IMPACT OF TAX REVENUE ON ECONOMIC GROWTH IN NIGERIA

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A PROJECT SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE (B.Sc HONS) IN ACCOUNTING AT THE COLLEGEOF HUMANITIES, MANAGEMENT AND SOCIAL SCIENCES, MOUNTAIN TOP UNIVERSITY, PRAYER CITY, OGUN STATE, NIGERIA

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DECLARATION

I, hereby declare that this research work titled "**IMPACT OF TAX REVENUE ON ECONOMIC GROWTH IN NIGERIA**" is entirely my effort and was aptly supervised by Mr. Oladipo S. I.   In the text, information obtained from diverse sources has been properly recognized, and a list of references has been provided. This project report has never been presented before for the purpose of receiving a degree or certificate.

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OLUYEBO, JOSHUA EYITOPE   **DATE**

CERTIFICATION

This is to confirm that the report on the research project titled "**IMPACT OF TAX REVENUE ON ECONOMIC GROWTH IN NIGERIA"** was carried out by OLUYEBO, JOSHUA EYITOPE with matriculation number 18020101012. This project report complies with the regulation governing the award of Bachelor of Science (B.Sc.) Degree in Accounting. Department of Accounting and Finance of the Mountain Top University, Ogun State, Nigeria, and is approved for its contribution to knowledge and literary presentation.

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DR. OMOKEHINDE, J.O.   **Date**

(Head of Department)

DEDICATION

I dedicate this project to God Almighty for his love, strength, knowledge, understanding and grace over my life and for seeing me through the course of this study and through all the difficult times, and to my beloved parents for their immerse assistance, financial support and encouragement and my siblings: Titilayo, Shade and Michael.

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ABSTRACT

This study examines the impact of Tax Revenue and Nigeria Economic Growth. In order to achieve this objective, data was gathered through secondary means. Tax Revenue is proxy by Petroleum Profit Tax, and Companies Income Tax, while Economic Growth is proxy by Gross Domestic Product, and Consumer Price Index. Data collected were analyzed with the aid of the EViews 12 statistical software. This study uses time series data for a period of 32 years (1990-2021) OLS model is used to run the multiple regression analysis. The F-value of 160.4760 with a corresponding P-value of P<0.0000 which is less than the 0.05 (5%) significant level lends credence to the fitness of the model and its overall significance. Therefore, tax revenue has significant influence on economic growth in Nigeria (CPI) while the F-value of 371.8931 with a corresponding P-value of P<0.0000 which is less than 0.05 (5%) significant value lends credence to the fitness of the model and its overall significance. Therefore, tax revenue has a significant influence on economic growth in Nigeria (GDP). The study recommends that government should be transparently and judiciously account for tax revenue generated through the provision company income tax and petroleum profit tax.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In Nigeria and around the globe, taxation is a practice that has always existed. Most nations, especially those with established economies, are unable to run without taxing their residents and businesses. The choice to impose taxes on its citizenry was ultimately motivated by the necessity for governments at all various levels and in all different jurisdictions to grow or extend their income base. Governments now use taxation as a tool to redistribute revenue that has been collected from both people and businesses. It is a tax that the government must impose on people and businesses in order to broaden the economic base and raise enough revenue to provide social services like security and other social benefits.

In economics, taxation is a frequently discussed subject. We are all aware that taxes are the government's main source of income, and that the funds raised will be used to fund growth. The tax system, which is at the core of the process of putting fiscal policy into effect and administering the public sector as a whole, is made up of the interplay between tax policy and tax administration. The government will find it challenging to spend revenue on sectors that are crucial to the development and growth of the nation's economy if tax income is low. One of the subjects that sparks the greatest debate and discussion is the role of taxes as a means of funding governmental expenses.

Individual and corporate income taxes, sales taxes on products and services, and other taxing mechanisms were used to collect taxes. If taxes were paid, the revenue would be used to fund corporate expansion. Researchers have found that designing taxes in a manner that fully utilizes the potential provided by tax design is one approach to boost administrative and political resources in a way that maximizes equality and efficiency. However, some individuals have chosen not to pay the tax because they feel that it unfairly burdens the rest of society. Particularly in the context of products and services, taxation is often mentioned as a factor that drives up prices.

Tax revenue collection has been challenging in Nigeria owing to a number of types of opposition, including evasion, avoidance, and various forms of corruption. These activities are referred to as economic sabotage, and they are commonly mentioned as factors that have contributed to the present state of undergrowth in Nigeria. The purpose of government is to passively collect and use taxes from available economic resources to create economic prosperity. This is accomplished in such a way that available and willing human and other resources are gainfully employed, infrastructure is provided, and essential public services (such as law and order) are put into place, among other things. The opposition to paying taxes serves only to render these admirable projects impossible. Changing tax rates entirely or adjusting them slightly may be one way to impact or attain macroeconomic stability, according to one line of argument. The governments of Canada, the United States, the Netherlands, and the United Kingdom are some of the most recent examples. These countries generate significant revenue from company income tax, value added tax, and import duties, and they have used this revenue to create prosperity in their respective countries. The expectations that the government of Nigeria had regarding the contribution of tax revenue, particularly that of corporate income tax, have not been met. The government has also expressed their displeasure and has promised to increase revenue from taxes other than those on oil.

Economic growth is a critical concept in global discourse because of its importance. A variety of observable outputs, which are collectively referred to as indicators, are used to track the progress of a nation over time. Examples of these include the development of essential infrastructure, growth in human capital, technological advancement, and commercial expansion, among other things. The terms growth and growth are frequently used interchangeably; however, there is a difference between these constructs in that growth refers to a country's total output over a given period of time, whereas growth refers to visible output in an economy. The difference between these two concepts can be summarized as follows: growth refers to a country's total output over a given period of time.

Even though many of the economic activities that took place in Nigeria before the colonial era were not documented, the country's economy began to expand before the beginning of the colonial era. Since that time, Nigeria has implemented a number of different plans for economic growth, each of which is focused on producing observable outcomes. There was the Structural

Adjustment Program (SAP) implemented by the then-military administration of Ibrahim Badamosi Babangida in the 1980s; the Sure-P program was implemented by the administration of Goodluck Ebele Jonathan; and the N-Power program is being implemented by the administration of Mohamadu Buhari at the present time.

Nevertheless, even if tax revenue is used to fund growth programs, those programs might not be able to reach their full potential in Nigeria or anywhere else around the world. Tax income is essential to the expansion of Nigeria in particular, despite the fact that Nigeria is often thought of as a single-economic model nation. The worldwide decline in the price of crude oil, an ineffective agricultural sector that has turned Nigeria into a one-product country, and the numerous tax reforms implemented to shore up tax proceeds and the expected input to economic growth necessitate an in-depth examination of the effect that taxation has on economic growth in Nigeria. This is necessary because it is expected that these factors will contribute to economic growth.

1.2 Statement of the Problem

Since the country's independence, economic expansion has been a consistent challenge for the Nigerian state, despite several initiatives and attempts aimed at reviving the economy, none of which have produced appreciable outcomes. Unemployment, a high death rate because of a bad health-care system, brain drain because of inadequate educational financing, a lack of vital infrastructure, a high inflation rate, and other problems are still a problem in Nigeria. Other problems include insecurity. The presence of all of these key difficulties, in addition to the recent decline in the price of global crude oil, necessitates the necessity of conducting an investigation into the effect that tax revenue has on the expansion of the economy.

Furthermore, the drive by the management of the Federal Inland Revenue Service (FIRS) and the various tax reforms introduced by the government to shore up revenue from taxation, as well as the projected impact on economic growth, necessitate a critical examination of the impact that taxation has on Nigeria's economic growth. This is because of the projected impact on economic growth. The goal of the study is to determine how much of an influence tax money has on the expansion of the economy.

1.3 Objective of the Study

The primary objective of this research is to investigate the influence that monetary gains from taxes have on the rate of expansion of Nigeria's economy as shown by the consumer price index (CPI) of gross domestic product (GDP) growth. The following are the specific objectives:

i. To investigate the effects of the company income tax on gross domestic product,

ii. To investigate the effects of the petroleum profit tax on gross domestic product,

iii. To examine the impact of the company income tax on the consumer price index, and

iv. To investigate the effect of the petroleum profit tax on the consumer price index.

1.4 Research Questions

In other to address the above objectives, we considered the below research questions:

i. What impact does Company Income Tax revenue impact gross domestic product in Nigeria?

ii. What impact does Petroleum Profit Tax revenue have on the gross domestic product in Nigeria?

iii. What effect does company income tax revenue have on consumer price index in Nigeria?

iv. What effect does petroleum profit tax revenue have on consumer price index in Nigeria?

1.5 Research Hypothesis

The following hypothesis was tested to establish the relationship between taxation and economic growth:

H_{01} Company income tax revenue had no significant impact on Nigeria's gross domestic product

H_{02} Petroleum profit tax revenue had no significant impact on Nigeria's gross domestic product.

H_{03} Company income tax revenue had no significant impact on Nigeria's consumer price index.

H$_{04}$ Petroleum profit tax revenue had no significant impact on Nigeria's consumer price index.

1.6 Significance of the Study

This study's objective is to analyze the role that taxes play in Nigeria's economic expansion and the influence that those taxes have. Both in industrialized nations and in countries still in the process of economic development, a great number of research on the relationship between taxes and economic growth have been carried out.

