household savings. Again foreign savings also come into two basic forms such as foreign aid, and private foreign savings.

### **Forms of Savings**

Savings in an economy can assume one of the several forms. These includes: Personal savings, corporate savings or business savings and Government savings.

**Personal Savings:** are household savings of individuals in the economy (Christopher, 2008).

**Corporate Savings:** are businesses savings as a component of the private savings which are re-invest by business owners, (Aron & Muellbauer, 1999).

**Public Savings:** are savings by the government due from increased tax or reduced spending (Eregba & Irugbe, 2009).

### **Sources of Savings in Nigeria**

The Nigerian economy, like any other, comprises of the public and private sectors, with both engaging in investment expenditures. Both sectors have to save and to borrow in order to meet their investment requirements. The immediate source of funds is own savings. The government, which represents the public sector, collects revenue from both tax and non-tax sources. After meeting its expenditure requirements on purchases of goods and services, the government uses whatever surplus there is to increase its stock of capital i.e. investment. This is also true of economic agents in the private sector. When investment expenditure exceeds the level of savings, the private and the public sectors mainly borrow from financial institutions.

The financial institutions that actually engage in providing funds or credits for investment in Nigeria include deposit money banks, mortgage institutions and development financial institutions. Other sources include non-bank financial institutions like the insurance companies, the capital market, mutual trust funds, pension funds, equipment leasing companies, cooperative and thrift societies, etc. all these are regarded as formal sources of investment finance in Nigeria because they are well organized with appropriate records and their operations are relatively open and regulated. Altogether, they provide the largest portion of the domestic funds for investment.

There are a large number of informal providers of domestic funds for investment in Nigeria. They are termed informal because of their mode of operations and for lack of enough documented information about them. They provide investment funds for individuals and small enterprises operating in the informal sector of the economic. As a result of lack of information on their operations, it is difficult to know the exact proportion of the total domestic funds for



investment that are made available by the so called informal providers of funds. However, for a country like Nigeria whose informal sector is adjudged to be large, the informal providers of investible funds are playing a significant role in the process of capital accumulation in the country. The informal providers for investment funds in Nigeria include individuals, groups, town unions, occupational groups, 'esusu', religious organizations, etc.

### Savings Trends in Nigeria

Table 1 shows the components of saving in Nigeria including savings and time deposits with deposit money banks, the national provident fund, federal savings bank, federal mortgage bank, life insurance funds and other deposit institutions. Saving and time deposits in banks is by far the single most important component of saving in Nigeria and has witnessed a continuous growth over the years. Beginning with a sum of ₦0.34 billion in 1970, it rose to ₦5.16 billion in 1980. By 1990, the figure had climbed to ₦23.14 billion, rising further by 2000 to ₦343.17 billion. As at 2005, the figure was ₦1.3 trillion and bullish up to ₦11.9 trillion by 2014.

Its contribution to total saving has however been mixed. In 1970, savings in banks consisted of 98.8% of total saving, with this figure reducing gradually to 89.4% in 1980, and further declining to 78% in 1990. From then the percentage of savings in banks in total saving has witnessed an upward trend, rising to 89.1% in 2000. Since 2003, this percentage has been 100% showing that it has become the only component of saving until 2013 and 2014 it declined to 99.4%.

The National provident fund and the federal mortgage bank were both established in 1974. Beginning with ₦0.13 billion, the national provident rose to ₦0.72 billion in 1990, reaching a peak of ₦1.37 billion in 1998. The fund maintained this figure till 2002 when it is scrapped by the government. The federal mortgage bank on the other hand experienced a more rapid growth, rising from a paltry ₦0.007 billion at its inception in 1974 to ₦0.30 billion in 1990. By 2002 when it ceased to exist, it had mobilized ₦22.3 billion. The figures of the federal savings bank have been mixed. It stood at ₦4.9 million in 1970, increasing ₦8.1 million in 1978. It thereafter declined to ₦4.0 billion in 1982, after which the figure the figure climbed steadily till it reached ₦37.5 billion in 1989 when it discontinued. 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 mobilized stood at ₦8.5 billion in 2002 when the federal government scrapped it.

**Table 2.1.3: Savings Statistics - Cumulative (N' Billion)**

Period	Savings and Time Deposit with Comm. Bank	National Provident Fund	Federal Savings Bank	Federal Mortgage Bank	Time Deposits with Merchant Banks	Premium Bonds, Savings Cert. & Savings Stamps	Life Insurance Funds	Other Deposits Institutions <sup>1</sup>	Total Savings
1981	5.80	0.38	0.01	0.06	0.33	0.00	-	-	6.56

1982	6.34	0.41	0.00	0.07	0.69	0.00	-	-	7.51
1983	8.08	0.47	0.01	0.09	0.79	0.00	-	-	9.44
1984	9.39	0.50	0.01	0.11	0.97	0.00	-	-	10.99
1985	10.55	0.54	0.01	0.10	1.32	0.00	-	-	12.52
1986	11.49	0.58	0.01	0.12	1.74	0.00	-	-	13.93
1987	15.09	0.61	0.02	0.13	2.82	0.00	-	-	18.68
1988	18.40	0.65	0.02	0.20	3.98	0.00	-	-	23.25
1989	17.81	0.70	0.04	0.21	3.97	0.00	1.07	-	23.80
1990	23.14	0.72	-	0.30	4.35	-	1.14	-	29.65
1991	30.36	0.65	-	0.43	5.01	-	1.24	0.05	37.74
1992	43.44	0.72	-	0.73	8.34	-	1.41	0.48	55.12
1993	60.90	0.77	-	0.82	19.30	-	1.57	1.68	85.03
							19.4		
1994	76.13	0.76	-	0.82	11.32	-	4	2.51	110.97
1995	93.33	0.73	-	0.44	11.10	-	2.89	-	108.49
1996	115.35	-	-	-	15.51	-	1.95	1.70	134.50
1997	154.06	-	-	-	19.76	-	3.83	0.00	177.65
1998	161.93	1.37	-	0.44	30.30	-	4.62	1.41	200.07
1999	241.60	1.37	-	-	24.71	-	4.34	5.65	277.67
2000	343.17	1.37	-	-	26.61	-	8.37	5.66	385.19
2001	451.96	1.37	-	22.30	-	-	8.49	3.93	488.05
2002	556.01	1.37	-	22.30	-	-	8.49	3.93	592.09
2003	655.74	-	-	-	-	-	-	-	655.74
2004	797.52	-	-	-	-	-	-	-	797.52
									1,316.9
2005	1,316.96	-	-	-	-	-	-	-	6
									1,739.6
2006	1,739.64	-	-	-	-	-	-	-	4
									2,693.5
2007	2,693.55	-	-	-	-	-	-	-	5
									4,118.1
2008	4,118.17	-	-	-	-	-	-	-	7
									5,763.5
2009	5,763.51	-	-	-	-	-	-	-	1
									5,954.2
2010	5,954.26	-	-	-	-	-	-	-	6
									6,531.9
2011	6,531.91	-	-	-	-	-	-	-	1
									8,062.9
2012	8,062.10	-	-	-	-	-	-	0.80	0
									8,656.1
2013	8,606.61	-	-	-	36.05	-	-	13.47	2
	11,936.9								12,008.
2014	0	-	-	-	71.31	-	-	-	21

CBN Statistical Bulletin, 2014

As proposed by Aryeetey and Udry (2002), there are no standard rules on the determination of how well national and domestic savings should perform in a given year. Hence, in discussing how well savings are doing in any economy, the standard used is to compare the economy to other economies of similar characteristics, or to compare the same countries' saving performance over times, or to compare the actual performance versus the planned performance.

### **Determinants of Savings in Nigeria/Africa.**

1. Population share of children, per capita income (PCI) and growth of PCI are all significant.
2. Accessibility to credit markets.
3. The institutional factor.
4. Reliability of financial institution.

