

CHAPTER ONE

INTRODUCTION

1.1. Background to the Study.

The global economy is faced with myriads of economic and social problems that increase in magnitude and dimension daily. Suicide bombings and killings, terrorism and insurgencies, drug trafficking, smuggling, money laundering, systemic corruption etc are some of those crimes that threaten the corporate existence of many countries of the world today.

Generally, Section 2 of the Nigeria Criminal Code defines crime as “An act or omission which renders the person doing the act or making the omission liable to punishment under the Criminal Code or any act or law in force. It follows, therefore, that a person cannot be convicted of a criminal offence unless that offence is defined and a penalty, therefore, prescribed in a written law, (Section 36, Sub-section 12 of the Constitution of the Federal Republic of Nigeria, 1999).

The gravity of crime makes offences to be categorized into simple, misdemeanor and felony. However, different laws enacted to guide and moderate social, economic and political lives of citizens have also categorized offences into social, economic, financial, religious and political crimes. However, of particular interest to the researcher are crimes that are economic in nature referred to as economic crimes.

Section 46 of the Economic and Financial Crimes Commission’s Act, 2004, defines economic crimes as “non-violent criminal and illicit activities committed with the objective of earning wealth illegally either individually or in a group or organised manner thereby violating existing legislation governing economic activities of

government and its administration and includes any form of fraud, money laundering, smuggling, currency counterfeiting, tax evasion, corruption, embezzlement etc. These constitute the typologies of economic crimes.

The history of economic crimes in Nigeria can be traced back to the colonial era. The consular court system disrupted the traditional administration, which the white colonialists met. In its place was appointed the highly flawed indirect rule under which appointment of personnel was arbitrarily made. Oftentimes, appointees were unknown people, different from the traditional heads and chiefs. Many of the appointed people were of questionable character who often became intoxicated by power, leading them to abuse and misuse of office, including showing favours to criminals. Therefore, the colonial heritage, legal traditions, religion, and geographical factors seem associated with economic crimes and other measures of government dysfunction.

In the Post-Colonial Era of the Civilian and Military Regimes, the First and Second Republics were characterised by electoral malpractices involving the use of money to buy votes, employment of thugs to intimidate political opponents, hiring of assassins to eliminate opponents, hijacking of electoral boxes and materials, the printing of fake voting cards, misappropriation of public funds and corruption. The military and civilian regimes accused each other of corruption and this was the major reason for rejection and takeover of government. The military regimes ruled by decrees and through it perpetrated all manner of economic crimes. Today, it is said that the worst civilian regime is better than the best military regime. The overall implication of this is that the once cherished culture of probity and honesty in public affairs soon yielded

place to a culture of graft and the standard of public morality continued to deteriorate, giving way for serious economic crimes.

Corresponding to the Colonial and Post Colonial Era was an industrial policy known as the Import Substitution Industrialization (ISI) that advocated the replacement of foreign imports with domestic production as an attempt to reduce foreign dependency through industrialized products, thus producing development and self-sufficiency through the creation of an internal market. ISI was gradually abandoned because this strategy appears not to have created the necessary foundation for an industrial revolution as it failed to develop capacities for export manufactures and even failed to produce enough to serve expanding domestic demand (Ogujiuba, Nwogwugwu & Dike, 2011).

By 1980s, the economy took a different turn, partly due to declining oil revenues, structural indebtedness etc. This precipitated the adoption of the Structural Adjustment Programme (SAP) from July 1986 on the insistence of IMF and the World Bank, of which trade liberalization aimed at the Global South was a major element. It was expected that a liberalized trade regime would stimulate industrial output expansion and enhance a better performance of the economy. However, contrary to expectations that SAP policies would shift production and trade towards outward orientation, the industrial sector seems not to have made any significant contribution to export earnings (Tamuno, & Edoumiekumo, 2012). The SAPs conceived and implemented for West African countries by IMF and the World Bank created loss of jobs and diminishing employment opportunities, reversal of industrial development, exclusion of majority of the population from vital social and welfare services (especially education and health care) and a fragile state. These developments

produced favourable environment for entrenchment of economic crimes witnessed today. Globalisation and indeed information and communication technology that integrated Nigerian economy into the global economy have thus, provided economic offenders with a tool for both committing economic crimes and laundering the proceeds that their acts generate (Swank, 2002).

Fruitful attempts have been made to measure economic crimes. There is Corruption Perception Index developed by Transparency International in 1995. This index has a band of 0 to 100. An index closer to zero signifies a very corrupt country, while an index closer to 100 signifies a country almost free from corruption. The table below represents Nigeria's level of corruption relative to the rest of the world.

Table 1: Nigeria's Corruption Perception Index (CPI) and Relative Corruption Ranking (RCR) 1995 to 2014.

YEAR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CPI	0	0.69	1.76	1.9	1.6	1.2	1.0	1.6	1.4	1.6
RCR	0	54	52	81	98	90	90	101	132	144
YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
CPI	1.9	2.2	2.2	2.7	2.5	2.4	2.4	2.7		
RCR	152	142	147	121	130	134	143	147	144	136

Source: Transparency International Report, 2014.

The table above portrays Nigeria as a very corrupt country.

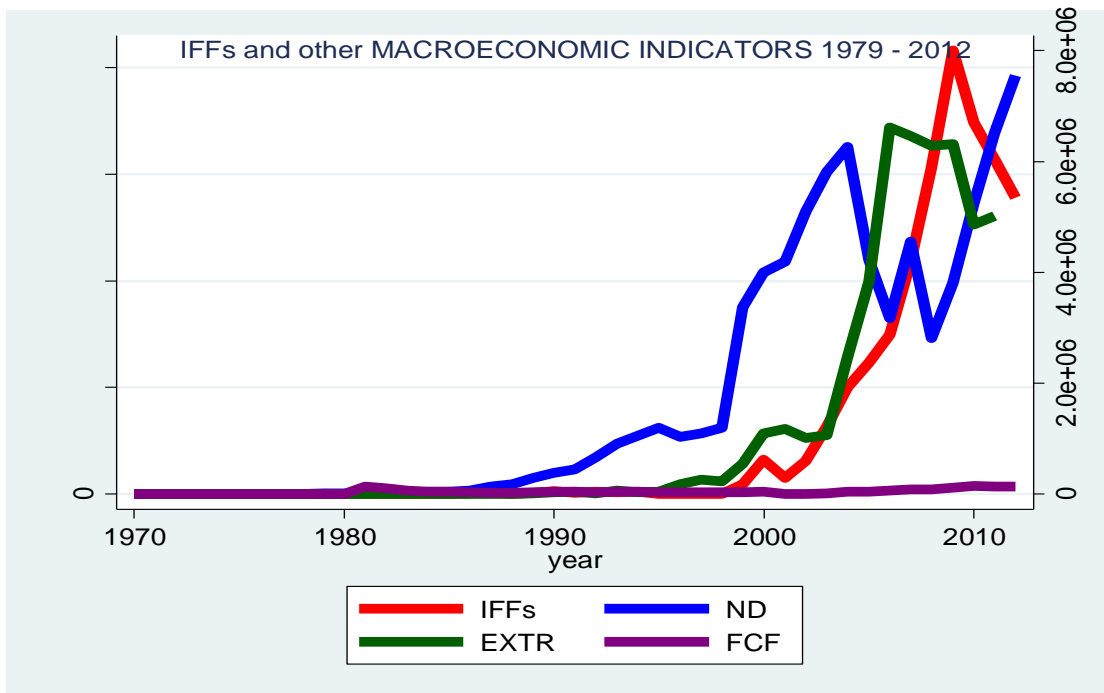
Furthermore, statistics on Illicit Financial Outflows (IFFs) as a measure of economic crimes was developed by Global Financial Integrity using two known models such as World Bank Residual Model and IMF Trade Mis-invoicing Model. IFFs refer to unrecorded capital outflows that derive from criminal, corrupt (bribery and theft by government officials) and illicit commercial activities (Baker, 2005).

Khan and Blenkenburg (2012) posit that the components of IFFs include proceeds of theft, bribery and other forms of corruption by government officials; proceeds of criminal activities including drug trading, racketeering, counterfeiting, money laundering and terrorist financing; and proceeds of tax evasion and laundered commercial transactions.

Economic crimes have risen in size and magnitude in recent times. Parton, Rajarao and Skalak (2009) observe that economic crime has become a global phenomenon thriving even in a downturn. Cost of cybercrime globally is estimated to be US\$ 388 billion for 2011 (Ernesto, 2012), while World Bank estimates that Worldwide bribery totals at least \$1 trillion per year, just over 3% of world income in 2002 (Kunicova and Ackerman, 2003). In the same vein, money laundered every year is estimated at about 2.0 to 5.0 per cent of world Gross Domestic Product (GDP) (IMF, 2004; Parton et al, 2009), whereas GFI estimates that IFFs from Africa across 1970 through 2012 is at some \$1.8 trillion while that from Nigeria is \$217,738.1 billion respectively (Khan and Blankenburge, 2012).

Comparing IFFs with some macroeconomic indicators such as National Debt and External Reserve in Figure 1 below reveal some interesting features. Their behavior is almost similar but with a significant change from 1999 through 2013 corresponding to the period of the uninterrupted democratic dispensation. This sort of relationship elicits attention, more so, when Nigeria is ranked 1st in the list of African countries where IFFs are the most.

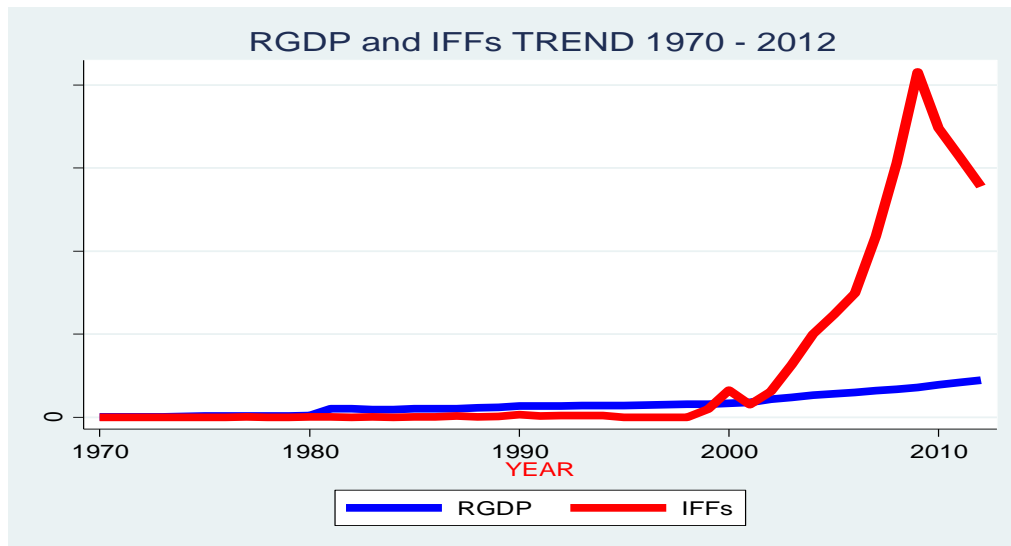
Figure 1: IFFs and some macroeconomic variables.



Source: Researcher using data from CBN and GFI

Figure 2 below indicates the slope of both IFFs and RGDP over 1970 through 2013, which reveals some interesting features. The variables almost exhibited similar behaviour all through the period but with large noticeable upward trend from 1999 through 2013. Whereas, RGDP surpassed IFFs from 1980 through 1998, IFFs surpassed RGDP from 1999 through 2013.

Figure 2: RGDP and IFFs Trend 1970 – 2013.



It agitates the mind of the researcher that economic crimes strongly persisted despite governments efforts to curb them. The wide gap noticed between economic crimes and economic growth in Figure 2 above especially within the uninterrupted democratic dispensation period perhaps holds some implication for the Nigerian economy especially as it concerns her hard earned democracy, which is believed to drive most economies of the world today. Nwabude (2014) theorized that democracy and economic progress are compatible. Furthermore, this sort of relationship in Figure 2 above makes it imperative to take a critical study of the nature of the relationship between economic crimes and the Nigerian economy especially within the uninterrupted democratic dispensation as this would shed light on why economic crimes have persisted despite government's efforts to curb them.

1.2. Statement of the Problem.

An economy is perceived to be growing if there is a quantitative sustained increase in a country's per capita output or income accompanied by an expansion in its labour force, consumption, capital and volume of trade (Todaro and Smith, 2011). The authors noted that the factors that drive economic growth among others include international trade, financial development, macroeconomic policy setting, research and development, the accumulation of physical and human capital etc.

Economic growth is often measured statistically by a country's GDP, which measures all market activities, all final goods and services exchanged for money. However, there are some economic activities that go unobserved in the calculation of the GDP such as most work done by women, including child rearing, household work, growing food for family consumption; it does not count volunteer work, charitable activities; it does not measure social peace, illegal activities such as crime and its proceeds. There is the possibility that these unobserved factors could affect the size and behaviour of the Nigerian economy.

Theoretical literature on economic crimes and economic growth has generated a rich debate over the last few years. Scholars studying economic crimes have theorized both how economic crimes can reduce economic growth and also how it can increase economic growth. On the one hand, scholars such as Ekundayo, Obasaju, AdedoyinIsola and Iseolorunkanmi (2013), Rotimi & Obasaju (2013), Ezema and Ogujiuba (2012) and OECD (2012) have argued that economic crimes are detrimental to economic growth. They point out that economic crimes modify government goals and divert resources from public purposes to private ones, thereby resulting in

deadweight loss to society. Furthermore, economic crimes may also discourage private investment by raising the cost of public administration or by generating social discontent and political unrest, which in turn, may slow economic growth. On the other hand, Colombatto (2003), Wedeman (1997) and Lui (1985) theorize that it is possible for economic crimes to be beneficial to economic growth by circumventing pervasive and inefficient regulations at low cost as well as speed up the bureaucratic process. Specifically, Wedeman (1997) observe that many corrupt countries have rapid growth rates. However, Ahmad, Ullah and Arfeen (2012) and Powell, Manish and Nair (2010) find economic crimes to be growth-enhancing at low levels of incidence and growth-reducing at high levels of incidence.

Empirical studies on Nigeria, for instance, the works of Mauro and Carmeci (2007), Nageri, Gunu and Falilat (2013) and Ekundayo et al (2013) have consistently reported a negative linear relationship between economic growth and economic crimes except the works of Ahmad et al (2012) and Aidt, Dutta and Sena (2008) who found non-linear relationship between economic growth and economics crimes in a panel of countries. It is, however, not certain if a non-linear relationship exists between economic crimes and economic growth in Nigeria as no empirical investigation on the relationship between economic growth and economic crimes have come to this conclusion.

The first step towards determining why economic crimes have persisted despite government's efforts to curb them lies in the determination of the nature of the relationship between economic crimes and growth of the Nigerian economy, which has left a wide gap in most empirical works reviewed. This failure to determine the nature of the relationship between economic growth and economic crimes has also

affected the choice of methodology employed by previous empirical works on Nigeria. This study is an attempt to offer a better methodology in the estimation of this relationship.