The findings and recommendations of the study will assist the government in bringing in additional revenue, which will allow it to construct superior infrastructure that will allow taxpayers to go about their daily business more efficiently. This will also bring about growth in the economy, which will help both domestic and foreign investors, as well as other stakeholders.

1.7 Scope of the Study

The importance of tax revenue to the expansion of the Nigerian economy is the primary focus of this research. How the tax system affects the progress of Nigeria, both positively and negatively, with suggestions on how we might make better use of the money brought in by taxes. This investigation is going to cover a time range of 32 years, beginning in 1990 and going all the way through 2021.

1.8 Definition of Terms

Taxation: Taxation refers to the practice of government levying compulsory financial obligations on private persons or corporate entities. Taxes are imposed in virtually every nation on the face of the planet, with the primary of funding governmental spending. However, taxes also serve a variety of additional function.

Tax Revenue: is the term used to refer to the income that is collected by government via the process of taxing. Taxation is the major method through which the government acquires revenue. Revenue can be generated in a variety of ways, including but not limited to private businesses, public businesses, commerce, royalties on natural resources, and/or donations to international organizations.

Economic Growth: Economic growth is defined as the increase or improvement in the inflation-adjusted market value of an economy's goods and services over time. Statisticians traditionally measure such growth as the percentage rate of increase in real GDP.

Gross Domestic Product: GDP is a monetary measure of the market value of all final goods and services produced in a given period. GDP (nominal) per capita, on the other hand, does not account for differences in the cost of living and inflation rates among countries; thus, using GDP per capita at purchasing power parity (PPP) may be more useful when comparing living standards among nations, whereas nominal GDP is more useful when comparing national economies on the international market. The contribution of each industry or sector of the economy to total GDP can also be broken down. The per capita GDP is the ratio of GDP to the total population of the region, and it is also known as the Mean Standard of Living.

Direct Tax: A direct tax is one that a person or organization pays directly to the entity that levied it. Individual taxpayers, for example, pay direct taxes to the government for a variety of purposes, such as income tax, real estate tax, personal property tax, or asset taxes.

Indirect Tax: An indirect tax is collected and paid to the government by one entity in the supply chain (typically a manufacturer or retailer), but it is passed on to the consumer as part of the purchase price of a good or service. The tax is ultimately paid by the consumer by paying more for the product.

Tax System: We define a tax system as the collection of taxes in impact in a country at any given time. A system implies that there are different elements, that there is a link between them, that there is a specific order or form, and that there are pre-established and common objectives. As a result, most doctrines claim that achieving the tax system is ideal, but what we have are tax regimes in many countries that are characterized by unpredictability, permanent change, and tax reforms for the sole purpose of tax collection.

Petroleum Profit Tax: Section 8 of this Act imposes a tax at the prescribed rate on the profits of any company engaged in petroleum operations during that period. It is important to note that not all petroleum operations are taxed under this PPTA. The Petroleum Profits Tax is levied on the earnings of companies engaged in petroleum operations.

Company Income Tax: Company Income Tax (CIT) is a tax levied on the profits of registered companies in Nigeria. It also includes the tax on profits made by foreign companies doing business in Nigeria. Limited liability companies, including public limited liability companies, pay the CIT.

Consumer Price Index (CPI): The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.

CHAPTER TWO

LITERATURE REVIEW

2.0 Preamble

This chapter is broken up into three sections: an overview of the concepts, an overview of the theories, and an overview of the empirical findings. During the stage of conceptual review, the existing link that exists between the independent factors and the dependent variables that are being investigated inside this study is made obvious. The conceptual review provides an explanation of the factors that were utilized in this research project. The theoretical investigation gives hypotheses on the relationship between taxation and the expansion of Nigeria's economy. The empirical review is founded on previous research that investigated the relationship between tax income and economic expansion in Nigeria.

2.1 Conceptual Review

2.1.1 Taxation and Economic Growth

The demands of Nigeria's growing population must be satisfied if the country is to achieve its growth objectives, and the population's needs will continue to increase over time. In order for governments all over the world, including that of Nigeria, to be able to complete the apparent mission, they require additional money, a significant portion of which comes from taxation.

An increase in the collection of money is essential in order for the government to satisfy the growing expectations of its population. Revenue for the government of Nigeria comes from a variety of sources, including profits from oil and gas exploration, profits from limited liability companies operating in Nigeria, proceeds from value-added goods and services, personal incomes of individuals and partnerships, and proceeds from value-added goods and services. In its broadest sense, taxation can be understood as the imposition of a monetary obligation on an individual or person, organization, or asset in order to finance governmental operations. In addition to this, a tax on profits or gains is imposed in order to generate revenue for the purpose of financing the delivery of social services and the enhancement of industrial productivity. It is an opportunity to bring in cash for the government, which may then be spent on fostering socioeconomic progress. It is also an instrument for managing the economy of the state through

the proclamation of various economic policies, in addition to being a vehicle for controlling and discouraging particular anti-social habits or behaviors. This can be achieved by providing assistance in the management of consumption patterns among the population of a state. Taxation, under the context of the nation-state, fulfills a dual role as an instrument of both revenue collection and distribution. As a consequence of this, taxation functions as a tool for the management of macroeconomics and monetary policy.

2.1.2 Concept of Revenue

To get a company's revenue, just multiply the average sales price by the number of units that were sold. Revenue is the money that a company earns through its regular business activities. After deducting the total expenditures from the revenue, one arrives at the net income (or gross income). The term "revenue" refers to sales for purposes of the income statement.

A company's operations might bring in revenue in the form of money for the company. There are a number of different approaches to calculating revenue, and the approach that is taken depends on the accounting method that is being used. When accrual accounting is used, credit sales are counted as revenue since they result from the delivery of products or services to the client.

Examining a company's cash flow statement can let you know how effectively it is able to collect money that is owed to it. When using cash accounting, on the other hand, sales are not considered revenue until after payment has been made. Cash that has been paid to a business is referred to as a "receipt." It is possible to have receipts even if there is no revenue coming in. In the event that a client pays in advance for a service that has not yet been performed or for items that have not yet been delivered, for instance, this action will result in a receipt but will not generate any income.

2.1.3 Gross Domestic Product

It can be calculated in nominal or real (inflation-adjusted) terms. Although other metrics are occasionally used, gross national product (GNP) or gross domestic product (GDP) are the most common ways to measure overall economic growth.

Although other metrics are occasionally used, gross national product (GNP) or gross domestic product (GDP) are the most common ways to measure overall economic growth. To put it briefly, economic growth is an increase in an economy's ability to produce goods and services over time. It can be measured in real terms, which are adjusted for inflation, or in nominal terms. Positive, zero, or negative economic growth are all possible.

When the annual average rhythms of the macroindicators are higher than the annual average rhythms of population growth, positive economic growth is observed.

When the annual average rhythms of growth of the macroeconomic indicators, particularly GDP, are equal to those of population growth, there is no longer any economic growth.

When macroeconomic indicator rhythms are slower than population growth, there is negative economic growth.

When the rate of economic growth is high, it is anticipated that there will be an increase in the output of goods and services, which will lead to an increase in job opportunities and, ultimately, a decrease in unemployment, raising the standard of living of the populace. Despite the fact that economic growth is a complex, long-term phenomenon, subject to limitations including excessive population growth, scarce resources, poor infrastructure, inefficient resource use, excessive governmental intervention, institutional and cultural models that make the increasingly difficult, this analogy does not always apply to developing countries.

2.1.4 Consumer Price Index

A CPI is a statistical calculation created using a sample of typical products with prices that are frequently gathered. For various categories and sub-categories of goods and services, sub-indices and sub-sub-sub-indices can be calculated. These sub-indices and sub-sub-indices are then combined to produce the overall index, with weights reflecting their shares in the total of the consumer expenditures covered by the index. It is one of many price indices that are computed by the majority of national statistics organizations. As a gauge of inflation, the yearly percentage change in a CPI is utilized. A CPI can be used to control prices, deflate monetary magnitudes to reflect changes in real values, and index (i.e. compensate for the effect of inflation) the actual

worth of wages, salaries, and pensions. The CPI is one of the most carefully followed national economic data in the majority of countries.

As a weighted average of sub-indices for various consumer expenditure components, such as food, housing, shoes, and clothing, each of which is in turn a weighted average of sub-sub-indices, the index is typically calculated monthly, or quarterly in some countries. Since detailed weighting information is unavailable at the most granular level, the elementary aggregate level (for instance, men's shirts sold in department stores in San Francisco), indices are calculated using an unweighted arithmetic or geometric mean of the prices of the sampled product offers. (However, even the most precise weighting information is progressively becoming available due to the expanding use of barcode scanner data.) These indices compare current prices to current prices from the price-reference month each month. The weights applied to them in order to combine them into higher-level aggregates and ultimately the overall index relate to the estimated expenditures made by the consumers covered by the index during the full year prior on the products falling under its purview in the covered area. Since the price-reference period, which is typically a more recent single month, does not coincide with the weight-reference period of a year, the index is a fixed-weight index rather than a true Laspeyres index.

2.1.5 Company Income Tax

The Federal Inland Revenue Service oversees the Company Income Tax under the Company Income Tax Act. All limited liability firms, with the exception of those in the petroleum industry, are subject to legal restrictions on tax assessment and collection. In accordance with the Company Income Tax Act (CITA), Section 40(1) establishes a tax rate of 30% on chargeable profit while Section 40(6) establishes a tax rate of 20% on chargeable profit for businesses engaged exclusively in export trade, manufacturing, agriculture, or mining, or for businesses with a total gross turnover of less than one million naira for the first five (5) years of assessment.