### **Determinants of Personal Savings**

Determinants of personal savings are income earned, age distribution and wealth holding. Income earned is the disposable income that can either be saved or spent by an individual. This is the direct money owned by individual as the reward for labor supplied. It can be wages or salaries. Age distribution is the age of an individual among varying ages, ranging between 0 and 17 and 60 upward for the dependent; also 18 and 59 for the independent-working class.

Wealth holding includes individuals, assets in forms of building(s) and/ or shares among other investments. This comprises of private apartment and rental apartment which can be relied upon in future as well as dividend returns-yielding investment and other properties (Oladeji and Ogunrinola, 2001).

The debt; inflation; interest rates and fiscal policy are some determinants of personal savings. So as a constant, they were not used as variables or factors determining personal savings.

### **Constraints to Savings**

- a) Low level of formal institution
- b) Fragmented financial markets and low patronage
- c) Patronage to holding physical goods than cash
- d) Informal savings more acceptable than formal ones
- e) Financial reforms
- f) Inflation and currency devaluation
- g) High transaction cost and low or no return on small savings
- h) External debt services.

### **Capital Formation**

Capital formation is a component of Gross Domestic Product by income together with consumption and net exports and services as an indicator of the level of investment in the economy. The concept means the society does not apply the whole of its current production activity to the needs and immediate desire of consumption but directs some part of it to the creation of capital goods (Jhingan, 2005). Capital formation promotes production and determines the speed of economic growth and development. It play important role in increasing the production potential of the economy and brings about balance growth of different sector.

Gross fixed capital formation (GFCF) is a macroeconomic concept used in official national



account. Statistically, it measures the value of acquisitions of new or existing fixed assets by the business sector, governments and “pure” households (excluding their unincorporated enterprises) less disposals of fixed assets. GFCF is a component of the expenditure on gross domestic product (GDP), and thus shows something about how much of the new value added in the economy is invested rather than consumed.

GFCF is called “gross” because the measure does not make any adjustments to deduct the consumption of fixed capital of fixed assets (depreciation of fixed assets) from the investment figures. For the analysis of the development of the productive capital stock, it is important to measure the value of the acquisitions less disposals of fixed assets beyond replacement for obsolescence of existing assets due to normal wear and tear. “Net Fixed Investment” includes the depreciation of existing assets from the figures for new fixed investment, and is called Net Fixed Capital Formation.

GFCF is not a measure of total investments, because only the value of net additions to fixed assets is measured, and all kinds of financial assets is measured, as well as stocks of inventories and other operating costs (the latter included in intermediate consumption). If, for example, one examines a company balance sheet, it is easy to see that fixed assets are only one component of the total annual capital outlay.

The most important exclusion from GFCF is land sales and purchases. The original reason, leaving aside complex valuation problems involved in estimating the value of land in a standard way, was that if a piece of land is sold, the total amount of land already in existence, is not regarded as being increased thereby; all that happens is that the ownership of the same land changes. Therefore, only the value of land improvement is included in the GFCF measure as a net addition to wealth. In special cases, such as land reclamation from the sea, a river or a lake, new land can indeed be created and sold where it did not exist before, adding to fixed assets.

It is worth noting that fixed assets in national accounts have broader coverage than fixed assets in business account. Fixed assets are produced assets that are used repeatedly or continuously in production processes for more than one year.

The range of fixed assets included in statistical measurement is defined by the purpose in using them. A vehicle for example is a fixed asset, but vehicles are included in GFCF only if they are actually used in work activities, i.e. if they fall within the scope of “production”. A car for personal use only is not normally included. The boundaries are not always easy to define, however, since vehicles may be used both for personal purposes and for work purposes; a conventional rule is usually applied in that case.

Non-produced assets (e.g. land except the value of land improvements, subsoil assets, mineral reserves, natural resources such as water, primary forests) are excluded from the official measure of GFCF. Also, ordinary repair work, purchases of durable household equipment (e.g. private cars and furniture) and animals reared for their meat are not part of GFCF.

It is sometimes difficult to draw an exact statistical boundary between GFCF and intermediate consumption, in so far as the expenditure concerns alterations to fixed assets owned. In some cases, this expenditure can refer to new fixed investment, in other words to operating costs relating to the maintenance or repair of fixed assets as part of GFCF.

Of recent, there has been a change in the treatment of expenditures on research and development (R&D). It is now recorded as the production of an asset instead of intermediate consumption,

which has the effect of increasing GDP.

While it is not possible to measure the value of the total fixed capital stock very accurately, it is possible to obtain a fairly reliable measure of the trend in net additions to the stock of fixed capital, since the purchase price of investment goods is recorded.

In the computation of GFCF, offensive weaponry and their means of delivery were excluded from capital formation, regardless of the length of their service life; reason being that military weaponry is used to destroy people and property, which is not value-adding production (Kanu, Ozurumba & Ayanwu: 2014).

### **Reasons for Low Level of Capital Formation**

**Low Income:** large savings are essential for capital formation; savings depend upon the size of the income. Since agriculture, industry and other sectors are backward in underdeveloped countries like Nigeria, the national output is low and so is the national income. As a result, per capita income is also low. On the other hand, the propensity to consume is very high, it is near unity. So almost the entire income is spent on consumption, thus saving is not possible and the rate of capital formation remains low.

**Low Productivity:** since the level of productivity is very low in such countries, the rates of growth of national income, saving and capital formation is also low. Their natural resources are either unutilized or underutilized due to the lack of efficient labor and technological knowledge, non-availability of capital, etc. these factors stand in the way of increasing the incomes of the resource-owners so that they are unable to save and invest more and the rate of capital formation does not rise.

**Demographic Reasons:** less developed countries possess such demographic features which keep the rate of capital formation at a low level. The growth rate of population is very high. On the other hand, the per capita income is low. As a result, the entire income is spent on bringing up the additional numbers, and little is saved for capital formation. Besides, the rapid increase in numbers aggravates the shortage of capital because large investments are required to equip the growing labor force even with obsolete equipment. Moreover, in such economic a large percentage of children in the total population entail a heavy burden on the parents in bringing them up and they are unable to save for capital formation. Lastly, such countries have a shorter life expectancy which means a smaller fraction of their population is available as an effective labor force. Since workers die in the prime of their lives, there are few adults to provide for a large number of children. This brings down the per capita income further. Thus, demographic reasons inhibit the rate of capital formation.

**Lack of Enterprise:** the lack of entrepreneurial ability is another factor responsible for low rate of capital formation in less developed countries. In fact, entrepreneurship is regarded as the focal point in the process economic development. But in less developed countries, small size of market, deficiency of capital, lack of private property and contract etc retard enterprise and initiative, thus there is low rate of capital formation.

**Lack of Economic Overhead:** the existence of economic overheads is essential to make fruitful investment and to encourage enterprise, for capital formation depends on them to a considerable extent. But economic overheads like power, transport, communications, water etc; are lacking in

less developed countries which retard enterprise, investment, activities and the path of capital formation.

**Lack of Capital Equipment:** In such countries the rate of capital formation also remains low due to the lack of capital equipment. Here not only the capital stock is low, but even capital is deficient. The total capital investments are hardly 5 to 6 per cent of the national income in Less Developed Countries whereas it is 15 to 20 per cent in developed countries. Due to the shortage of capital, it is not possible to replace the existing capital equipment and even to cover its depreciation in such countries. As a result the rate of capital formation remains at a low level.

**Inequalities in Income Distribution:** There are extreme inequalities in income distribution which keep the rate of capital formation low in such countries. But income inequalities do not imply larger savings. In fact larger savings are possible only in the case of the top 3 to 5 percent of the people in the income-pyramid. But these people invest in unproductive channels like gold, ornaments, precious stones, real estates, foreign currency etc. This distorts real investment and the rate of capital formation is low.

**Small Size of the Market:** The small size of the market is another reason for the low rate of capital formation in Less Developed Countries. It is a big hindrance in the way of enterprise and initiative. People are poor in such countries. The demand for goods is limited due to their low incomes Hence it is the small size of the domestic market to absorb the supply of new products. This keeps the rate of capital formation at a low level.