Furthermore, a significant challenge faced by empirical works on Nigeria is the choice of proxy for economic crimes. Most of the empirical works reviewed used corruption perception index, which is subjective in nature with very short time points, as proxy for economic crimes and suggested that the direction of causality is from economic crimes to economic growth and not vice versa. Definitely, a variable that is largely objective in nature and has larger time points is preferable to the one that is subjective.

Therefore, this study aims at providing robust econometric analysis, which deepens the understanding of the relationship between economic crimes and economic growth in Nigeria both in the short run and long run within the uninterrupted democratic dispensation period of 1999 to 2013 using a state-space time-varying methodology. It is believed that this will shed brighter light on the impact of economic crimes on economic growth.

1.3. Objectives of the Study.

In the conduct of this research, the following specific objectives will be achieved:

- a. To determine the long run relationship existing between economic crimes and economic growth in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.
- b. To verify the short run impact of economic crimes on economic growth in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

- c. To ascertain the existence of bi-directional causal relationship between economic crimes and economic growth in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

1.4. Research Questions.

This study revolved around the answering of the following research questions:

- a. How does economic crime relate with economic growth in Nigeria in the long run within the uninterrupted democratic dispensation period of 1999 to 2013?
- b. How does economic crime relate with economic growth in Nigerian in the short run within the uninterrupted democratic dispensation period of 1999 to 2013?
- c. What is the causal relationship between economic crimes and economic growth in Nigeria within the uninterrupted democratic dispensation period in Nigerian of 1999 to 2013?

1.5. Hypotheses.

As a further guide to the conduct and advancement of this study, the researcher verified the following hypotheses stated in both their null and alternative forms:

1. **H₀**: There is no long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

2. **H₀**: There is no significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

3. **H₀**: There is no bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

1.6. Significance of the Study.

The study is significant in the following ways:

For the different arms of government, this study will form one of the major yardsticks for evaluating the performance of government within the uninterrupted democratic dispensation period and also form the basis of policy formulation to improve democratic governance.

This study will serve as a reference material for econometric modeling of economic crimes in Nigeria and a tool in hand for further research.

The study would become a useful tool to calibrate policies for combating economic crimes and developing the political will towards implementing these policies. Indeed, when implementing a cost-benefit analysis, it may be convenient to increase the contrast level of economic crimes when the economic cost of crime is greater.

The study would also serve as a policy tool in the hands of policy makers such as the Ministry of Finance, Central Bank of Nigeria and National Planning Commission towards the formulation and implementation of policies that ensure prudent financial management and best international practices across all the sectors of the Nigerian economy, thus enabling them to run a sound fiscal and monetary policies.

1.7. Scope of the Study

The study spans through 1999 to 2013. However, data for the study were quarterly data, thus increasing the time periods to 60, and ensuring greater degrees of freedom. The issues discussed are limited to crime but particularly economic crimes of which illicit financial outflows (IFFs) was used as proxy. This proxy for economic crime was adopted because of the components of IFFs, which deal with major economic crimes prevalent in Nigeria as defined in Chapter Two of this research. A study of the Nigerian economy cannot be adequately completed within this work. Therefore, the researcher limited its work to economic growth. This implies that Nigerian economy for the purpose of this research is construed as economic growth. Data for the study and analysis of data relate to Nigeria only. Moreover, because of the possibility of non-linear relationship between economic crimes and economic growth, state space method that measures non-linear relationships when time series data possess break dates and are subject to regime changes while accounting for time-varying coefficient

of economic crime was employed. The possibility of transforming non-linear parameters of the model to linear parameters through logarithmic transformation also enabled the researcher to employ Ordinary Least Square technique, thus adding more research value to the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction.

This chapter is made up of four sections. These sections were discussed under the following sub-headings: Theoretical literature review where some related theories and conceptual/historical issues were discussed; Empirical literature review where related empirical works both foreign and local were discussed; Summary of literature review and justification for the study.

2.2. Review of Theoretical Literature.

This sub-heading was devoted towards reviewing various economic theories that relate economic crimes to economic growth and a discourse on conceptual issues that require more elucidation. However, the researcher discussed conceptual issues first before delving into economic theories. The theories that were discussed under basic theories and other related theories are listed below:

- a. Classical Growth Theory.
- b. Circular Flow of Income Model.
- c. Hawtrey's Trade Cycle Theory.
- d. Keynes's Theory of Business Cycle
- e. Harrod-Domar Growth Theory.
- f. Solow Growth Theory.
- g. The Endogenous Growth Model.
- h. Time Allocation Model

2.2.1. Conceptual Issues

a) Forms of Economic Crimes in Nigeria

a. Fraud.

Fraud is a generic term and embraces all multifarious means which human ingenuity can devise, which are resorted to by one individual to get an advantage over another by false representation. No definite and invariable rule can be laid down as general proposition for defining fraud as it includes surprise, trickery, cunning and unfair ways by which another is cheated. The only boundaries defining it are those which limit human knavery (Albretch & Albretch, 2006).

The Nigerian Criminal Code, in its Section 418 defines fraud as “any representation made by words, writing or conduct, of a matter of fact, either past or present, which representation is false in fact, and which the person making it knows to be false or does not believe to be true”. Its Section 419 prescribes three years imprisonment for such criminal if convicted but seven years if the thing taken by fraud is of the value of one thousand naira or above.

The banking sector in any country plays a fundamental role in increasing the level of economic activity that fosters economic growth. As intermediaries to both suppliers and users of funds, banks are effectively situated in a continuum that determines the pulse of the economy. Worldwide, the ability or inability of banks to successfully fulfill their role as intermediaries has been a central issue in some of the financial crises that have been witnessed so far (Eseoghene, 2010). The failure of banks to adequately fulfill its role arises from the several risks that they are exposed to. One of

such risks which is increasingly becoming a source of worry is, the banking risk associated with fraud (World Bank, 2013).

Okoye and Gbeji (2013) opine that the most prominent of frauds in banks and agencies of government detected in Nigeria in the recent times include: fraudulent transfer and withdrawals; use of unauthorized overdraft; posting of fictitious credits; presentation of forged cheques; conversion of banks' money into personal use; granting of unauthorized loans; insider abuse; illegal conversion of pension funds in various agencies and ministries; ghost workers fraud resulting into millions of naira paid into private pockets; abuse of political office leading to contract over billings and over invoicing, etc.

ii. Corruption

Black's Law Dictionary sees corruption as "depravity, pervasion or taint, an impairment of integrity, virtue or moral principles, especially, the impairment of public official's duties by bribery." In *Biobaku v. Police* (2012)6 NWLR Pt. 259 @ 211, His Lordship, Bairaman J. defined corruption as "the receiving of a benefit or reward or inducement to sway or deflect the receiver from the honest and impartial discharge of his duties".

The International Monetary Fund (IMF) defined corruption as "abuse of authority or trust for private benefit: and is a temptation indulged in not only by public officials but also by those in positions of trust or authority in private enterprises or non-profit organizations" (IMF, 2000).

From the above definitions, corruption, therefore, is a form of antisocial behaviour by an individual or social group which confers unjust or fraudulent benefits on its

perpetrators, which is inconsistent with the established legal norms and prescribed moral ethos of the land and is likely to subvert or diminish the capacity of the legitimate authorities to produce fully for the material and spiritual well being of all members of society in a just and equitable manner.

Chaikin and Sharman (2009) observe that corruption manifests itself in Nigeria in the form of abuse of positions and privileges, low levels of transparency and accountability, inflation of contracts, bribery/kickbacks, misappropriation or diversion of funds, under and over-invoicing, false declarations, advance fee fraud and other deceptive schemes, collection of illegal tolls, commodity hoarding, illicit smuggling of drugs and arms, human trafficking, child labour, illegal oil bunkering, illegal mining, tax evasion, foreign exchange malpractices including counterfeiting of currency, theft of intellectual property and piracy, open market abuse, dumping of toxic wastes and prohibited good, just to mention few.

Corruption exists in the public and private sectors, profit and non-profit as well as charitable organizations. It subsists both in the developing and also in the developed nations but predominant in developing countries. In Nigeria, examples of corruption are evidenced from the fraudulent misappropriation of pension funds, recycling of items in the budget among others (UNECA, 2012).

Ekundayo et al (2013) posit that corruption reduces public revenue and increases public spending. It, thus, contributes to larger fiscal deficits, making it more difficult for the government to run a sound fiscal policy. Corruption is likely to increase income inequality because it allows well positioned individuals to take advantage of government activities at the cost of the rest of the population. Rotimi et al (2013)

assert that there are strong indications that the changes in income distribution that have occurred in recent years in previously centrally planned economies have been partly the result of corrupt actions. On the one hand, corruption distorts markets and allocation of resources because it reduces the ability of government to impose regulatory controls and inspections to correct for market failures. When government does not perform its regulatory role on banks, hospitals, food distribution, transportation activities, financial markets and so on well, it loses part of its basic *raison d'être* as well as distorting incentives as individual allocate their energies to rent seeking and to corrupt practices and not to productive activities. Nageri et al (2013) further observe that corruption acts as an arbitrary tax, reduces or distorts the fundamental role of the government, reduces the legitimacy of the market economy and perhaps of democracy and is likely to increase poverty because it reduces income earning potentials of the poor and for all the above reasons, corruption is likely to reduce economic growth.

Furthermore, there is a growing worldwide concern over the spread of corruption due to so many factors. Highly corrupt nations are always perpetuated with vicious cycle of poverty, low rate of saving which leads to low incomes and which in turn leads to low investment and productivity. Others may include high illegal capital flight. Growth and development of the economy could be hampered by corruption, and could also heighten the level of poverty and unemployment and culminating in infrastructural decay (OECD, 2012).

Few examples of corruption noticed in the public sector in Nigeria are highlighted in order to shed more light on corruption in Nigeria. One Albert J. Stanley, an official of Halliburton – a United States based oil services company was alleged to have given

about \$180 million to the former Managing Director of Nigeria Petroleum Corporation (NNPC) and other top officials of Federal Government of Nigeria to secure contract for their subsidiary company called Kellogg Brown and Root (KBR) in Nigeria. In another classic case of corruption, Justice Olusola Williams of Lagos High Court in June 21, 2010, convicted the former Chairman and Chief Executive Officer of the National Drug Law Enforcement Agency (NDLEA), Mr. Bello Lafiaji and his erstwhile Special Assistant, Usman Amali for conspiracy and abuse of office for releasing one alleged drug suspect and diverting €164,300 Euros allegedly seized from the drug suspect (*The Nation*, 2010).

Furthermore, Economic and Financial Crimes Commission (EFCC) has in the past arrested and prosecuted several public officers for abuse of office and corruption. The former Governors Diepreye Alamiesiegha of Bayelsa State and Lucky Igbinedion of Edo State pleaded guilty through a process of “plea bargain” to corrupt practices and economic crimes at the Federal High Court in Lagos and Enugu, respectively. Furthermore, former Inspector General of Police, Mr. Tafa Balogun was prosecuted on 70 count charge of money laundering pursuant to section 14(1) of the Money Laundering Act, 2004. He was convicted and jailed for six months, whilst the former Senate President, Chief Adolphus Wabara, was indicted by the Senate for allegedly accepting a bribe of ₦55 million from Professor Fabian Osuji, the former Minister of Education in order to increase the latter’s Ministry’s budget, (Nuhu, 2006).

Ezema et al (2012) posit that “corruption is endemic and has eaten deep into every facet of our national life. The productive and technological base is weak, outdated, narrow, inflexible and externally dependent. The infrastructure is poor, inadequate and lacks maintenance. The effectiveness of incentives has been generally low, giving

rise to inadequate utilization of the factors of production. Furthermore, policy instability and summersaults are discouraging foreign investment despite the huge domestic market and the strategic location of the nation. The obvious effects have produced a weak private sector largely oriented towards distributive activities”.

Colombatto (2003), Wedeman (1997) and Lui (1985) theorized that it is possible for economic crimes to be beneficial to economic growth by circumventing pervasive and inefficient regulations at low cost as well as speed up the bureaucratic process. Specifically, Wedeman (1997) observe that many corrupt countries have rapid growth rates. However, Ahmad et al (2012) and Powell et al (2010) find economic crimes to be growth-enhancing at low levels of incidence and growth-reducing at high levels of incidence.

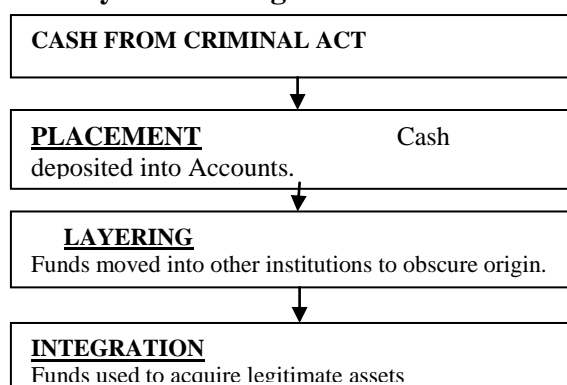
iii. Money Laundering

Financial Action Task Force (FATF), 2010, an inter-governmental body established by the governments of major industrialized countries which sets standards, develops and promotes policies to combat money laundering and terrorist financing, defined money laundering as the conversion or transfer of property, knowing that such property is derived from criminal offence, for the purpose of concealing, or disguising the illicit origin of the property or assisting any person who is involved in the commission of such offence or offences to evade the legal consequences of such actions, the concealment or disguise of the true nature, source, location, disposition, movement, rights with respect to, or ownership of property, knowing that such property is derived from a criminal offence and the acquisition, possession or use of property, knowing at that time of receipt that such property was derived from a

criminal offence or act of participation in such offence. Money laundering, therefore, is the procedure by which the proceeds of illegal acts are converted into legal activities so that the criminal origin of such proceeds is hidden. It is a process of washing clean, so to speak, 'dirty money' so as to conceal its dirty origin.

From the foregoing, therefore, it is clear that money acquired illicitly must have to be "laundered" in order for the criminal to use it legitimately. In this way, the criminal involved sets the procedure by which the proceeds of illegal acts are converted into apparently legal activities, thus concealing their criminal origin. This is usually done through three systems and stages of laundering known as placement, layering and integration as can be seen in Figure 3 (Osisioma, 2009). Money laundering scheme may not be complete or successful unless the paper documentation is destroyed or the inflow of illegally accrued money cannot be easily discovered. The objective here is to hide the origin of the illegal funds and also to put some trench of currency into other assets or 'fronts' through over statement of reported revenues, over statement of reported expenses and balance sheet laundering. Money laundering is considered to be the world third largest business and it is estimated that between \$500 billion and \$1.5 trillion gets laundered annually across national and international borders (IMF, 2012).

Figure 3: Money Laundering Process.



Source: Osisioma, 2009

Adegbe (2012) observes that the Nigerian legal framework to checkmate the challenge of money laundering started with the promulgation of the following decrees: The Failed Bank (Recovery of Debts) and Financial Malpractices in Banks Decree No. 18 of 1994, Money Laundering Decree No. 3, of 1995 and The Advanced Fee Fraud and Other Related Offences Decree, 1995. However, between 1999 to date, government has taken the following legislative measures by enacting also these statutes: the EFCC Act, 2002, Money Laundering Amendment Act, 2002, Money Laundering Prohibition Act, 2003, Money Laundering Prohibition Act, 2004, EFCC Act, 2004, Advanced Fee Fraud and Other Related Offence (Amendment) Act, 2005 and Advanced Fee Fraud and other Related Offences Act, 2006.

