

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The structure of Nigeria's economy is typically an underdeveloped one. More than half of the Gross Domestic Product (GDP) is accounted for by the primary area where agriculture continues to play a vital role. In particular, the oil and gas quarter remains' the main driver of the economy, accounting for more than 95 percent of export earnings and approximately 85 percent of government revenue. The sector contributed 14.8 and 13.8 per cent of GDP in 2011 and 2012 respectively. Reservations also increased from 37,119 billion barrels (bbs) in 2012 to 36,042 pounds (bbs) in 2011. In Nigeria 's industrial area (including production, mining and utilities) money owed for a small percentage of financial activity (6 percent) while the production area contributed best to 4 per cent of gross domestic product in 2011. This is despite political initiatives that have sought to promote the process of industrialization over the last 50 years and in particular, more recently.

The country adopted import-substituting industrialization (ISI) under the First Plan with the objective of mobilizing and deploying country-wide monetary sources on a value/advantage basis among contending initiatives, as the time of this plan witnessed the commissioning of energy initiatives consisting of the Kanji dam and the Ughelli thermal plants, which supplied a significant infrastructure.

The 1986 Structural Adjustment Program (SAP) is an alternative mechanism to fix the limitations and inefficiencies of prior attempts in development planning. SAP's goals included promoting finance, stimulating non-oil exports and providing a foundation for progress in the non-public zone; selling the output of the industrial zone in Nigeria; privatizing and marketing

state-owned establishments to sell commercial efficiency; developing and using home generation to encourage improved production and use of nearby uncooked substitutes. In 1990, a key issue among the Science and Technological group in Nigeria became the need to connect the science, engineering and technology sectors to fit into industrial and economic development efforts. As predicted, the undue pampering of the manufacturing sector by means of liberal and anti-competitive policies at the time of import substitution, in the form of low interest rates, low wages, tariffs on imported inputs, an overvalued exchange rate and high tariffs on imported substitutes, led to the inability of the sector to develop coherent growth dynamics or graphs, and an autonomous or independent growth movement.

After 10 years, the Bank of Industry (BOI), founded in 2000, was established as a development institution to promote industrial development by providing industrial enterprises with long-term loans, equity financing and technical assistance. The Nigerian Industrial Development Bank (NIDB), the Nigerian Bank for Trade and Industry, Industrial and Insurance Brokers, and the Leasing Company of Nigeria Limited were mixed institutions. The objectives of these financial institution were to secure the provision of long-term loans, assistance in the era of jobs and the sale of industrial dispersal of indigenous entrepreneurship. In academics, industry or governmental institution, it has by no way been argued everywhere that industrialization is necessary to financial growth, perhaps the efficacy of a given industrial coverage result in the necessary changes which are contestable. In fact, there is rarely a developed state that is not industrialized. As Iwuagwu (2011) noted, industrialization generally comes with the executive and political classes of society's clear enthusiasm and commitment, i.e. there should be a concentrated administrative capacity to exercise the political will needed to enact clearly specified policies that can turn the country into industrialization. Indeed, the experience of

Nigeria shows that industrial policies were never missing in the country. The political will, continuity and enthusiasm of the administrative class are still absent; the outcome, of course, is that most policies have been discarded in the midstream. This study analyses the industrialization achievements of Nigeria and their respective policies in order to examine the problems and opportunities over the past 70 years. (Iwuagwu 2011). The medium and large-scale industrial plants in Nigeria obviously increased from 150 plants at independence to 380 by 1965. Similarly, production rose from 4.2 percent at independence to 6.1 percent in 1964 as a share of GDP. Unfortunately, those aids in the form of tariff and quota protection were pursued by way of constrained subject to the effect that it encouraged continued awareness at the same low. Also, despite the various incentives, home goods struggled to compete with imported products in phrases of best, creativity, distribution, and even price. This was primarily due to gross inefficiency and supply bottlenecks in input management and usage. These plants, for example, were heavily dependent on imports for capital inputs, and the poor management of the logistics involved meant that most of these plants never generated near installed capacity. (Duru 2012). Again, the First National Development Plan is strongly believed to have not accomplished much, considering that its targets have not been strictly enforced. The Nigerian Civil War between 1967 and 1970 undermined even the modest achievements reported.

In the structural transformation phase that characterizes economic growth, industrial development is central. Industrial development is responsible for the economic growth of countries such as China, the Republic of Korea (Korea), China's Taiwan Province (Taiwan), and Indonesia, according to Kniivilä (2007). In many of these nations, along with increased growth, poverty rates have decreased. Of course, some economies have managed to achieve egalitarian prosperity, while inequality is undeniably high in other economies. Growth of Industry,

currently, as a consequence of globalization, technological transition and modern global change rules, it points to the brand-new demanding circumstances and possibilities faced by existing industrializations. For instance, the advent of Southern multinationals and South-South investment is one recent phenomenon that has captured the attention of economic development scholars. In all areas of monetary activity, such as agriculture and offers that can provide promising paths for improvement for a few growing economies, the depth of knowledge is growing.

The manufacturing sector of Nigeria has faced numerous challenges, including low capacity utilization, especially since the 1980s; unstable infrastructure (which affects the cost of doing business); lack of enterprise. Start-up money; disproportionately high capital costs, primarily from banks and other monetary establishments; Loss of long-term loans; lack of an encouraging macroeconomic environment; more than one taxation by various government entities, all of which had a negative effect on the industry over the years.

Industrial growth, according to Imhonopi and Urim (2013), signifies the progress made by massive industrial production of goods and services in the expansion of the economy and commercial activities in a country. This involves the conversion of raw materials into consumer products, new capital goods that allow more consumer goods to be produced, and social overhead capital that together with human resources, provides both households and businesses with a new stream of services.

Imhonopi and Urim (2013) claim that industrial growth in modern society is an important mode of production and is the mechanism that provides livelihoods for millions of people around the world because it generates a wide pool of citizens' jobs. They also contend that what differentiates nations into developed, underdeveloped or developing economies is the pace of

industrial growth. Nigeria possesses the ingredients it needs to become a leading manufacturing economy in the global market, and its domestic market swarms with a ready army of customers for its industrial products and services, backed by its large population of more than 200 million people.

1.2 STATEMENT OF THE PROBLEM

Imhonopi and Urim (2013) claim that industrial growth in modern society is an important mode of production and is the mechanism that provides livelihoods for millions of people around the world because it generates a wide pool of citizens' jobs. They also contend that what differentiates nations into developed, underdeveloped or developing economies is the pace of industrial growth. Nigeria possesses the ingredients it needs to become a leading manufacturing economy in the global market, and its domestic market throngs with a ready army of customers for its industrial products and services, backed by its large population of more than 200 million people. The focus in the oil sector is the reflect of the industrial sector has not enabled her to reap the benefit of industrialization in terms of employments generation, foreign exchange earnings and human capital development. In spite of the policies formulated by various governments, the sector has not contributed to it's full potential partly due to the exchange rate variation, high interest rate, large inflation. As a consequence, Ogbu (2012) stresses that the oil industry does not allow any agglomeration or technical spillover impact. From a small 4.8 percent in 1960 to 7.2 percent in 1970 and 7.4 percent in 1975, the industrial contribution to GDP increased. This dropped in 1980 to 5.4 percent, but then rose in 1985 to a record high of 10.7 percent. The share of GDP production stood at 8.1 percent in 1990, but dropped to 7.9 percent in 1992, 6.7 percent in 1995, and further fell to 6.3 percent in 1997. The GDP production share fell from 6.2 percent in 2000 to 3.4 percent as of 2001. Nonetheless, in 2011, it rose to 4.16%, which is less than what

it was in 1960. Actually, the Gross Domestic Product (GDP) share of Nigeria's manufacturing sector remains small (CBN, 2011). Various industrial growth strategies, opportunities, and medium-term economic plans have recognized the importance of the manufacturing sector in the economy. Looking at how quickly developed economies have flourished over the years, it is not possible to achieve industrialization in Nigeria, except of course, with the presence of skilled human capital. Nigeria had concentrated so much on the oil sector that the mechanized knowledge needed to achieve industrialization, particularly through manufacturing, could not be overemphasized by every other sector. The growth of an economy can be achieved and preserved by the country's human capital. The study aims to examine the impact of industrialization on economic growth in Nigeria.

1.3 RESEARCH QUESTIONS

To achieve the specific objectives of this study, the following research questions shall be answered in the course of this study.

- i. Does manufacturing output have a significant relationship with the economic growth?
- ii. How does human capital affect the Nigerian economic growth?
- iii. Does currency devaluation have an impact on industrialization in Nigeria

1.4 OBJECTIVES OF THE STUDY

The broad objective of the study is to examine the impact of industrialization on the Nigerian economic growth within the study periods, 1983 to 2019. In specific, the following objectives include:

- i. To examine the impact of manufacturing output on economic growth
- ii. To evaluate the effect of human capital on the economic growth

- iii. To determine how currency devaluation have affected economic growth in Nigeria

1.5 RESEARCH HYPOTHESES

The hypotheses for this study stated in null forms are;

H₀₁: Manufacturing output has no significant effect on the Nigerian economic growth.

H₀₂: Human capital has no significant effects on Nigerian economic growth.

H₀₃: Currency devaluation has no significant impact on economic growth in Nigeria.

1.6 SIGNIFICANCE OF THE STUDY

Whilst acknowledging the fact that this study is not the first of the kind using Nigeria data, however, it shall go a little further than earlier work to capture the stages of Industrialization in relationship with the Nigerian economic growth from 1983-2019.

Industrialization is a way out for economic growth for less developed economies because it employs both skilled and unskilled labour and it gives room for improvement for the skilled labor thereby utilizing the human capital available in the state. Thus, Nigeria as a developing economy cannot but consider industrialization as a way out. Basically, the result of the study should be useful to:

Government/ policy makers: this study can be useful to the government/ the policy makers, by guiding them to making proper policies that will improve the manufacturing sector and create more employment.

The public: this research will enlighten the citizens on what to expect from the government and make them see reasons why industrialization is a necessity in a less developed economy.

Academia/researchers: this study will be useful to students and other researchers as it will form part of existing literature on issues of industrialization and the Nigerian economic growth.

The findings and its recommendations will assist organizations know the need to invest more in human capital development so that the locals that the rate of employment in Nigeria will increase.

1.7 SCOPE OF STUDY

The scope of the study covered a period from 1983–2019. The empirical analysis focused on the impact of industrialization on economic growth in Nigeria. The real gross domestic product (RGDP) was used as the indicator for economic growth.

1.8 OPERATIONAL DEFINITION OF TERMS

Economic Growth:

This can be defined as the increase in the production and consumption of goods and services. It is also the increase in the output that the economy produces over a period of time.

Economic Development:

This refers to the sustained, concerted actions of policy makers and communities that promote the standard of living of the economy. Economic development is also defined as the quantitative and qualitative changes in the economy such as action like human capital, critical infrastructure and regional competitiveness and so on.

Industry:

An industry is a group of firms that produce similar product or a group mainly in manufacturing physical services

Export Promotion:

This is defined as a strategy for promoting economic development in less developed countries.