### **Sources of Capital Formation**

Jhingan (2006) Formation of capital is determined by increase in the volume of real savings, mobilization of savings and investment savings. He further opined that capital formation is a monetary phenomenon. He disaggregates the factors as domestic and external factors.

**Increase in National Income:** the first important step is to increase the national output or income which will tend to raise the income of the people. This can be done by utilizing the existing techniques and employing resources more efficiently, by utilizing unused resources productively and increased division of labour.

**Savings Drives.** Savings drives will also help solve the problem of augmenting savings. They require concerted efforts in the form of propaganda and social education. Savings is a matter of habit which can be inculcated by propaganda. People can be persuaded to save in their own interest or in the interest of the family, for imparting education to their children, for marrying them, for building a house or as a safeguard against old age, sickness or emergency. Similarly, issuing savings certificates in the form of government bonds and annuities carrying a high rate of interest may be helpful in mobilizing savings. Further incentive to savings can be in the form of business gifts, lottery prizes and tax exemption on the purchase of government bonds.

**Establishment of Financial Institutions:** It is common knowledge that much of the unspent current income is hoarded in cash; jewels, gold, etc., by the people in underdeveloped countries. Therefore, the need is to establish financial institutions where small savers can safely deposit their money with confidence. The setting up of a well-developed capital and money market by

the central bank can give further impetus in this direction. In order to stimulate small savings among the masses, attention should be paid to the starting of like insurance, compulsory provident fund, provident fund-cum-pension-cum, life insurance schemes, opening up of savings banks and mobile banks in rural areas, and promoting savings through cooperative societies, including the establishment of service cooperatives and strong apex institutions like the central and state cooperative banks. Such agencies will not only permit small amounts of saving to be handled and invested conveniently but will allow the owners of savings to retain liquidity individually and finance long-term investment collectively.

**Rural Savings:** Another important measure is to encourage rural savings for local needs which are understood and approved of by the savers. Government securities might be attached to particular development projects in rural areas. These rural debentures should as far as possible be for specific projects of development in which the villager is interested in different degrees, according as they are of direct benefit to him, or to those with whom he shares fellowship of interest because“ of their belonging to his district or region or state. The guiding policy should therefore, be to link rural savings with local development projects. In this way, mobilization of rural savings might lead to more rapid development. Such voluntary savings can even lead to that “critical minimum” which is so essential for a “take-off.

**Gold Hoards:** Another method is the mobilization of gold hoards. This is a useful, though a neglected method of capital formation. The government should issue gold certificates carrying a high rate of interest in lieu of the gold surrendered by the public.

**Perpetuation of Income Inequalities:** This is also regarded as one of the measures to achieve high rates of saving and investment. Since the mass of the people have a low marginal propensity to save in underdeveloped countries, it is the higher income groups with a high marginal propensity to save that can do saving and investment for capital formation. This had been one of the major sources of capital formation in 18th century England and early 20th century Japan. But widening of income inequalities is not feasible under the prevailing political climate in underdeveloped countries. Moreover, it is not definite that the wealthy classes may utilize their savings for productive investments, as was done by the British entrepreneurs of the 18th century. Rather the tendency is to spend on conspicuous consumption re-inforced by the international demonstration effect. In some of the African and Latin American countries where the governments are not watchful, the declining influence of the wealthy classes has led to the flight of domestic capital into the safe vaults of banks in developed countries.

**Increasing Profits:** Professor Lewis is of the view that the ratio of savings to national income is a function not just of inequality, but precisely, of the ratio of profits to national income. He maintains that voluntary savings form a significantly large share of national income only where inequality of income distribution is such that profits are a relatively large share of national income. If there is unequal distribution of income and the society’s upper level incomes accrue to the landlords or traders, there is little chance of providing voluntary savings to finance investments.

**Fiscal Measures:** since sufficient voluntary savings are not forthcoming for capital formation in an underdeveloped economy, the government is in a better position to mobilize them through

various fiscal and monetary measures. These measures may be in the form of a budget surplus through increase in taxation, reduction in government expenditure expansion of the export sector, raising money by public loans and even by deficit financing. Besides the government can increase savings by running public undertaking more efficiently so that they show larger profits. Above all, the government should evolve a growth oriented long-term savings policy so that savings should increase automatically as development gains momentum.

Public borrowing is also a useful tool for diverting resources from unproductive to productive channels. But its scope is limited in underdeveloped countries because of the low levels of income and savings, and high propensity to consume. Besides, there is the lack of organized money and capital markets. To make public borrowing a success, concerted campaign by propaganda and social education is essential. Further, a network of intermediate agencies should be set up in the form of savings banks, commercial banks, insurance companies, unit trusts, social security institutions and a well-organized bill market. Nurkse also suggests forced loans if voluntary public borrowing does not succeed.

**Inflation:** If sufficient funds are not forthcoming for capital formation, inflation is the most potent measure. It is regarded as a hidden or invisible tax. When prices rise, they reduce consumption and thus divert resources from current consumption to investment. The government creates inflation by issuing more currency into circulation to meet its requirements. But inflation raises savings at the cost of the standard of living of the masses. The fixed income groups are the hardest hit. Discontentment increases among the masses, unions fight for higher wages and productivity is adversely affected. Rising prices and costs also reduce exports to world markets. Thus inflation, as a method for capital formation, brings more harm than benefit unless counter inflationary measures are adopted by the government.

**Profits of Public Corporations:** The government can also mobilize domestic savings for productive investment by establishing public corporations. Public corporations receive funds in the form of equity capital and bonded debt from the open market, and in developing countries public corporation directly from the government. They also obtain foreign loans or collaborate with foreign enterprises. Public corporations are a substitute for private enterprise in underdeveloped countries. They generally utilize their resources as a revolving fund. But in certain underdeveloped countries where public corporations are established as state enterprises, their profits are utilized for capital formation. This is being done in the case of public enterprises set up by the federal government or state government. In many underdeveloped countries, public corporations have been set up for financing the establishment and running of private enterprises. Similarly they have been formed as investment trusts. The establishment of such varied public corporations helps organize capital and money markets for the mobilization of domestic savings for capital formation.

**Utilization of the Disguised Unemployment:** According to Nurkse, one of the important sources of capital formation is the concealed saving potential contained in rural underemployment in overpopulated underdeveloped countries. The disguised unemployed workers contribute practically little or nothing to output, their marginal productivity is zero or negligible. Such unproductive workers can be removed from the land without a fall in agricultural output and employed on various capital projects such as irrigation, roads, house building, etc., and they can be a fruitful source of capital formation. This increased income can



be taxed to finance the investment projects. When the investment projects are completed, they will tend to raise output and income which can also be taxed and utilized for further investment.

**External Sources:** Domestic sources for capital formation are required to be supplemented by the following external sources:

**Foreign Aid:** In the absence of adequate domestic resources for capital formation, it is necessary to import foreign capital in the form of loans and grants from advanced countries without any „strings.“ But the best course is to start joint ventures whereby foreign investors bring technical know-how along with capital, and they train local labour and enterprise. Capital can also be imported indirectly by paying for through export. This is the best policy because exports pay for imports. But it is for a backward economy to increase its exports to the level of imports in the initial stage of development.

**Restriction of Imports:** Another important external source of capital formation is the restriction of consumption imports. All luxury import should be restricted and the foreign exchange so saved should be utilized in importing capital goods. This measure can be successful only if the domestic income saved on imported consumer goods is not utilized in luxury and semi-luxury goods manufactured at home. If consumers start spending more on domestic consumer goods, the increase in the import of capital goods will be offset by reduction in domestic Investment because resources will be diverted from domestic production to increased spending of Consumer goods. An increase in domestic saving is, therefore, essential if the restriction of luxury imports is to lead to an increase in net capital formation.