Money laundering affects indigenous entrepreneurship, more so with trade liberalization. Proceeds of economic crimes are used to bring in and ‘dump’ goods in the market, which are sold at prices below cost price in the exporting country. The reason for selling at a very low price is that economic criminals (money launderers) import so as to transfer their dirty money and not for profit motives. The situation depresses domestic production due to the uncompetitive pricing of the imported products. Because the return on investment on domestic production and other legitimate business activity will almost inevitably be lower than the high returns made by money launderers, domestic production is depressed by their activities. This situation affects small and medium scale enterprises which are the growth targets the government is addressing. Consequent to this development, foreign investment will decline, because investors will be scared of an economic environment where illicit monies are allowed to play a significant role in the allocation of resources (UNECA, UAC, 2012).

Kar (2011) opines that money laundering impacts on the poorest in society potentially and most destructively too. It eviscerates foreign aid. It is argued that for every dollar, which is given to developing countries in aid, ten dollars flow back out in illegal funds. Half of the one trillion dollars of dirty money which flows across borders each year comes from developing countries. Nothing hurts the poor more in Africa than the outflow of illicit money because that money never comes back. Nigeria in particular may have had a higher percentage of its GDP stolen than any other country in Africa.

Furthermore, Haken (2011) observed that the clandestine financial activity that money laundering entails leads to volatile financial markets and weakening of certain businesses. Because it is fed by an unaccountable and unpredictable black market, money laundering can involve cross-border transfer of assets that legal private and state actors cannot anticipate. The International Monetary Fund has registered inexplicable fluctuations in currency demand, prudential risks to bank soundness, contamination effects on legal transactions and heightened unpredictability of international capital flows and exchange rates due to money laundering (IMF, 2012). Osisioma (2009), states that in Nigeria, embezzlement of federal funds by certain state government actors has led, in many cases, to the naira's devaluation and concomitant sparse supply of sterling and US dollars as launderers purchase foreign currency to export. A more unstable financial environment precipitated by money laundering means a financial environment less conducive to sustained growth. The East Asian Financial Crisis of 1997, although an extreme case, was an example of how quick and unpredicted outflows of capital crippled several economies.

iv. Illicit Financial Outflows (IFFs)

Illicit Financial Outflows (IFFs) refer to money that is illegally earned, transferred, or utilised. Somewhere at its origin, movement or use, the money broke laws and hence it is considered illicit (Reuter, 2012, Kar, 2011). This definition above is a departure from capital flight. Generally, capital flight is understood as the movement of funds abroad in order to secure better returns, often in response to an unfavourable business climate in the country of origin (Kant, 2002). Capital flight may be legal or illegal. However, IFFs present a new conceptual conjecture that departs from capital flight both conceptually and in policy terms as shown below: the term IFFs reflect a more narrow definition that focuses on unrecorded capital flows that derive from criminal, corrupt (bribery and theft by government officials) and illicit commercial activities (Baker, 2005). On the other hand, flight capital takes two forms: the legal component that stays on the books of the entity or individual making the outward transfer while the illegal component is intended to disappear from records in the country from which it comes. By far the greatest part of unrecorded flows are indeed illicit, violating the national criminal and civil codes, tax laws, customs regulations, VAT assessments, exchange control requirements, or banking regulations of the countries out of which the unrecorded/illicit flows occur (Kar and Cartwright, 2012).

Khan et al, 2012 give the main components of IFFs as:

- ❖ The proceeds of theft, bribery and other forms of corruption by government officials;
- ❖ The proceeds of criminal activities including drug trading, racketeering, counterfeiting, contraband and terrorist financing; and

- ❖ The proceeds of tax evasion and laundered commercial transactions.

OECD, 2013 observes that there are two main channels through which illicit capital, unrecorded in official statistics, can leave a country. The World Bank Residual Model captures the first channel as external accounts of the country. The second type of illicit flows, generated through the mispricing of trade transactions, is captured by the Trade Mis-invoicing Model which uses IMF Direction of Trade Statistics. Specifically, the World Bank Residual model compares a country's source of funds with its recorded use of funds. Sources of funds—the countries inflows of capital—include increases in net external indebtedness of the public sector and the net inflow of foreign direct investment. The net external indebtedness is derived by calculating the change in the stock of external debt which is obtained from the World Bank's Global Development Finance Database. Use of funds includes financing the current account deficit and additions to central bank reserves. These data series along with data on foreign direct investment are obtainable from the IMF balance of payments database. According to the model, whenever a country's source of funds exceeds its recorded use of funds, the residual comprises unaccounted for and hence illicit financial outflows.

Kar et al (2012) further state that trade mis-invoicing has long been recognized as a major conduit for illicit financial outflows. By overpricing imports and under-pricing exports on customs documents, residents can illegally transfer money abroad. To estimate trade mis-invoicing, a developing country's exports to the world are compared to what the world reports as having imported from that country, after adjusting for insurance and freight. Additionally, a country's imports from the world are compared to what the world reports as having exported to that country.

Discrepancies in partner-country trade data, after adjusting for insurance and freight, indicate mis-invoicing.

Haken (2011) posits that the costs of this financial hemorrhage have been significant for African countries. In the short run, massive capital outflows and drainage of national savings have undermined growth by stifling private capital formation. In the medium to long term, delayed investments in support of capital formation and expansion have caused the tax base to remain narrow. Naturally and to the extent that illicit capital flight may encourage external borrowing, debt service payments also increased and further compromised public investment prospects. Furthermore, World Bank (2013) affirms that illicit capital flight has had adverse welfare and distributional consequences on the overwhelming majority of poor in numerous countries in that it heightened income inequality and jeopardized employment prospects. In the majority of countries in the African sub-region, unemployment rates have remained exceedingly high in the absence of investment and industrial expansion. As outlined in the 2012 Economic and Social Development Report for Africa, unleashing Africa's productive capacity requires increasing investment in infrastructure, promoting technology transfer and innovation for value addition and boosting agricultural productivity, amongst others (UNECA, UAC, 2012).

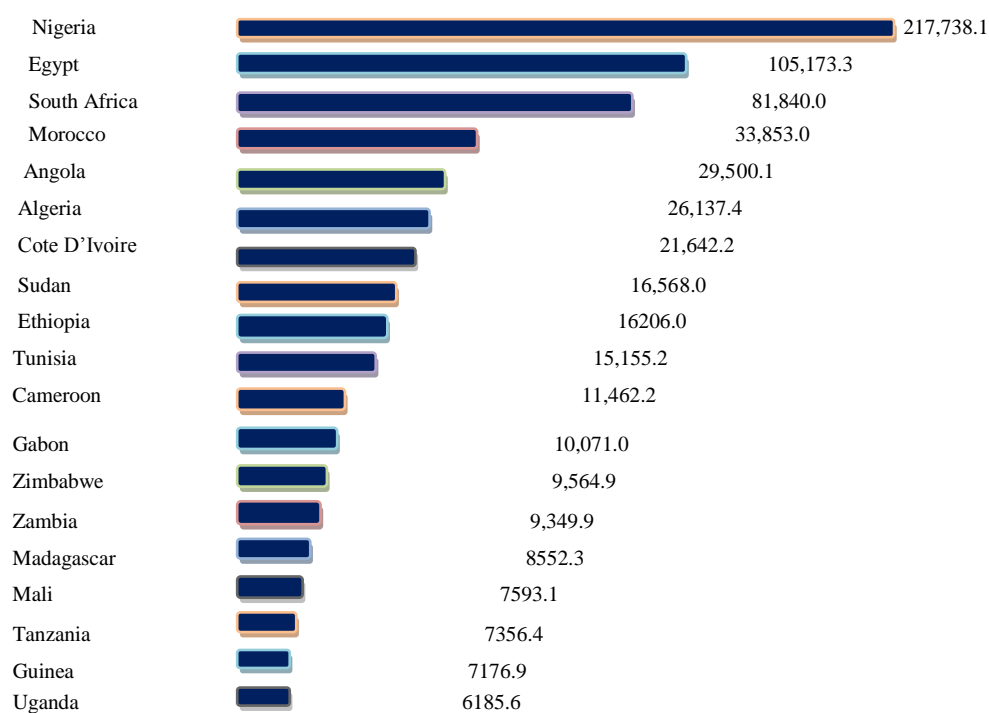
Beker, 2005 estimates that laundered commercial money through multinational companies constitute the largest component of IFFs followed by proceeds from criminal activities and lastly corruption.

However, the proceeds of these components of IFFs are so intricately connected that makes it virtually impossible to disentangle these components into concrete unified

units. OECD, 2012 observed that corruption and money laundering are symbiotic: not only do they tend to co-occur, but more importantly, the presence of one tends to create and reciprocally reinforce the incidence of the other. Equally, corruption would facilitate transfer pricing. Multinational corporations are able to buy off the relevant national authorities or even lobby in favour of low taxes, lax regulations and weak oversight provisions.

Nigeria ranks number one in the list of African countries where illicit financial outflows are enormous as can be seen in Figure 4 below. OECD (2013) asserts that so long as illicit financial outflows continue to hemorrhage out of poor African countries over the long term at a rapid pace, efforts to reduce poverty and boost economic growth is believed to be thwarted as income distribution becomes ever more skewed leading to economic and political instability.

Figure 4: Illicit Financial Outflows from Africa from 1970 - 2012.
Top 20 African Countries cumulative Illicit Outflows (US \$million).



Source: Car & Cartwright-Smith, 2012

OECD, 2013 further observes that illicit financial outflows originating in developing countries – from money laundering, tax evasion and bribery – often reach OECD countries. Recognizing these risks, OECD countries have taken action to avoid being safe havens for illegal money. They, therefore, offered the following interim measures among others:

A. On Money Laundering:

They observed that illicit financial outflows often leave developing countries via the commercial financial system. Through this system, funds are laundered to disguise their origin. Anti-money laundering and counter-terrorist financing (AML/CTF) regimes are effective tools to prevent illicit funds from being held, received, transferred and managed by major banks and financial centres.

B. On Tax Evasion:

They observed that fighting international tax evasion is important because it is a major source of illicit financial flows from developing countries. Sub-Saharan African countries still mobilise less than 17% of their gross domestic product (GDP) in tax revenues. To combat tax crimes, effective exchange of information among countries is essential.

C. On International Bribery:

An estimated USD 1 trillion is paid each year in bribes. Reducing bribery reduces the opportunities for illicit gains and hence illicit financial outflows. The 1997 OECD Anti-Bribery Convention tackles the supply side: the bribe payers. The criminalization of bribe payers outside of developing countries, as well as their effective prosecution is central for drying up this source of illicit financial flows.

D. On Freezing, Recovering and Repatriating Stolen Assets:

They advised OECD countries to do the following:

- Ratify the United Nations Convention against Corruption and the United Nations Convention against Transnational Organized Crime.
- Install and enforce an effective legal framework.
- Establish adequately resourced and trained specialist units which investigate stolen assets and prosecute offenders.
- Implement comprehensive, strategic policies and best practices for rapid tracing, freezing and repatriating stolen assets, such as non-conviction based forfeiture, acceptance of foreign confiscation orders, recovery by civil trial and assistance to foreign jurisdictions.
- Enhance information sharing on asset recovery cases with other jurisdictions and between institutions.
- Provide technical assistance, capacity-building support and case assistance to other countries.

E. Finally on what developing countries should do:

They gave the following suggestions:

- ❖ Request and engage in mutual legal assistance.
- ❖ Demonstrate commitment to combating corruption and bringing the guilty to justice.
- ❖ Examine the best options for managing returned funds.
- ❖ Discuss with developed countries proper cost-sharing arrangements for asset recovery cases.

b) Historical Issues

Economic crimes in Nigeria have some historical underpinnings, which would shed light on the persistence of economic crimes despite government's numerous policies and efforts to curb them. The history of economic crimes in Nigeria traversed through some markable epochs. The first epoch was the colonial era. Colonialism, western education, the development of urbanization and monetization of the economy were all attended by growth of individualism. All these brought dramatic changes in relationship and the way of doing things in Nigeria. The consular court system also disrupted the traditional administration, which the white colonialists met. In its place was appointed the highly flawed indirect rule under which appointment of personnel was arbitrarily made. Oftentimes, appointees were unknown people, different from the traditional heads and chiefs. Many of the appointed people were of questionable character who often became intoxicated by power, leading them to abuse and misuse of office, including showing favours to criminals. Corruption in the indirect rule system soon got to the attention of the colonialists, as most of the warrant chiefs prospered materially through the proceeds of economic crimes of bribery and corruption. Also the local councils established by the colonialists were fertile grounds for economic crimes. Therefore, the colonial heritage, legal traditions, religion, and geographical factors seem associated with economic crimes and other measures of government dysfunction.

During the post-colonial period, the nationalists who took over the government from the colonialists before full independence was attained were not exonerated from economic crimes. The Foster-Sutton Commission of Inquiry set up to look into the management of the African Continental Bank owned by the Eastern Region

Government in the mid 1950s and the Coker Commission of Inquiry in the early 1960s which considered the affairs of some Western Region Government corporations found the conduct of the key actors of government as falling short of high ethical standards expected of public office holders. Also, at the federal government and regional levels, economic crimes characterized the First Republic (1960-1966). There were electoral malpractices involving the use of money to buy votes, employment of thugs to intimidate political opponents, hiring of assassins to eliminate opponents, hijacking of electoral boxes and materials, and the printing of fake voting cards. Naturally, those who attained power through corrupt means had no other ambition than to serve self and promote ulterior interests at the disadvantage of the larger society. The military that seized power from their civilian counterpart soon became more corrupt. It is widely believed that the worst civilian regime is better than the best military regime.

The composite effect of all of these is that the once cherished culture of probity and honesty in public affairs soon yielded place to a culture of graft and the standard of public morality continued to deteriorate, giving way for serious economic crimes.

One of the industrial policies of this period was the Import Substitution Industrialisation (ISI). ISI is an industrial development program based on the protection of local infant industries through protective tariffs, import quotas, exchange rate controls, special preferential licensing for capital goods imports, subsidized loans to local infant industries, etc. It was a deliberate effort to replace major consumer imports by promoting the emergence and expansion of domestic industries such as textiles, shoes, household appliances, usually requiring the imposition of protective tariffs and quotas to protect new or infant industries. Ogujiuba et al (2011) observe

that Sub-Saharan Africa embarked on ISI as early as the post war II decades, consolidating that process in the post-colonial decades of the 1960's and 1970's and employing also protectionist industrial policy. However, in stark contrast to East Asia, Sub-Saharan Africa's ISI ended up in a cul-de-sac; it failed to develop capacities for export manufactures and even failed to produce enough to serve expanding domestic demand. They further asserted that African's development problems, in particular Nigeria's inability to undergo industrial take off, are blamed on lack of openness to global trade and investments index pinned by government interventions. The widely circulated Berg Report had blamed Sub-Saharan Africa's development crisis on price distortions (over-valued exchange rates, subsidized interest rates, etc) underpinned by heavy government interventions. The study noted that the Berg Report provided a point of departure for the neoliberal structural adjustment programmes (SAPs) formulated for Sub-Saharan Africa and the developing world by the Bretton Woods institutions – the International Monetary Fund (IMF) and World Bank – in the 1980s and 1990s. This paradigm shift watered the environment for the development, nurture and entrenchment of modern economic crimes in Nigeria.