This involves running an open economy relying on a foreign market

Entrepreneur:

A person, who organizes, operates and assumes the risk for a business venture. He receives profit and bears losses.

Gross Domestic Product (GDP):

The gross domestic product is the market value of all officially recognized final goods and services produced within a country in a given period of time.

Import Substitution:

A strategy for the industrialization of less developed countries, concentrating initially on replacing imports by domestically produced substitute

Industrialization:

This is the process of moving resources into the industrial sector or it is the transformation methods of production involving the use of traditional or modern equipment's or mechanized equipment.

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL REVIEW

This section concentrated on the research-related literature review, and then looked at the theoretical context analysis on which the study was based. A lot of people have done some studies in the past on the role that industrialization has played in economic growth. It is fitting at this junction to review their work, observations and conclusions on this topic. Here basic concepts of industrialization and economic growth were discussed.

2.1.1 The Concept of Industrialization

According to Balami (2006), the industry is conceptualized as grouping together businesses or groups of firms manufacturing either equal or equivalent goods. Alfred Marshal is a collective of individual companies providing the same or related products and services. He also found out that the sector is obsessed with the actions of the company's citizens in relation to wealth. Industrialization is conceived as a consolidation of industry in a city. Concentration of industries in the economy tends to generate job opportunities which in turn, reduce poverty and wide spread income inequality, thereby improving economic development.

In many countries, the power of value-added processed is considered to be the manufacturing field. Governments, especially in developing countries, see industrialization as a tool for increasing national production to reduce reliance on industrialized countries and to minimize volatility in foreign exchange earnings (Ayodele and Falokun 2003). Industrialization has gained a powerful importance in both industrialized and emerging countries to promote economic growth. It decreases unemployment and hunger, and it is seen as a road to growth. Industrialization is concerned with the implementation and development of factories at a given site, city or nation (Obioma and Ozughalu 2005). It is a situation in which many factories are developed in different parts of the world. As several industries, various types of products are also produced in the region. Industrialization is also a method of building the ability of a country to manufacture a range of items – the mining of raw materials and the processing of semi-finished and finished goods. Anyanwu et al (1997) defines industrialization as a method of building up a

nation's capacity to turn raw materials and other inputs into finished products and to produce goods for further output or final consumption.

Industrialization increases the use of valuable inputs (labor, capital and raw materials) for the manufacture of consumer products, intermediate goods and capital goods that are not viable and sustainable for domestic consumption, export or further production, depending on the country's technology.

2.1.2 Industrial policy

The nation's economic policy is an innovative tool for stimulating and regulating the period of industrial growth. It is a strategy that specifies the goals and strategies for achieving the non-primary development targets optimally, in particular production, taking into account the country's resources in terms of labour, land, capital, entrepreneurship, international goodwill, etc. (Federal Ministry of Industry & Technology, 1992).

Pack (2000) describes industrial policy as policies intended to target individual industries to improve their productivity and relative value in the manufacturing sector. In the same vein, Amsden (1989), Chang (2002), Lin and Chang (2009) identified commercial coverage as a manual for government action to selectively encourage positive development sectors, with the goal of encouraging a country to defy its comparative advantage and improve its quarter of production.

Johnson (1984) describes industrial coverage in the sense of slender experience as a sporting authority that seeks to help develop those sectors in a country-wide economy to sustain international competitiveness." Chang (1994) defines industrial policies as government movements seeking to stimulate development and technical capacities in sectors that are deemed strategic for national change. Landsman (1992) makes an authentic contribution to the concept by emphasizing the selective aspect of industrial policy. The strongest criticism of industrial policies arises from the notion of government incompetence. Industrial policy is seen as detrimental since governments lack the expertise, abilities and tools needed to efficiently assess if the gains of helping those over other sectors outweigh the costs and effectively implement the policies.

The East Asian Tigers presented examples of active heterodox policies and protectionist industrial measures (Amsden, 1992). Development policies such as Import-Substitution-Industrialization (ISI) have been unsuccessful in many other regions, such as Latin America and sub-Saharan Africa. Governments can be influenced by vested interests when taking decisions on political or personal gains, leading to economic policies that will only promote rent-seeking, while at the same time distorting the efficient distribution of capital by market forces (Pack and Saggi 2006). Scholars such as Anne-Kruger (1993) and Deepak (1983) have argued that industrial policy has not been successful and is lagging behind. The argument was certainly correct in pointing out some very inefficient cases of industrial policy in developing countries.

In its focus, however, it was very restricted. In contrast, the predictive argument that policy mistakes are often worse than market failures are more political than either the theory or the facts. Several regions have adopted diverse forms of industrial policies and mixed-outcome prospects. First of all, in Latin America and some sub-Saharan African countries, the closure of domestic markets contributed to international rivalry in the form of ISI (Import Substitution Industrialization). The export model centered on South Korea and Taiwan, with potential to promote the development of the export sectors (also the domestic sector has been protected). The reasons for the introduction and implementation of particular economic policies can be traced to the inconsistencies of the different policy makers or the assumptions and ideologies of their economists.

Mills (1976) also indicates that a proper plan for economic growth is a sine qua non of success. Growth in the pace of production of the productive forces (and more precisely, in labor efficiency) as well as increasing influence by the primary user of the loop of market output. Dominated sector of the least developed countries, their agreement was based on the premise that the behavior of this sector is determined by external and internal factors such as economic degradation and God's act of drought. They thus argued that relying exclusively on the expansion of the primary driver for rapid and sustainable development cannot be a realistic policy, and that the push to industrialize, as far as they are concerned, derives from the need for general systemic reform.

2.1.3 Import Substitution Policy:

The major industrialization strategy was the production of imported goods in substitution for imports. Working on the new demand for imported manufactured products, the domestic substitution of these finished goods (in most factories by selling the parts and participating in the final production process) made it possible for post-war industrialization to take place from top to bottom in expectation of industrialization by actually supplying the intermediate materials and the owner. Substitution of imports, in addition to allowing the internal substitution of the existing market, is also disproportionately appealing because of the common belief that it would help to solve the issue of the balance of payments of the developed world. While the pervasive promotion of import substitution in practice focuses primarily on industrialization and balance of payments targets, Proportionate industrial protectionism has given rise to a number of specific explanations in the context of a development scenario, which can be found to be more extreme than the ordinary simple argument of "normal" agricultural infirmity or the supposed need for industrial assistance to replace imports derives in part from knowledge of appeal to developing countries. Historically, studies in several countries indicate not only that the share of industrial production is growing with development, but also that the rise of import substitution-based factories enables the nation to import semi-finished materials and to conduct the final touches of transforming or assembling almost finished industrial inputs into finished goods on a domestic basis as a result of increased demand. Another specific explanation for industrialization by way of substitution is that the export market of a periphery country will provide all those industrial products that cannot be created in view of the comparatively slow growth of its exports, if we consider the revenue elasticity of import demand that is either manufactured or generated at home and that nation does not have any other means of increasing.

2.1.4 Export Promotion Policy:

In the sense of industrialization through import substitution, there is a growing interest in the potentialities of an industrialization strategy that emphasizes export substitution, i.e. non-traditional exports such as refined primary goods, it can be argued that the process of export substitution has several distant pitfalls to the system of import substitution in terms of easing import substitution.

This are focused on a high effective rate of protection; some analytical analyses of the factor requirements of manufacturing exports and imports suggest that if capital and foreign exchange are real constraints and labor is not the import value, it may be substituted. Moreover, in so far as it focuses on exogenous world demand, the industrialization period by way of export substitution is not limited to the particular domestic specified mechanism of import substitution. Global capital inflows to allow export substitution are not dependent on domestic market security, but are triggered by the estimation of resource cost productivity. International export substitution investment also tends to be more related to agriculture as it concerns primary product production. When it comes to the production of labor-intensive, semi-manufacturers, more specifically the replacement of exports, contributes to more than substitution of imports in order to increase work and income distribution. Being labor-intensive and dependent on exogenous demand for manufacturing methods, the non-traditional portion would actually require more labor than the replacement for imports, and many could also decrease labor costs in terms of the complementary use of the scare factor of the produced capital inputs. The export substitution process allows a more effective use of the surplus labor component than the import substitution approach, and it also enables the additional scare factor to be more competitive. Data has shown that countries with export-oriented development plans appear to interfere with the promotion of new goods almost as "classically" as other countries do on the import substitution line. However, the economic cost of distorted export incentives appears to be lower than the cost of this distortion to export substitution and growth performance by countries and to be more satisfactory than that of import substitution countries. If the presumption is right, the message is that the strategy should be on the side of accepting higher gross earnings costs than foreign exchange earnings.

2.1.5 Industrialization and economic growth

Industrialization may mean an increase in the share of output in the Gross Domestic Product (GDP) and in the occupations of the economically active population. It may also be used to define the growth of economic operation in comparatively broad units of production, the use of machinery and other capital properties, with thinly divided work duties and formalized employment relations (Kirk-Greene 1981). In either case, industrialization is associated with the

expansion of the country's manufacturing activities, including the generation of electricity and the growth of its communications network; in either case, industrialization is related to the advancement of the country's processing processes, including the generation of electricity and the growth of its communications network. It is also a mechanism of reducing the relative importance of the extractive industries and increasing that of the secondary and tertiary sectors (Adejugbe 2004).

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There is an underlying connection between industrialization and economic development. This is because there can be hardly any nation that has grown without industrializing at the same time as rapidly emerging economies appear to have fast-growing manufacturing sectors (UNIDO 2009). In the same way, nearly any nation that has undergone significant growth in production and living standards over the last two hundred years has done so by industrializing (Murphy 1989). Britain, generally known as the first industrialized country, achieved this position with the Industrial Revolution, which allowed it to increase its industrial production by four times in the first half of the 18th century. Since then the key criteria for growth has been the rise in per capita wages, mostly due to industrialization. The case of Southeast Asia, to which we referred earlier, is self-evident. Industrialization of these countries has proven to be the inevitable path to economic development. Their fast growth compares sharply with the continuing economic marginalization of sub-Saharan Africa and other economically developed economies.

2.1.6 Government incentives/policy measures to the industrial sector

After independence in 1968, the government aggressively tried to reduce reliance on foreign producers through a support policy aimed at allowing local producers to satisfy local demand along the import substitution path. In order to accomplish this goal, the Nigerian Government has drawn up an industrial policy document to direct the country's achievement. According to the Office of the Public Enterprise (2005), industrial coverage can be described as the intervention of a scientific authority through specially crafted industrial policy focused on the adequacy of macroeconomic policies to control the growth of the market. It went on to state that the instrument of industrial policy includes discounts, tax incentives, export promotion, government procurement and controls on imports. Others provide direct investment, which was the pivot of industrial policy from the 1970s to the 1980s. International exchange management, fiscal policy and trade policy all continue to influence investment decisions. Nigeria's industrial policies aim to accomplish the following goals.

- i. To generate and raise the production.
- ii. Increase export of locally manufactured goods.
- iii. Create a wider geographical dispersal of industries.
- iv. To improve the technological skill and capabilities available in the country.
- v. To increase local contest of industrial output by looking inwards for the basic and intermediate input
- vi. To affect foreign direct investment.