**Favorable Terms of Trade:** Similarly, if the terms of trade move in favor of an underdeveloped country, it is in a position to import large quantities of capital goods. To take advantage of the favorable terms of trade, it is essential that the increase in domestic income due to larger export earnings should be saved and invested productively. If the extra income thus earned is spent on consumer goods, new saving will not take place for capital formation. Since improvement in the terms of trade is not an automatic source of capital formation, Nurkse suggests that this saving should be extracted through taxation to give the country a command over additional imports of investment goods.

### **Theories of Economic Growth**

Economic growth means the steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income. Economic growth could be said to comprise three component; capital accumulation, growth in population and eventual growth in the labor force, and technological progress. Capital accumulation results when some proposition of personal income is saved and invested in order to augment future output and income. Capital accumulation involves a trade-off between present and future consumption, giving up a little now so that more can be had latter.

Population growth, and the associated increase in the labor force, has traditionally been considered a positive factor in stimulating economic growth. A larger labor force means more productive workers, and a large overall population increases the potential size of domestic markets. Technological progress results from new and improved ways of accomplishing traditional tasks. Technological progress could be neutral, labor-saving, and capital-saving.



Neutral technological progress occurs when higher output levels are achieved with the same quantity and combinations of factor inputs. Computers, the internet, tractors, mechanical ploughs and many other kinds of modern machinery and equipment can be classified as products of labor-saving technological progress.

### Harrod-Domar Growth Model

This is referred to the economic mechanism by which more investment leads to more growth. It is often referred to as the AK model because it is based on the linear production function with output given by the capital stock K times a constant, often labeled A. In order to grow, new investments representing net additions to the capital stock are necessary. In this theory, investment is considered fundamental in the process of economic growth. Investment according to the theory creates income as well as augments the productive capacity of the economy by increasing the capital stock. In as much as there is net investment real income and output will continue to expand. For full employment equilibrium level of income and output to be maintained, both real income and output should expand at the same rate with the productive capacity of the capital stock.

According to the theory, for the economy to maintain a full employment, in the long run, net investment must increase continuously as well as growth in the real income at a rate sufficient enough to ensure full capacity use of a growing stock of capital. It follows that any net addition to the capital stock in the form of new investment will bring about corresponding increase in the flow of national output. Suppose that this relationship, known in economics as the capital-output ratio, is roughly 3 to 1. If we define the capital-output ratio as K and assume further that the national net savings ratio, S is a fixed proportion of national output and that total new investment is determined by the level of total savings, economic growth model could be constructed, net savings (S) is some proportion, S, of national income (Y), such that we have;

$$S = Y \dots\dots\dots 2.1$$

Net investment is defined as the change in the capital stock, K and can be represented by  $\Delta K$ ;

$$I = \Delta K \dots\dots\dots 2.2$$

But because the total capital stock, K, bear a direct relationship to total national income, Y, as expressed by the capital output ratio, k, it follows that

$$\frac{K}{Y} = k \quad \text{or} \quad \frac{\Delta K}{\Delta Y} = k \dots\dots\dots 2.3$$

Because net national savings, S, must equal net investment, I, we can write this equality as;

$$S = I \dots\dots\dots 2.4$$

But from equation 2.4 we know that  $S = sY$ , and from equation 2.2 and 2.3;

$$I = \Delta K = k\Delta Y$$

The identity of saving equaling investment in 2.4 could be written as

$$S = Y = k\Delta Y = \Delta K = I \dots\dots\dots 2.5$$

Or simply as

$$SY = k \Delta Y \dots\dots\dots 2.6$$

Dividing both sides of equation 2.6 first by Y and the by k,

$$\frac{\Delta Y}{Y} = \frac{S}{K} \dots\dots\dots 2.7$$

$\Delta Y/Y$ , represents rate of growth of GDP. Equation 2.7, states simply that the rate of growth of GDP is determined jointly by the net national saving ratio, s, and the national capital-output, k.

In the absence of government, the growth rate of national income will be positively related to the savings ratio, that is, the more an economy is able to save and invest out of a given GDP, the greater the growth of that GDP will be, and negatively related to the economy's capital output ratio, the lower the rate of GDP growth. To grow, economic must save and invest a certain proportion of their GDP.

### **Traditional Neoclassical Growth Theory**

It expanded on the Harrod-Domar formulation by adding a second factor, labour and introducing a third variable, technology, to the growth equation. Solow's neoclassical growth model exhibited diminishing returns to labour and capital separately and constant returns to both factors jointly. Technological progress because the residual factor explaining long term growth, and its level was assumed by Solow and other neoclassical growth theorists to be determined exogenously, that is, independently of all other factors.

According to traditional neoclassical growth theory, output growth results from one or more of three factors; increase in labor quantity and quality (through population growth and education), increase in capital (through and investment), and improvements in technology. Closed economies with lower saving rates (other things being equal) grow more slowly in short run than those with high savings rates and tend to converge to lower per capita income levels. Open economies, however, experience income convergence at higher levels as capital flows from rich countries where capital-labor ratios are lower and thus returns on investments are higher. Consequently, by impeding the inflow of foreign investment, the heavy-handedness of less developing countries governments, according to the neoclassical growth theory, will retard growth in the economics of the developing world. In addition, openness is said to encourage greater access to foreign production ideas that can raise the rate of technological progress.

### **Endogenous Growth Theory**

Endogenous growth economists believed that improvements in productivity can be linked directly to a faster pace of innovation and extra investment in human capital. They stress the need for government and private sector institutions which successfully nurture innovation, and provide the right incentives for individuals and businesses to be inventive. There is also a central role for the accumulation of knowledge as a determinant of growth. Supporters of endogenous growth theory believed that there are positive externalities to be exploited from the development of a high value-added knowledge economy which is able to develop and maintain a competitive advantage in fast-growth industries within the global and maintain a competitive advantage in fast-growth industries within the global economy.

The main points of the endogenous growth theory are as follows:

The rate of technological progress should not be taken as a constant in growth model government policies can permanently raise a country's growth rate if they lead to more intense competition in markets and help to stimulate product and process innovation. There are increase returns to scale from new capital investment. The assumption of the law of diminishing returns is questionable. Endogenous growth theorists are strong believers in the potential for economies of scale (or increasing returns to scale) to be experienced in nearly every industry and market. Private sector investment in research and development is a key source of technical progress.

The protection of private property rights and patents is essential in providing appropriate and effective incentives for businesses and entrepreneurs to engage in research and development. Investment in human capital (including the quantity and quality of education and training made

available to the workforce) is an essential ingredient of long-term growth. Government policy should encourage entrepreneurship as a means of creating new businesses and ultimately as an important source of new jobs, investment and innovation.

### **Measurement of Economic Growth**

In discussing economic growth three stands of the measure of growth can be deciphered. These measures include;

- a) Measurement of Growth from the nominal perspective
- b) Growth defined from real magnitudes and
- c) Growth measured in terms of per capita values.

### **Macroeconomic Determinants of Economic Growth**

Several variables have been adjudged as the macroeconomic determinants of economic growth in any nation: These include:

- a) Natural Resources
- b) Population growth and investments
- c) Investment
- d) Human capital
- e) Innovation
- f) Technological progress
- g) Economic policies and macroeconomic conditions
- h) Government factors
- i) Financial system
- j) Foreign aid
- k) Knowledge and information
- l) Openness to the world economy
- m) Foreign direct investment
- n) Foreign portfolio investment
- o) Economic migrants remittances and workers salaries
- p) Institutional framework
- q) Political factors
- r) Socio cultural factors
- s) Geography
- t) Demographic trends
- u) Output volatility
- v) Religious diversity
- w) Debt overhang

### **Theoretical Framework**

Several theories have been developed in the attempt to understand the concept of savings. The life-cycle theory developed by Modigliani and Brumberg (1950) is based on the observation that individuals make consumption decisions based on the resources available to them over their life time and their current stage in life. The theory predicts that the age consumption of a country's population should influence its savings behavior in such a manner that the higher the proportion of a country's population that is not in the active labor force, the lower its savings rate should be. In other words, individuals will save when they are young and have low income, save during

their productive years, and once again save when they retire.