Following the abandonment of ISI, Structural Adjustment Programme (SAP) was introduced in Nigeria in the 80's. SAPs consist of a set of economic policies designed to generate rapid and sustainable economic growth with macroeconomic stability. SAPs that evolved over the past decades initially focused on eliminating fiscal and external imbalances and reviving growth. The implementation of SAPs has involved the following main subject areas: the liberalization of prices and marketing systems; financial sector policy reforms; international trade regulation reforms; government budget rationalization; divestiture and privatization of parastatals and civil service

reforms. These elements have so far been implemented in various degrees. Because the market is expected to play a critical role in the growth and adjustment process, structural adjustment programmes also emphasize market liberalization, market competition and the development of the private sector. The key ingredients of structural adjustment programmes are, therefore, based on an economic model of private ownership, competitive markets and an outward-oriented development strategy. Developing free and competitive markets and liberalizing the price systems are necessary for allocation efficiencies. A stable macroeconomic environment is also essential to allow markets to operate efficiently and investors to make correct decisions based on market signals.

Tamuno et al (2012) posit that the SAPs foisted on developing countries during the 1980s and 1990s by the International Monetary Fund (IMF) and the World Bank with the complicity of many advanced capitalist states destroyed the economic and social progress made in many of the countries after independence from colonial rule. Many of the structural adjustment policies led to government downsizing or withdrawing the provision of social services. Since then the governments in West Africa no longer regard the provision of social services as a primary duty, thereby creating a huge population of deprived and excluded citizens. Some of the programmes led to privatization or sale of public enterprises; majority of such enterprises closed down after their assets were stripped by the buyers in many countries, especially Nigeria. The stage was finally ripe and set for different forms of economic crimes with a large army of unemployed youths seeing economic crimes as a survival strategy.

The Military Periods (1966-1979; 1983-1998) corresponding to the post colonial era showed obvious disregard to rule of law as they always suspended the constitution,

which is the ground norm of the society. Although the military gave prominent position to economic crimes as the reason for staging coups and the subsequent coups, but unfortunately, military regimes tended to be more corrupt than the regimes they seemed to have come to correct. Despotism, which inevitably characterizes military regimes, destroyed a culture of accountability. Their ethical programmes such as WAI-C (War against Indiscipline and Corruption) and MAMSER (Mass Mobilization and Socio- Economic Reconstruction) introduced against economic crimes were short-lived and largely ineffectual.

Thus, the extensive liberalization that accompanied SAP with the export promotion focus which was embraced as an alternative and the concomitant globalization of the Nigerian economy intertwined with a social context characterized by (a) youthful and growing population without matching growth in the economy to provide employment; (b) deterioration of social services-- especially education, health care, and housing to cater for a growing population; (c) wide inequality in access to basic social and welfare services as well as wealth in a country where majority are absolutely poor; (d) aspiration and taste for Western lifestyle by young people and diminishing influence of traditional social control and safety-nets, which are fuelling drug use and abuse, internet scam, illegal migration and human trafficking (f) the advancement in information and communication technologies nurtured the Nigerian economy for use by economic criminals.

c) Legal Issues

Local Jurisprudential Response against Economic Crimes in Nigeria

Several agencies have been established by successive governments to curb economic crimes in Nigeria. The unstoppable spread of economic crimes necessitated the adoption of measures and strategies by successive governments which include the establishment of agencies, commissions and other bodies charged with the responsibility of curbing economic crimes. These bodies include:

a. Economic and Financial Crimes Commission

Economic and Financial Crimes Commission (EFCC) was established in 2003 to complement the zero tolerance for corruption crusade of Obasanjo's administration. This anti-graft body was established by Economic and Financial Crimes Commission Establishment Act, 2004. The Act mandates the EFCC to combat financial and economic crimes in Nigeria. The Commission is empowered to prevent, investigate, prosecute and penalise economic and financial crimes criminals and is charged with the responsibility of enforcing the provisions of other laws and regulations relating to economic and financial crimes, including: Economic and Financial Crimes Commission Establishment Act, (2004), Money Laundering Act, 1995, Money Laundering (Prohibition) Act, 2004, Advance Fee Fraud and Other Fraud Related Offences Act, 1995, Failed Banks (Recovery of Debts) and Financial Malpractices in Banks Act, 1994, Banks and other Financial Institutions Act, 1991; and Miscellaneous Offences Act. Others agencies are:

b. The Independent Corrupt Practices and Other Related Offences Commission

(ICPC).

- c. Code of Conduct Bureau (CCB).
- d. Nigerian Extractive Industries Transparency Initiative (NEITI).
- e. Budget Monitoring and Price Intelligence Unit (BMPIU).
- f. Nigerian Investment Promotion Commission (NIPC).
- g. National Drug Law Enforcement Agency (NDLEA).
- h. The National Agency for Food, Drug Administration and Control (NAFDAC).

Laws and Decrees Promulgated in Nigeria to Curb Economic Crimes.

- a. Investigation of Assets (Public Officers and Other Persons) Decree of 1968.
- b. The Corrupt Practices Decree 1975.
- c. Public Officers (Special Provisions) Decree 1976.
- d. Recovery of Public Property Decree 1984.
- e. National Drug Law Enforcement Agency (NDLEA) Act No. 48 of 1989.
- f. The Code of Conduct Act 1989.
- g. The Public Complaints Commission Act, Cap 377, Laws of the Federation 1990.
- h. The Code of Conduct Bureau and Tribunal Act Cap 235, Laws of the Federation 1990.
- i. Banks and Other Financial Institutions Act, 1990.
- j. Recovery of Public Property (Special Military Tribunal) Act Cap 389, Laws of the Federation 1990.
- k. The Criminal Code Act Cap 77, Laws of the Federation 1990.
- l. The Penal Code, Northern States Federal Provisions Act —Cap 345, Laws of the Federation 1990.

- m. The National Agency for Food, Drug Administration and Control (NAFDAC) Act No. 19 of 1993.
- n. The Failed Banks (Recovery of Debts) and Financial Malpractices Act No. 18 of 1994.
- o. Advance Fee Fraud and other Related Offences Act No. 13 of 1995.
- p. The Foreign Exchange (Miscellaneous Provisions) Act No. 17 of 1995.
- q. The Money Laundering Act No. 3 of 1995.
- r. Failed Banks Act No. 16 of 1996.
- s. Corrupt Practices and Other Related Offences Act of 2000.
- t. The Independent Corrupt Practices and other related Offences Act 2000.
- u. Money Laundering Act 2003.
- v. Trafficking in Persons (Prohibition) Law Enforcement and Administration Act 2003.
- w. Economic and Financial Crimes Commission (EFCC) Act, 2004.
- x. Public Procurement Act, 2007.
- y. Fiscal Responsibility Act, 2007.
- z. Money Laundering Act, 2011. Etc.

Regional and International Initiatives to Combat Economic Crimes

As economic crimes become increasingly transnational, the need for regional and international cooperation through joint taskforces and law enforcement became necessary. Some of the regional and international responses have been in the form of conventions, protocols, mutual legal assistance, multi-lateral and bi-lateral agreements

between countries and national law enforcement agencies. Some of the critical instruments include:

- The United Nations Convention against Transnational Organised Crime, which provides a plan for the fight against organised crime.
- The UN Convention against Corruption.
- The African Union Convention against Corruption, which seeks to strengthen cooperation between state parties and provides access to mechanisms required to prevent, detect, punish and eradicate economic crimes and other related offences.
- The ECOWAS Protocol on the Fight against Corruption, which criminalizes corruption and seeks to develop self-regulating codes for professional conduct both in the private and public sector.
- The ECOWAS Convention on Small Arms and Light Weapons, which seeks to regulate and control the transfer, import and export of small arms and light weapons, ammunition and other related materials.
- The ECOWAS Protocol relating to the Mechanism for Conflict Prevention, Management, Resolution, Peacekeeping and Security, which promotes close cooperation among the security services of member states as well as the harmonization of domestic laws in accordance with relevant ECOWAS Convention on Mutual Assistance in Criminal Matters, and Extradition;
- The Intergovernmental Action Group against Money Laundering in West Africa (GIABA), established as a specialised institution with the objective of protecting the economies of ECOWAS member States by combating money laundering, corruption and terrorist financing, and working with national central banks and financial institutions in the region.

- The West African Police Chiefs Committee (WAPCCO), an association of police chiefs in the region with the objective of designing strategies for combating trans-border crime.
- The International Criminal Police (Interpol), which promotes the widest possible mutual assistance between all criminal police authorities within the limits of the laws existing in the different countries.
- The ECOWAS Convention on Mutual Assistance in Criminal Matters and the ECOWAS Convention on the Extradition, aimed at enhancing collaboration between criminal justice agencies of member countries.
- The Nigeria-Benin Joint Patrol Programme, code-named 'Operation Prosperity' which began on 28th September, 2011 for the purpose of combating trans-border crime along Benin's coast.
- West African Coastal Initiative (WACI)
- West Africa Commission on Drugs (WACD)
- The West African bureau of the International Criminal Police Organisation (Interpol).

2.2.2. Basic Theories

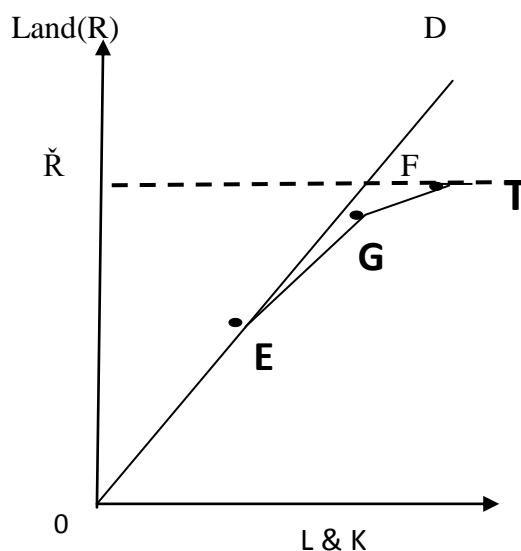
a) Classical Growth Theory.

This is related to the works of Adam Smith, David Ricardo and Robert Malthus of the 17th century in England. They sought to determine the sources and composition of growth and what can hinder growth. Barro and Sala (2004) state the assumptions of this theory to include: emphasis laid on the importance of economies of scale; price mechanism guides the flow of resources; capital formation is driven by the rate of

profit; profit depends on wages and is a negative function; the extent of the national market limits division of labour; and land is fixed in supply while labour and capital are not.

The major conclusion of the theory is represented in Figure 5 below.

Figure 5: Classical Growth Path.



Along OEGT, growth occurs and hits a bar and dissipates. The economy grinds to a halt because there is no profit, no investment and no growth, while along OED, growth continues without a bar. National output expands along OED path if and only if land is not fixed. However, in this model, land is fixed. Therefore, under the hypothesis that productive land will be used up first and low productive land last, income will rise first along OE, then will slow down along EG as less productive land is cultivated, eventually approaching T where zero output or income growth sets in at T. At T, capital (K) and labour (L) are expanding, output is not increasing but fixed and L and K are increasing causing stagnant growth.

This theory offers an explanation of the outcome for growth or the distribution of income between classes in the society. The way income is distributed among these classes determines whether growth occurs or how growth proceeds. It also determines the saving behavior of classes in the society which is critical for growth. Therefore, growth flows from the distribution of income. High level of corruption distorts the allocation of public resources and leads to a more unequal distribution of income. Gupta, Davoodi, & Alonso-Terme (2002) in a study on corruption, inequality and poverty observed that high levels of economic crimes produce a more unequal distribution of income under some conditions, but the mechanism may be complex—operating through lower investments in education and lower per capita incomes.

Furthermore, from the methodological point of view, the division of the economy into sectors and income classes permits the understanding of the savings behaviour of the economy and the implications of this for the prospects of the economy. This makes the theory compare with Harrod-Domar who also stressed the importance of savings in the components of growth. Economic crimes such as corruption, money laundering etc are factors that diminish individual and national savings. Rotimi et al (2013) assert that there are strong indications that the changes in income distribution that have occurred in recent years in previously centrally planned economies have been partly the result of corrupt actions. Similarly, Jain (1998) in his empirical research into the relationship between earnings inequality and crime generally find that more inequality is associated with more crime.

b) Circular Flow of Income Model.

A continuous flow of production, income and expenditure is known as circular flow of income. The circular flow of income involves two basic principles:

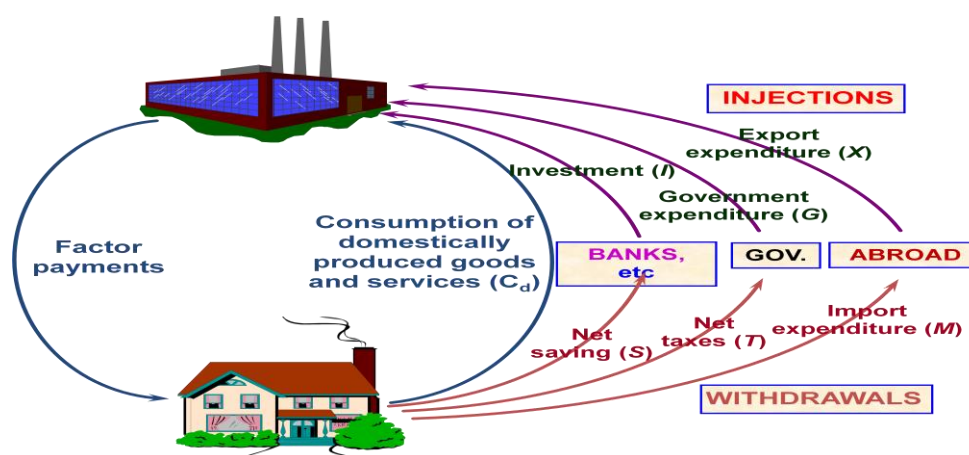
1. In any exchange process, the seller or producer receives the same amount what the buyer or consumer spends.
2. Goods and services flow in one direction and money payment to get these flows in return direction, causes a circular flow.

Mankiw, 2006, posits that the four-sector model of the circular flow of income is a more realistic representation of the economy than the two sector model. Unlike the two-sector model (that assumes no financial, government and overseas sectors; no savings), the Four-Sector Model relaxes all the assumptions of a Two-Sector Model thereby making it possible for the introduction of three more assumptions. The first is the existence of the financial sub-sector that consists of banks and non-bank intermediaries who engage in the borrowing (savings from households) and lending of money. In terms of the circular flow of income model, the leakage that financial institutions provide in the economy is the option for households to save their money. This is a leakage because the saved money cannot be spent in the economy and thus is an idle asset as not all output will be purchased. The injection that the financial sector provides into the economy is investment (I) into the business/firms' sector. The Economic theory posited by Keynes observed that all that is saved may not be invested, thus producing disequilibrium. Thus, banks sometimes are conduits for money laundering.