2.1.6 Petroleum Profit Tax

The Petroleum Profit Tax Act sets rules for this tax (PPTA). The Federal Inland Revenue Board is in charge of its administration, and it is imposed on the petroleum industry earnings of businesses. Petroleum Operations were described in the Act as "the winning or obtaining and

transportation of petroleum or chargeable oil in Nigeria for its account by any drilling, mining, extracting, or other like operations or processes, excluding refining at a refinery, in the course of a business carried on by the company engaged in such operations, and all operations incident thereto, as well as any sale or disposal of chargeable oil or on behalf of a company." In any accounting period, 85% of the company's chargeable earnings is subject to taxation.

2.2 Theoretical Framework

This will acknowledge the numerous theories that are been associated with this research. This study will associate with few relevant theories relating to the studies. The cost of service theory, benefit theory, modernization theory and sociopolitical theory are the acceptable theories to explain the relationship between the taxation and economic growth reporting in this study.

2.2.1 Theories of Taxation

A tax, also known as taxation, is a mandatory contribution to the state's revenue that is imposed by the government on citizens' personal income and business profits or added to the price of certain goods, services, and transactions. It is levied at a fixed rate that is largely proportionate to the amount of income that is subject to the contribution.

Along with the government, tax authorities, and tax professionals, academics and researchers have long been interested in how taxes affect economic growth. A taxation system is just a comprehensive collection of tax options, regulations, and conditions since the influence of taxes on economic growth encompasses both the impact of tax revenue generation and the impact of taxation policies on the economy. Economists have put out a variety of tax theories or concepts through the years to help the government choose how to implement justice or equity in taxes. Some of the fundamental ideas or principles are the cost-of-service theory, benefit theory, modernization theory, and sociopolitical taxation theory.

2.2.2 The Cost-Of-Service Theory

According to this notion, the government should tax the people in proportion to the price of the services it provides. The expense of some services provided by the government to people should be shared by all citizens. An individual should pay an amount of tax that is proportional to the

cost of the benefits they get. There have been several complaints made about this hypothesis. The cost-of-service hypothesis, according to Jhingan (2009), places some limitations on government services. The government's goal is to help the underprivileged. If the idea is put into practice, the government won't provide welfare services like healthcare, education, social amenities, etc. Additionally, it will be exceedingly challenging to calculate the cost per person of the numerous services given by the government. Additionally, the theory has broken the right definition and principles of taxes.

2.2.3 The Benefit Theory

In accordance with this theory, the state ought to tax people in proportion to their benefits. This implies that a person should pay more taxes to the government the more benefits they receive from the state's initiatives. This theory aims to make sure that each person's tax obligations are as closely related to the benefits that they receive from using public services as possible. This presupposes an exchange or contractual relationship between the state and the taxpayers in which the state provides specific goods and services and the cost of those goods and services is contributed in proportion to the benefits received; as a result, the benefits received serve as the basis for dispersing the tax burden in a particular way. This theory disregards the potential for tax policy to support economic stability or growth. There are many similarities between the benefits-received theory and the cost-of-service theory. The theory focuses more on the interactions between the state and its citizens that are semi-commercial in nature. According to Chigbu, et al. (2012), the implication was that citizens do not have any legal rights to state benefits and, if they do, must foot the bill for them. In contrast to the benefits-received theory, which implies a balanced budget, this theory meticulously recovers the costs of services (Chigbuet al, 2012).

2.2.4 The Modernization Theory

Originally proposed by German sociologist Max Webber in 1864, this theory served as the inspiration for Talcott Parsons' 1902 modernization paradigm. The idea examines a nation's internal dynamics while presuming that, given aid, "traditional" nations may be propelled toward progress in the same way that more advanced nations have. In an effort to better understand how societies evolve, modernization theory aims to pinpoint the social factors that influence social

development. The modernization theory of growth bases its main presuppositions on the notions that modernization is a stage and homogenizing process. In the long run, modernization is a progressive, irreversible process that is not only desirable but also necessary. These presumptions are relevant to the study because raising tax revenue is intended to achieve growth that is phased and homogenizing in nature.

2.2.5 The Sociopolitical Theories

According to this theory of taxation, choosing taxes should primarily be based on social and political goals. According to the theory, a tax system should be used to treat the problems that society as a whole, not just to benefit individuals. According to the socio-political theory of taxation, choosing taxes should primarily be based on social and political objectives. The theory promoted the idea that a tax system should be used to treat the problems in society as a whole rather than to benefit individuals (Bhartia, 2009). Thus, this theory serves as the foundation for this study.

2.3 Empirical Review

Ayeni Olasubomi Adefolake & cordelia Onyinyechi Omodero (2022) examined tax revenue and economic growth in Nigeria. This research work assesses the effects of tax revenue on the economic growth of Nigeria utilizing time series data spanning from year 2000 till 2021. The study's specific goal is to evaluate the influence of hydrocarbon tax, corporation income tax and Value Added Tax on Nigeria's economic growth. The study employs secondary form of data which have been sourced from CBN statistical bulletin and published Federal Inland Revenue Statement. Ex-post facto research design is used for this study. The data collected are analyzed and tested for unit root using Augmented Dickey Fuller method. The findings reveal that PPT and VAT have positive and significant effects on GDP. It also reveals that CIT has a negative and significant effect on GDP.

S.K. Akintola, A. A. Omotola, B. M. Oyinbodunmi and E. K. Akinyemi (2022) The main objective of this study is to examine empirically the effect of tax revenues on the economic development of Nigeria, judging its impact on the relationship between tax revenue and economic growth. Data was sourced from CBN statistical bulletin and the World Bank data. A

multiple regression anal is was used for the analysis of the data which would consist of a fusion between the dimensions of time (time series). A quantitative research approach was used to analyze the regression results. Consequently, the findings from the study showed that custom and excise duties, companies income tax, petroleum profit tax, and value-added tax have a significant combined effect on gross domestics product in Nigeria.

Ayano, David Ayanniyi (2022).The study investigated the impact of company's income tax revenue, education tax revenue, and petroleum profit tax revenue on health, education and standard of living respectively in Nigeria from 2000 to 2020. The study test the unit roots of the variables by using Augmented Dickey Fuller and found out that all variables involved are stable at level and first difference. The study used Bound Co-integration test and ARDL– Autoregressive Distributed Lag to estimate its three models. The results are as follows: in model 2a with life expectancy at birth as dependent variable, there exist a negative relationship between company income tax revenue/education tax revenue and life expectancy at birth (LEXB), and there exist a positive relationship between petroleum profit tax revenue and life expectancy at birth (LEXB) within the periods of study; while in model 2b with student enrolment at tertiary level as dependent variable, there exists a positive relationship between company income tax revenue and school enrolment at tertiary level (SET), there exists a negative relationship between education tax revenue and school enrolment at tertiary level (SET) within the periods of study, and there exists a positive/significant relationship between petroleum profit tax revenue and school enrolment at tertiary level (SET) within the period of study; finally in model 2c with per capita gross national income as dependent variable, there exist a negative relationship between company income tax revenue in current year and one year lag respectively and per capita gross national income (PCGNI), there exist a positive relationship between education tax revenue and per capita gross national income (proxy for standard of living), and there exist a positive relationship between petroleum profit tax revenue and per capita gross national income (PCGNI) within the periods of study.

Timah and Chukwu (2021) investigated the relationship between corporate tax and employees' wages, dividend, and corporate social responsibility. Descriptive research design was adopted, and data on selected manufacturing companies were obtained from the published annual financial statements of the companies. Data analysis was conducted using Ordinary Least Square,

with the aid of E-views software. The findings revealed that there was a significant relationship between corporate tax and employee wages, and also between corporate tax and dividend payment. Further, there was a significant, positive relationship between corporate tax and the corporate social responsibility engagements of the selected companies. The implication of these consistent findings is that tax payment motivates greater hard work, which translates into better amount of wages, more dividends, and more investment in corporate social responsibility.

Oladele (2021), examined the impact of tax compliance on economic development in Nigeria. The specific objective examined if tax compliance impact human capital development and per capital income in Nigeria. In trying to achieve this objective, a quantitative research design was adopted while regression was adopted for the data analysis. The results of the study indicate that the tax compliance have positive impact on economic development in a time series data of Nigeria's Economy during 2003 – 2019. The linearity test revealed that linear relationship exists between tax compliance and standard of living in Nigeria.

Uche and Ugonabo (2021), ascertained the effect of Value Added Tax on Economic Development in Nigeria from 1994-2018. Pearson coefficient of correlation and simple regression analysis were applied for the test of the hypotheses formulated with aid of E-Views 9.0 statistical software. Findings showed that Value Added Tax has a positive and statistically significant relationship with economic development (proxy by Gross Domestic Product and Total Government Revenue) at 5% significant level. Based on these findings, the study recommends among others that Government should therefore put in place measures to enhance productivity so as to increase the contribution of VAT to economic growth and development in Nigeria.