In order to accomplish the above the Nigerian Government has placed in place certain policy or policy initiatives, which are viewed from three viewpoints. Funding for economic growth, incentives for business and institutional structure operation.

A. Funding Industrial Development

Improving industrial development in Nigeria requires a high degree of financing. The private sector is supposed to play a leadership role while the government relies on the

role of facilitators. Two major initiatives have been introduced by the Government to benefit the industrialist by acquiring a cheap investible fund.

- a. The provision of credit score centers for concessionary financial development banks.
- b. Provision of equity capital and long-term loans by the financial industry to finance small and medium-sized enterprises.

On the basis of the above, the Government has allotted full-size assets to finance economic development through the Bank of Industry (BOI). The bank was formed from the merger of the National Economic Reconstruction Fund (NERFUND). The Bank is expected to promote the development of primary industrial inputs by offering medium-and long-term loans to agriculture and agro-alloy industries. The banks arise from the merger of the Citizens Bank, the Nigerian Agricultural and Corporation Bank and the Family Economic Advancement Program (FEAP). Making funds available to small and medium-sized enterprises (SMES) that enable Nigeria's government to achieve its self-reliance goals increases poverty reduction, etc. Government through the Central Bank has allowed banks to set aside 10% of their annual earnings as equity funds and long-term loans to finance SMES in order to draw international investments, the government has built a sound framework and a working infrastructure that would inspire capital inflows into the economic system. These include the deregulation of economic policy stability, the reduction of the number of regulatory agencies and the establishment of the Nigeria Investment Promotion Commission (NIPC). It also embarked on port reforms and the establishment of export processing factories and the upgrade of infrastructure facilities in the region.

B. Incentives to Industry

An investment policy has been put in motion to promote national economic growth and facilitate a competitive, profitable and successful manufacturing sector economy. Opportunities aimed at enabling the private sector to play a leading role, promoting geographic dispersal of manufacturing, and increasing the exploitation of industrial output and domestic resources, as well as market relations. Incentives are broken down into

- (i) fiscal measures
- (ii) promotion of exports

Fiscal Measures

- i. Tax Holiday: This is exemption of some industries especially the infant ones from the payment of tax for the period of at least 5 years to enable them grow.
- ii. Tariff Protection: This is imposition of a heavy import duty on foreign goods so as to protect local industries from international competition.
- iii. Import Duty Relief: This is the granting of import duty relief to the importation of capital equipment by the government. This helps the newly established firm to be able to procure capital equipment cheaply, thereby increasing their productivity.
- iv. Reduction of Excise Duty: This simply means reduction in the amount paid as taxes for goods and services produced in the country. This helps to reduce business cost of production.

Export Promotion

Export incentives were implemented in the 1980s with the implementation of the Structural Adjustment Policy (SAP) by the promulgation of Export Decree No. 17 of 1986. It contains the following:

- i. Export Development Fund: The Government has set up this program to provide financial assistance to private exporting firms for part of their export promotion activities. These include education, conferences, advertisement and study on export advertising, and so on.
- ii. Export expansion grant: the program gave rewards to exporters who exported N500, 00. Worth of the processed commodity its award of 20% on the gross annual export and on receipt of confirmation of repatriation of the export proceeds. It is governed by the Nigeria Export Promotion Board. Such policy initiatives include: tax draws scheme, depreciation allowance, currency holding scheme, etc.

C. Institutional Framework:

The institutions play an advisory role in the industrialization process in the economy. They make the market climate conducive to a profitable start-up. The organization comprises the Individual Training Fund (ITF) for the production of manpower, standard organization and product efficiency, the National Automotive Council (NAC) for the enforcement of government automotive policy. Others include: Central Bank of Nigeria (CBN), Industrial Data Bank (IDB), Industrial Inspectorate, Small and Medium Enterprises Development Agency (SMIDA), Raw Materials Research and Development Council (RMRDC), National Food Drug Administration and Control Agency (NAFDAC), etc.

2.2 The Concept of Economic Growth:

According to Balami (2006) Economic development, which is often a surrogate for GDP, is also conceived as an improvement in the production of the economy's ability to generate goods and services required to boost the well-being of its people. Development is viewed as a gradual phase requiring an increase in the amount of production of goods and services in the economy, such as an increase in the gross domestic product (GDP). Inflation is significant because inflation rates are much higher than population growth because they have to contribute to greater human well-being. Development is thus seen as a continuous period of growth in the productive ability of the economy and therefore a rise in national income, characterized by higher rates of per capita output growth and the total productivity factor, in particular labor productivity. According to Fajingbeji and Odusola (1999), while economic growth is correlated with an increase in capital per capita, capital is not the only prerequisite for growth. Thus, if capital is made available without, at the same time having a basis for its application, it is lost. And as Hemming (1991) observed, this boom is induced by aiding the composition of spending, for the reason that positive types of expenditure are more likely to result in development. The provision of socio-economic facilities, activities and repair, and general administrative and legal structures are important among these forms of expenditure. In the same way, Ogiogio (1995) stressed that sufficient financing for the recurring expenditure of the public sector leads to an efficient and usable civil service and thus to the efficiency of the execution of development policies and programmes. As Hemming (1991) has analyzed, perhaps even less productive spending, defense, for example, provides the social and political protection needed for growth and may be

inefficient in doing so. The main conclusions that can be taken from these studies are however, that public spending contributes to development, rather than to a substantial degree. This work concerns the growth rate of the economy, i.e. The speed of GDP growth. The rate of GDP growth can be estimated using the well-known compound interest equation as a reference. We should note the formula for compound interest.

$$Y_T = Y_0 (1 + r)^t \text{ ----- (2.1)}$$

Where Y_t is the current year output/income, Y_0 is the previous year output/income; r is the compound rate of growth of Y (GDP).

Assuming $t = 1$, equation one will be written as follows

$$Y_t = Y_0 (1 + r) \text{ ----- (2.2)}$$

$$Y_t / Y_0 = 1 + r \text{ ----- (2.3)}$$

$$\text{Therefore } r = Y_t / Y_0 - 1 \text{ ----- (2.4)}$$

Equation (2.4) can therefore be used as a framework for measuring rate of growth of GDP in the country. According to Balami (2006) there are three different measurements for economic growth namely: nominal measurement of growth, real output growth rate as a measure of economic growth and growth measured in per capita values. According to Wikipedia, the free encyclopedia (2013) economic growth is measured as a percentage change in the Gross Domestic Product (GDP) or Gross National Product (GNP). Those two metrics, which are slightly different in measurement, equal the amounts paid for the goods and services that a nation has generated. An economy that produces \$9,000,000,000 in goods and services in 2010 and then generates \$9,090,000,000 in 2011 has a cumulative economic growth rate of 1 per cent for 2011 as an indicator of calculating economic growth. Inflation or deflation can make it difficult to measure economic growth.

2.2.1 Factors Affecting Economic Growth:

Ndiyo and Ebong (2003) reported that the economic routes that influence a given economy by macroeconomic variables include:

2.2.2. The Concept of Openness:

Economic development is a primary objective in developed countries. The share of imports and exports in regular production offers a ready indicator of the degree of openness of the economic system. It is the weighted total of the imports and exports of products divided by GDP usage (Slaughter and Swagel 1997:2). Development theories indicate that there could be a high-quality courting in the long run between transparency and the GDP boom charge. According to Ekpo (1995), openness to trade increases the rate of economic growth by providing access to a variety of imported inputs, in particular technology. Again, openness is widening the demand for domestic exports back to innovation and specialization (Romer 1986; Matin 1992; and Ekpo 1995) points out that the recent development literature does not predict that greater openness would specifically improve the growth rate of national production. According to him, they demonstrate, as an alternative, that growth can be decreased with the assistance of increased international resistance, or that it can be increased by means of import safety, if defense promotes funding for studio-intensive manufacturing. As a result, the course of the boom effect of transparency remains an empiric issue, provided that the recent increase in literature is not explicit as to how increased openness impacts the boom strain of the economy.

2.2.3. The Concept of Foreign Direct Investment (Fdi):

Classical economists claim that international capital mobility enables international locations with minimal financial savings to draw funding for efficient domestic financing ventures that enable merchants to diversify their portfolios, disperse expenditure risks in turn; higher return costs will inspire savings and financing that deliver faster economic growth. The relationship between FDI and economic development is thus optimistic.

2.2.4. The Concept of External Reserves:

The external reserves of a country are financial assets available to its monetary authorities to meet temporary imbalances in external payments and to meet other policy objectives. This is because changes in global net savings have a clear effect on the volume of money supply. Therefore, one of the main priorities of external reserve management is to maintain an adequate amount of reserves to allow for financial transactions. This may have an effect on economic growth.

2.2.5. The Concept of Foreign Exchange Rate:

The strength of a country's foreign exchange depends on a number of factors, such as the state of the financial system in terms of competition and quantity of its exports, the amount of domestic demand and the quantity of foreign reserves (CBN 1999). In a free-market economy, the exchange rate of the currency of a nation is dictated by the powers of supply and demand for that currency. Exchange rate policy goals are to retain the international value of the domestic currency, retain a desirable external reserve status and ensure external balancing without compromising the need for internal equilibrium and the overall objective of the macroeconomic balance. Therefore a phase of globalization leading to a high naira exchange rate will further increase economic instability.

2.2.6. The Concept of Net Foreign Indebtedness:

Development theories indicate that a fair amount of borrowing with the assistance of a developed nation is likely to decorate its financial growth. Developing countries have limited capital reserves and are expected to have investment opportunities with costs of return higher than those in developed economies (Pattillo et al 2000). As long as borrowed funds are used for productive financing and are no longer influenced by macroeconomic uncertainty and directives that distort monetary rewards, the boom will expand.

2.2.7. The Concept of Fiscal Policies:

Fiscal deficit is a strong predictor of the general macroeconomic performance of the economy. High deficits are triggering external debt crisis, inflation, foreign exchange shortages, high interest rates, and crowding out of spending. Deficit causes instability in interest and exchange rates, and puts highly indebted countries at risk of foreign market pressures and weakening countries of substantial savings and investment (Masson 1985). Anyanwu (1997) was of the view that fiscal deficits siphon funds from sustainable expenditure, thus slowing down productivity and eventually, reducing living standards.

2.2.8. The Concept of Average World Prices:

Continuous rising prices are triggering economic stagnation. Inflation is an economic phenomenon that indicates a steady increase in the general price index. It has a full-scale effect

on any individual and on all sectors of the economy. When charges increase, the buying power of capital decreases and this results in the impoverishment of the lower middle and poorest parts of society (Gbosi, 1990). This is an issue that has regularly proven difficult to address due to any effort to minimize it might lead to a shift in other main macroeconomic and social priorities, such as housing, social security networks, crime and the environment. Yet inflationary pressures allow the foreign-exchange reserves of the country to overflow as imports get cheaper.

2.2.9. The Concept of Balance of Payments:

Net exports or trade balances are also characterized as exports with fewer imports. If the trade balance is negative, there is a trade deficit, and if it is positive, there is a trade surplus. The balance of payments account retains part of the change in trade from one country and the rest of the world. The balance of payments account keeps track of all trade transactions between a government and the rest of the world. There are two sections of the balance of payments, including the current account and the capital account (see Taylor 1995: 1040-46 for descriptions of these subaccounts). As a monetary instrument, a favorable balance of payments status is an indicator of a stable economy. Fiscal policies for economic development and stabilization require careful control of these factors.