The first sector introduced into the circular flow of income is the Government Sector that consists of the economic activities of local, state and federal governments. The leakage that the government sector provides is through the collection of revenue through taxes (T) that is provided by households and firms to the government. Economic crimes involving tax evasion and commercial mis--invoicing could shrink tax revenue. For this reason they are a leakage because it is a leakage out of the current income, thus reducing the expenditure on current goods and services. The injection provided by the government sector is government spending (G) that provides collective services and welfare payments to the community. An example of a tax collected by the government as a leakage is income tax and an injection into the economy can be when the government redistributes this income in the form of welfare payments, which is a form of government spending back into the economy. When tax revenue shrinks due to economic crimes, government expenditure is affected.

The final sector in the circular flow of income model is the overseas sector which transforms the model from a closed economy to an open economy. The main leakage from this sector are imports (M), which represent spending by residents into the rest of the world. The main injection provided by this sector is the exports of goods and services which generate income for the exporters from overseas residents. Over-invoicing of export acts as a leakage instead of injection. The figure below sheds more light on the flow.

Figure 6: Four-Sector Circular Flow of Income Model.



The Circular Flow Theory was first advanced by the Physiocrats, a school of economics in the 1700s. The major proponent of the Physiocratic view, Francis Quesnay (1694-1774), wrote in 1758 that the circular flow was a natural order in economics and self-sustaining.

Quesnay proposed that the flow had an inherent self-correcting mechanism and therefore did not need to be directed by government. The circular flow created a balance by automatically decreasing and increasing consumer spending levels and business investment when needed.

The significance of the study of circular flow of income to this research can be seen in the measurement of national output/income. National income is an estimation of aggregation of any of economic activity of the circular flow. It is either the income of all the factors of production or the expenditure of various sectors of the economy. However, aggregate amount of each of the activity is identical to each other. Again, the circular flow of income signifies the interdependence of each activity upon one another. For the economy to be in equilibrium, all the behaviours of all the

components (both observed and unobserved) of the national income are important. Gupta et al (2002) in a study on corruption, inequality and poverty observed that high levels of economic crimes produce a more unequal distribution of income under some conditions, but the mechanism may be complex—operating through lower investments in education and lower per capita incomes.

Equilibrium matters and for there to be equilibrium, withdrawals must equal injections into the economy or planned expenditure equals planned output. Any divergence produces disequilibrium.

Table 2: Leakages and Injections in a four-Circular Flow Model

LEAKAGES	INJECTION
Saving (S)	Investment (I)
Taxes (T)	Government Spending (G)
Imports (M)	Exports (X)

Illicit financial outflows (Money Laundering, import over-pricing and export under-pricing, corruption, wastes) could make $S + T + M > I + G + X$, which lowers the levels of income, output, expenditure and employment causing a recession or contraction in the overall economic activity. But if $S + T + M < I + G + X$, the levels of income, output, expenditure and employment will rise causing a boom or expansion in economic activity.

A simple model of the national income can be written as:

$$Y = C + I + G + (X-M)$$

(1)

Where Y = National Output, C = Consumption, I = Investment, G = Government Expenditure, $X-M$ = Net Export.

This model was used to estimate the national output with economic crimes as one of the explanatory variables.

2.1.3. Hawtrey's Trade Cycle Theory.

This theory was developed by R.G. Hawtrey in 1929 in USA. According to him, trade cycle is purely a monetary phenomenon. Changes in the flow of money are the sole and sufficient cause of changes in economic activity. The flows of money are approximately equal to consumer outlays which may be termed as MV , if V is the income velocity of circulation of money. If the quantity of money and credit are expanded, demand exceeds anticipations, stocks decrease and larger orders are placed for replenishment of stocks. This brings about a rise in prices, production, employment and factor incomes. In an opposite situation, a reduction in the quantity of money (through illicit financial outflows and other means) causes a contraction in demand. Stocks will accumulate and prices decline. This will cause losses. Production will fall; unemployment will swell; and agonizing downward movement will gather force. However, Hawtrey has not altogether ignored the impact of non-monetary factors like earth quakes, wars, and strikes, which can cause a general impoverishment.

The expansion or upswing in the economic system has been attributed to the driving force of credit expansion. Banks faced with the accumulation of excess reserves liberalise the terms of credit. Borrowing may be stimulated in various ways. The banks may apply a less strict standard to the security offered. They may extend the

maximum period for which they are willing to lend. No discrimination may be made about purposes for which the loans are to be utilized. The main instrument for encouraging borrowing by the businessmen is the reduction of the discount rate. Thus, under the circumstances of easy bank credit, a process of cumulative expansion of productive activity is set in. The bank finances make the wholesalers place larger orders to the manufacturers for raising their stocks of goods. This induces additional production and employment and the money created by the banks is received by the factors of production as incomes. The increased personal incomes will raise the monetary demand (consumer's expenditure) which will give further momentum to the economic activity. This results in a cumulative expansion of productive activity. As the cumulative expansion proceeds, prices are quoted higher and higher. When prices rise, dealers have a further inducement to borrow, since the rising prices affect the business activity in the same manner as a fall in interest rates.

Prosperity stops when credit restraints are imposed by banks. Extension of credit is stopped and pressure is applied upon business firms for the recovery of outstanding loans. This results in the emergence of contraction. The credit restrictions and insistence on repayment of loans by banks will force the firms to dispose of the stocks which results in a fall in prices. As the prices fall, losses appear and the producers curtail production, workers are laid off; factor incomes decline; and there is a decline in consumer outlays which depresses sales, causing stocks to accumulate and the resultant losses continue to aggravate the downward tendencies. Thus, it is evident that the critical factor in precipitating the downturn is the contraction of bank credit.

World Bank (2013), points out that finance matters, both when it functions well and when it functions poorly. Supported by robust policies and systems, finance works

quietly in the background, contributing to economic growth and poverty reduction. However, impaired by poor sector policies, unsound markets, and imprudent institutions, finance can lay the foundation for financial crises, destabilizing economies, hindering economic growth, and jeopardizing hard-won development gains among the most vulnerable. When financial systems perform their functions poorly, they hinder economic growth, curtail economic opportunities, and destabilize economies. For example, if financial systems collect funds and pass them along to cronies, the wealthy, and the politically connected, it slows economic growth and blocks potential entrepreneurs. The IMF also notes that the volume of clandestine movement of finance in and outside nations put the domestic and international financial stability at great risk.

c) Keynes Theory of Business Cycle

John Maynard Keynes has made an important contribution to the analysis of the causes of business cycles in 1939 and according to Keynes, the level of income, output or employment is determined by the level of aggregate effective demand. A higher level of aggregate demand will result in greater output, income and employment and a lower level of aggregate demand will result in smaller amount of goods and services. Hence, the changes in the level of aggregate demand will bring about fluctuations in the level of income, output and employment.

Keynes stated that fluctuations in economic activity are due to the fluctuations in aggregate effective demand. Thus, a fall in aggregate effective demand will create the conditions of recession or depression. If aggregate demand is increasing, economic expansion will take place. Keynes also noted that aggregate demand is composed of demand for consumption goods and demand for investment goods. Thus, aggregate

demand depends on the total expenditure of the consumers on consumption goods and entrepreneurs on investment goods. A simple algebraic expression of the above idea is stated in Equation 2.

$$Y = \{ \text{Aggregate Demand (AD)} = C + I + G + (X-M) \} \dots\dots\dots 2$$

Where Y = National Income/Output, C = Consumption, I = Investment, G = Government expenditure, $X-M$ = Net Export.

The Circular Flow of Income Model has given an insight on some of the factors that contribute to the changes in AD. John Maynard Keynes aggregate demand is similar to the circular flow model and the two were adopted in this work.

To Keynes, the propensity to consume is almost stable in the short run and fluctuations in aggregate demand are primarily due to the fluctuations in investment demand. Hence, it is fluctuations in investment demand that brings about business cycles in the economy and fluctuations in investment are due to fluctuations in the marginal efficiency of capital (M.E.C). The volume of private investment depends upon (i) the rate of interest and (ii) the marginal efficiency of capital. The rate of interest is more or less stable and hence the M.E.C is the real strategic variable which determines the volume of private investment. Hence, it is the fluctuations in marginal efficiency of capital that cause fluctuations in investment and fluctuations in income, output or employment.

Keynes has shown that changes in investment will have its effect on output, income or employment. This is explained in terms of multiplier which shows that there will be a manifold change in income as a result of an initial change in investment. As such,

changes in investment will get magnified when multiplier is working during the upswing or downswing of a business cycle.

2.2.3. Other Related Theories

d) Endogenous Growth Model.

Neoclassical theory credits the bulk of economic growth to an exogenous or complete independent process of technological progress. Though intuitively plausible, this approach has at least two insurmountable draw backs. Jhingan, 2009 reiterates that first, using the neoclassical framework, it is impossible to analyse the determinants of technological advance because it is completely independent of the decisions of economic agents. And second, the theory fails to explain large differences in residuals across countries with similar technologies (the Asian Tigers). In other words, a great deal of faith has been placed in a poorly understood external process for which there is little theoretical or empirical support. According to neoclassical theory, the low capital-labour ratio of developing countries promises exceptionally high rates of return on investment. The free-market reforms imposed on highly indebted countries by the World Bank and International Monetary Fund should thus have prompted higher investment, rising productivity and improved standard of living. Yet, even after the prescribed liberalization of trade and domestic markets, many LDCs experienced little or no growth and failed to attract new foreign investment or to halt the flight of domestic capital. The anomalous behavior of developing-world capital flows (from poor to rich nations) helped provide the impetus for the development of the concept of endogenous growth or the new growth theory.

Developed by Arrow, K. J. in 1962, advanced and popularized by Paul Romer in 1988 and Robert Lucas (Jnr) 1990, the endogenous growth theorists seek to explain what determines the size of the rate of growth of GDP that is left unexplained and exogenously determined in the Solow neoclassical growth equation (that is, the Solow residual).

The assumptions of the model as posited by Jhingan, 2009 are as follows: there are many firms in a market; knowledge or technological advancement is a non-rival good; there is increasing returns to scale to all factors taken together and constant returns to a single factor; technological advance comes from what people do (that is, from creation of new ideas); and many individuals and firms have market power and earn profits from their discoveries.

Adopting Lucas model, it is assumed that investment in education leads to the production of human capital which is the crucial determinant in the growth process. A distinction is made between the internal effects of human capital where the individual worker undergoing training becomes more productive and external effects which spillover and increase the productivity of capital and of other workers in the economy. It is investment in human capital rather than physical capital that has spillover effects that increase the level of technology. Thus, the output for firm 'i' takes the form:

$$Y_i = A(K_i).(H_i).H^e \quad (3)$$

Where 'A' is the technical coefficient, 'K_i' and 'H_i' are the inputs of physical and human capital used by firms to produce goods 'Y_i'. The variable 'H' is the economy's average level of human capital. The parameter e represents the strength of the external effects from human capital to each firm's productivity. In this model, each firm faces

constant returns to scale, while there are increasing returns for the whole economy. Each firm benefits from the average level of human capital in the economy, rather than from the aggregate of human capital. Thus, it is not the accumulated knowledge or experience of other firms but the average level of skills and knowledge in the economy that are crucial for economic growth. In this model, technology is endogenously provided as a side effect of investment decisions by firms and is treated also as a public good.

The implication of this model to the study is that greater stocks of human capital and investing more on research and development will foster faster rate of economic growth in Nigeria with greater emphasis on private investment in technological research and development. However, public policy can be more effective in making large provision for making investments in creating human capital and on research and development of new knowledge. This can help to increase the rate of accumulation of both physical and human capital and thus the long-run growth rate of the economy. But in Nigeria, our public policy does not support growth and development of research. Economic criminals are celebrated with its consequences on growth. Esty and Porter (2002) in a study on the National Environmental Performance Measurements and Determinants concluded that highly corrupt countries tend to under-invest in human capital by spending less on education, to over-invest in public infrastructure relative to private investment, and to have lower levels of environmental quality. Similarly, Kaufmann (2003) posits that measures of corruption and poor governance are correlated with per capita income and with the United Nations Human Development Index (HDI). Richer countries, on average, have less reported corruption and better functioning governments. The same holds true for

countries with high levels of the HDI, a measure that includes measures of health and educational attainment as well as a logarithmic measure of income. The findings confirm that very high levels of human development are associated with low levels of corruption. However, high levels of corruption are associated with a wide range of middle to low levels of human development.

e) Time Allocation Model.

Flinn, C. developed time allocation model of crime in 1986 in Washington DC. He incorporated human capital formation in a time-allocation model. In his model, human capital is accumulated at work, not at school. Consequently, crime takes time away from work and hence diminishes the amount of human capital accumulated. The diminished human capital leads to lower future wages and hence less time spent working. Czabanski (2008) observed that since crime and work are substitutes in Flinn's model, the decline in time allocated to work leads to increased participation in criminal activities. This model, therefore, emphasises that productivity is driven down when more time is allocated to economic crime.

f) Harrod-Domar Growth Theory.

This theory was developed by Harrod, R. F and Domar, E. in 1947 in America to discover the rate of income growth necessary for a smooth and uninterrupted working of the economy.

Jhingan (2009) posits the assumptions of the model to include: full employment equilibrium level of income; absence of government intervention; the model operates in a closed economy; marginal propensity to save is constant; there is

fixed proportion of capital and labour; the general price level is constant; and the ratio of capital stock to income is assumed fixed, etc.

The model states that every economy must save a certain proportion of its national income, if it must replace worn-out or impaired capital goods. However, in order to grow, new investments representing net additions to the capital stock are necessary. If it is assumed that there is some direct economic relationship between the size of the total capital stock, 'K', and total GNP, 'Y', it follows that any net additions to the capital stock in the form of new investment will bring about corresponding increase in the flow of national output, GNP.

Jhingan, 2009 opines that suppose that this relationship, known in economics as the capital-output ratio is defined as 'k' and further assume that the national savings ratio, 's', is a fixed proportion of national output and that total new investment is determined by the level of total savings, a simple Harrod-Domar Model of economic growth can be stated as follows:

1. Savings (S) is some proportion, 's', of national income (Y) such that we have the simple equation:

$$S = sY \quad (4)$$

2. Net investment (I) is defined as the change in the capital stock, 'K' and can be represented as ΔK such that:

$$I = \Delta K \quad (5)$$

Because the total capital stock, 'K', bears a direct relationship to total national income or output, 'Y', as expressed by the capital-output ratio, 'k', it follows that:

$k = K/Y$ or $\Delta K/\Delta Y$, so that

$$\Delta K = k\Delta Y \quad (6)$$

3. Finally, because net national savings, 'S', must equal net investment, 'I', this equality can be written as $S = I$. Combining (5), (6) and (7):

$$sY = k\Delta Y \quad (7)$$

Dividing both sides of equation (4) by first 'Y' and then by 'k', the expression below is arrived at.

$$\Delta Y/Y = s/k \quad (8)$$

$\Delta Y/Y$ is the growth rate of GDP. Equation (8) is the simplified version of the famous equation in the Harrod-Domar Theory of economic growth and states that the growth rate of GDP is determined jointly by the savings ratio, 's', and the national capital-output ratio, 'k'. So, the rate of growth of GDP is positively related to the economy's savings ratio and negatively related to the economy's capital-output ratio. The more economies save and invest, the faster they can grow but the actual rate of growth is measured by the inverse of the capital-output ratio.