Abiola, Adegbie and Ogundajo (2021) opines that economic growth drivers aimed at stimulating and stabilizing the economies of the countries to engender sustainable growth. Studies have shown that Nigeria has been plagued with stunted and faltering economic growth over the years. Tax and other relevant macroeconomic policies are implemented by the government to smoothen out economic fluctuations but this has not been fully harnessed. A causal-effect study was conducted between tax revenue, gross fixed capital formation and economic growth using a 38-year time series data from 1981 to 2018 derived from CBN statistical bulletin. It was found that

tax revenue (TR) had significant positive effect on Gross Domestic Product and Gross Fixed Capital Formation (GFCF) significantly controls the relationship between TR and GDP. It is evidenced that the country relied heavily on taxes as major source of revenue. The study recommended that government should widen its tax net, creates expansionary measures to enhance its tax revenue in order to boost its GDP. The government should also create an enabling environment for economy diversifications in order to increase revenue generated via other means than taxes in order to spur economic growth and avoid over-reliance on taxes.

(Etim et al. 2021) Using a descriptive and inferential statistical technique, correlational and regression statistics, and an *ex post facto* research design, the study compared the effects of direct and indirect taxation on the growth of the Nigerian economy. The study demonstrated that indirect taxes have a greater detrimental impact on economic growth. Mukolu and Ogodor's (2021) study examined the impact of VAT on the Nigerian economic growth for the year 1994 till 2018 using an Augmented Dickey Fuller analysis method. Data gotten from Central Bank of Nigeria statistical bulletin and Federal Inland Revenue Service. The study showed that there is a positively significant impact of Value Added Tax on Gross Domestic Product. It also showed that VAT has to a great extent given rise to the total revenue of the nation and has helped in tax evasion by taxpayers.

John and Dickson (2020) using Error Correction Models analyzed the influence of tax revenue on economic growth using both unadjusted and adjusted Gross Domestic Product from 1984 to 2018. When GDP was not adjusted for inflation, PPT had a minor but beneficial effect on economic growth, whereas VAT and CIT had a large but negative impact on GDP. PPT had a negative and insignificant impact on adjusted GDP, but VAT had a positive and considerable impact, and CIT had a negative and significant one.

Yadawananda and Achal (2020) investigated the long-run and short-run relationship between tax structure and state-level growth performance for the year 1991 till 2016 using the panel regression method. The findings revealed that commodity and service tax were bad for the economy and an increase in those taxes will lead to inflation while income taxes were found to be significant for the economy as it mostly impacts the savings and labour supply which is regarded as the drive for economic growth.

Jimoh, Adegoriola and Adeyemo (2020) investigated the impact of tax revenue on economic growth in Nigeria (1990 – 2016). Annual time series data were sourced from Federal Ministry of Finance, Federal Inland Revenue Service, Central Bank of Nigeria and National Bureau of Statistics. The data were tested for stationarity using Augmented Dickey Fuller (ADF) test while the co-integration was conducted using Johansen's test. The estimation technique employed for the time series data was Error Correction Model (ECM). The results show that, there is long run equilibrium relationship between the key variables. ECM has the expected sign which is negative. This shows that short-run disequilibrium can be brought back to equilibrium in the long-run. The result showed Petroleum Profit Tax, Company Income Tax and Value Added Tax have positive and significant impact on Gross Domestic Product. Personal Income Tax has negative and not significant impact on Gross Domestic Product. Tax Elasticity has a negative but significant impact on Gross Domestic Product. The study therefore recommends that government should double it effort in generation of more revenue from taxes other than rely on foreign exchange from crude oil since petroleum profit tax, company income tax and personal income tax improve economic growth in Nigeria. Government should endeavour to provide infrastructural amenities to every part of the country as this will boost the level of tax compliance and will encourage citizens to pay taxes in Nigeria.

Adaramola and Dada (2020) examined the influence of inflation on the growth of the Nigerian economy, the study employs the autoregressive distributed lag on the selected variables, i.e., real gross domestic product (GDP), inflation rate, interest rate, exchange rate, degree of economy`s openness, money supply, and government consumption expenditures for the period 1980–2018. The study findings indicate that inflation and real exchange rate exert a significant negative impact on economic growth, while interest rate and money supply indicate a positive and significant impact on economic growth. Other variables in the model depict no influence on the economic growth of Nigeria. Etale and Eze (2019), examined the impact of some selected macroeconomic variables on stock market performance in the Nigerian Stock Exchange (NSE). The study adopted all share index (ASI) as a proxy for stock market performance and the dependent variable, while the selected macroeconomic variables included broad money supply (BMS), interest rate (ITR), inflation rate (IFR), and exchange rate (EXR) used as the independent variables. Secondary data for the variables was sourced from Central Bank of Nigeria (CBN) Statistical Bulletins covering the period 1985 to 2017. The study employed

multiple regression techniques, Augmented Dickey-Fuller unit root test, Johansen co-integration test, and Error Correction. However, a Model (ECM) was used to analyze the long-run equilibrium and short-run dynamic relationships that existed between the selected macroeconomic variables and stock market performance in the Nigerian Stock Exchange. Based on the findings, the study recommended the monetary authorities should put in place sound monetary policies that would bring about positive growths in the stock market.

Izuchukwu and Patricia (2015) The main purpose of this study is to ascertain the existence of a relationship between inflation and economic growth in Nigeria. The methodology employed is the quantitative research design. The consumer price index (CPI) was used as a proxy for inflation and the GDP as a proxy for economic growth, to examine the relationship. The scope of the study spanned from 2000 to 2009. Ordinary least square method and t-test were used to test the variables most likely to impact economic growth in Nigeria due to inflation. The findings also show that there is a strong relationship between inflation and economic growth in Nigeria, that the exchange rate has a positive impact on economic growth, and that a high-interest rate discourages investment and hence forestalls economic growth.

Doguwa (2012) examined the issue of the existence and the level of inflation threshold in the relationship between inflation and growth in Nigeria, using three different approaches that provide appropriate procedures for estimating the threshold level and inference. These results suggest that the threshold level of inflation above which inflation is inimical to growth is estimated at 10.5 to 12 percent for Nigeria. Using the estimated two threshold point model, this paper did not find enough reasons to accept the null hypothesis of the super neutrality of money, and therefore, suggests that there is a threshold level of inflation above which money is not super-neutral.

Okeke et al. (2018) study which examined the connection between tax revenue and economic growth measured by the labor force, infant mortality, and fixed capital formation in Nigeria between the period 1994 – 2016 reported tax revenue has a statistically important correlation between labor force, infant mortality and gross fixed capital formation. It was recommended for the government to increase tax revenue allocation to the critical sectors of the economy like agriculture and industry to improve the wellbeing of the citizenry.

Appah and Ebiringa (2012) in their study examined the connection between petroleum profit tax and economic growth in Nigeria by obtaining data covering GDP and PPT between the period 1970 to 2010. The study ascertained using Granger causality the direction of connection between the two variables and established the presence of a long-run equilibrium relationship between gross domestic product (GDP) and petroleum profit tax and also, the existence of a positive and significant relationship between PPT and economic growth.

Uzoka and Chiedu (2018) studied the impact of revenues from taxation on the growth of the economy in Nigeria between 1997 -2016. The unit root test result revealed incomes from company tax, customs, and excise duty and gains from the sale of capital assets are stationary at the level. While Real Gross Domestic Product (RGDP), Petroleum Profit Tax (PPT), Value Added Tax (VAT), and RDT are stationary at first order, that is the after first difference. The co-integration tests showed that a long-run relationship existed between the economic growth and RGDP, PPT, VAT, and RDT CIT, CED. The results obtained from the analysis of the model revealed CGT and EDT have no major impact on economic growth but there is a significant impact from PPT, CIT, VAT, and CED on the growth of Nigeria's economy. The study recommended boosting the growth of Nigeria's economy, the administration needed to ensure the tax revenue generated is channeled towards building capital stock that can create more jobs which will produce more income for the government through other forms of taxes.

2.4 Gaps in the literature

The analysis of empirical literature on how taxation revenue influence economic growth in Nigeria has not been clarified. While some studies has shown that taxation revenue using different variables to measure taxation and different variables to measure economic growth, taxation revenue has a significant effect on economic growth and some has shown that it does not have a significant effect on economic growth, however, studies have not exclusively gone through each of the different taxes and proxy for economic growth, so this study will employ two variable to measure both taxation revenue (PPT, CIT) and economic growth (GDP, CPI).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Preamble

The term "research methodology" refers to the strategy, plan, blueprint, design, and outline that is utilized to logically and coherently integrate the different components that make up the study. The population of the research, the parameters of the model, and any other pertinent topic matter are included in this section. In addition to this, it details the techniques and methodologies that were applied in order to carry out the research

3.1 Research Design

Ex post facto research methodology will be used in this study because it is necessary to assess the impact of earlier factors on the current phenomenon or event that is being studied. This design is seen as the best option to use when all of the independent variables, or even just one of them, are challenging to choose, manage, or monitor

3.2 Data Collection

The majority of the research relied on secondary sources of information. The CBN statistics bulletin, the federal inland revenue service (FIRS) report, the global development indicators (WDI), and other pertinent government publications were used to obtain this time series data. The research spans the years 1990 through 2021, which amounts to a total of 32 years.

3.3 Method of Data Analysis

A stochastic multiple regression model was described for the purpose of linking tax revenue and economic growth. This was done on the basis of the perceived causal relationship that existed between the dependent and independent variables of the research. The ordinary least square (OLS) method is employed in the analysis to arrive at an approximation of the connection between tax receipts and overall economic expansion.