2.3. THEORETICAL FRAMEWORK

A strong and prosperous manufacturing sector is a requirement for industrialization (Bennett & Anyanwu, 2015). As a result, very few countries have been able to develop and generate capital without investing in their manufacturing industries. Industrialization has become a high-profile growth policy that will help to address the global backwardness problems. However, the success of industrialization in the country was not too spectacular (Bennett and Anyanwu, 2015). Nigerian industrialists have been seriously deprived of the very necessary component for industrial growth that is evident from issues such as: inadequate initial capital for take-off, inadequate funds for the maintenance of existing factories, insufficient funds for extension. The shortage of funds and stimulating climate for industrialists has substantially deprived the nation the opportunity for a substantial industry boom or industrialization that Nigeria has typically hoped for and hoped for (Bennett & Anyanwu). Gerschenkron principle According to

Gerschenkron, going from the conventional level of economic backwardness to the modern industrial economy requires a drastic break with the past or a "huge spurt" of industrialization.

Most Western nations, such as the United States, Germany, the United Kingdom, and France, undergone transformations at around the same time, partially following industrialization in the first half of the 19th century. Thus, he noted that the industrialized nations began their first stage of growth with the factory/private company. While in extreme backward states, banks would provide a big boost) what they have described as moderately backward states and governments. There are a number of inconsistencies in several respects between economic backwardness and the value of progress.

According to Gerschenkron, in the first instance, he based his views on two empirical results for industrialization, as Rostow put it the pre-conditions for industrialization that prevailed in England were either absent in the poorest countries of Europe or observed on a very small scale – in comparison, there was a huge upsurge in industrialization even in those countries where those pre-conditions had been met.

Gerschenkron supported his point of view by pointing to England's example that capital from already acquired wealth or steadily plundering profits was supplied to England's early factories – yet the very poor states/countries that may not have had these conditions of industrialization were compensated for by bank and legislative actions. The World Bank, which raised funds from the world's surplus units for the world's deficit units, could have a big boost.

Alexander Gerschenkron (1962) was an economic economist who researched the conventional economies of countries as an attempt to achieve industrialization. He noticed similar characteristics and differences between countries and analyzed the mechanism of transition, recognizing some common phases in which underdeveloped countries would pass in order to achieve economic growth. According to Gerschenkron, considering the degree of economic backwardness of the world in the event of its industrialization, the course and purpose of its industrial growth appeared to shift in many respects.

- The more backward a country's economy, the more pronounced the stress in its industrialization on dryness of both plant and enterprises.

- The more backward a country's economy, the greater the stress upon producers' goods as against consumer goods,
- The more backward a country's economy, the more backward its industrialization, as a great spurt proceeds at a relatively high rate of growth of manufacturing output.
- The more backward a country's economy, the greater the role the plant played through special industrial factors designed to increase supply of capital to the nascent industries and in addition to better informed entrepreneurial guidance.
- The more backward a country, the less likely its agricultural sector play an active role by offering to the growing industries. The advantage of an expanding industrial market based on its rising productivity of agricultural labor.

2.3.1 Common Characteristics of Nation:

On the verge of industrialization, Gerschenkron pointed to three popular features of nations. First some drawbacks and challenges can remain. But they're not bad enough to stall progress. Second, quite a number of cultures are starting to realize the possible advantages of industrialization when a vast community of people are constantly pursuing new prospects for greater prosperity. There is a tension between the present economic framework and the current structure. Stress is the greatest in a world that is late on the road to growth, since the present economic condition of those nations is highly backward compared to that of more developed countries.

2.3.2 How to Bring About the Great Spurt:

Extreme tension between economic backwardness and the rate of growth in many ways necessitates a big spurt of industrial production. According to Gerschenkron, for industrialization, the existence of any "necessary condition" was not necessary for industrialization, as Rostow argued. He based his opinion on two scientific findings. Second, the pre-condition for industrialization that occurred in England was either missing or very weak in the backward countries of Europe.

Second, except in those countries where those preconditions were present in support of its arguments, a substantial rise in industrialization occurred, he cited the example of Italy, and

before 1880, Italy's economy seemed to be very weak relative to Europe's advanced economies. The same inference, which will result in the presence of the requisite pre-c, may be selected for comparison, be it quantitative descriptions of mechanical equipment, organizational efficiency and labor skills in industrial firms or scattered qualitative figures on relative profitability in some divisions of industry, the railway network or the population analphabetism norm.

As mentioned above, Gerschenkron classified foreign locations in three corporations on the basis of the degree of economic backwardness; advanced moderately backward and actually backward. For the great spurt of industrialization, he observed that the advanced nation begins its first stage of growth with the organizational leadership of the factory (or private firm), the relatively backward banking nation, and the severe backward government. However, it should not be concluded from this that industrialization relies on the development of these safeguards, even in the course of capital-intensive techniques. According to him, there will be a very large technological gap in an extraordinarily primitive world between the development processes and those of the developing countries.

This can thus be industrialized by adopting the most sophisticated capital-intensive strategies of the latter countries for two reasons: firstly, this technological assistance in creating alternative import markets, thereby reducing global competition. Second, since backward countries lack skilled labour, they use capital-intensive and labor-saving techniques. The more economically backward the higher the amount of capital-intensive techniques required for economic growth, historical borrowed technology was one of the key reasons assuming a high rate of development in a backward country entering the stage of industrialization.

2.4 EMPIRICAL REVIEW

Arrey (2013) shares this observatory but adds that industrialization is a process that engages human and mechanical resources in the transformation of raw materials for immediate consumption or for further production and leads to the heavy dependence on mass production of goods and services manufactured within the territory of a country. Thus, industrial development is focused on the use of technology and science in fostering a country's capacity to transform

raw materials into finished goods or manufacture intermediate and capital goods for consumption or for further production.

Many empirical studies have underpinned the hypothesis that there is a connection between industrialization and economic growth in several world economies. For starters, Ebong, Udoh and Obafemi 2014 using five decades of time series (1960-2010) centered on the two phases of the Eagle-Granger and the Johansen co-integration test, and the vector auto regression analysis studied globalization and industrial development in Nigeria. Findings clearly showed that the effect of globalization on industrial development is important. They proposed that increasing the level of trade with the rest of the world would create opportunities for exporting local raw materials and for introducing the required input into the industrial process, and that financial liberalization would increase industrial development. Hence, recommended that policies are required to reserve the tide of capital flight from the country and channel resources toward the industrial sector.

Likewise, Ogunrinola and Osabuohien (2010) examined the impact of globalization on employment generation in Nigeria's manufacturing sector using ordinary least square technique of analysis on a time series data for the period of 1990-2006 and discovered that globalization has a positive impact on employment level in the Nigerian manufacturing sector. It means that countries that interact with other parts of the world create jobs in their markets, contributing to economic growth. Another research related to the developing economies undertaken by Kaya (2010), which studied the impact of the latest wave of economic globalization on manufacturing employment in developing countries from 1980 to 2003 using a detailed dataset of 64 developing countries. The study deals with the classic debate on the advantages of industrialization and how it affects developing countries. Overall, the results show that manufacturing employment in most developing countries is increasing. First, this study reveals that the extent of financial improvement measured with the aid of GDP in line with capita is the most vital issue influencing the dimensions of manufacturing employment. Second, monetary globalization also influences manufacturing employment in growing nations, but especially via alternate.

From another line of thinking, Ndiyo and Obongi 2003 with the use of the vector autoregressive technique of analysis examined the challenges of openness in developing countries for lessons to be drawn using Nigeria from (1970 – 2000). Empirical result from this study shows that

globalization has had both positive and negative effect on the Nigerian economy. The negative effect according to Mike (2012) includes the challenges for industrial policies in Nigeria which are powerful tools to promote rapid economic growth and development. He observed that Nigeria has not been able to make appreciable progress in industrial development due mainly to policy failure. He said different governments have been trying different approaches since independence based on the dictates of those in power and those who advise them, stressing that the result was political summersault and inconsistency in favor of seeking rent.

Also, the technique adopted was the use of Ordinary least square (OLS) approach. The take a look at recommended that authorities must redirect its commercial and investment coverage that allows you to boom output of the domestic manufacturing (RGDP), flexible exchange fee and control inflation rate because that confirmed that increase in trade and inflation price, reduced output. Also, industrial and investment policy should be flexible on infant industries so as to encourage productivity and improve GDP. A study by Isiksal and Chimezie (2016) indicated that no country particularly the developing ones has attained a level of economic growth without sub-sector linkage. They evaluated the Impact of Industrialization in Nigeria from 1997-2012 using the Johansen co-integration testing approach which demonstrated a significant long-run relationship between the three variables used. The consequences screen that agriculture, enterprise and offerings have a considerable high-quality relationship with GDP.

The oil and gas sector is a major player in the economy and contributes about 95% to the country's export earnings compared to the industrial sector which only accounts for about 6% of the economic activity (Aliya & Odoh, 2016). While the exact relationship between industrialization and economic development has been a controversial issue in the economic literature, not many economists doubt the capacity of industry for rapid growth and making adjustments for economic progress. It is in the light of the foregoing that this study seeks to examine industrialization and economic growth in Nigeria. The main objectives are: To examine the trend of industrialization and the Nigerian economic growth; To investigates the contribution of industrial output to the Nigerian economic growth; and examine the Effect of overseas funding monetary boom in Nigeria. This observes examines industrialization and financial increase, following a country's unique analysis with a unique focus on Nigeria. They examine shall use annual time series information protecting the length from 1981 to 2016. The choice of

the period was informed by the need to capture the periods of different policy reforms that led to the change in the investment atmosphere in Nigeria. The study contributes to the literature on Dutch disease since a boom in resource rents shifts labour away from the tradable industrial sector and towards non-tradable services. This study, investigates this mechanism in order to explain the reasons for the significant portion of the rapid industrialization experience of the developing world that has been overlooked in most previous studies on Dutch Disease.

On the empirical ground, Mario, Amat and Šikić (2016) analyze industrialization patterns in Europe, implications of monetary backwardness and the position of European integration in facilitating industrialization and development.

The study finds evidence of some income convergence in Europe, but mostly in countries that were able to exploit the ‘advantages of (mild) backwardness’. Regions of widespread backwardness which include the Balkans had difficulties to seize up. Membership within the European Union helped mainly more backward economies to broaden faster. In a similar vein, Aboagye (2016) used panel data from 1980 to 2015 covering 36 SSA countries and found that, in the long run, both urbanization and industrialization tend to increase energy intensity inside the 36 decided on SSA international locations whilst the opposite is installed for FDI and exchange openness. Inflation become additionally located to be associated with rises in energy depth in SSA. Additionally, the finding confirms the existence of a legitimate EKC speculation for power intensity; the existence of an inverted U-shaped dating between monetary increase and energy depth in SSA. Finally, it is observed that the SADC zone of the region, in particular, is exhibiting rising energy intensity as compared to the ECOWAS sub-region. Also, Anyanwu, Kalu and Alexandra (2015) investigated the effect industrial development on the Nigeria’s economic growth 1973-2013. The model explains that the influence of business output on monetary boom isn't always statistically great, though the sign obtained from its à priori expectation is positively related to (economic growth) GDP but does not hold strong enough.