Nwachukwu & Egwaikhide (2007) postulated that the life-cycle hypothesis is the principal theoretical underpinning that has guided the study of savings behavior over the years. Each of the determinants of savings is articulated in the context of the life-cycle hypothesis which hypothesis that the determinant of savings behaviors include income, growth of income, interest rate, inflation and macroeconomic stability, fiscal policy, external debt, term of trade and financial development.

However, in the context of life-cycle Income Hypothesis (LCH), Tobins (1976) points out that unchanged individuals savings rates by age group require myopic expectations of the future income. Life-Cycle Income Hypothesis (LCH) is derived from the aggregation of finitely-lived overlapping generations. It view individuals as choosing a life time stream of consumption and savings in a way that present value of their consumption equals the present value of their life time earnings and inheritance (Deaton, 1977). The age structure of the population is expected to affect the savings ratio within a society (Modigliani's Life Cycle Hypothesis). Modiglina, 1970; Modiglina and Ando, 1963 suggest that individuals save for retirement when they are in working age and dissave when they are old. Thus, younger societies are likely to display higher savings than other ones.

Studies reviewed from the Life Cycle Model (LCM) reveal individuals will tend to smooth consumption over their lifetimes, and tend to be net savers during their working years and dis-saves during retirement (Modigliana, 1986). If growth in population increases the proportion of people in their working age, then savings increases with population whereas if population increase leads to a high proportion being young, then savings will decrease with population growth.

The bequest theory developed by Yaari (1965) stipulates that if individuals have positive bequest motives, they will tend to save some wealth for their heirs. Thus, aggregate savings are influenced by the demographics of the population. The theory of optimal saving stipulates that individual should save early to create a buffer stock to cushion bad income draws and limit the negative internality from habit formation. A key proponent of this theory is Fisher (1930), who stated that income uncertainty increases current saving. The traditional economic theory of savings developed by Simon (1959) posits that government can finance its expenditure through taxes or borrowing,; hence the only thing that affects the economy is the time path of government expenditure and not the taxes that finance such expenditure (Ricardo, 1817).

The dynamically inconsistent preferences theory of Brown, Camerer and Chua (2006) stipulates that consumers know how to save optimally, but cannot resist short-term temptations to consume some products. The bounded rationality theory developed by Marshak (1955) stipulates that consumers save suboptimal because their rationality is bounded. In other words, it is possible that consumers simply cannot figure out or learn over time how to save optimally.

The Permanent Income Hypothesis (PIH) emphasizes a representative-lived consumer. Under the (PIH), a transitory positive income shock leads to an increase in savings as agent to smooth consumption overtime. Instead, a permanent income shock has ambiguous effect on savings. Higher permanent income with unchanged individuals' saving rates by age groups raises aggregate savings because it increases the aggregate income of the working population relative to pensioners and those not earning labor incomes. Clearly, there are numerous theories of savings apart from the ones stated above.

## **Review of Empirical Studies**

A number of studies have been conducted so far to study the relationship between savings and economic growth in many developing countries, but most of them are connected to Latin American, sub-Saharan and East Asian countries.

Lean & Song (2009) choose the whole country and 4 representative provinces as their sample to analyze the relationship between economic growth and savings in China by using Johansen co-integration and granger causality. The study found that there is bilateral causality exists between the household's savings and economic growth in short run and in long run unidirectional causality exist from the economic growth to savings growth.

Tang & Chau (2009) conducted a study based on the relationship between savings and growth in Malaysia by using nonparametric co-integration test and OLS method. The found that savings and economic growth are co-integrated and positively related in the long run so the study indicates savings is an engine to economic growth through its impact on capital formation. In the case of Cambodia Seng & Sothan (2014) investigated the causal between domestic savings and economic growth. The study does not find any causality runs from either GDS to Growth or Growth to GDS, so the study concluded that GDS and Economic growth are independent of each other in Cambodia.

Romm (2005) used Johansen VECM estimation technique to study the relationship between Growth and Savings in South Africa. The study confirmed that private saving rate has direct as well as indirect effect on economic growth.

Olajide & Oladipo (2009) employed the Toda and Yamamoto methodology to analyze the direction of causal relationship between savings and economic growth in Nigeria between 1970 and 2006 the findings revealed that a unidirectional causality between savings and economic growth. But the result from the study was different from what others had been proved in this area, Nuruden (2010) found out causality run from economic growth to saving, implying that economic growth preceded and Granger causes saving. Adeleke (2014) revealed that there is bi-directional causality exists between savings and Economic Growth in Nigeria. Bakare(2011) used OLS Multiple Regression analytical method in the economy of Nigeria to examine the relationship between capital formation and economic growth.

Mphuka (2010) investigated the causality between savings and economic growth in Zambia using bivariate vector auto-regression (VAR) estimation procedure. The test indicated that economic growth granger cause savings, even though the article argues that savings may influence the economic growth indirectly, because the savings will cause to accumulate capital and to inject the technologies from developed countries, in fact the technologies are the key to the economic growth.

Nicholas & Odhiambo (2008, 2009) conducted a study in Kenya in 2008 and another one in South Africa in 2009 to study the relationship between savings and economic growth in these two countries. They used causality and economic growth in these two countries. They used caused and co-integration test to analyze the relationship between the variable and the study proved that there is a positive relationship between savings and economic growth.

Anorou & Ahmad (2001) investigated the relationship between savings and economic growth in 7 African countries, congo cote divoire, Ghana, Kenya, Nigeria, south Africa and Zambia using vector error correction model. The result indicated that there is a long run relationship between



economic growth and saving. Also they found that savings granger causes growth in Congo and there is bi-directional causality in South Africa and Cote d'Ivoire.

Mohan (2006) addressed the relationship between domestic savings and economic growth for various economies with different income levels. The study used time series data on almost 20 countries with different income levels to investigate the relationship between the domestic savings and economic growth for various economies. Empirical results suggest that the economic growth rate Granger causes growth rate of savings in 13 countries. On the other hand the opposite results prevailed in two countries, Indonesia 5 countries, a bi-directional causation was found. In LICs the direction were mixed. In most of LMCs, the causality is from economic growth to savings growth. In all HICs except Singapore, the causality is from economic growth to growth of saving. Overall result shows that causality is from economic to domestic savings the main conclusion of the study is that income class of a country plays an important role in determining the direction of causality.

Tang (2009) investigated the casual relationship between saving and economic growth peroxide by real GDP for quarterly data from Malaysia for the period 1991: Q3 via the application of KPSS unit root test, congenital Granger causality test, modified Sims test, Hsiao test, multiple rank F-rank test, and modified Wald (MWALD) test. The results of all, the causality test consistently revealed bidirectional causality between savings and economic growth. This invariably implies that using different causality test techniques for same data set may not produce different result.

Furthermore, Sinha & Sinha (1998) examined the relationship between savings and economic growth over the period 1960-1996 for Mexico and applied multivariate co-integration test and multivariate Granger causality tests. Their results revealed that there is a long run positive relationship between savings and economic growth. The result of Granger causality test suggest that the growth of GDP Granger causes the growth of both private and public savings but there is not much evidence of reverse causality. However, the vicariate causality tests indicate that there is no causality flows in any direction. Employing same time series data for Mexico from 1970-2000 through the application of Toda and Yamamoto technique for Granger non-causality test to re-examine the causal flow between savings and economic growth, Maite et al. (2004) found that higher savings Granger caused higher economic growth. A more recent study by Masih and Peters (2010) also re-examined the savings-growth nexus in Mexico converging 1960-1966 using Johansen co-integration technique, Toda and Yamamoto causality techniques and generalized variance Decomposition Analysis. The authors found a clear evidence of feedback long run relationship between public savings and economic growth. The results also showed evidence of public savings having leading information for private savings. However, no significant long run causality running from private savings to economic growth was observed.