3.4 Model Specification

Generally, the multiple regression model is specified as:

Y = f (bX1, bX2, bX3...........Xn)

To empirically investigate the relationship between economic growth and tax revenue proxy by the various income tax; petroleum profit tax (PPT) and company income tax (CIT), we hypothesized that economic growth depends behaviorally on the various income taxes.

The functional model of this study is specified thus;

Economic growth $= f$ (taxation) $+ \tau$

Where,

- Economic growth = GDP, CPI (Dependent Variable);

- Taxation (Explanatory/Independent Variable) = PPT, CIT,

$$GDP = \int (PPT, CIT) \text{--- (1)}$$

$$CPI = \int (PPT, CIT) \text{--- (2)}$$

$$GDP = \beta_{0t} + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 VAT_t + \varepsilon_t \text{--------------------------- (3)}$$

$$CPI = \beta_{0t} + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 VAT_t + \varepsilon_t \text{--------------------------- (4)}$$

3.4.1 Description of Research Variables

The dependent (criterion) variable constitutes economic growth (proxy by GDP, CPI) while tax revenue represents the independent (predictor) variable which was proxy by (PPT and CIT).

All the variables are fully described here under.

Where:

CPI = Consumer Price Index (a proxy for economic growth)

GDP = Gross Domestic Product (a proxy for economic growth)

PPT = Petroleum Profit Tax

CIT = Company Income Tax

β_0 stand for the intercepts of relationship in the models.

β_{1-3} stands for the regression coefficients for the models.

ε_t stand for the error terms.

3.4.2 Measurement of Variables

The Independent variables to measure taxation includes petroleum profit tax (PPT), and company income tax (CIT) while the dependent variable to measure economic growth is the consumer price index (CPI) and gross domestic product (GDP). This is further explained in the table below.

Table 3.4.2: Variables Definition and Units of Management

Variable	Proxy	Label		Measurement
Economic Growth	Gross Domestic Product	GDP	Dependent	At constant basic price Adefolake & Omodero, *Cogent Business & Management* (2022)
Economic Growth	Consumer Price Index	CPI	Dependent	Index of the quantity of output
Tax Revenue	Company Income Tax	CIT	Independent	30% tax for large companies and is charged on profits for the accounting year ending in the year preceding assessment. Adefolake & Omodero, *Cogent Business & Management* (2022)
Tax Revenue	Petroleum Profit Tax	PPT	Independent	50% for oil and gas operations under production sharing agreements (PSC)Non-PSC operations, including joint ventures (JVs) are charged 65.75 percent in the first five years and 85 percent after the first five years. Profits from upstream gas are taxed at 30%. Adefolake & Omodero, *Cogent Business & Management* (2022)

Source: Researcher's computation, 2022.

3.5 Estimation techniques

Using descriptive statistics, unit root test, co-integration test and regression model, the impact of tax revenue on economic growth in Nigeria will be examined in this study. The fact that this test will be effective in assessing the influence of one variable on the another, it guides that analysis done in this study. As a result, the techniques are consistent with the research design that was used in this study.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

4.0 Preamble

This chapter presents the results of the analysis in line with the research questions put forward in the study in order to make a valid conclusion on the stated research problems. The study findings were presented to examine the impact that proceeds from taxation have on Nigeria's economic growth measured by Gross Domestic Product (GDP) and Consumer Price Index (CPI).

The study makes use of secondary sources of data. These data were time series data collected using CBN statistical bulletin and other relevant government publications. The study covers the period from 1990 to 2021, a period of 32 years. Other sections of the data analysis were done in congruence with the research objectives and hypothesis.

4.1 Descriptive Statistics

Table 4.1

Date: 08/31/22   Time: 11:03
Sample: 1990 2021

	GDP	CPI	CIT	PPT
Mean	47970.79	95.14085	501.6183	1173.608
Median	26748.53	63.91324	192.6000	1170.704
Maximum	173527.7	354.3041	1747.990	3201.320
Minimum	494.6437	2.413909	3.000000	26.90900
Std. Dev.	52372.85	94.58794	555.2966	1005.958
Skewness	0.944481	1.197236	0.795428	0.365624
Kurtosis	2.661375	3.540712	2.220221	1.920540
Jarque-Bera	4.910455	8.034491	4.185169	2.266612
Probability	0.085844	0.018002	0.123368	0.321967
Sum	1535065.	3044.507	16051.79	37555.47
Sum Sq. Dev.	8.50E+10	277353.2	9558984.	31370485
Observations	32	32	32	32

Source: EVIEWs 12 raw result, 2022.

The summary of statistics of the data used for this study is presented in Table 4.1. As contained in the Table, a total of thirty two (32) observations formed the constituent for each of the variables of this study. The average value of gross domestic product (GDP)(47970.79) with a corresponding maximum (173527.7) and minimum (494.6437) values seem average good enough. The average consumer price index (CPI) (95.14085) with respect to the maximum (354.3041) and minimum (2.413909) The average value of company income tax (CIT) (501.6183) with respect to the maximum (1747.990) and minimum (3.00000). furthermore, the average value of petroleum profit tax (PPT)(1173.608) with respect to the maximum (3201.320) and minimum (26.90900).

It is observable in Table 4.1 that the Jarque-Bera statistics of each of the variables used for this study with their corresponding p-values indicated that all the data set were normally distributed.

4.2 Diagnostic Tests

4.2.1 Unit Root Test

As presented in Appendices 1, Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) unit root tests results revealed that none of the variables was stationary at level under both the Augmented Dickey-Fuller and the Phillips-Perron test. However, all the variables were stationary at first difference under both the Augmented Dickey-Fuller and the Phillips-Perron tests.

4.2.2 Co-Integration Test

As presented in Appendices 2, the results revealed that after the first difference there are three (3) co-integrating relationships as shown by both the trace statistic and the maximum eigenstatistic, which are greater than the critical values at 5% level of significance. The results therefore indicate that there is an existence of a long run relationship among the variables in the models. The test therefore rejected the null hypothesis of no co-integrating equation and concluded that, the equations are co-integrating.

4.3 Regression Result and Interpretation

In regression analysis, the model summary indicates the predictive power of the model. R is the correlation coefficient between the dependent variable (observed) and the independent variable(s), also known as the predictor (s). The sign of R indicates the direction of the relationship (positive or negative), with values ranging from -1 to 1. The absolute value of R indicates the strength of a relationship, with a larger absolute value indicating a strong correlation. The R squared (coefficient of determination) in regression analysis reveals the degree of linear-correlation of variables (fitness of fit). This is the proportion of variation in the dependent variable explained by the regression model. In other words, it shows how much of the variation in the dependent variable can be explained by the independent variable (s). The sample R squared is a conservative estimate of the model's population fit. In the updated R square, just the number of variables in the regression model was changed. The standard deviation of the residuals shows the estimate's standard error.

It attempts to correct R squared in order to better reflect the model's goodness of fit. It is the R squared value adjusted for the number of variables in the regression model. The standard error of estimates is the difference between the standard deviation of the residuals and the standard error of the estimates. The standard error of the estimate decreases as R squared increases. In other words, a better match results in less estimation error. It's an excellent indicator of how close the sample statistic's estimate of the population parameter is to the mark. The ANOVA table displays the overall significance of the model. The t-test is used when the population characteristics (mean and standard deviation) are unknown.

The T-test, which is based on the t-distribution, is regarded an appropriate test for detecting the significance of a difference between the means of two samples when sample size is restricted and population variance is unknown. The F-statistic is obtained by dividing the MSR of the regression by the MSR of the residual. F-statistics use the model's significance level to determine whether it is a good fit for the data. F-statistics with a significant value suggest that the model predicts the dependent variable's outcome value better than the average. If the F-statistics significance value is less than 0.05, the independent variable(s) is/are significant in explaining the variance in the independent variable, then the null hypothesis is accepted.

The beta co-efficient or standard co-efficient is an attempt to make the regression co-efficient more similar. It is a handy tool for determining the impact of modifying the explanatory variable by one standard deviation on the independent variable. It is usually equal to the correlation coefficient of the variables.

Based on the research objectives, the following hypotheses were expressed in both null and alternative versions and tested

Model 1:

Table 4.2

Dependent Variable: CPI
Method: Least Squares
Date: 08/31/22   Time: 10:47
Sample: 1990 2021
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.80737	7.749385	2.039822	0.0506
CIT	0.168577	0.012553	13.42902	0.0000
PPT	-0.004455	0.006929	-0.642846	0.5254

R-squared	0.917131	Mean dependent var		95.14085
Adjusted R-squared	0.911416	S.D. dependent var		94.58794
S.E. of regression	28.15220	Akaike info criterion		9.602188
Sum squared resid	22983.85	Schwarz criterion		9.739601
Log likelihood	-150.6350	Hannan-Quinn criter.		9.647737
F-statistic	160.4760	Durbin-Watson stat		0.825699
Prob(F-statistic)	0.000000			

Source: EVIEWs 12 raw result, 2022.

From the regression table 4.2, the result indicated that there is a significant and positive impact of company income tax (CIT, proxy for tax revenue)(P=0.000) on consumer price index (CPI, proxy for economic growth) and statistically significant at 5% level of significance, while petroleum profit tax (PPT)(P=0.5254) has an inverse but insignificant influence on consumer price index (CPI) at 5% level of significance. This shows that a unit increase in CIT would increase CPI by 0.168577 similarly, a unit increase in PPT would decrease CPI by -0.004455. from this regression result, the stated null hypothesis that CIT has no significant effect on CPI

cannot be accepted. Therefore, this study confirms that CIT has statistical significant effect on CPI. On the other hand, the stated Hypothesis that PPT has no significant effect on CPI cannot be rejected. Therefore, this study uphold that PPT has no statistical effect on CPI. The F-value of 160.4760 with a corresponding P-value of P<0.0000 which is less than the 0.05 (5%) significant level lends credence to the fitness of the model and its overall significance. Therefore tax revenue has significant influence on economic growth in Nigeria (CPI).