2.5 GAP IN THE LETERATURE

The main difference found in the literature examined is that most of the works reviewed are not new. According to the 2019 MBS report, Muhammadu Buhari led the administration's focus on

funding for the manufacturing sector, of which billions of naira are pumped into the industrial sector. The studies analyzed often provide inconsistent conclusions which this analysis plans to use in order to address the most recent evidence and applicable methodological methods. For eg, Gylych and Enwerem (2016) in their analysis on the effect of industrialization on economic growth: the experience of ten ECOWAS countries between 2000 and 2013 showed that industrialization eventually had a bad impact on the economic boom in Nigeria. Another study on emerging economies conducted by Kaya (2010), which looked at the effect of the current period of economic globalization on manufacturing employment in developing countries from 1980 to 2003 using a quantitative dataset of 64 developing countries. The thesis deals with the classic discussion about the benefits of industrialization and how it impacts developed countries. Overall, the findings suggest that manufacturing jobs is on the rise in most developed countries. The first is that the level of economic improvement calculated by GDP per capita is the most important factor impacting the scale of manufacturing jobs. Second, economic globalization also affects manufacturing jobs in developed countries, especially through transition.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the research methodology. It contains the method of estimation, source of data, as well as model specification.

3.2 Model Specification.

The model specification is as follows:

$$\begin{aligned} \ln RGDP_t = & \beta_0 + \beta_1 \ln MANO_t + \beta_2 \ln FDI_t + \beta_3 \ln LAB_t + \beta_4 \ln EXCH_t + \beta_5 \ln INF_t \\ & + \varepsilon_t \dots (1) \end{aligned}$$

Where $RGDP_t$ = Real Gross Domestic product

$MANO_t$ = Manufacturing Output

FDI_t = Foreign Direct Investment

LAB_t = Labour Force

$EXCH_t$ = Exchange Rate

INF = Inflation

ε_t = Error Term

3.3 A-Priori Expectation

$$\delta \ln RGDP_t / \delta \ln FDI_t > 0$$

$$\delta \ln RGDP_t / \delta \ln MANO_t < 0$$

$$\delta \ln RGDP_t / \delta \ln LAB_t < 0$$

$$\delta \ln RGDP_t / \delta \ln EXCH_t > 0$$

$$\delta \ln RGDP_t / \delta \ln INF_t > 0$$

3.4 Estimation Techniques

The determinants of Economic Growth, RGDP is analyzed using the OLS model. However before using the OLS, it is fundamental to carry out some other analysis to aid the estimation of the relationship between the variables. The Stationarity test using the Augmented Dickey Fuller test (ADF), Co integration bound test, Multicollinearity, and Heteroskedasticity test. Meanwhile, to check and make sure our model is not mis-specified; we will make use of the Ramsey Reset test to check for model specification.

3.4.1 Unit Root

The unit root hypothesis has recently attracted a considerable amount of work in both the economics and statistics literature. Indeed, the view that most time series are characterized by a stochastic rather than deterministic nonstationarity has become prevalent. A test of stationarity (or non-stationarity) has become widely popular over the last several years is the unit root test (Guajarati, 2004). The seminal study of Nelson and Plosser (1982) which found that most macroeconomic variables have a univariate time series structure with a unit root has catalyzed a burgeoning research program with both empirical and theoretical dimensions

The unit test is carried out before the co- integration method of analysis can be carried out; this is because it is necessary to test the presence of a unit root test in a variable. A unit root shows whether time series variable is not stationary using autoregressive model. A test that is very popular and valid for large sample of the Augmented Dickey Fuller (ADF) and another test that can be used to determine the order of integration in a variable. The classical unit root test which is the Augmented Dickey Fuller (Dickey and Fuller, 1979) (ADF) unit root test is used for the non-stationary of the series. However structural breaks in stationary time series can induce unit roots, as shown empirically by Perron (1989) and by Hendry and Neale (1991). The ADF unit root test is relatively common in the literature but has been criticized because of the bias towards non-rejection of the null hypothesis in the presence of structural breaks and low power for near-integrated process Olayungbo and Akinbobola, (2011). The Augmented Dickey Fuller (ADF) unit root test is used to test whether the variables are stationery or not and their order of integration.

The estimation commences with an extensive unit root test to confirm the stationarity states of the variables that entered the model using both the Augmented Dickey-Fuller (ADF). The unit root test is used in order to guarantee that our inferences regarding the important issue of

stationarity are not likely driven by the choice of the testing procedure used. The testing procedure for the ADF test is as follows:

$$\Delta X_t = \lambda_0 + \beta_t + \gamma X_{t-1} + \delta_1 \Delta X_{t-1} + \dots + \delta_p \Delta X_{t-p} + \mu_t \dots \dots \dots (2)$$

Where, λ_0 is a constant, β_t is the coefficient on a time trend and p is the lag order of the autoregressive process and Δ is the difference operator. The unit root test is then carried out under the null hypothesis $\gamma = 0$ against the alternative hypothesis of $\gamma < 0$. We compare the computed value of the test statistic with the relevant critical value for the test. For instance, if the computed test statistic is greater (in absolute value) than the critical value at 5% or 1% level of significance, then the null hypothesis of $\gamma = 0$ is rejected and thus no unit root is present, otherwise, it is accepted. The test for stationarity is first conducted at level, however, if the variables are not stationary at level; we then difference them and test for the stationarity of the differenced variables. Supposing the variables are stationary at first difference, we conclude the variables are integrated of order one (i.e., $I(1)$).

Once the computed ADF is obtained, it is compared with the critical value. After the unit root test, the cointegration analyses should be done subject to the criteria if the variables have unit root.

3.4.2 Johansen's Co-Integration

This test is appropriated for investigating the number of cointegrating relations among the involved variables involved. The results of the test maybe sensitive to the lag length. The most common procedure is to estimate a vector auto-regression using the indifference data. Then use the same lag-length tests as in a traditional VAR. Estimate the model and determine the rank of π . The Johansen (1991) model can be written in error-correction form, as follow:

$$\Delta Y_t = \delta + \sum_{i=1}^{k-1} \Gamma_i \Delta Y_{t-i} + \Pi Y_{t-1} + \mu_t \dots \dots \dots (4)$$

Where Y_t is a column vector of the n variables, Γ and Π represents the coefficient matrices, Δ is a difference operator, and δ is the constant. If Π has zero rank, then there is no linear combination that is stationary between the variables. However, if Π is of rank $r > 0$, there are r possible linear combinations. Π can then be decomposed in to two matrices, α and β , that is $\Pi = \alpha\beta'$. In this representation, β contains the coefficients of the r co-integrating vectors that render $\beta' Y_t$ stationary, even though Y_t is non-stationary, and α contains the speed adjustment coefficients.

Before performing the Johansen approach, the model has to be specified with regard to the inclusion of a constant or a trend, and the number of lags. The Akaike Information Criterion (AIC) is used to determine the number of lags for each series.

3.5 DIAGNOSTIC TESTS

The tests were carried out in this way;

3.5.1 EXPLANATORY OF POWER OF THE MODEL

The explanatory power of the model was tested using coefficient of multiple determinations (R^2). It measures the goodness of fit of a regression line. R^2 measures the proportion of percentage of the total variation in dependent variable explained by the regression plane. (Guajarati)

Decision rule; the higher the R^2 the greater the percentage of the variations of the dependent variable explained by the independent variables.

3.5.2 TEST OF OVERALL SIGNIFICANCE OF THE MODEL

By testing the overall significance of the regression result, we use f statistics at 5% confidence level of significance. The hypothesis to be tested is

H0: $a_1 = a_2 = a_3 = a_4 = 0$ (all slope confidence are equal to zero)

H1: $a_1 = a_2 = a_3 = a_4 \neq 0$ (all slope confidence are not equal to zero)

Decision rule; Reject the null hypothesis if f-probability is less than 5% otherwise we accept.

3.5.3 AUTOCORRELATION TEST

One of the underlying assumptions of the OLS (ordinary least square) regression is that the succession values of the random variables are temporarily independent. This means that an error $\{U_t\}$ is not correlated with one or more of the previous errors $\{U_{t-1}\}$

The Breusch-Godfrey Serial Correlation LM Test was adopted for this test.

The hypothesis is;

H0: There is auto correlation

H1: There is no auto correlation

Decision Rule

If the value of probability of the LM test is less than the selected level of significance

3.5.4 MULTICOLLINEARITY TEST

The term multi-co-linearity is used to denote the presence of linear relationship among explanatory variables. The test was carried out using correlation matrix. According to Barry and Feldman (1985) “multi-co-linearity is not a problem if no correlation co-efficiencies exceed 0.80” but if the correlation co-efficiencies exceed 0.80, there is presence of multi-co-linearity.

3.5.5 HETEROSKEDASTICTY TEST

Our concern here's to determine whether or not our residuals have constant variance. The white general heteroskedasticity (no cross term) was used for this test.

The hypothesis tested is;

H0: Homoscedasticity

H1: Heteroscedasticity

Decision rule; if the probability of f statistics is less than 5%, we reject the null hypothesis otherwise we accept.

3.5.6 NORMALITY TEST

The classical linear regression model assumes that each error (U_i) is distributed evenly (normally) with the mean and variance. The jar-que Bera normality test was used for this test.

The hypothesis tested is.

H0: The error term are normally distributed

H1: The error term are not normally distributed

Decision Rule; If the probability of Jar-que Bera is less than 5%, we conclude that the error term are not normally distributed but if the Jar-que Bera is greater than 5%, we conclude that the error term are normally distributed.

3.6 METHOD OF DATA ANALYSIS

The model will be estimated using ordinary least square method (OLS). The econometric techniques specification test, stationarity test, co integration test, granger causality, explanatory power of the model, test for overall significance of the model, auto correction test, multi-co-linearity test, heteroscedasticity test, normality test was used to analyze the data. The econometric view software (EViews) was used to analyze the data electronically.

3.7 SOURCES OF DATA ANALYSIS

The World Development Indicators (WDI) statistical bulletin of various issues, it covers the period of 1983-2019.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.0 INTRODUCTION

This chapter covers the analysis of data and presentation of results, the research question was answered, the hypothesis was tested and the findings of the study were also discussed.