The fact that Less Developed Countries (LDCs) savings levels are often not enough to meet the levels suggested by the linear-stages models, the need to fill the "savings gap" was used to justify massive transfers of capital and technical assistance from

developed countries to LDCs. This also has contributed in the globalisation of economic crime. However, it is noted that most of the capital transfer later find their way back to foreign countries in form of illicit capital outflows.

Apart from illicit financial outflows, more savings and investment are not sufficient conditions for accelerated rates of economic growth. Many LDCs lack the necessary structural, institutional and attitudinal conditions to convert new capital effectively into higher levels of output, with economic crimes being the major culprit. Institutional and attitudinal reforms are, therefore, necessary.

g) Solow Growth Model.

Robert Solow of Massachusetts Institute of Technology, USA, developed this model in 1956. He builds his model as an alternative to the Harrod-Domar thinking with assumption of fixed proportions in production while Solow postulates continuous production function linking output to the inputs of labour and capital.

Jhingan, 2007 highlights some of the assumptions of the model to include: diminishing returns to labour and capital separately; constant returns to scale to both factors jointly. The constant returns to scale allows for the workings of the production function in an intensive form, thus allowing the setting of $y=1/L$ or $1/AL$; technological progress is a residual factor explaining long-term growth and its growth is assumed to be exogenously determined, that is independent of all other factors; there is factor input substitutability; and there is full employment of labour and capital, etc.

Formally, the Solow neoclassical growth model uses a standard aggregate production function known as the Cobb-Douglas Production Function at any time t .

$$Y_{(t)} = K_{(t)}^{\alpha} (A_{(t)}L^{1-\alpha}_{(t)}) \quad (9)$$

Where Y = Gross Domestic Product; K = Stock of Capital; L = Labour

A = Productivity or effectiveness of labour which grows over time at an exogenous rate. For developed countries, this rate is estimated at about 2% per year. But it may be smaller or larger for developing countries, depending on whether they are stagnating or catching up with the developed countries. Because the rate of technological progress is given exogenously (at 2 % per year), the Solow Neoclassical Model is sometimes called ‘exogenous’ growth model to be contrasted with the endogenous growth approach.

α = elasticity of output with respect to capital. It is usually measured statistically as the share of capital in a country’s national income accounts. Since α is assumed to be less than 1 and private capital is assumed to be paid its marginal product, so that there are no external economies, this formulation of neoclassical growth theory yields diminishing returns to capital and labour.

Note that $\alpha + 1 - \alpha = 1$, thus yielding constant returns to scale.

Because of constant returns to scale, if all inputs are increased by the same amount, say, ‘ c ’, the output will increase by the same amount (‘ c ’ in this case).

$$\text{More generally, } cY = F(cK, cL) \quad (10)$$

where ‘ c ’ is some positive amount.

Because ‘ c ’ can be any positive real number, a mathematical ‘trick’ useful in analyzing the implications of the model is to set $c = 1/L$, so that:

$Y/L = f(K/L, 1)$, which can be written as:

$$y = f(k)$$

(11)

Equation (11) is so because the function is of capital and 1 is a constant.

Note that $y = Y/L$ and $k = K/L$.

The simplification in equation (11) allows us to deal with just one argument in the production function. Thus, in the Cobb-Douglas case of equation (9),

$$y = Ak^\alpha \tag{12}$$

Equation (12) represents an alternative way to think about a production function, in which everything is measured in quantities per effective worker. It states that output per effective worker (y) is a positive function that depends on the amount of capital per effective worker (k). This implies that the more capital with which each worker has to work with, the more output that worker can produce. If money needed to provide the capital needed by labour illicitly leaves the shores of the country, it could cause a fall in the output per effective worker.

2.3. Empirical Literature Review.

In this sub-heading, the researcher explored previous empirical studies conducted in this area of study with a view to discovering the gap in literature, which formed the basis of this research. To this end, a number of works were reviewed both foreign and local.

Okoye et al (2013), in a study to evaluate the effect of fraud and related financial crimes on the Nigerian economy using GDP, fraud in the banking sector and inflation in Nigeria as variables for the period 2007 to 2011 and adopting Ordinary Least Squares procedure, found that fraud and other related financial crimes have significant effect on GDP and inflation in Nigeria. This study suffered from dearth of data as the data generated spanned over a period of five years. Thus, the result is unrepresentative and does not offer deep insight into the problem. Data used for this study were not subjected to diagnostic tests.

Eseoghene (2010) also in a related study of Bank Frauds in Nigeria: Underlying Causes, Effects and Possible Remedies in a survey of a sample of 100 respondents and adopting t-test statistic found bank fraud to be common in Nigeria while identifying greed, infidelity, poverty, poor internal control and poor working conditions as factors responsible for the prevalence. This study drawn from a sample of 100 respondents cannot be used to make generalizations. The study did not state how representative the sample is, as the sample could have been drawn from one location.

Ikpefan (2006) in a similar study of the Nigerian banking industry and the impact of fraud on it, empirically tested if there is a significant relationship between deposits on the one hand, and the following explanatory variables - actual/expected loss and Money Laundering Act (MLA), between 1989 – 2004. He employed the Ordinary Least Square method (OLS) and found that the explanatory variables were very useful in explaining variability in deposits in the Nigerian banking sector. The study used actual and expected loss in the banking industry, Money Laundering Act and fraud as explanatory variables to explain the changes in deposits in the banking industry.

There is no justification for the choice of variables and this may becloud the aim of this study. The study failed to state the type of deposit used in this study and also failed to state any limitation encountered in generating the data for the study as there would always be expected in this type of study. Money Laundering Act as a variable is most inappropriate and unnecessary.

Ekundayo, et al (2013), in a study to analyse Corruption and Economic Growth in Nigeria using GDP as the dependent variable and corruption, previous degrees of corruption and corruption perception index for Nigeria as explanatory variables and adopting OLS concluded that corruption impairs economic growth. This study failed to identify any scope or even identify the sources of data and so the reliability of data and result drawn there from are put in doubt. Moreover, corruption perception index is just the perception of individuals with regard to corruption and this perception is largely subjective with minimal time points.

Abiodun (2007), in a study to evaluate the Effects of Corruption and Economic Reforms on Economic Growth and Development in Nigeria drawing data for the study from news, stories, reports of tribunals and commissions of enquiry, interviews of Nigerians with relevant information, anecdotes, and personal knowledge of Nigeria concluded that there have been significant reductions in the level of corruption in the country through the introduction of government anti-corruption instruments. In addition, this study found a negative correlation between levels of corruption and economic growth thereby making it difficult for Nigeria to develop fast. This study did not adopt any known methodology and so may be affected by bias.

Ahmad et al (2012) using panel data from 1984 to 2009 for 71 developed and developing countries, with corruption index, corruption squared, bureaucratic efficiency index, political stability index, institutional efficiency index, risk to investment index etc while employing generalized methods of moments estimation (GMM) find that decrease in corruption raises economic growth rate in an inverted U-shaped way.

Aidt et al (2008), in an empirical study on Governance Regimes, Corruption and Growth: Theory and Evidence in a panel data analysis using voice and accountability index, corruption index and gdp as variables found a non-linear relationship between corruption and growth and therefore concluded that there is no relationship between corruption and growth in countries with low-quality political institutions.

Méon and Sekkat (2005) in an empirical study on whether corruption greases or sands the wheels of growth using voice and accountability index, bureaucratic efficiency index, political stability index, institutional efficiency index as variables and employing panel technique conclude that corruption 'sands the wheel' of economic growth.

Lambsdorff (2003), using survey method in generating his data and employing descriptive statistics in his analysis, finds that corruption is responsible to reduced capital productivity among a panel of countries. This result reinforces the time allocation model of crime and economic growth. In this model, crime and work are substitutes. The more time is allocated to crime, the less time work gets and this implies lower human and capital productivity. Use of descriptive statistics only hampers robust analysis.

Pellegrini and Gerlagh (2004) summed up exports and imports data and dividing the total by the GDP to stand as proxy for a country's openness and also used investment ratio to GDP with corruption index as variables of the model. Employing a multivariate Vector Autoregressive Method concluded that the impact of corruption on economic growth acts by reducing the ratio of investment to GDP and the country's openness.

Farida and Ahmadi-Esfahani (2007) explored the neoclassical model of economic growth that explicitly includes human capital accumulation and the direct and indirect effects of corruption on economic growth. The theoretical model suggests that output and growth are influenced by the level of corruption. If one of the physical inputs in the production function suffers a quality loss in the presence of corruption, then this will also affect growth and the steady state level. This result compares with Barrow's model of economic growth wherein a government sector is introduced into an endogenous growth model. Public services are financed by a flat-rate income tax. The economy's growth rate and saving rate initially rise with the ratio of productive government expenditures. However, where government expenditures are subverted through corruption, economic growth and savings rate fall.

Hellman, Jones, Kaufmann and Schankerman (2000) investigated the relationship between corruption and economic growth in a neoclassical model employing Ordinary Least Square method for a Panel of Asian Countries. They were able to empirically prove the negative relationship between corruption and growth. This conclusion aligns with the findings of Ekundayo, et al (2013) although the variables used are not exactly the same. Hellman, et al used corruption perception index and GDP while

Ekundayo, et al used GDP, corruption perception index, previous degrees of corruption as variables.

Adegbie (2012) in another study to investigate Economic and Financial Crime in Nigeria: Forensic Accounting as Antidote using Chi-Square found that Forensic Accounting is a financial strategy to curb and resolve economic and financial crimes in the Nigerian economy. It therefore, implies that proper use of forensic accounting would reduce money laundering to the barest minimum as detection becomes easier.

Cadernas (2007) focuses on relationship between growth rate and organized crime in an unbalanced panel of 65 countries and found that criminality in Columbia undermines economic growth through the productivity channel, after applying a growth accounting calculus. Indeed, the sources-of-growth decomposition shows that this reversal can be accounted entirely by changes in productivity induced by an increase in criminality.

Pinotti (2011) compares the post-war economic growth of two different regions (treated group) in southern Italy exposed to the presence of mafia organizations after the 1970's with a hypothetical control group, using synthetic control methods. The comparison of actual and counterfactual development shows that the presence of mafia mitigates regional GDP per capita by 16 per cent, at the same time as murders increase sharply for the synthetic control group.

Gaibullov and Sandler (2008) measured the impact of domestic and transnational terrorism on income per capita growth for 1971–2004 in a panel of 18 Western European countries and concluded that there is a negative but significant relationship

between crime variables (economic costs of domestic and transnational crimes) and income per capita growth.

Enders and Sandler (1996), employing a transfer function and a VAR model, assessed the impact of terrorist financing on net foreign direct investment in Greece and Spain and found that foreign direct investment is impacted negatively.

Jain (1998) proceeded to use pooled time-series cross-section data for USA and found, inter alia, positive associations between unemployment and property crime. This suggests that as the earnings gap widens, relative deprivation increases, which in turn leads to increases in crime. Empirical research into the relationship between earnings inequality and crime generally find that more inequality is associated with more crime. This is the rationale behind the market society theory of economic crime developed by Elliot Currie in 1997 using America as a case study. He finds that crime is a product of factors associated with 'market society' and increase of free market values. He defines Market Society as a "civilization in which the pursuit of personal economic gain becomes increasingly the dominant organizing principle of social life" and identified seven closely intertwined elements of a market society which work together in breeding crime such as: Market societies destroy livelihoods and jobs; they deliberately create inequality and material deprivation; they weaken other public supports against crime, such as after school care and child care facilities; they erode informal networks of public support, such as community facilities; and they promote a culture of brutal competition.

Gupta (2004) analyzes the consequences of conflict index on economic growth within a three-equation cross section structural model for a panel of countries. He finds that

conflict index has no direct effect on economic growth, but has an indirect effect by increasing defense spending share, which lowers economic growth.

Peri (2004), using a large data set from 1951 to 1991, shows that annual per capita income growth in Italy is negatively affected by murder.

Narayan and Smyth (2004) used the Granger Causality Test within an Auto Regressive Distributed Lag (ARDL) Model to determine the relationship between different crime typologies (arms trafficking and human trafficking) on the one hand and real wage rate and unemployment in Australia, on the other. The study finds that proliferation of arms and human trafficking deteriorated unemployment and wage rate. The study links increase in participation in crime to proliferation of arms, which breeds unemployment as the number of prison sentences increases. This study aligns with the Time Allocation Model.

Mauro et al (2007) test the link between unemployment, economic growth and human trafficking using Italian regional data. Employing Ordinary Least Square technique, the study found that human trafficking impacted negatively on the GDP of the economy as well as increase unemployment rate. The influx of illegal immigrants into Italy for prostitution and pornography put a downward pressure on existing facilities and thus cause increase in government spending on infrastructure and other social services.

Chen (2009) examines the long-run and causal relationships among cyber crime, unemployment and income for Taiwan, using a Bounce Test Approach. The study finds significant negative relationship between cyber crime, income and unemployment in Taiwan with a unidirectional effect of crime on economic variables.

Detotto and Pulina (2009) applied an ARDL Model from 1970 to 2004 for Italy to assess the relationship between deterrence indicators, multiple crime offences and economic performance. They conclude that cyber crime affected the GNP of the economy negatively while deterrence indicators did not substantially reduce the number of cyber crimes committed within the period.

Baharom and Habibullah (2009) examined the relationship between real gross national product (GNP) and cyber crime. Applying an ARDL model for Malaysia, the study shows that cyber crime has negative but significant impact on the GNP of the country. They, therefore, advocated for strong and water-tight security code for banks and stiffer penalty for those found culpable.

Detotto and Otranto (2010) presented an empirical analysis of macroeconomic consequences of criminal activity (murder) in Italy from 1979 to 2002. Dealing with an AR model incarnated in a state space model, a time-varying parameter approach was employed to measure the short-run impact of criminality on real GDP. Results show that murder has a strong permanent component which has a significant negative impact on economic performance.

Adewale (2011) discovered a strong significant negative relationship between economic crime and output growth in Nigeria. He undertook an empirical investigation of the relationship between a number of key variables in Nigeria. After carrying out a test of stationary and co integration properties on the variables, he further estimated the econometric parameters of the variables which included Gross Domestic Product (GDP) as the dependent variable and Gross Capital Formation (GCF), Money Supply (MS), Public Domestic Investment (PINV), Corruption

Perception Index (CPI), bank fraud, External Debt (EXTD) and Unemployment Rate (UNEMPL) as the explanatory variables, and concluded that economic crime has a crowding-out effect on growth within the period of 1996 to 2009. The time points are small to allow for generalizations of this nature. Again, the use of corruption perception index as a proxy for economic crime may hide other characteristics of economic crime and so hamper robust econometric analysis.

Fabayo, Posu & Obisanya (2011), in their study analyzed the consequences of economic crime on investment in Nigeria using the Ordinary Least Square technique. They used the annual corruption perception index between the period 1996 and 2010 as proxy for economic crimes. Their study revealed that low Corruption Perception Index ranking on Nigeria, which implies high level of corruption, leads to low investment and thus low economic growth in Nigeria. The time points are small to allow for generalizations of this nature. Again, the use of corruption perception index as a proxy for economic crime may hide other characteristics of economic crime and so hamper robust econometric analysis.