Moreover, Pravakar et al. (2001) examined the causal relationship between savings and economic growth for India from the period 1951-51 to 1998-99. Engle Granger and Error correction Model (ECM) in the presence of structural break are applied and their results indicate that there is a long run relationship between savings and economic growth. The results further suggest unidirectional causal flow from economic growth to savings. This implies that increase in economic growth stimulates savings in the case of India. Another study by Singh (2010) further re-examined the relationship between domestic savings and economic growth for India from the period 1950-51 to 2001-02 via application of OLS-based two-step co-integration



estimator of Engle and Granger, Dynamic least square (DOLS), fully modified OLS (FOLS) AND Non-Linear least square (NLS). The findings revealed a significant long run effect of savings on income causality test results suggest two-way causality relationship which implies that savings and income reinforce each other.

Another recent study by Abu (2010) applied Johansen co-integration test and Pair wise Granger causality test to investigate the relationship between savings and economic growth for the period 1970-2007. The co-integration results revealed existence of long run equilibrium between savings and economic growth. Also, causality test suggests one-way causality running from economic growth to savings implying that it is economic growth that Granger caused savings in the Nigerian case. Similarly, on the basis of time series data Morande (1998) conducted a study on the relationship between savings and economic growth over the period 1960-1996 and applying Johansen Juselius, Engle and Granger co-integration techniques and variance Decomposition analysis for Chile, the results suggest that private savings are positively affected by economic growth and a dummy reflecting the effect of pension funds. The error correction coefficient also suggest that most of the adjustment process between short run to long run will be completed within three years, while the variable representing income bears the bulk of such adjustment. Also, Odhiambo (2009) investigated the causal relationship between savings and economic growth over the period 1950-2005 and applied co integration-based error correction and trivariate causality test for south Africa. The results indicate bidirectional causality between savings and economic growth in the short run and unidirectional causality running from economic growth to savings in the long run. The results further suggest bidirectional relationship between capital inflows and savings, while causality runs from economic growth to foreign capital inflow.

In addition, Agrawal & Sahoo (2009) empirically examined the long run total private and private savings functions for Bangladesh for the period 1975-2004 via application of Autoregressive Distributed lag (ARDL) bound test error correction model (ECM) and forecast t error variance decomposition (FEVD) analysis. The ARDL bounds results revealed stable and long run equaling density, interest rate and foreign savings. The authors also showed directional causality between these variables. While, the FEVD justified the causality tests results. A recent study by Shahbaz & Khan (2010) was also conducted to investigate the long run equilibrium and direction of causality between savings and economic growth for Pakistan from the period 1971 to 2007 through applying Autoregressive Distributed lag (ARDL) bounds test procedure, Johansen first information maximum likelihood test to co integration and Toda and Yamamoto causality tests. Their result showed a long run relationship between economic growth and savings. The results revealed unidirectional causality running from economic growth to domestic savings using both innovative Accounting and Toda and Yamamoto techniques.

However, the savings and economic growth nexus has also been justified on purely data for example, Ahrnad et al. (2003) examined the long run relationship and direction of causality between savings and economic growth spanning from 1960 to 1997 in five Asia countries using Johansen and Juselius co integration technique and Granger causality test within the framework of vector error correction model (VECM). The authors found that foreign savings does not Granger cause gross domestic product (GDP) peroxide for economic growth both in the short and long run. Similarly, savings does not cause economic growth in all countries with exception

of Singapore; and finally, the effect of interest rate on savings in countries under study is inclusive. A more recent study by Misztal (2011) using England ganger co integration and Grainger causality tests to analyze the relationship between savings and economic growth in advanced countries and in developing and emerging countries for the period 1980-2009. The results revealed the existence of unidirectional causal flow from gross domestic savings to gross domestic product for developed countries as well as in developing and emerging countries .however, neutrality hypothesis was confirmed between gross domestic product and gross domestic savings for all the countries under study.

Torbira and Ogbulu (2014) empirical investigation into the relationship between fund mobilization by insurance companies and gross fixed capital formation (GFCF) in Nigeria and specifically how the latter responds to stimuli emanating from the insurance companies. A five variable-predictor multivariate regression model was estimated and analyzed. The short run results reveal those four explanatory variables namely: premium from fire, accidents, motor vehicles and employee liabilities insurance policies positively and insignificantly correlate with Gross Fixed Capital Formation while the relationship between premium from marine insurance policies and GFCF is both negative and insignificant. In the long run, the fund mobilization variables by insurance companies positively and significantly impact on the growth of gross fixed capital formation. In addition, the Granger causality test provides no evidence of causality among the variable. Pathania (2013) examined linkages between export, import and capital formation investigated by time series econometric techniques like Unit root test, Co-integration and ranger causality during the period of 1991 to 2010 for India. This study checked that whether there is uni-directional or bidirectional causality between export, import and capital formation in India. In this paper, the results reveal that there is bidirectional causality between gross domestic capital formation and export growth. The traditional Granger causality test also suggests that there is uni-directional causality between capital formation and import and export.

Ugwuegbe & Uruakpa, (2013) investigated the impact of capital formation on economic growth in Nigeria. To analyze the impact of capital formation, stock mar ket capitalization, inflation rate and interest rate on economic growth, the study employed Ordinary least square (OLS) technique. To test for the properties of time series, phillip-perron test was used to determine the stationarity of the variables and it was discovered that gross fixed capital formation and economic growth are integrated of order zero  $I(0)$ , Johansen co integration test was employed to determine the order of integration while error correction model was employed to determine the speed of adjustment to equilibrium. The empirical findings suggested that capital formation has positive and significant impact on economic growth in Nigeria for the period under review.

Kanu & Ozurumba, (2014) examined the impact of capital formation on the economic growth of Nigeria using multiple regressions technique. It was ascertained that in the short run, gross fixed capital formation had no significant impact on economic growth; while in the long run; the VAR model estimate indicates that gross fixed capital formation, total exports and the lagged values of GDP had positive long run relationships with economic growth in Nigeria. It was equally ascertained that there exists an inverse relationship between imports (IMP), Total National Savings (TNSV) and economic growth; while GDP was seen to have a unidirectional causal relationship with export (EXP), Gross fixed capital formation (GFCF), Import (IMP) and Total national saving (TNSV).

Umerede (2006) investigated possible determinants of capital formation using Nigerian data covering 1980-2004 studied. Time-series estimates are obtained using an OLS methodology which included tests for stationarity and cointegration. Empirical results showed a positive influence of cumulative foreign private investment (CFPI), index of energy consumption (INDEXEC) and total banking system credit to the domestic economy (BSTCr), and a negative influence of gross national savings (GNS), domestic inflation rate (INFR), maximum lending rate (MLR), foreign exchange rate EXCHR) and debt service ratio (DSR) on capital formation. We discovered that foreign exchange rate leads capital formation in Nigeria, followed by index of energy consumption and then, debt service ratio.

Laopodis (2001) uses Granger causality tests on a time-series data from 1960-1997 for Greece, Ireland, Portugal and Spain and finds no significant relationship either positive or negative between military spending and gross private domestic investment. To further investigate this relationship, He further tests for co-integration of a number of variables relating to gross private domestic investment and estimated the associated Error Correction Model (ECM). The results also indicate that military spending had no significant effect on investment.

Ajao (2011) in his study concludes that long-term capital formation in Nigeria were not majorly sourced from the capital market as the above result shows the marginal contribution of Market Capitalization and New Issues to Gross Fixed Capital Formation. Though, it is unarguable that when investors take position for profit, it can affect the level of wealth which can then be used to build private capital. This result is in line with the findings of Sarkar (2006) where he concludes that there exist no meaningful relationship between stock market capitalization and gross fixed capital formation.