Model 2

Table 4.3

Dependent Variable: GDP
Method: Least Squares
Date: 08/31/22   Time: 10:44
Sample: 1990 2021
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1587.498	2887.435	0.549795	0.5867
CIT	92.59830	4.677345	19.79719	0.0000
PPT	-0.055987	2.581931	-0.021684	0.9828

R-squared	0.962473	Mean dependent var		47970.79
Adjusted R-squared	0.959885	S.D. dependent var		52372.85
S.E. of regression	10489.56	Akaike info criterion		21.44321
Sum squared resid	3.19E+09	Schwarz criterion		21.58062
Log likelihood	-340.0913	Hannan-Quinn criter.		21.48876
F-statistic	371.8931	Durbin-Watson stat		1.437984
Prob(F-statistic)	0.000000			

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From the regression table 4.3, the result indicated that there is a significant and positive impact of company income tax (CIT, proxy for tax revenue)(P=0.000) on consumer price index (CPI, proxy for economic growth) and statistically significant at 5% level of significance, while petroleum profit tax (PPT)(P=0.9828) has an inverse but insignificant influence on consumer price index (CPI) at 5% level of significance. This shows that a unit increase in CIT would increase CPI by 92.5.9830 similarly, a unit increase in PPT would decrease CPI by -0.055987. from this regression result, the stated null hypothesis that CIT has no significant effect on CPI cannot be accepted. Therefore, this study confirms that CIT has statistical significant effect on CPI. On the other hand, the stated Hypothesis that PPT has no significant effect on CPI cannot

be rejected. Therefore, this study uphold that PPT has no statistical effect on CPI. The F-value of 371.8931 with a corresponding P-value of P<0.0000 which is less than the 0.05 (5%) significant level lends credence to the fitness of the model and its overall significance. Therefore tax revenue has significant influence on economic growth in Nigeria (GDP).

4.4 Discussion of Findings

Every country strives to be the best it can be. The government's job is to make the country better, so it has policies in place to promote economic growth and stability. The purpose of this research was to determine if tax revenue has a positive or negative effect on GDP and inflation rates in Nigeria (CPI). Proceeds from taxation were proxy using Petroleum Profit Tax (PPT) and Company Income Tax (CIT) as the independent or explanatory variables. Independent variables effect on GDP and the consumer price index were analyzed singly and in combination.

The study however suggests that there is a statistically significant on the influence that revenue from taxes have on the growth of Nigeria's economy.

Moreover, the study hypothesized that there is no significant impact of company income tax revenue on Nigeria's gross domestic product and this study found that there is a significant effect of company income tax on Nigeria's gross domestic product. This result is aligned with Uzoka and Chinedu (2018) which examined that company income tax has a significant effect on gross domestic product.

This study hypothesized that there is no significant impact of petroleum profit tax revenue on Nigeria's gross domestic product and this study found that there is a statistically but no significant effect of petroleum profit tax revenue on Nigeria's gross domestic product. This result is consistent with John and Dickson(2020) which examined that PPT had a negative and insignificant impact on the adjusted GDP

However, the study suggest that there is no significant impact on company income tax revenue on consumer price index and this study found that there is a significant influence of company income tax on consumer price index.

Finally, the hypothesis indicate that there is no significant impact of petroleum profit tax revenue on consumer price index and this study found that there is a insignificant effect of petroleum profit tax revenue on consumer price index.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Preamble

This chapter summarizes the study's findings and its implications. It also covers the conclusions and recommendations postulated from the results, as well as the limitation to the study.

5.1 Summary of the Study

This study examined the impact that proceeds from taxation have on Nigeria's economic growth measured by Gross Domestic Product (GDP) and consumer price index (CPI). Petroleum Profit Tax (PPT), Company Income Tax (CIT) were the independent or explanatory variables which were selected as proxy for measuring proceeds from taxation.

Related literature related to the major concepts of the study was reviewed in line with the study's objectives and previous related study which served as sources of empirical were comprehensively reviewed and illustrated. The theoretical frameworks on which the study was anchored are theories of taxation, which include: The cost-of-service theory, benefit theory, modernization theory, and sociopolitical taxation theories are some of the main theories or principles.

The study makes use of secondary sources of data. These data were time series data collected using CBN statistical bulletin and other relevant government publications. The study covers the period from 1990 to 2021, a period of 32 years. Data generated was subjected to both descriptive, unit root and co-integration and regression analysis with the aid of Eview 12. The results of the analysis are summarized as; Company income tax (CIT) has a very strong significant and positive impact on consumer price index (r=0.168577, p<0.0000). Petroleum profit tax (PPT) is insignificant and negative impact on consumer price index (r=0.004455, p<0.5254). Furthermore, Company income tax (CIT) has a very strong significant and positive impact on gross domestic product (r=92.59830, p<0.0000). Also, petroleum profit tax (PPT)is insignificant and negative impact on gross domestic product (r=-0.055987, p<0.9828).

5.3 Conclusion

According to the findings of this study, it is concluded that that company income tax has a positive and statistically significant impact on economic growth, while petroleum profit tax has a negative and statically but not significant impact on economic growth. This research indicated that company income tax and petroleum profit tax have desirable and significant economic connection to Nigeria's economic growth. It is therefore established based on the findings of this study that the proceeds from taxation in Nigeria has been contributory in supporting economic growth in Nigeria and an increase in the level of proceeds from taxation will substantially boost the economy. However, this may be a pointer to the fact that Nigeria government excessively rely on taxation on companies and petroleum sector and have neglected other potent and viable sector of economy like agriculture.

5.3 Recommendations

From the findings, which have emerged in this study, several recommendations can be deduced. The following recommendations was made after the research findings; The government to increase tax revenue allocation to the critical sectors of the economy like agriculture and industry to improve the well-being of the citizenry. The study recommended boosting the growth of Nigeria's economy, the government needed to ensure the tax revenue generated is channeled towards building capital stock that can create more jobs which will produce more income for the government through other forms of taxes. Recommended for the nation to broaden its revenue sources out of crude oil to other sectors of the economy such as agriculture and extractive industries. Establishment of tax incentives to promote private sector engagement in the economy Proper utilization of revenue to encourage citizen to pay tax without cohesion.

Improvement of the tax information system to enhance the evaluation of the performance of the Nigerian tax system and facilitate adequate macroeconomic planning and implementation.

REFERENCES

Abiola, O.F. Adegbie, F. & Ogundajo, O. G. (2021). Tax revenue, capital formation, and economic growth in Nigeria. *Research in World Economy. 12*(1), 101-112

Adereti, S., Sanni, M., & Adesina, J. (2011). Value-added tax and economic growth of Nigeria. *European Journal of Humanities and Social Sciences, 10*(1), 456-471.

Adeusi, A. S., Uniamikogbo, E., Erah, O. D., & Aggreh, M. (2020). Non-oil revenue and economic growth in Nigeria. *Research Journal of Finance and Accounting, 11*(8), 95–106.

Agunbiade, O., & Idebi, A. A. (2020). Tax revenue and economic growth nexus: Empirical evidence from the Nigerian economy. *European Journal of Economic and Financial Research*, *4*(2), 18–41.

Aguolu, O. (2004). *Taxation and Tax Management in Nigeria*, 3rd Edition, Enugu; Meridan Associates.

Aguolu, O. (2014). Taxation and Tax Management in Nigeria, 6th Edition, Enugu; Ezu Books Ltd, 581P.

Akintola, S.K., Omotola, A. A., Oyinbodunmi, B. M., & Akinyemi, E. K. (2022).Effect of Tax Revenues on the Economic Development of Nigeria. *Journal of Economics, Management and Trade. 28(4): 47-61*

Appah, E., & Ebiringa, O. T. (2012). Petroleum profit tax and economic growth in Nigeria. *International Journal of Management Science and Business Research*, 1(9), 12-22.

Ariyo, A. (2007). "Productivity of the Nigerian Tax System: 1970–1990". *African Economic Research Consortium,* 13 (50), 256-266.

Asaolu, T. O., Olabisi, J., Akinbode, S. O., & Alebiosu, O. N. (2018). Tax revenue and economic growth in Nigeria. *Scholedge International Journal of Management & Development*, *5* 7 , 72–85.

Ayano, D. A. (2022) Impacts of Taxation on Economic Development in Nigeria. *International Journal Of Innovative Research & Development*

Ayeni O. A. & Cordelia O. O. | (2022) Tax Revenue And Economic Growth In Nigeria, Cogent Business & Management, 9(1), 211-282.

Ayeni, A. P., Ibrahim, J., & Adeyemi, A. O. (2017). tax revenue and Nigerian economic growth. *European Journal of Accounting, Auditing and Finance Research*, *5*(11), 75–85.

Ayuba, A. J. (2014). Impact of non-oil revenue on economic growth: The Nigerian perspective. *International Journal of Management Sciences and Business Research*, *1*(9), 12–22.

Benefit theory of taxation." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/benefit%20theory%20of%20taxation. Accessed 9 Feb. 2022.