In another related study which focuses on the relationship between economic crime and development, Akindele (2005) undertook an empirical investigation of the relationship between a number of key variables in Nigeria. Estimating a modified production function that includes labour, capital and political instability, corruption index as variables found that there exists a strong significant negative relationship between economic crime and development. The time points considered here are too short for such conclusions to be drawn. The use of OLS linear regression without investigating the nature of the relationship between economic crimes and economic growth will definitely yield misleading result.

Nageri et al (2013) while adopting Ordinary Least Square (OLS) linear technique tested the hypothesis that corruption perception index affects economic development (GDP) and found the result to be statistically significant, meaning that Corruption Perception Index (CPI), a proxy for economic crime in this research negatively affects economic development. On the other hand, the null hypotheses of Corruption Rank (CR) and Relative Corruption Ranking (RCR) of Nigeria among countries under review were not accepted meaning that the relative position of Nigeria among countries under review and Nigeria's rank on corruption cadre is also statistically significant. The proxy for economic crime is a subjective variable and may not be an adequate measure of economic crime since they depend largely on the perceptions of people.

2.3.1. Table 3: Summary of Empirical Literature Review.

S/No	Author(s)	Date	Country	Topic	Variables	Method of Analysis	Findings	Comments
1.	Okoye, E.I & Gbeji, D. O.	2013	Nigeria	An Evaluation of the Fraud and Related Financial Crimes on the Nigerian Economy	Fraud, GDP, Inflation	OLS	Fraud affected GDP and inflation negatively	Data points too short for robust analysis. No diagnostic tests carried out.
2.	Ekundayo, Adedoyinsola, L. & Iseolorunkanm I. J.	2013	Nigeria	Analysis of Corruption and Economic Growth in Nigeria.	GDP, Corruption Perception Index, Previous degrees of corruption	OLS	Corruption impairs economic growth	Sources of data not identified and there is presence of autocorrelation as buttressed by the Durbin Watson statistic.
3.	Nageri, Gunu and Falilat	2013	Nigeria	Corruption and Economic Development: Evidence from Nigeria.	Corruption Perception Index, corruption rank, relative corruption rank, GDP	OLS	Corruption negatively affects economic development.	The proxy for economic crime is a subjective variable and may not be an adequate measure of economic crime since they depend largely on the perceptions of people. Short time points too.
4.	Adegbie, F.F	2012	Nigeria	Economic and Financial Crime in Nigeria: Forensic Accounting as Antidote.	Forensic Accounting, Money Laundering	Chi-Square	Forensic Accounting can curb money laundering and so minimize its effect in the economy.	Data for money laundering was based on survey data and not on time series data.

S/No	Author(s)	Date	Country	Topic	Variables	Method of Analysis	Findings	Comments
5.	Ahmad, E., Ullah, M. A., & Arfeen, I.	2012	Latin America	Does corruption affect economic growth?	corruption index, corruption squared, bureaucratic efficiency index, political stability index, institutional efficiency index, risk to investment index	Generalized Methods of Moments estimation(GMM)	Decrease in corruption raises economic growth rate in an inverted U-shaped way.	
6.	Pinotti, P.	2011	Italy	The Economic Consequences of Organised Crime: Evidence from Southern Italy.	GDP per Capita, Drug Trafficking	Synthetic control experimental methods	Presence of Mafia group mitigates regional GDP per capita.	This study is focused on welfare.
7.	Adewale, S. B.	2011	Nigeria	The crowding-out effects of Economic Crime in Nigeria: An Empirical Study	GDP, gross capital formation, money supply, public domestic investment, corruption index, bank fraud, external debt, unemployment rate.	OLS	Economic crime crowds out economic growth.	Inadequate time points for such generalization.
8.	Eseoghene, J.I.	2010	Nigeria	Bank Fraud in Nigeria: Underlying Causes, Effects and Possible Remedies.	Fraud, Nigerian economy(GDP)	Survey & t-Test	Bank fraud is a common phenomenon in Nigerian banks and it affects the economy negatively	A sample of 100 respondents may not be representative to make generalization.
9.	Fabayo, J.A., Posu, S. & Obisanya, A.A.	2011	Nigeria	Economic Crime and the Investment Climate in Nigeria”	Corruption perception index, Inv. GDP.	OLS	High corruption perception index leads to low investment and growth.	Inadequate time points used.
10.	Detotto & Otranto	2010	Italy	Does Crime Affect Economic Growth	Murder, GDP	OLS, State-Space Method	Crime has significant negative impact on Growth.	Data covered a 23 year period.

S/No	Author(s)	Date	Country	Topic	Variables	Method of Analysis	Findings	Comments
11.	Detotto & Pulina	2009	Italy	Does Crime Mean Fewer Jobs.	GDP, Cyber crime	ARDL	Cyber Crime affected the GNP of the economy negatively while deterrence indicators did not substantially reduce the number of cyber crimes committed within the period.	Data covered a 34 year period.
12.	Habibullah, M. S. & Baharom, A.E.	2009	Malaysia	Crime and Economic Conditions in Malaysia	GNP, Cyber Crime	ARDL	Cyber crime has negative but significant impact on the GNP of the country	
13.	Chen, S. W.	2009	Taiwan	Investigating Causality among Unemployment, Income and Crime in Taiwan: Evidence from the Bounce Test Approach.	Cyber crime, Unemployment rate, GDP	Bounce Test Approach	There is a significant negative relationship between cyber crime and income and unemployment in Taiwan with a unidirectional effect of crime on economic variables.	
14.	Gaibulloev, K & Sandler, T.	2008	Panel of 18 Western European Countries	Growth Consequences of Terrorism in Western Europe	Income per capita growth, cost of terrorism	Panel Analysis	There is a negative but significant relationship between crime variables (economic costs of domestic and transnational crimes) and income per capita growth.	
15.	Aidt, T., Dutta, J. and Sena, V.	2008	Panel of countries	Governance regimes, corruption and growth: theory and evidence	voice and accountability index, corruption index and gdp	panel data analysis	found a non-linear relationship between corruption and growth and therefore concluded that there is no relationship between corruption and growth in countries with low-quality political institutions.	
16.	Cardenas, M	2007	Columbia	Economic Growth in Columbia: A Reversal of Fortune?	GDP growth rate, Drug trafficking	Growth Accounting calculus	criminality in Columbia undermines economic growth through the productivity channel	
17.	Farida, M. & Ahmadi-Esfahani, F.	2007	Australia.	Modeling Corruption in a Cobb-Douglas Production Function.	Labour productivity, capacity utilization, Corruption Perception Index.	VAR	Output and growth are influenced by the level of corruption. If one of the physical inputs in the production function suffers a quality loss in the presence of corruption, then this will also affect growth and the steady state level.	

S/No	Author(s)	Date	Country	Topic	Variables	Method of Analysis Method of Analysis	Findings	Comments
18.	Mauro, L. & Carmeci, G.	2007	Italy	A Poverty Trap of Crime and Unemployment.	GDP, unemployment rate, human trafficking	OLS	human trafficking impacted negatively on the GDP of the economy as well as increase unemployment rate.	
19.	Abiodun, E. O.	2007	Nigeria	Effects of Corruption and Economic Reforms on Growth and Development in Nigeria.	Corruption, Economic Reform, Nigerian economy	Personal Analysis	Corruption has reduced but still has negative impact on the economy.	No known method of analysis used.
20.	Ikpefan, A.O.	2006	Nigeria	Growth of Bank Frauds and the Impact on the Nigerian Banking Industry.	Actual/expected loss in banks, Money Laundering Act(MLA), Fraud, Deposits	OLS	The explanatory variables significantly explain The variability in deposits in the banking industry.	Data used to capture fraud may be misleading and unrepresentative.
21.	Akindele, S. T.	2005	Nigeria	A Critical Analysis of Economic Crime and its Problems in Nigeria”	Labour, Capital, Political instability, corruption index.	OLS	Strong significant negative relationship between economic crime and development.	
22.	Méon, P. G. and Sekkat, K.	2005		Does corruption grease or sand the wheels of growth?	voice and accountability index, bureaucratic efficiency index, political stability index, institutional efficiency index	Panel technique	Corruption ‘sands the wheel’ of economic growth	
23.	Narayan, P. K. & Smith, R.	2004	Australia	Crime Rates, Male Youth Unemployment and Real Income in Australia.	Real wage, Unemployment rate, Arms and Human trafficking	ARDL	Proliferation of arms and human trafficking deteriorated unemployment and wage rate	
24.	Pellagrini, L & Gerlagh, R.	2004	USA	Corruption’s Effect on Growth and its Transmission Channels.	Corruption Perception Index, Investment Ratio, Exports, Imports, GDP.	VAR	Corruption reduces the ratio of investment to GDP and the country’s openness.	

S/No	Author(s)	Date	Country	Topic	Variables	Method of Analysis Method of Analysis	Findings	Comments
25.	Peri, G.	2004	Italy	Socio-cultural Variables and Economic Success: Evidence from Italian Provinces.	Per capita income, murder	OLS	Murder affects per capita income negatively.	
26.	Gupta, S.	2004	Panel of countries	Fiscal Consequences of Armed Conflict and Terrorism in Low and Middle-Income Countries.	GDP, Conflict index	Three-equation cross-section Model	Conflict index has no direct effect on economic growth but has an indirect effect by increasing defense spending share.	
27.	Lambsdorf, J. G.	2003	Panel of countries	How Corruption Affects Productivity.	Corruption, Capital productivity.	Survey of 22 Western countries	Corruption is responsible to reduced capital productivity.	
28.	Hellman, J. S., Jones, G., Kaufmann, D. & Schankerman, M.	2000	Panel of Asian Countries	Measuring Governance, Corruption and State Capture: How Firms and Bureaucrats Shape the Business Environment in Transition Economies	Corruption Perception Index, GDP.	OLS	There is a negative relationship between corruption and economic growth.	
29.	Jain, A. K.	1998	USA	Economics of Corruption	Unemployment rate, number of corrupt cases.	Pooled Time-Series Analysis	There is a significant relationship between earnings inequality and crime.	
30.	Enders, W. & Sandler, T.	1996	Greece & Spain	Terrorism and Foreign Direct Investment in Spain and Greece.	FDI, Rate of Terrorist attacks	VAR	Terrorism impacts negatively on FDI.	

2.4. Summary of Literature Review.

The major point that is garnered from the theories reviewed is the fact that the way income is distributed to classes in the society determines whether growth occurs or how growth proceeds in the economy. This distribution of income to classes in the society as well determines the saving behavior of these classes and by extension the national savings. Consequently, there are two strands of theoretical postulations. One strand argues that high level of economic crimes could be growth-reducing while the

other strand argues that economic crimes could be growth-enhancing but mostly in the long run.

Empirical works reviewed adopted two main approaches to study the relationship between economic crimes and various economies. One of it being a cross-sectional approach which compares the overall economic performance of countries or regions with high level of crime to that of countries with low levels of crime, controlling for other explanatory variables. Adegbe, 2012; Pinotti, 2011; Eseoghene, 2010; Gaibulloev et al, 2008, Aidt, et al (2008), Méon et al (2005), etc adopted this approach. Although, this approach allows working with a large amount of information for key variables, such as GDP or crime index, nevertheless, it is hampered by the data source problems, cross-border spillover effects, dynamic effect identification and selection bias. The second approach adopted is a multivariate time series methodology, where crime is considered along with economic variables. Nageri et al, 2013; Ekundayo et al, 2013; Detotto et al, 2010; Farida et al, 2007 adopted this approach. This approach allows the identification of dynamic processes and enables deeper forecasting analysis. Moreover, it does not need to distinguish in advance the endogenous variables from exogenous ones. It has several advantages in terms of interpretability of results and application.

While reviewing previous works, the researcher found that previous studies on Nigeria assumed a linear relationship between economic crimes and economic growth, thus influencing the methodology adopted in measuring this relationship. Application of a linear model will be inappropriate if economic crimes are discovered to have non-linear relationship with economic growth. This methodology problem in previous studies on Nigeria is further compounded by the use of corruption perception

index, which is largely subjective with very short time points, as proxy for economic crimes. This narrowed the application of econometric tools, which probably led previous works to suggest that the direction of causality is from economic crimes to economic growth and not vice versa. These gaps were filled by this present study.

2.5. Justification of the Study.

The practical reasons necessitating this study are as follows:

This study is timely and topical. It is also practical and of national priority (especially now that economic crime has been identified as a global phenomenon and a major national issue). The need to quantify economic costs of economic crimes becomes necessary so as to be able to make informed decisions.

A time series model of economic crimes on economic growth has always remained a challenge to scholars due to dearth of data and inappropriate proxy for economic crimes. This challenge has hampered the use of econometric tools in analyzing the impact of economic crimes on the Nigerian economy so as to provide useful policy guide. This study seeks to bridge this gap,

Furthermore, previous studies on Nigeria assumed that a linear relationship exists between economic crimes and economic growth as no study reviewed has concluded otherwise. This necessitated the use of a linear model to measure this relationship. A linear model will be inappropriate if non-linear relationship possibly exists between economic crimes and the Nigerian economy. Understanding the nature of the relationship between economic crimes and economic growth will deepen

understanding of the overall impact of economic crimes on the Nigerian economy.

This study bridges this gap and provides robust econometric analysis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction.

In this chapter, the researcher demonstrated the process through which the research objectives were actualized, research hypotheses tested and results analysed. This process is discussed under the following specific sub-headings below:

3.2 Theoretical Framework of the Study.

This study is anchored on the Circular Flow of National Income Model of an open economy and John Meynard Keynes Trade Cycle Theory already discussed in Chapter Two of this study.

Keynes basic conclusion is that changes in the level of aggregate demand will bring about fluctuations in the level of income, output and employment. The circular flow of income has highlighted some factors that may affect aggregate demand. The Circular Flow of Income Model begins with the spending habits of consumers. How much and how fast consumers spend drives the amount of investments that businesses make in resources to produce goods. These investments in turn affect the number of jobs that are available and the general economic health of the region. As more jobs become available, consumers have more money to spend. Conversely, as employment levels drop, consumers have less money to spend on goods and services. Injections and leakages may distort this flow and cause disequilibrium in the economy. The liberalization and globalization of economic activities which also brought with it the internationalization of economic crimes of illicit financial outflows are also factors that could determine the size of the disequilibrium.

This simple econometric model has been adopted to calculate the national income/output of many countries including Nigeria and will be adopted in this study with an introduction of economic crime variable to determine the impact and nature of the relationship between economic crimes and economic growth in Nigeria within the uninterrupted democratic dispensation period.