Orji & Mba (2011) in their study looked at relationship between FPI, Capital Formation and Growth, in Nigeria using the two-stage least squares (2SLS) method of estimation. The study finds that the long run impact of capital formation and foreign private investment on economic growth is larger than their short-run impact. There is thus, a long-run equilibrium relationship among the variables as the error correction term is significant, but the speed of adjustment is small in both models. In their result, the two stage least squares estimates are very close to the OLS estimates suggesting that OLS estimates are consistent and unbiased. Hence, endogeneity was not a problem in the estimated models. There is therefore no simultaneity between GDP growth and capital formation model. These findings therefore have some policy implications as discussed in the work.

Adekunle & Aderemi (2012) examined the relationship between Domestic Investment, Capital Formation and Population Growth in Nigeria he used Secondary data from the Central Bank of Nigerian, for capacity utilization, capital expenditure bank credit and capital formation while growth and investment rates from World Economic Information database were used. Their result shows that the rate of investment does not assist the rate of growth of per capital GDP in Nigeria. The paper tests on the curve estimation regression models confirm that growth is in existence but is found to be insignificant. The linear result indicates the importance of government expenditure, capacity utilization and bank credit in increasing the income of Nigerians. The results also show that there is negative relationship between growth rates of the population and capital formation. With the curve estimation method results, investment rate can engender growth in the economy though slowly, on a linear path.

Akujuobi (2008) writing on the topic "Foreign Direct Investments and Capital Formation in

Nigeria, posits that, FDI, is a significant positive contributor to the overall capital formation efforts in Nigeria. However, the gains of FDI do not come so automatically. He therefore, recommended that efforts must be directed at removal of such impediments as poor transparency in laws, especially in the areas of property rights, patent rights, copy right protection and commitment to enforcement of contracts.

Donwa & Odia (2009) considered the impact of globalization on the gross fixed capital formation in Nigeria from 1980 to 2006. Using the ordinary least square, it was found that globalization proxy by openness was negatively and insignificantly related to gross fixed capital formation. In other words, globalization has not helped in assisting fixed capital formation. Foreign Direct Investment and Gross Domestic Product were positive and significant while exchange rate had a negative impact on GFCF. Interest rate had positive and insignificant relationship with GFCF. Suggestions on how Nigerian could benefit from globalization and improve on her gross fixed capital formation were proffered.

Aiyedogbon (2011), tried to explore the relationship between military expenditure and capital formation in Nigeria. The study spanned a period of 1980–2010. It employed the econometric methodology of vector error correction model and testing the results using stationarity test, co-integration and variance decomposition. Findings reveal that military expenditure (Milex) and lending rate have negative impact on gross capital formation (GCF) in Nigeria in both the short- and long-run. The GDP is positively significant in the long run while it is positive and insignificant in the short run. The study recommends that the present funding of the military should be cut to release more funds for other sectors. The military authority should utilize the available resources and discharge their role in creating investment-friendly environment in order to enhance economic development in Nigeria.

Ezekwesili (2012) posits that Nigeria poor capital formation comes from low education development of her people. She reiterated that, the resurgence of entrepreneurial spirit based on hard work and sound education are the panacea or critical factors to changing Nigeria.

Kanu, Ozurumba and Anyanwu (2014), writing on “Capital expenditures and capital formation in Nigeria posits that Capital Expenditures (CAPEX) had a negative significant relationship with Gross Fixed Capital Formation (GFCF) in Nigeria at both 1% and 5% Alpha levels, while other macro economic variables such as Imports, National Savings and Gross Domestic Product formation of human capital. By investing this capital in workers, their efficiency is increased.

### **3.0 RESEARCH METHODOLOGY**

Esene (2005) while quoting Yomere and Agbonigho (1999) defined research methodology as the methods, procedures, or modalities through which the researcher intends to accomplish his objectives. Thus, this chapter sets out the rationale for choosing the research population and samples. It also includes a highlight of the data collection process and the statistical technique adopted for testing the validity of the hypotheses already formulated.

#### **Research Design**

Research design requires the structuring of the investigation aimed at identifying the validity of the most of the hypothesis and their respective relationship with one another. This is used for the purpose of obtaining data to enable the researcher test the hypotheses questions (ThankGod, 2004).

This research design employed is the ex-post facto design which seeks to establish the cause-

effect relationship and the variables of interest are not under the control of the researcher and therefore cannot be manipulated.

### **Sampling Technique**

The sampling technique adopted for this research is the non – probability sampling technique. “This is when whatever elements of the population that are available are selected as sample items, without following any specific subject selection process” (Esene, 2005). This sampling techniques was adopted because all the items of the population were not available, hence the researcher had to use those that were fully available.

### **Research Population and Sample Size**

Because of the researcher’s interest to carryout a study the impact of National Savings and Economic Growth in Nigeria; as measured by the various Economic Growth indicators such as Gross Domestic Product (GDP). The population of this study shall consist of the whole economy in Nigeria. However, the sample population will be drawn from all available data representing National Savings and Economic Growth as stated above. This study will cover the period of 1990 to 2015.

### **Method of Data Collection**

Data used for this study were secondary data, as represented by the “Annual Report and Account’ of the Nigerian stock exchange and Central Bank of Nigeria statistical bulletin. The use of Secondary data was necessary because of the quantifiable and verifiable nature of the variables involved; capital market and economic development. Other secondary data and information used were gotten from textbooks, Journals, the internet, newspapers etc.

The data used for this study are basically time series data covering 1990 to 2015.

### **Technique of Data Analysis**

Method of data analysis simply means the statistical total or technique utilized in processing the data collected, with a view to arriving at valid conclusions. The statistical technique adopted for this study is simple regression econometric procedure. The study commenced its analysis with Dickey-Fuller test, to verify, the stationary variables so as to avoid spuriousness of empirical result. The t-test was employed to ascertain the significance of each of the constant parameters, while the diagnostic test based on the coefficient of determination ( $R^2$ ) was used to check for the goodness of fit of the model. The Durbin-Watson statistic will be employed also to measures the serial correlation in the residuals. If the DW is less than 2, there is evidence of positive serial correlation. A DW statistic output that is very close to one indicates the presence of serial correlation in the residuals.

### **Decision Rule Formulation**

Accept Null hypothesis ( $H_0$ ) and reject Alternative Hypothesis ( $H_1$ ) if the correlation coefficient ( $r$ ) is significantly negative. Or accept Alternative Hypothesis ( $H_1$ ) and reject Null Hypothesis ( $H_0$ ), if the correlation coefficient ( $r$ ) is significantly positive.

### **Model Specification**

In examining the impact of National Savings on Economic Growth in Nigeria from the period of 1990 to 2015. The study specifies the functional relationship of the model as:



$$\text{GDP} = F(\text{NS}) \dots \dots \dots (1)$$

The model is specified as follows:

$$\text{GDP} = \beta_0 + \beta_1 \text{NS} + \mu \dots \dots \dots (2)$$

Where: GDP=Gross Domestic product Growth

NS= National Savings

Where  $\beta_0 > 0$ ,  $\beta_1 > 0$ ,

$\beta_0$ , = constant parameters

$\beta_1$ , = coefficient and  $\mu$  = the error term

#### VARIABLE MEASUREMENT AND DEFINITION

In measuring the impact of National Savings on Economic Growth in Nigeria, we adopted the convectional method of using their proxies. Thus National Savings was proxied by the (NS), while economic growth was proxied by Real Gross Domestic Product Growth (GDP)

#### 4.0 DATA PRESENTATION

Table 4.1.1 shows the data used in the study. The data comprises the National Savings, Real Domestic Product from 1990 - 2015.