4.1 DESCRIPTIVE STATISTICS RESULTS

TABLE 4.0: Summary of Descriptive Statistics

	LNGDP	LNLAB	LNMANO	LNFDI	EXCH	INF
Mean	31.08099	17.63402	28.98828	21.17765	99.19740	19.41085
Median	30.86697	17.65974	28.89450	21.35138	111.2313	12.55496
Maximum	31.87638	17.93266	29.53077	22.90267	306.9210	72.83550
Minimum	30.41674	17.28307	28.69521	19.05813	0.724410	5.388008
Std. Dev.	0.504775	0.195577	0.272054	1.159091	92.64259	17.42196
Skewness	0.366347	-0.274987	0.969156	-0.167856	0.752588	1.731703
Kurtosis	1.640754	1.804028	2.538874	1.820880	2.796795	4.747206
Jarque-Bera	3.675938	2.238224	6.119939	2.317164	3.556386	23.19887
Probability	0.159140	0.326570	0.046889	0.313931	0.168943	0.000009
Sum	1149.997	546.6546	1072.566	783.5731	3670.304	718.2014
Sum Sq. Dev.	9.172737	1.147513	2.664481	48.36568	308975.4	10926.89
Observations	37	31	37	37	37	37

Source: *author's analysis 2020*

Table 4.0 shows the summary statistics of the data employed in the model. The value of the mean showed that exchange rate has the highest mean among all the variables, which is then followed by gross domestic product, manufacturing output, foreign direct investment and labour

force respectively. The table, based on the values of skewness showed that gross domestic product, manufacturing output, exchange rate and inflation are positively skewed i.e. are skewed to the right while labour force and foreign direct investment are negatively skewed as shown by the skewness value. This is based on the respective positive and negative skewness signs. Kurtosis showed the degree of peakedness of each distribution. It shows that all the variables are platykurtic because they have skewness value that is lower than 3 while real GDP is leptokurtic. The Jacque-bera result and its probability value showed that only manufacturing output and inflation are normally distributed while other variables i.e. gross domestic product, labour force, foreign direct investment and exchange rate is not normally distributed at 5% level of significance.

4.2 Time series Econometrics Results

The study examined the time series characteristics of the variable adopted in order to avoid a situation of spurious regression.

4.2.1 Unit Root Test

The unit root test of the variables are conducted to determine whether they are stationary and to know the order to which they are integrated. The study adopted the Augmented Dickey Fuller test for unit root.

Table 4.1 Augmented Dickey Fuller Unit Root Tests

Variables	Level	1st difference	2 nd difference	Order of integration
LNGDP	-1.537452	-4.808984		1(1)
LNMANO	-1.161580	-5.093060		1(1)
LNFDI	-3.077991	-10.47718		1(1)
LNEXCH	-2.195209	-4.368868		1(1)
LNLAB	-2.053577	-4.849916		1(1)
LNINF	-3.223838	-3.788946		1(1)
Critical value				
1%	-4.252879	-4.243644		

5%	-3.548490	-3.544284		
10%	-3.207094	-3.204699		

Source: author's analysis 2020

The result in Table 4.2 shows that the variables were stationary at first difference since the absolute value of Augmented Dickey Fuller unit root test is greater than the chosen critical value which is 5%. Looking at the above result, we conclude that there is further variation among variables after the stationarity at first difference.

4.2.2 Cointegration Test

Table 4.2: Johansen (Multivariate) Cointegration Test

Date: 11/05/20 Time: 19:44

Sample (adjusted): 1991 2019

Included observations: 29 after adjustments

Trend assumption: Linear deterministic trend

Series: LNGDP LNMANO LNLAB LNFDI INF EXCH

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.887227	153.5360	95.75366	0.0000
At most 1 *	0.771875	90.24689	69.81889	0.0005
At most 2 *	0.580826	47.98889	47.85613	0.0553
At most 3 *	0.413886	32.17426	29.79707	0.2889
At most 4	0.204734	6.681249	15.49471	0.6150
At most 5	0.001308	0.037969	3.841466	0.8455

Source: author's analysis 2020

From the result above in table 4.3, we conclude that the variables are co integrated since the likelihood ratio of three possible combinations is greater than the critical value at 5% which corresponds to the decision rule in chapter three.

4.3 REGRESSION RESULTS

Table 4.3: Ordinary Least Square (OLS) Long Run

Regression Result

Regression equation

Dependent Variable: LNGDP

Method: Least Squares

Date: 11/05/20 Time: 19:45

Sample (adjusted): 1989 2019

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMANO	0.558494	0.047985	11.63884	0.0000
LNLAB	2.062696	0.172141	11.98261	0.0000
LNFDI	0.046514	0.015312	3.037729	0.0055
LNINF	0.000895	0.000687	1.302454	0.2046
LNEXCH	-0.000921	0.000339	-2.715228	0.0118
C	-22.28254	3.378641	-6.595121	0.0000
R-squared	0.938928	Mean dependent var	31.19849	
Adjusted R-squared	0.896714	S.D. dependent var	0.466276	
S.E. of regression	0.053745	Akaike info criterion	-2.837143	
Sum squared resid	0.072213	Schwarz criterion	-2.559597	
Log likelihood	49.97572	Hannan-Quinn criter.	-2.746670	
F-statistic	446.6068	Durbin-Watson stat	1.433924	
Prob(F-statistic)	0.000000			

Source; author's analysis 2020

Research questions

1. Does manufacturing output have a significant relationship with the economic growth?
2. How does human capital affect the Nigerian economic growth?
3. Does currency devaluation have an impact on industrialization in Nigeria

Firstly, the result of the research question one, indicated that MANO which is the variable for representing manufacturing output and proxy as industrialization shows that the coefficient of MANO is 0.558494, implying a positive relationship with the dependent variable GDP which is the proxy to the Nigerian economic growth. In testing the significance of manufacturing output, we used the probability test coefficient of MANO, and the rule for probability test states that if the probability coefficient is less than the selected level of significance, we conclude that the variable is significant. For the purpose of this study we adopt 5% level of significance. Thus, since the coefficient of probability is 0.000 which is less than 0.05. Therefore, the analysis shows a significant positive relationship between manufacturing output and the Nigerian economic growth.

Secondly, the result of the second research question also found that labour force which proxy human capital revealed that the coefficient of labour force is 2.062696, which indicates that a unit change or a variation in labour force will have a corresponding positive effect on the economic growth. From the coefficient of labour force which appears to be positive, shows that a variation in labour force will have a positive of 2.062696 on the economic growth. This explains part of the problem of industrialization. That is to say, if the labour productivity is not efficient it will bring hiccups to achieving an industrialized economy.

Thirdly and final result of the third research questions indicated that exchange rate that is proxy as currency devaluation revealed that the coefficient of exchange rate is -0.000921 which is negative; thus, a variation in exchange rate will have a negative effect on the economic growth since the coefficient of exchange rate is -0.000921.

4.4 DIAGNOSTIC TESTS

The following diagnostic tests of the data and model were carried out:

Table 4.4.1 diagnostic test result

Test result	Test
R-squared	0.938928
Adjusted R-squared	0.896714
Durbin-Watson stat	1.433924
F-statistic	446.6068
Prob(F-statistic)	0.000000
Serial Correlation LM test	0.2736

Source: Author's analysis 2020

4.4.1 GOODNESS OF FIT

R^2 the coefficient of multiple determinants was used for the test. From the regression result above, in table 4.4.1, the value of R^2 is 0.938928, which shows that the variation in the independent variables can explain 93% of the dependent variable. After adjustment of degree of freedom, the adjusted R^2 value which 0.896714 indicates that approximately 89% of the changes in the independent variables. Therefore, we conclude that the level of explanatory power of the model was satisfactory for the study, since the explanatory power of the model is above 50%.

4.4.2 OVERALL SIGNIFICANCE OF THE MODEL

In order to determine if all the explanatory variables have significant effect on the dependent variable, the F-test was used. The decision rule stated in chapter three was followed;

From the result in table 4.1, the value of the f-probability is 0.000000. We therefore, reject the null hypothesis at 5% (0.05) level of significance and conclude that the independent variables have significant impact on the dependent variable.

4.4.3 AUTO CORRELATION

In testing for auto correlation or the serial order correlation in the model, we use Breusch-Godfrey Serial Correlation LM Test: to test for the presence of auto correlation in the model.

The rule states that if the value of probability of the LM test is less than the selected level of significance, which for this study we used 5% (0.05), we reject the null hypothesis; from the analysis the coefficient of the probability test is 0.2736, which implies that there is no auto correlation in the model. Therefore, since the coefficient of the probability is greater than 5%, we fail to reject the null hypothesis and conclude that there is no presence of auto correlation in the model.

4.4.4 SPECIFICATION TEST

The text conducted to check if the model is correctly specified or not. We used the Ramsey reset test for this analysis.

H0: the model is not mis-specified

H1: the model is mis-specified

Decision Rule

If the f-probability is less than the chosen level of significance (5%), then reject the null hypothesis, otherwise accept.

The result gotten from the Ramsey reset is presented in table 4.9

Table 4.4.4 specification test result

Ramsey RESET Test:

	Value	df	Probability
t-statistic	2.161914	24	0.0408
F-statistic	4.673874	(1, 24)	0.0608
Likelihood ratio	5.515910	1	0.0188

Source: author analysis 2020

From the result in table 4.4.4, the probability is 0.0608. Since 0.0608 is greater than 5% level of significance, we reject the null hypothesis and conclude that the model is not mis-specified.

4.4.5 NORMALITY TEST

The essence of this test is to check if the error term follows the normal distribution. Jarque Bera test of normality was used

H0: the error term follows a normal distribution

H1: the error term does not follow a normal distribution

Decision Rule; If the probability of Jar-que Bera is less than 5%, we conclude that the error term are not normally distributed but if the Jar-que Bera is less than 5%, we conclude that the error term are normally distributed.

Table 4.5: Normality test for the Long OLS Result

Variables	Value
Jarque –Bera	9.450902
Probability	0.008867

Source: author's analysis 2020

From the above result in table 4.4, the probability of the Jarque Bera is 0.008867. We therefore fail to reject the null hypothesis and conclude that the error term follows a normal distribution since the probability of the jarque- Bera is less than 5% level of significance.

4.4.6 HETEROSKEDASTICTY

White Heteroskedasticity (Breusch-Pagan-Godfrey) was conducted to verify whether the variance of the error term has a constant variance.

H0: Homoscedasticity

H1: Heteroskedasticity

Decision, reject the null hypothesis if the probability of the f-statistics is less than 5% level of significance otherwise we fail to reject.

Table 4.6 Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.309394	Prob. F (5,25)	0.9026
Obs*R-squared	1.806462	Prob. Chi-Square (5)	0.8752
Scaled explained SS	2.000815	Prob. Chi-Square (5)	0.8490

Source; author's analysis 2020

The above table showed the heteroscedasticity result of the study. The null hypothesis is that there is homoscedasticity in the variance of error term while the alternative hypothesis states that their heteroscedasticity in the variance of error term. From the F-statistics 0.9026 and its respective probability value 0.9026, we can accept the null hypothesis of homoscedasticity and thus the result is consistent and reliable.

4.4.7 MULTICOLLINEARITY TEST

Correlation matrix was used to check for the problem of multi-co linearity among the explanatory variables.

Decision, if the pair unit or zero orders correlation coefficient between two regressors is high in excess of 0.8, and then multi-co-linearity is present in the model.