Bruno, O. O., & Emmanuel, A. O. (2019). Tax revenue and the Nigerian Economy. *International Journal of Academic Science Research*, *3*(2), 61–66.

Chigbu, E. E., Akujuobi, L. E., & Appah, E. (2012). An empirical study on the casualty between economic growth and taxation in Nigeria. *Curr. Res. J. Econ. Theory*., *4*(2), 29–38.

Chigbu, E.E., Akujuobi, L.E., &Appah, E., (2012). "An empirical study on the causality between economic growth and taxation in Nigeria". *Current Research Journal of Economics Theory*.4 (2), 29-38.

Dladla, K., & Khobai, H. (2018). *The impact of taxation on economic growth in South Africa*. Nelson Mandela University.

Edewusi, D. G., & Ajayi, I. E. (2019). The nexus between tax revenue and economic growth in Nigeria. *International Journal of Applied Economics, Finance and Accounting*, *4*(2), 45–55.

Etim, O. E., Nsima, J. U., Austin, U. N., Samuel, S. C., & Anselem, M. U. (2021). Comparative analysis of the effect of direct and indirect taxation revenue on economic growth of Nigeria. *Account and Financial Management Journal*, *6*(7), 2403–2418.

Etim, O. E., Nsima, J. U., Austin, U. N., Samuel, S. C., & Anselem, M. U. (2020). Petroleum profit tax, company income tax and economic growth in Nigeria. *Journal of Finance Accounting and Auditing Studies*, *6*1, 164–187.

Gbeke, K. K., & Nkak, P. (2021). Tax reforms and economic growth of Nigeria. *Journal of Business and Management*, *23*(6), 16–23.

https://www.knowledgiate.com/cost-of-service-theory-of-taxation/

Jhingam, M. L. (2009). Money, Banking, international trade, and Public Finance. Delhi, Nisha Enterprises.

Jimoh, B.A., Adegoriola, A.E., & Adeyemo, T., (2020). Empirical analysis of impact of tax revenue on economic growth in Nigeria. *Bingham Journal of Economics and Allied Studies (BJEAS)* 3(1), 1-12

John, O. A., & Dickson, O. E. (2020). Tax revenue and economic growth in Nigeria. *Journal of Taxation and Economic Development*, *19*(1), 15–34.

Madugba, J. U., Ekwe, M.C. & Kalu, J.M. (2015), Corporate Tax and Revenue Generation: Evidence from Nigeria. Journal of Emerging Trends in Economics and Management Sciences 6(5); 333 – 339.

Ogbonna, G. N., & Appah, E. (2012). Impact of Tax Reforms and Economic Growth in Nigeria: A Time Series Analysis. Current Res. J. Soc. Sci., 4(1), 62-68.

Ojong, C. M., Anthony, O., & Arikpo, O. F. (2016). The impact of tax revenue on economic growth: *Evidence from Nigeria. Journal of Economics and Finance,* 7(1), 32-38.

Okeke, M. N., Mbonu, C. M., & Ndubuisi, A. N. (2018). Tax revenue and economic growth in Nigeria: A disaggregated analysis. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 8(2), 178-199.

Okwara, C. C., & Amori, O. M. (2017). Impact of tax revenue on economic growth in Nigeria. *International Journal of Advanced Scientific Research*, 2(2), 90-102.

Oladele, R. (2021). Impact of tax compliance on standard of living in Nigeria. *The Journal of Accounting and management. 11*(1), 237-250.

Omodero, C. O., Okafor, M. C., & Nmesirionye, J. A. (2021). Personal Income Tax Revenue and Nigeria's aggregate earnings. *Universal Journal of Accounting and Finance*, *9*(4), 783–789.

Onaolapo, A. A., Aworemi, R. J., & Ajala, O. A. (2013). Assessment of value-added tax and its impacts on revenue generation in Nigeria. International Journal of Business and Social Science, 4(1), 220-225. Oyedele

Thomas, A. (2000). *Poverty and Development Into The 21st Century, in: Tim Allen and Alan Thomas (eds.*). Glasgow: Oxford University Press.

Timah, B. P., & Chukwu, G. J. (2021). Corporate taxation and stakeholders' welfare of selected manufacturing companies in Nigeria. *International Journal of Academic Research in Business and Social Sciences,* 11(2), 13–26.

Tosun, M.S. & Abizadeh S. (2005). 'Economic growth & tax components: An analysis of tax change in OECD' *Applied Economics,* 37(2), 2251- 2263.

Uche, E.P., & Ugonabo, C.U., (2021). The effect of value added tax on economic development in Nigeria (1994- 2018). *IOSR Journal of Humanities and Social Science (IOSR-JHSS)* 26(5), 21-30.

UNDP, (1992). *United Nation Development Programmes* (UNDP) Publication. Washington DC: UNDP.

Uzoka, P. U., & Chiedu, C. O. (2018). Impact of tax revenue on economic growth in Nigeria. International Journal of Social Sciences and Management Research, 4(7).

Worlu, C. N., & Emeka, N. (2012). Tax revenue and economic growth in Nigeria: A macro-econometric approach. Academic Journal of Interdisciplinary Studies, 21(46), 121-139.

Wyngaard, A.T. (2006). *An introduction to economic development in the Western Cape.* Department of economic development and tourism.

Yadawananda, N., & Achal, K.G., (2020). Tax structure and economic growth: a study of selected Indian states. Journal of Economic structure, 9(38), 1-12.

APPENDIX

Appendices 1 & 2:

Null Hypothesis: D(GDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.862532	0.0026
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP,2)
Method: Least Squares
Date: 08/31/22   Time: 11:13
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-1.054239	0.216809	-4.862532	0.0000
C	-2917.727	1143.134	-2.552392	0.0167
@TREND("1990")	543.0485	113.7266	4.775033	0.0001

R-squared	0.478152	Mean dependent var	639.3309
Adjusted R-squared	0.439497	S.D. dependent var	3425.185
S.E. of regression	2564.324	Akaike info criterion	18.63142
Sum squared resid	1.78E+08	Schwarz criterion	18.77154
Log likelihood	-276.4713	Hannan-Quinn criter.	18.67624
F-statistic	12.36962	Durbin-Watson stat	1.822704
Prob(F-statistic)	0.000154		

Null Hypothesis: D(GDP) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.860176	0.0026
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)		5918184.
HAC corrected variance (Bartlett kernel)		5896829.

Phillips-Perron Test Equation
Dependent Variable: D(GDP,2)
Method: Least Squares
Date: 08/31/22   Time: 11:16
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-1.054239	0.216809	-4.862532	0.0000
C	-2917.727	1143.134	-2.552392	0.0167
@TREND("1990")	543.0485	113.7266	4.775033	0.0001

R-squared	0.478152	Mean dependent var	639.3309
Adjusted R-squared	0.439497	S.D. dependent var	3425.185
S.E. of regression	2564.324	Akaike info criterion	18.63142
Sum squared resid	1.78E+08	Schwarz criterion	18.77154
Log likelihood	-276.4713	Hannan-Quinn criter.	18.67624
F-statistic	12.36962	Durbin-Watson stat	1.822704
Prob(F-statistic)	0.000154		

Null Hypothesis: D(CPI,2) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 2 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.094860	0.0172
Test critical values:	1% level	-4.339330	
	5% level	-3.587527	
	10% level	-3.229230	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CPI,3)
Method: Least Squares
Date: 08/31/22   Time: 11:18
Sample (adjusted): 1995 2021
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPI(-1),2)	-1.886390	0.460673	-4.094860	0.0005
D(CPI(-1),3)	0.937925	0.323119	2.902725	0.0083
D(CPI(-2),3)	0.431441	0.251700	1.714113	0.1006
C	-3.250050	1.839100	-1.767196	0.0911
@TREND("1990")	0.325418	0.103696	3.138185	0.0048

R-squared	0.518225	Mean dependent var	0.542323
Adjusted R-squared	0.430630	S.D. dependent var	4.916165
S.E. of regression	3.709572	Akaike info criterion	5.625286
Sum squared resid	302.7404	Schwarz criterion	5.865256
Log likelihood	-70.94136	Hannan-Quinn criter.	5.696642
F-statistic	5.916119	Durbin-Watson stat	1.705671
Prob(F-statistic)	0.002175		

Null Hypothesis: D(CPI,2) has a unit root
Exogenous: None
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.515330	0.0138
Test critical values:	1% level	-2.647120	
	5% level	-1.952910	
	10% level	-1.610011	

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

Residual variance (no correction)	18.62256
HAC corrected variance (Bartlett kernel)	21.25133

Phillips-Perron Test Equation
Dependent Variable: D(CPI,3)
Method: Least Squares
Date: 08/31/22   Time: 11:22
Sample (adjusted): 1993 2021
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPI(-1),2)	-0.502259	0.224721	-2.235040	0.0336

R-squared	0.140894	Mean dependent var	0.517966
Adjusted R-squared	0.140894	S.D. dependent var	4.738231
S.E. of regression	4.391771	Akaike info criterion	5.831216
Sum squared resid	540.0542	Schwarz criterion	5.878364
Log likelihood	-83.55263	Hannan-Quinn criter.	5.845982
Durbin-Watson stat	1.562205		