YEAR	GDP(₦'B)	NS(₦ 'B)
1990	472.65	29.65
1991	545.67	37.74
1992	875.34	55.12
1993	1,089.68	85.03
1994	1,399.70	110.97
1995	2,907.36	108.49
1996	4,032.30	134.50
1997	4,189.25	177.65
1998	3,989.45	200.07
1999	4,679.21	277.67
2000	6,713.57	385.19
2001	6,895.20	488.05
2002	7,795.76	592.09
2003	9,913.52	655.74
2004	11,411.07	797.52
2005	14,610.88	1,316.96
2006	18,564.59	1,739.64
2007	20,657.32	2,693.55
2008	24,296.33	4,118.17
2009	24,794.24	5,763.51
2010	54,612.26	5,954.26
2011	62,980.40	6,531.91
2012	71,713.94	8,062.90
2013	80,092.56	8,656.12
2014	89,043.62	12,008.21
2015	94,144.96	11,418.41



Source: *CBN Statistical Bulletin, 2015*

**Table 4.1.2 Descriptive Statistics**

	<b>NS_N_B_</b>	<b>GDP_N_B_</b>
<b>Mean</b>	<b>2784.581</b>	<b>23939.26</b>
<b>Median</b>	<b>623.9169</b>	<b>8854.638</b>
<b>Maximum</b>	<b>12008.21</b>	<b>94144.96</b>
<b>Minimum</b>	<b>29.65120</b>	<b>472.6487</b>
<b>Std. Dev.</b>	<b>3769.530</b>	<b>30367.60</b>
<b>Skewness</b>	<b>1.251671</b>	<b>1.274685</b>
<b>Kurtosis</b>	<b>3.249287</b>	<b>3.088996</b>
<b>Jarque-Bera</b>	<b>6.856274</b>	<b>7.049473</b>
<b>Probability</b>	<b>0.032447</b>	<b>0.029460</b>
<b>Sum</b>	<b>72399.11</b>	<b>622420.8</b>
<b>Sum Sq. Dev.</b>	<b>3.55E+08</b>	<b>2.31E+10</b>
<b>Observations</b>	<b>26</b>	<b>26</b>

Source: E-view Output, version 9

Table 4.2; depict the descriptive statistic of the secondary data collected from the CBN Statistical Bulletin (1990-2015) as presented in the table 4.1.1 for consideration.

## DATA ANALYSIS

### Hypothesis One: The impact of National Savings on Gross Domestic Product in Nigeria

**Table 4.3.1**

Dependent Variable: GDP\_N\_B\_

Method: Least Squares

Date: 01/17/17 Time: 20:54

Sample: 1990 2015

Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1995.010	1579.565	1.263012	0.2187
NS_N_B_	7.880629	0.341319	23.08873	0.0000
R-squared	0.956919	Mean dependent var	23939.26	
Adjusted R-squared	0.955124	S.D. dependent var	30367.60	
S.E. of regression	6433.066	Akaike info criterion	20.45009	
Sum squared resid	9.93E+08	Schwarz criterion	20.54687	
Log likelihood	-263.8512	Hannan-Quinn criter.	20.47796	
F-statistic	533.0894	Durbin-Watson stat	1.503011	
Prob(F-statistic)	0.000000			

From Table 4.3.1 above, the result could be observed that the variables have a significant impact on GDP. it could be observed that National Savings on GDP contributes (7.88) this mean that for every unit change in National Savings there is a corresponding change of 7.88 in GDP.

Meanwhile, the coefficient of determination ( $R^2$ ) is 95.6%, which implies a positive relationship

between the explanatory variables which is National Savings, and the dependent variable (GDP). This means that the impact of National Savings on Nigerian economic growth (GDP) explain or account 95.6% influence or movement on the real gross domestic product of Nigeria, while only 4.4% account could be explain by other variables or factors not included in the model. The Adjusted  $R^2$  of 0.955 is close to the  $R^2$  value of 0.956 meaning that the model is fit for making generalization. Furthermore the value of  $F= 533.09$  indicates the models goodness of fit to the data. Also looking at the D.W of 1.50 shows absence of positive auto correlation among the variables in the model. Finally, looking at the p-value of National Savings is  $< 0.05$  degree of freedom. Therefore, the study concluded that there is positive significant relationship between National Savings and economic growth (GDP) in Nigeria.

The explanatory variable (National Savings) is significantly predictors of economic growth (Gross Domestic Product (GDP) in Nigeria. For instance, National Savings is positively related and significant to GDP. This implies that an increase in National Savings will boost economic growth. The finding agrees with Tang & Chau (2009), Lean & Song (2009), Mphuka (2010), Nicholas & Odhiambo (2008, 2009), Anorou & Ahmad (2001), and Sinha & Sinha (1998) who found that Savings had a positive impact on economic of Nigeria.

Summarily, this result revealed that increase in National Savings Positively affect the economic growth and development in Nigeria.

## **CONCLUSION AND RECOMMENDATIONS**

This study examined the impact of National Savings on economic growth in Nigeria from the period of 1990 to 2015. To achieve this, a model was formulated which we related National Savings to economic growth indicators (Gross Domestic Product (GDP). The summary of findings of the study showed that;

The result showed that National Savings have positive significant impact on economy's growth of the Nation (as measured by Gross Domestic Product (GDP). The study confirmed to the positions of Tang & Chau (2009), Lean & Song (2009), Mphuka (2010), Nicholas & Odhiambo (2008, 2009), Anorou & Ahmad (2001), and Sinha & Sinha (1998) who found that National Savings significantly impact on economic growth of Nigeria. In other words, the National Savings has impacted greatly on the Nigerian economy. So the government should adopt an appropriate approach to encourage savings and foster economic growth.

Following the empirical findings of this study, the following recommendations are made for the purpose of effective policy formulations in the area of National Savings and economic Growth.

- a) Government should ensure that adequate macroeconomic policies that will open up the economy are put in place to encourage foreign direct investment inflow and make Nigeria an export platform, where export commodities could be manufactured for established international market; this will help to Strengthen Nigeria's term of trade and induce private savings.
- b) There is need for proper financial market development. The financial sector should be deregulated. This would enable the sector to function properly, thus rising up to the challenge of building a strong, virile and competitive sector that would be able to meet the saving needs of the surging business world.
- c) Greater efforts should be made to make available, short, medium and long term loans to productive investments like small scale industries/businesses as they constitute an integral part of the growth and transformation process of an agro based economy like that of Nigeria this will induce employment and income of the various economic agent which

will have a spillover effect on private savings.

- d) There is need for the government to retain tight monetary and fiscal policies in order to fight inflation in the Nigeria economy. Since inflation have negative and significant influence on private savings in Nigeria.
- e) Government expenditure should be tied to specific viable economic projects in the economy. All nonviable projects should not be sourced through deficit financing and adequate machinery should be put in place by all sectors of government to arrest corruption and penalize those perpetrate it. This will make fiscal policy to have positive and significant impact on private savings in Nigeria.
- f) Public saving has been shown to be a complement rather than a substitute for private saving in Nigeria. Government should therefore sustain its oil-32 price-based fiscal rule (OPFR) which is designed to link government spending to notional long run oil price, thereby de-linking government spending from current oil revenues. This mechanism will drastically reduce the short term impact of fluctuations in the oil price on government's fiscal programmes. State governments should also desist from spending their share of excess crude oil revenue indiscriminately. This is because this practice can severely test the absorptive capacity of the economy in addition to risking the fuelling of inflation. The challenge is for state governments to save excess revenue or spend it directly on imported capital goods in order to sustain Nigeria's hard-won macroeconomic stability. Third, monetary policy should focus on ways of increasing the abysmally low real interest rate on bank deposits. It should also devise means of substantially reducing the interest rate spread. Lastly, it is pertinent to note that even though this paper has concentrated on Nigeria, its results can be applied to other African countries not previously studied. They contain some valuable lessons for informing policy measures in the current thrust towards greater mobilization of private saving in the African continent.
- g) Endemic corruption in Nigeria prevents funds borrowed by the government from achieving their objective of economic stimulation, thus, making servicing (or repaying) such loans burdensome to the economy. Therefore, unrestrained borrowing by government from international agencies along with the biting effects of corruption must be checked so as not to crowd out national saving.
- a) Macroeconomic projections should guide the overall level of Savings. As such, their projections need to be more realistic, internally consistent and based on more accurate and timely information.

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