	GDP	MANO	FDI	EXCH	LAB	INF
GDP	1.000000	0.834556	0.599210	0.805374	0.841612	-0.420569
MANO	0.834556	1.000000	0.211063	0.707078	0.636276	-0.205559
FDI	0.599210	0.211063	1.000000	0.453755	0.663031	-0.347862
EXCH	0.805374	0.707078	0.453755	1.000000	0.736103	-0.459885
LAB	0.841612	0.636276	0.663031	0.736103	1.000000	-0.533051
INF	-0.420569	-0.205559	-0.347862	-0.459885	-0.533051	1.000000

Source: author's analysis 2020

From the table 4.6 above, the correlation between any two independent variables has shown that there is multi co linearity in the model. However, in line with the rule of OLS, since the presence of multicollinearity is said to be partial multicollinearity, we apply the rule of thumb and do nothing.

4.5 DISCUSSION OF FINDINGS

LNMANO has a positive relationship with the economic growth. This is shown in the regression equation with a coefficient of 0.558494, explaining a marginal or percentage change in LNMANO will result to corresponding effect in the dependent variable LNGDP. Labour force (LNLAB) have a positive relationship with manufacturing output (LNMANO) which is the proxy for industrialization as shown by the coefficient of labour force, 2.062696. This is however in line with the apriori expectation; explaining that a marginal change in will result to a corresponding change in industrialization in Nigeria. Foreign direct investment (LNFDI) has a positive coefficient of 0.046514 and this explains that a marginal change in FDI will bring about a corresponding change in economic growth as proxied by the gross domestic product, which is in agreement with the apriori expectation in chapter three.

This finding completely conforms to the apriori expectation based on economic theory. This finding also shows that LNMANO has a significant impact on Gross domestic product (GDP). This is shown by the t-statistics value of LNMANO which is 11.63884 in the regression equation result, which is greater than 0.05 of our chosen level of significance. This implies that manufacturing output rate has significant positive impact on the economic growth as represented by gross domestic product.

The overall goodness of the model as shown by the adjusted coefficient of determination is 0.896714, which shows that about 89% of the variation experienced in the economic growth for the period being investigated may be explained by the independent variables included in our model. The probability value of Breusch-Godfrey Serial Correlation LM Test: is 0.2736 for the model. This implies that there is absence of autocorrelation among the explanatory variables in the model, following the rule stated in chapter three.

F-statistics which measures the joint statistical influence of the explanatory variables in explaining the dependent variable was found to be statistically significant at 0.05% level.

The study also finds that exchange rate (LNEXCH) has a negative relationship with the dependent variable log (GDP) which represents the economic growth. This however is not in line with the economic apriori expectation in the previous chapter considering how the fluctuation in exchange rate has affected the Nigerian economic growth. The study also reveals that there is a long-term relationship among variables using the result from the co integration test.

The study agrees with diyo and Obongi 2003 with the use of the vector autoregressive technique of analysis examined the challenges of openness in developing countries for lessons to be drawn using Nigeria from (1970 – 2000). Empirical result from this study shows that globalization has had both positive and negative effect on the Nigerian economy. The negative effect according to Mike (2012) includes the challenges for industrial policies in Nigeria which are powerful tools to promote rapid economic growth and development. He observed that Nigeria has not been able to make appreciable progress in industrial development due mainly to policy failure. He said different governments have been trying different approaches since independence based on the dictates of those in power and those who advise them, stressing that the result was political summersault and inconsistency in favor of seeking rent. Also, the methodology adopted was the use of Ordinary least square (OLS) technique. The study recommended that government should redirect its industrial and investment policy so as to increase output of the domestic production (RGDP), flexible exchange rate and control inflation rate since that showed that increase in exchange and inflation rate, decreased output. Also, industrial and investment policy should be flexible on infant industries so as to encourage productivity and improve GDP.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

The main findings of this study will be summarized thus;

1. Summary statistics of the data used in the model. The mean value showed that the exchange rate had the highest average of all the factors followed by gross domestic product, industrial production, foreign direct investment and labor force, respectively.

2. It shows that all variables are platykurtic because they have a skewness value that is lower than 3 while real GDP is leptokurtic and the Jacque-bera result and its probability value shows that only production output and inflation are usually distributed while other variables are distributed.

3. The Augmented Dickey Fuller test for the unit root was used to test for stationarity. And the result shows that all of the variables are stationary at the first discrepancy. However there are suggestions that there may be more variance

4. A percentage change in foreign direct investment will result in 0.046514 corresponding change (increase) in LNGDP.

5. The co-integration test shows that there is a long-term relationship between variables following the decision rule for the co-integration test.

5. The 89% adjusted R² indicates that the model is adequate for policy making. It describes that the degree of explanatory power of the model is satisfactory for the analysis, because the explanatory power of the model is greater than 50%.

1. We use Breusch-Godfrey Serial Correlation LM Test: to test for the existence of auto-correlation in the model. However the test shows that there is no auto-correlation in the formula. Even using the Ramsey Reset test for the specification of the model, after checking, we concluded that the model was not wrongly defined.

2. The multicollinearity result shows that there is no multicollinearity in the model.

3. Manufacturing output has a positive impact on economic growth in Nigeria.

4. Labor has a positive effect on economic development in Nigeria.

1. Overall importance of the variables indicates that the explanatory variables which include: production performance (LNMANO), labor force (LNLAB), foreign direct investment (LNFDI), inflation (LNINF) ND exchange rate (LNEXCH) are efficient determinants of economic growth (LNGDP). There is also a major average relationship between the independent variables and the dependent variable.

2. The multicollinearity test indicates that there is no existence of multicollinearity in the model.

5.2 CONCLUSION

The research explored the relationship between industrialization and Nigerian economic development from 1983 to 2019. The analysis used the most ordinary least square form. The contingent variable is the proxy for economic growth for Actual Gross Domestic Product (RGDP). Independent variables are development volume (LNMANO), labor force (LNLAB), foreign direct investment (LNFDI), inflation (LNINF) ND exchange rate (LNEXCH) In accordance with the apriori projections, both variables are technically supposed to display indications.

In conclusion, the regression estimation based on the ordinary least square method (OLS) indicates that industrialization has had a substantial influence on Nigeria's economic development over the study period. This conclusion is consistent with the view articulated by Arrey (2013) in this Observatory, but adds that industrialization is a mechanism that engages human and mechanical capital in the transformation of raw materials for immediate consumption or further development and leads to a strong reliance on mass production of products and services produced within the territory of a country. Thus, industrial growth focuses on the use of technology and science to promote the potential of a nation to turn raw materials into finished products or to produce intermediate and capital goods for consumption or further processing.

The results of the co-integration regression test indicate that there is good evidence of co-integration between RGDP and MANO. Arrey suggested that Effort should have the enabling atmosphere by maintaining macro-economic stability and growing investment in human

resources by corporate individuals who will help to nurture and bring to life the dream of industrialization in Nigeria.

5.3 RECOMMENDATIONS

Following the conclusions of this report, the following suggestions have been made

1. Government should enforce fiscal restraint initiatives, follow a lean approach to managing its workforce and efficiently control the country's human and natural capital so that the government can have adequate resources to make Nigeria a hope of being an industrial economy.
2. If there is ever a government that wants to be seriously committed to the question of human welfare, it is now. The need to train human resources for the next step of the modern industrial revolution is now when Nigeria plans to be part of what is happening in the rest of the world.
3. The government should invest more in the education sector, particularly those relevant to science and technology, because the world is moving forward and Nigeria should be left behind.
4. There is a need for a new approach, perhaps based on a partnership with the private and public sectors of the economy, to eradicate the obsolete use of technologies and to educate people about and provide for the use of recent technologies.
5. The school system should be designed in such a manner as to ensure the importance of ICTs as it allows intellectual resources to grow.
6. Exchange rate fluctuations should be adequately handled by ensuring that the macro economic factors are not a sole generator of national income. This will help to increase domestic and foreign investment in the country, particularly towards industrialization.
7. In order for the home country to be able to increase the productivity of people, both professional and unskilled labor should be facilitated either by supplying funds or by discouraging the importation of products that can be manufactured within the country.
8. To aid manufacturing and economic growth, the Nigerian government will have to make economic policies that will put them on the right side with the international organizations and attract investors that are interested in science and technology.

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APPENDIX

DATA PRESENTATION

YEAR	GDP	MANO	FDI	EXCH	LAB	INF
1983	1.84E+13	3.54E+12	3.64E+08	0.72441		23.21233
1984	1.64E+13	3.28E+12	1.89E+08	0.766527		17.82053
1985	1.62E+13	3.45E+12	4.86E+08	0.893774		7.435345
1986	1.72E+13	3.14E+12	1.93E+08	1.754523		5.717151
1987	1.72E+13	3.68E+12	6.11E+08	4.016037		11.29032
1988	1.77E+13	4.24E+12	3.79E+08	4.536967		54.51122
1989	1.9E+13	3.57E+12	1.88E+09	7.364735	32058465	50.46669
1990	1.94E+13	3.83E+12	5.88E+08	8.038285	32859513	7.3644
1991	2.17E+13	4.17E+12	7.12E+08	9.909492	33652634	13.00697
1992	2.18E+13	4.67E+12	8.97E+08	17.29843	34548217	44.58884
1993	2.28E+13	3.85E+12	1.35E+09	22.0654	35482256	57.16525
1994	2.23E+13	3.36E+12	1.96E+09	21.996	36439785	57.03171
1995	2.19E+13	2.9E+12	3.36E+08	21.89526	37320907	72.8355
1996	2.19E+13	2.99E+12	4.99E+08	21.88443	38262439	29.26829
1997	2.28E+13	3.05E+12	4.7E+08	21.88605	39254783	8.529874
1998	2.35E+13	2.91E+12	3E+08	21.886	40317120	9.996378
1999	2.41E+13	2.98E+12	1E+09	92.3381	41372859	6.618373
2000	2.42E+13	2.98E+12	1.14E+09	101.6973	42380692	6.933292
2001	2.54E+13	3.05E+12	1.19E+09	111.2313	43326706	18.87365
2002	2.69E+13	3.59E+12	1.87E+09	120.5782	44414245	12.87658
2003	3.11E+13	3.2E+12	2.01E+09	129.2224	45524729	14.03178
2004	3.33E+13	3.17E+12	1.87E+09	132.888	46722817	14.99803
2005	3.64E+13	3.24E+12	4.98E+09	131.2743	47913307	17.86349
2006	3.88E+13	3.27E+12	4.85E+09	128.6517	49159600	8.225222
2007	4.11E+13	3.27E+12	6.04E+09	125.8081	50457057	5.388008
2008	4.38E+13	3.37E+12	8.19E+09	118.5667	51778077	11.58108
2009	4.68E+13	3.49E+12	8.56E+09	148.88	53136654	12.55496
2010	5.06E+13	3.58E+12	6.03E+09	150.2975	54538708	13.7202

2011	5.46E+13	4.22E+12	8.84E+09	153.8625	53684327	10.84003
2012	5.75E+13	4.78E+12	7.07E+09	157.5	52793935	12.21778
2013	5.99E+13	5.83E+12	5.56E+09	157.3117	53691627	8.475827
2014	6.39E+13	6.68E+12	4.69E+09	158.5526	54559255	8.062486
2015	6.8E+13	6.59E+12	3.06E+09	192.4403	55288066	9.009387
2016	6.98E+13	6.3E+12	4.45E+09	253.492	56831352	15.67534
2017	6.87E+13	6.29E+12	3.5E+09	305.7901	58403811	16.52354
2018	6.92E+13	6.42E+12	2E+09	306.0837	59873566	12.09473
2019	6.98E+13	6.55E+12	3.3E+09	306.921	61384184	11.39679

SOURCE OF DATA: world development index.