Null Hypothesis: D(CIT) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 2 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.272902	0.0001
Test critical values:	1% level	-4.323979	
	5% level	-3.580622	
	10% level	-3.225334	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CIT,2)
Method: Least Squares
Date: 08/31/22   Time: 11:24
Sample (adjusted): 1994 2021
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CIT(-1))	-2.865381	0.456787	-6.272902	0.0000
D(CIT(-1),2)	1.127061	0.363066	3.104292	0.0050
D(CIT(-2),2)	0.696940	0.225658	3.088480	0.0052
C	-78.45116	54.50366	-1.439374	0.1635
@TREND("1990")	13.07623	3.412873	3.831444	0.0009

R-squared	0.816988	Mean dependent var	13.65962
Adjusted R-squared	0.785160	S.D. dependent var	253.5549
S.E. of regression	117.5248	Akaike info criterion	12.53161
Sum squared resid	317677.7	Schwarz criterion	12.76950
Log likelihood	-170.4425	Hannan-Quinn criter.	12.60433
F-statistic	25.66875	Durbin-Watson stat	1.687138
Prob(F-statistic)	0.000000		

Null Hypothesis: D(CIT) has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.689564	0.0000
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

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

Residual variance (no correction)	18803.44
HAC corrected variance (Bartlett kernel)	17988.19

Phillips-Perron Test Equation
Dependent Variable: D(CIT,2)
Method: Least Squares
Date: 08/31/22   Time: 11:25
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CIT(-1))	-1.504093	0.196751	-7.644639	0.0000
C	79.51962	27.22474	2.920859	0.0068

R-squared	0.676078	Mean dependent var	15.72698
Adjusted R-squared	0.664509	S.D. dependent var	245.0529
S.E. of regression	141.9385	Akaike info criterion	12.81301
Sum squared resid	564103.1	Schwarz criterion	12.90642
Log likelihood	-190.1951	Hannan-Quinn criter.	12.84289
F-statistic	58.44051	Durbin-Watson stat	1.888293
Prob(F-statistic)	0.000000		

Null Hypothesis: D(PPT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.950268	0.0004
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PPT,2)
Method: Least Squares
Date: 08/31/22   Time: 11:27
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPT(-1))	-0.943979	0.190693	-4.950268	0.0000
C	62.87195	103.2904	0.608691	0.5476

R-squared	0.466719	Mean dependent var	15.98499
Adjusted R-squared	0.447673	S.D. dependent var	758.0346
S.E. of regression	563.3614	Akaike info criterion	15.57006
Sum squared resid	8886528.	Schwarz criterion	15.66347
Log likelihood	-231.5509	Hannan-Quinn criter.	15.59994
F-statistic	24.50515	Durbin-Watson stat	1.939158
Prob(F-statistic)	0.000032		

Null Hypothesis: D(PPT) has a unit root
Exogenous: Constant
Bandwidth: 23 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.370622	0.0000
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

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

Residual variance (no correction)	296217.6
HAC corrected variance (Bartlett kernel)	34254.02

Phillips-Perron Test Equation
Dependent Variable: D(PPT,2)
Method: Least Squares
Date: 08/31/22   Time: 10:28
Sample (adjusted): 1992 2021
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPT(-1))	-0.943979	0.190693	-4.950268	0.0000
C	62.87195	103.2904	0.608691	0.5476

R-squared	0.466719	Mean dependent var	15.98499
Adjusted R-squared	0.447673	S.D. dependent var	758.0346
S.E. of regression	563.3614	Akaike info criterion	15.57006
Sum squared resid	8886528.	Schwarz criterion	15.66347
Log likelihood	-231.5509	Hannan-Quinn criter.	15.59994
F-statistic	24.50515	Durbin-Watson stat	1.939158
Prob(F-statistic)	0.000032		

Date: 08/31/22   Time: 10:31
Sample (adjusted): 1993 2021
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: GDP CIT PPT
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.717265	54.90895	29.79707	0.0000
At most 1 *	0.447822	18.27479	15.49471	0.0186
At most 2	0.035630	1.052130	3.841465	0.3050

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.717265	36.63416	21.13162	0.0002
At most 1 *	0.447822	17.22266	14.26460	0.0165
At most 2	0.035630	1.052130	3.841465	0.3050

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

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

GDP	CIT	PPT
-0.000204	0.010099	-0.001644
-6.14E-05	0.010360	-0.001039
0.000150	-0.012106	-0.001198

Unrestricted Adjustment Coefficients (alpha):

D(GDP)	-937.7826	147.0267	411.3522
D(CIT)	-71.10121	-53.87664	6.251256
D(PPT)	223.2403	-37.35871	74.71658

1 Cointegrating Equation(s):   Log likelihood   -639.0154

Normalized cointegrating coefficients (standard error in parentheses)

GDP	CIT	PPT
1.000000	-49.45876	8.053177
	(5.01720)	(1.42502)

Adjustment coefficients (standard error in parentheses)

D(GDP)	0.191482
	(0.10106)
D(CIT)	0.014518
	(0.00436)
D(PPT)	-0.045582
	(0.01887)

Date: 08/31/22   Time: 10:33
Sample (adjusted): 1993 2021
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: CIT PPT CPI
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.588439	39.13850	29.79707	0.0032
At most 1	0.335168	13.39237	15.49471	0.1012
At most 2	0.052175	1.553964	3.841465	0.2126

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.588439	25.74613	21.13162	0.0104
At most 1	0.335168	11.83841	14.26460	0.1169
At most 2	0.052175	1.553964	3.841465	0.2126

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

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

CIT	PPT	CPI
-0.002520	0.001890	-0.068762
0.005610	-0.001072	-0.064674
-0.008690	-0.000640	0.054272

Unrestricted Adjustment Coefficients (alpha):

D(CIT)	60.52659	-54.39090	-2.781288
D(PPT)	105.8398	85.48385	101.3241
D(CPI)	-1.794398	-0.448450	0.151527

1 Cointegrating Equation(s):   Log likelihood   -453.7946

Normalized cointegrating coefficients (standard error in parentheses)
CIT	PPT	CPI
1.000000	-0.750221	27.29136
	(0.16021)	(6.47808)

Adjustment coefficients (standard error in parentheses)
D(CIT)	-0.152500
	(0.05906)
D(PPT)	-0.266669
	(0.26162)
D(CPI)	0.004521
	(0.00100)

Dependent Variable: GDP
Method: Least Squares
Date: 08/31/22   Time: 10:44
Sample: 1990 2021
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1587.498	2887.435	0.549795	0.5867
CIT	92.59830	4.677345	19.79719	0.0000
PPT	-0.055987	2.581931	-0.021684	0.9828

R-squared	0.962473	Mean dependent var		47970.79
Adjusted R-squared	0.959885	S.D. dependent var		52372.85
S.E. of regression	10489.56	Akaike info criterion		21.44321
Sum squared resid	3.19E+09	Schwarz criterion		21.58062
Log likelihood	-340.0913	Hannan-Quinn criter.		21.48876
F-statistic	371.8931	Durbin-Watson stat		1.437984
Prob(F-statistic)	0.000000			

Dependent Variable: CPI
Method: Least Squares
Date: 08/31/22   Time: 10:47
Sample: 1990 2021
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.80737	7.749385	2.039822	0.0506
CIT	0.168577	0.012553	13.42902	0.0000
PPT	-0.004455	0.006929	-0.642846	0.5254

R-squared	0.917131	Mean dependent var		95.14085
Adjusted R-squared	0.911416	S.D. dependent var		94.58794
S.E. of regression	28.15220	Akaike info criterion		9.602188
Sum squared resid	22983.85	Schwarz criterion		9.739601
Log likelihood	-150.6350	Hannan-Quinn criter.		9.647737
F-statistic	160.4760	Durbin-Watson stat		0.825699
Prob(F-statistic)	0.000000			

Data extraction

year	GDP	CPI	PPT	CIT
1990	494.64	2.41	26.91	3.00
1991	590.06	2.73	38.82	3.80
1992	906.03	3.94	51.48	5.40
1993	1,257.17	6.20	59.21	95.54
1994	1,768.79	9.73	42.83	12.28
1995	3,100.24	16.82	42.86	21.88
1996	4,086.07	21.75	76.67	22.00
1997	4,418.71	23.60	68.57	26.00
1998	4,805.16	25.96	68.00	33.30
1999	5,482.35	27.68	164.30	46.20
2000	7,062.75	29.60	525.10	51.10
2001	8,234.49	35.19	639.20	68.70
2002	11,501.45	39.72	392.20	89.10
2003	13,556.97	45.29	683.50	114.80
2004	18,124.06	52.08	1,183.60	113.00

2005	23,121.88	61.39	1,904.90	140.30
2006	30,375.18	66.44	2,038.30	244.90
2007	34,675.94	70.02	1,600.60	275.30
2008	39,954.21	78.13	2,060.90	420.60
2009	43,461.46	87.94	939.40	600.60
2010	55,469.35	100.00	1,480.36	666.06
2011	63,713.36	110.84	3,070.59	654.45
2012	72,599.63	124.38	3,201.32	820.57
2013	81,009.96	134.92	2,666.37	963.45
2014	90,136.98	145.80	2,453.95	1,173.49
2015	95,177.74	158.94	1,289.96	1,268.98
2016	102,575.42	183.85	1,157.81	933.54
2017	114,899.25	214.23	1,520.48	1,215.06
2018	129,086.91	240.14	2,467.58	1,340.33
2019	145,639.14	267.51	2,114.27	1,604.70
2020	154,252.32	302.95	1,516.99	1,275.38

| 2021 | 173,527.66 | 354.30 | 2,008.45 | 1,747.99 |