EVIEWS RESULTS

Null Hypothesis: LNGDP has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.537452	0.7963
Test critical values: 1% level	-4.252879	
5% level	-3.548490	
10% level	-3.207094	

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

UNIT ROOT TEST

Null Hypothesis: D(LNGDP) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.808984	0.0024
Test critical values: 1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

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

Null Hypothesis: LNMANO has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.161580	0.9034
Test critical values: 1% level	-4.234972	
5% level	-3.540328	
10% level	-3.202445	

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

Null Hypothesis: D(LNMANO) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.093060	0.0011
Test critical values: 1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

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

Null Hypothesis: LNFDI has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.077991	0.1267
Test critical values: 1% level	-4.234972	
5% level	-3.540328	
10% level	-3.202445	

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

Null Hypothesis: D(LNFDI) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
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Augmented Dickey-Fuller test statistic	-10.47718	0.0000
Test critical values: 1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

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

Null Hypothesis: EXCH has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.195209	0.4774
Test critical values: 1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

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

Null Hypothesis: D(EXCH) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.368868	0.0073
Test critical values: 1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

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

Null Hypothesis: LNLAB has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.053577	0.5488
Test critical values: 1% level	-4.309824	
5% level	-3.574244	
10% level	-3.221728	

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

Null Hypothesis: D(LNLAB) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.849916	0.0638
Test critical values: 1% level	-3.679322	
5% level	-2.967767	
10% level	-2.622989	

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

Null Hypothesis: LNINF has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.223838	0.0959
Test critical values: 1% level	-4.234972	
5% level	-3.540328	
10% level	-3.202445	

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

Null Hypothesis: D(LNINF) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.788946	0.0309
Test critical values: 1% level	-4.284580	
5% level	-3.562882	
10% level	-3.215267	

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

LNGDP LNLAB LNMANO LNFDI EXCH INF

Mean	31.08099	17.63402	28.98828	21.17765	99.19740	19.41085
Median	30.86697	17.65974	28.89450	21.35138	111.2313	12.55496
Maximum	31.87638	17.93266	29.53077	22.90267	306.9210	72.83550
Minimum	30.41674	17.28307	28.69521	19.05813	0.724410	5.388008
Std. Dev.	0.504775	0.195577	0.272054	1.159091	92.64259	17.42196
Skewness	0.366347	-0.274987	0.969156	-0.167856	0.752588	1.731703
Kurtosis	1.640754	1.804028	2.538874	1.820880	2.796795	4.747206
Jarque-Bera	3.675938	2.238224	6.119939	2.317164	3.556386	23.19887
Probability	0.159140	0.326570	0.046889	0.313931	0.168943	0.000009
Sum	1149.997	546.6546	1072.566	783.5731	3670.304	718.2014
Sum Sq. Dev.	9.172737	1.147513	2.664481	48.36568	308975.4	10926.89
Observations	37	31	37	37	37	37

VAR Lag Order Selection Criteria

Endogenous variables: LNGDP LNMANO LNLAB LNFDI
INF EXCH

Exogenous variables: C

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Sample: 1983 2019

Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-206.6987	NA	0.159722	15.19276	15.47823	15.28003
1	-18.39927	282.4491	3.21e-06	4.314234	6.312541	4.925136
2	38.19796	60.63990	1.10e-06	2.843003	6.554144	3.977536
3	142.5152	67.06107*	3.10e-08*	-2.036798*	3.387177*	-0.378635*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

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Sample (adjusted): 1991 2019

Included observations: 29 after adjustments

Trend assumption: Linear deterministic trend

Series: LNGDP LNMANO LNLAB LNFDI INF EXCH

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.887227	153.5360	95.75366	0.0000
At most 1 *	0.771875	90.24689	69.81889	0.0005
At most 2 *	0.580826	47.98889	47.85613	0.0553
At most 3 *	0.413886	32.17426	29.79707	0.2889
At most 4	0.204734	6.681249	15.49471	0.6150
At most 5	0.001308	0.037969	3.841466	0.8455

Trace test indicates 4 co integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.887227	63.28910	40.07757	0.0000
At most 1 *	0.771875	42.85800	33.87687	0.0033
At most 2	0.580826	25.21464	27.58434	0.0976
At most 3	0.413886	15.49301	21.13162	0.2558
At most 4	0.204734	6.643281	14.26460	0.5321
At most 5	0.001308	0.037969	3.841466	0.8455

Max-eigenvalue test indicates 2 co integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Dependent Variable: LNGDP

Method: Least Squares

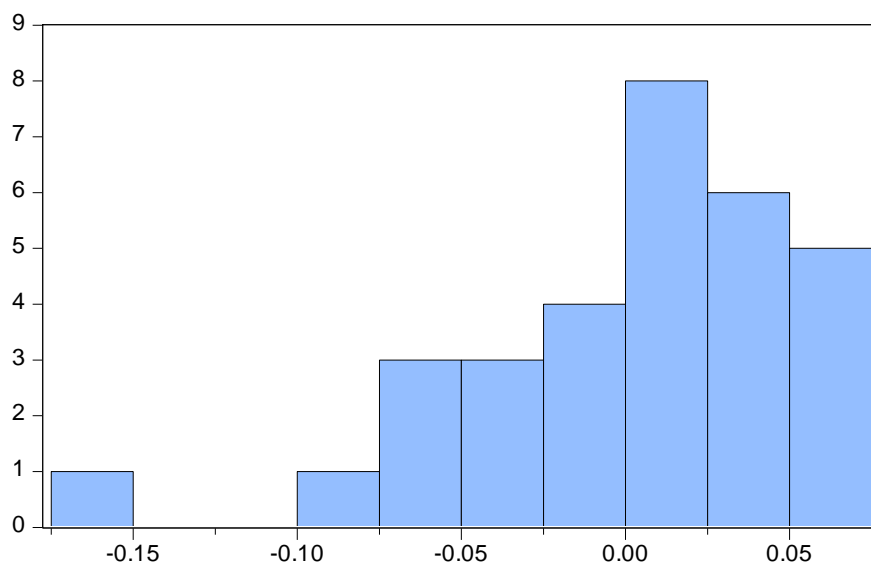
Date: 11/05/20 Time: 19:45

Sample (adjusted): 1989 2019

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMANO	0.558494	0.047985	11.63884	0.0000
LNLAB	2.062696	0.172141	11.98261	0.0000
LNFDI	0.046514	0.015312	3.037729	0.0055
INF	0.000895	0.000687	1.302454	0.2046
EXCH	-0.000921	0.000339	-2.715228	0.0118
C	-22.28254	3.378641	-6.595121	0.0000

R-squared	0.938928	Mean dependent var	31.19849
Adjusted R-squared	0.896714	S.D. dependent var	0.466276
S.E. of regression	0.053745	Akaike info criterion	-2.837143
Sum squared resid	0.072213	Schwarz criterion	-2.559597
Log likelihood	49.97572	Hannan-Quinn criter.	-2.746670
F-statistic	446.6068	Durbin-Watson stat	1.433924
Prob(F-statistic)	0.000000		



Series: Residuals	
Sample 1989 2019	
Observations 31	
Mean	-1.39e-14
Median	0.008017
Maximum	0.060860
Minimum	-0.154587
Std. Dev.	0.049062
Skewness	-1.155404
Kurtosis	4.406054
Jarque-Bera	9.450902
Probability	0.008867

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.372071	Prob. F(2,23)	0.2736
Obs*R-squared	3.304379	Prob. Chi-Square(2)	0.1916

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 11/05/20 Time: 19:46

Sample: 1989 2019

Included observations: 31

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMANO	0.001225	0.051799	0.023658	0.9813
LNLAB	0.034275	0.170897	0.200558	0.8428
LNFDI	-0.001375	0.015112	-0.090976	0.9283
INF	0.000146	0.000697	0.209922	0.8356
EXCH	-6.10E-05	0.000340	-0.179314	0.8593
C	-0.606397	3.407372	-0.177966	0.8603

RESID(-1)	0.332030	0.217557	1.526174	0.1406
RESID(-2)	-0.209418	0.225044	-0.930564	0.3617
<hr/>				
R-squared	0.106593	Mean dependent var	-1.39E-14	
Adjusted R-squared	-0.165314	S.D. dependent var	0.049062	
S.E. of regression	0.052963	Akaike info criterion	-2.820824	
Sum squared resid	0.064516	Schwarz criterion	-2.450763	
Log likelihood	51.72277	Hannan-Quinn criter.	-2.700193	
F-statistic	0.392020	Durbin-Watson stat	2.045656	
Prob(F-statistic)	0.897361			

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.309394	Prob. F(5,25)	0.9026
Obs*R-squared	1.806462	Prob. Chi-Square(5)	0.8752
Scaled explained SS	2.000815	Prob. Chi-Square(5)	0.8490

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 11/05/20 Time: 19:47

Sample: 1989 2019

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.179516	0.292051	0.614673	0.5443
LNMANO	0.001965	0.004148	0.473686	0.6398
LNLAB	-0.013565	0.014880	-0.911607	0.3707
LNFDI	0.000161	0.001324	0.121434	0.9043
INF	-3.08E-05	5.94E-05	-0.518715	0.6085
EXCH	1.83E-05	2.93E-05	0.625722	0.5372
R-squared	0.058273	Mean dependent var	0.002329	
Adjusted R-squared	-0.130072	S.D. dependent var	0.004370	
S.E. of regression	0.004646	Akaike info criterion	-7.733746	
Sum squared resid	0.000540	Schwarz criterion	-7.456200	
Log likelihood	125.8731	Hannan-Quinn criter.	-7.643273	
F-statistic	0.309394	Durbin-Watson stat	2.032093	
Prob(F-statistic)	0.902622			

Ramsey RESET Test

Equation: UNTITLED

Specification: LNGDP LNMANO LNLAB LNFDI INF EXCH C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	2.161914	24	0.0408
F-statistic	4.673874	(1, 24)	0.0408
Likelihood ratio	5.515910	1	0.0188

F-test summary:

	Sum Sq.	of df	Mean Squares
Test SSR	0.011771	1	0.011771
Restricted SSR	0.072213	25	0.002889
Unrestricted SSR	0.060443	24	0.002518

LR test summary:

	Value	df
Restricted LogL	49.97572	25
Unrestricted LogL	52.73368	24

Multicollinearity test

multicollinearity test

	GDP	MANO	FDI	EXCH	LAB	INF
GDP	1.000000	0.834556	0.599210	0.805374	0.941612	-0.420569
MANO	0.834556	1.000000	0.211063	0.707078	0.636276	-0.205559
FDI	0.599210	0.211063	1.000000	0.453755	0.663031	-0.347862
EXCH	0.805374	0.707078	0.453755	1.000000	0.736103	-0.459885
LAB	0.941612	0.636276	0.663031	0.736103	1.000000	-0.533051
INF	-0.420569	-0.205559	-0.347862	-0.459885	-0.533051	1.000000