The Circular Flow and Keynes Model were modified to include economic crime variable and can be written as: $Y = C + I + G + NX + IFFs$ (13)

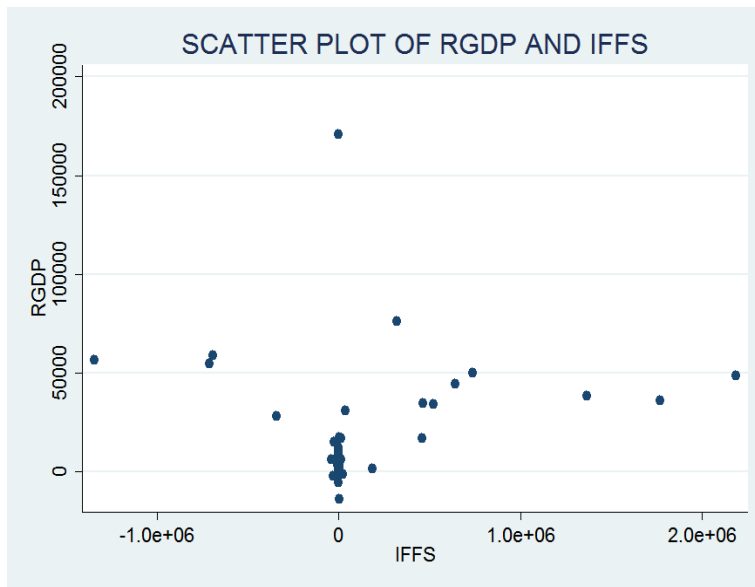
Where Y = National Output, C = Household Consumption, I = Investment, G = Government expenditure, NX = Net Exports, $IFFs$ = Illicit Financial Outflows.

3.3 Model Specification

Different models can be used to estimate the relationship between economic crimes and economic growth. Ahmad et al (2012) adopted the standard production function, which extends Solow's original approach to growth accounting process while Detotto et al (2010) adopted OLS technique incarnated in a State Space Model enabling the capture of time-varying elasticity coefficient of crime on growth. The point of divergence of the present study from that used by Detotto et al (2010) is that the present study used economic crimes (Illicit Financial Outflows as proxy) instead of murder as one of the explanatory variables explaining economic growth.

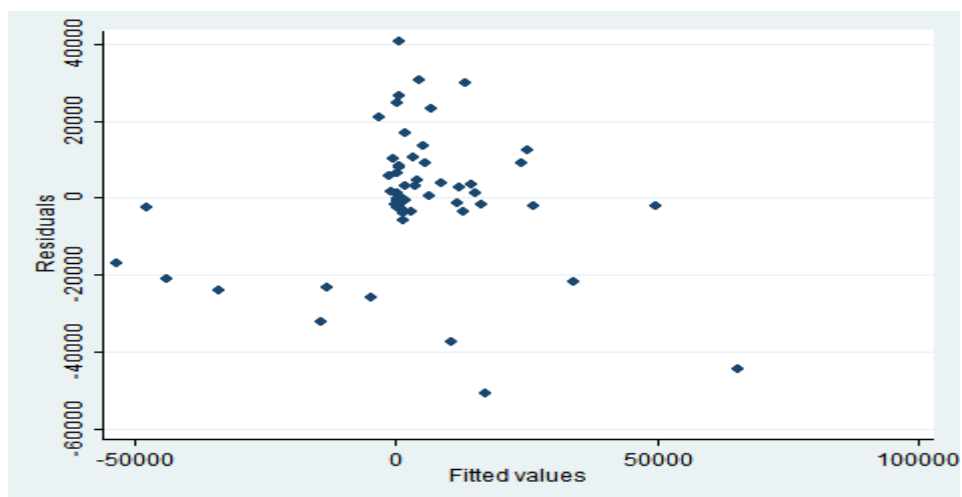
Detotto et al (2010) observed that a quick way of determining the nature of the relationship between two variables is to plot their scatter diagram. Figure 7 plots the scatter diagram of Illicit Financial Outflows and RGDP for Nigeria over 1970 through 2013.

Figure 7: Scatter plot of IFFs and RGDP.



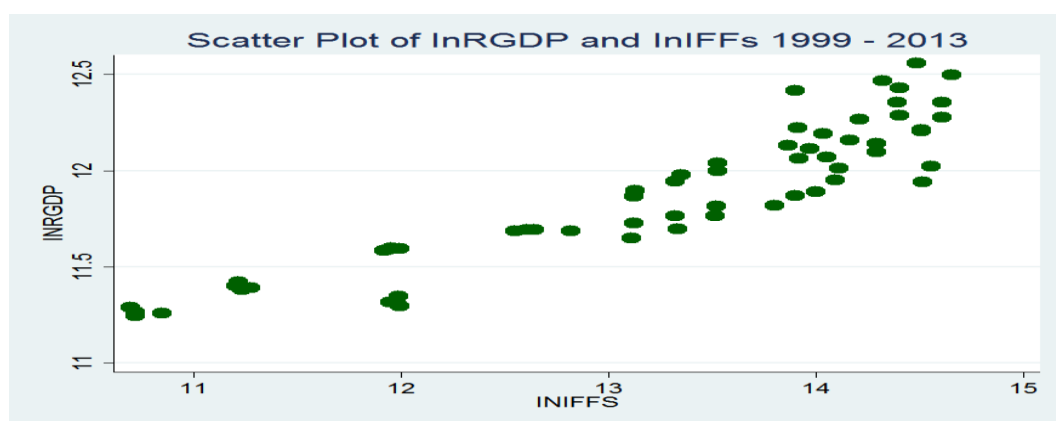
The figure above does not show a clear linear combination. Furthermore, Gujarati and Porter (2009) posit that plotting residuals versus the fitted values of the dependent variable dictates the possible of nonlinearity that your analysis has ignored. Figure 8 below represents a diagram of fitted values of RGDP and residuals with no easily identifiable linear relationship, thus reinforcing the possibility of nonlinearity.

Figure 8: Fitted values of RGDP and Residuals



Gujarati et al (2009), however, stated that non-linear models, in some special cases, can be linearised through logarithmic transformation which is why logarithm transformation is called non-linear transformation. Therefore, taking a logarithm transformation of the parameters and plotting it in a scatter diagram portrays a linear combination as can be seen in Figure 9.

Figure 9: Scatter plot of log of IFFs and RGDP.



The figure above implies that under some special cases but not in all cases, a non-linear model may be transformed to a linear model. This transformation, therefore, permits the use of OLS linear regression, permitting comparison with other models.

Because of the possibility of economic crimes having non-linear relationship with economic growth, the functional expression which captures this non-linear relationship specified as a linear function is stated below:

$$\text{RGDP} = f(\text{Household Consumption Expenditure, Gross Fixed Capital Formation, Government Consumption Expenditure, Net exports, Illicit Financial Outflows}) \dots \dots \dots (14)$$

The mathematical/algebraic representation of the model is stated as:

MODEL 1: MODIFIED NATIONAL INCOME MODEL

$$RGDP = \beta_0 + \beta_1 HCON + \beta_2 GFCF + \beta_3 GEXP + \beta_4 NX - \beta_5^n IFFs + \xi \dots \dots \dots (15)$$

Where:

- RGDP = Real Gross Domestic Product
- HCON = Household Consumption expenditure.
- GFCF = Gross Fixed Capital Formation.
- GCON = Government Consumption Expenditure
- NX = Net Exports (Exports minus Imports)
- IFFs = Illicit Financial Outflows
- β_0 = Intercept
- β_1 to β_5 = Parameters to be estimated.
- ξ = Residual Terms.
- n = any power except 1

The logarithmic transformation of Equation (15) specified in Equation (16) below permits the linearization of the non-linear parameters of the model. Figures 3 and 4 provided the rationale.

$$\ln RGDP_t = \beta_0 + \sum \beta_1 \ln HCON + \sum \beta_2 \ln GFCF + \sum \beta_3 \ln GCON + \sum \beta_4 \ln NX - \sum \beta_5 \ln IFFs + \xi_t \dots \dots \dots (16)$$

Equation (15), among other things, was used to answer Research Question ‘a’ and ‘b’.

To verify if long-run equilibrium relationship exists and to verify if this relationship is linked with the short-run dynamic adjustment mechanism that describes how the

series react when they move out of long-run equilibrium, the researcher explored cointegration and error correction models.

Cointegration.

Cointegration is an econometric concept which mimics the existence of a long-run equilibrium among economic time series. If two or more series are themselves nonstationary, but a linear combination of them is stationary, then they are said to be cointegrated (Wei, 2006). Rajab (2011) observed that we should be concerned about cointegration because it is a possible solution to nonstationarity found in many economic time series, and if time series are nonstationary, the assumptions upon which OLS estimation rest are violated, rendering its application inappropriate. Cointegrated variables will never move far apart, and will be attracted to their long-run relationship.

Testing for cointegration implies testing for the existence of such a long-run relationship between economic variables. This study considered only the Johansen's procedure for cointegration among other tests such as the Engle-Granger method commonly known as the two-step estimation procedure and the Phillips-Ouliaris method.

Johansen's Procedure

Johansen's procedure builds cointegrated variables directly on maximum likelihood estimation instead of relying on OLS estimation. This procedure relies heavily on the relationship between the rank of a matrix and its characteristic roots. Johansen derived the maximum likelihood estimation using sequential tests for determining the number

of cointegrating vectors. Consequently, he proposes two different likelihood ratio tests namely: the trace test and the maximum eigen value test.

Stata 11 uses the trace statistic and compares it with the critical test statistic. Cointegrating vector exists if the trace statistic is greater than the critical test statistic.

This procedure has the advantage over the Engle-Granger and the Phillips-Ouliaris methods in that it can estimate more than one cointegrating relationship, if the data set contains two or more time series.

The long run equation of the model is stated below:

$$\pi_t = \ln \text{RGDP}_t - \psi_0 - \sum \psi_{i,1} \ln \text{IFFs}_t \dots \dots \dots (17)$$

Where:

π_t is the equilibrium error term. $\Psi_{i,1}$ is the long-run response (change of RGDP_t with respect to a change in IFFs_t). This model was used to analyse fully objective 'b'.

Error Correction Model (ECM)

An error correction model is not a model that corrects the error in another model. ECMs are a category of multiple time series models that directly estimate the speed at which dependent variable, say, Y returns to equilibrium after a change in an independent variable, say, X. ECM links the long-run equilibrium relationship implied by cointegration with the short-run dynamic adjustment mechanism that describes how the two series react when they move out of long-run equilibrium. Although it may be possible to estimate the long-run or cointegrating relationship, economic systems are rarely in equilibrium as they are affected by institutional and/or

structural changes that might be temporary or permanent. Since equilibrium is rarely observed, the short-run evolution of variables (short-run dynamic adjustment) is important.

The error correction model of this study is stated below:

$$\Delta \text{RGDP}_t = \alpha + \beta_1 \Delta \text{IFF}_{S_{t-i}} - \beta_2 \text{ECT}_{t-i} + \varepsilon_t \dots \dots \dots (18)$$

Where :

β_1 is the short-run effect (called the impact multiplier) that measures the immediate effect that a change in $\text{IFF}_{S_{t-i}}$ will have on RGDP_t . The β_2 parameter, measures the adjustment effect (also called the feedback effect): it indicates how much of the disequilibrium is being corrected, i.e. the measure to which any disequilibrium in a previous period affects any adjustment in RGDP_t .

Rajab (2011) opines that the problems associated with the use of the short-run model among others are as follows:

Multicollinearity: This is a situation in which two or more independent variables in a multiple regression model are highly correlated.

Spurious correlation: This is a situation in which two variables have no causal connection, yet it may be inferred that they do as a result of a certain third unseen factor.

The possible solution is to adopt the error-correction mechanism (ECM) formulation of the dynamic structure. The ECM satisfies the assumptions of classical normal linear regression model (CNLRM). These assumptions include: linear regression

model; residuals are normally distributed; there is no serial correlation among residuals; the number of observations must not exceed the number of parameters to be estimated; there is no perfect multicollinearity.

This means that diagnostic tests have to be conducted on the error-correction mechanism in order to determine whether any of these assumptions have not been violated. These tests include: Normality test, Heteroscedasticity test, Serial correlation test, Misspecification test and Multi co-linearity test.

Statistical Theory of Variance Error Decomposition

Variance decomposition refers to the breakdown of the forecast error variance for a specific time horizon. Basically, variance decomposition can tell a researcher the percentage of the fluctuation in a time series attributable to other variables at select time horizons.

Variance decomposition is calculated from the Vector Moving Average (VMA) representation of a Vector.

$$\begin{bmatrix} y_t \\ z_t \end{bmatrix} = \begin{bmatrix} \bar{y} \\ \bar{z} \end{bmatrix} + \sum_{i=0}^{\infty} \begin{bmatrix} \phi_{11} & \phi_{12} \\ \phi_{21} & \phi_{22} \end{bmatrix} \begin{bmatrix} \varepsilon_{yt-i} \\ \varepsilon_{zt-i} \end{bmatrix} \quad \dots\dots\dots(19)$$

$$\begin{aligned} y_t &= \bar{y} + \sum_{i=1}^{\infty} \phi_{11} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{12} \varepsilon_{zt-i} \\ z_t &= \bar{z} + \sum_{i=1}^{\infty} \phi_{21} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{22} \varepsilon_{zt-i} \end{aligned} \quad \dots\dots\dots(20)$$

The formula in matrix notation above is the VMA representation of a two variable VAR equation and the bottom two are the same formulas but in standard form. The VMA is typically rewritten in this form

$$\begin{aligned}
 y_t - \bar{y} &= \sum_{i=1}^{\infty} \phi_{11} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{12} \varepsilon_{zt-i} \\
 z_t - \bar{z} &= \sum_{i=1}^{\infty} \phi_{21} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{22} \varepsilon_{zt-i}
 \end{aligned}
 \dots\dots\dots (21)$$

to emphasize that notion that deviate from the long-term average only occur because of shocks to either the y or z error term designated as epsilon. Using this notation, one can write the percentage deviation of y from shocks to itself and those of z like this respectively.

$$\begin{aligned}
 &\frac{\sum_{i=1}^{\infty} \phi_{11} \varepsilon_{yt-i}}{\sum_{i=1}^{\infty} \phi_{11} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{12} \varepsilon_{zt-i}} \\
 &\frac{\sum_{i=1}^{\infty} \phi_{12} \varepsilon_{zt-i}}{\sum_{i=1}^{\infty} \phi_{11} \varepsilon_{yt-i} + \sum_{i=1}^{\infty} \phi_{12} \varepsilon_{zt-i}}
 \end{aligned}
 \dots\dots\dots (22)$$

Calculating these percentages at different time intervals for all independent variables yields the variance decomposition of a time series. A shock to any one of the variables considered in the VECM not only affects the variables directly, but is also transmitted to other endogenous variables via the dynamic lag structure of the VECM. Thus, the variance decomposition provides information about the relative importance of each random shock to the endogenous variables in the VECM.

Impulse Response Function

The Vector Moving Average (VMA) description of a stationary VAR system can be used to derive the Impulse Response Functions (IRF) of a model. The moving average representation now can be written more compactly in terms of the structural error terms:

$$\begin{bmatrix} y_t \\ z_t \end{bmatrix} = \begin{bmatrix} \bar{y} \\ \bar{z} \end{bmatrix} + \sum_{i=0}^{\infty} \begin{bmatrix} \phi_{11} & \phi_{12} \\ \phi_{21} & \phi_{22} \end{bmatrix} \begin{bmatrix} \varepsilon_{yt-i} \\ \varepsilon_{zt-i} \end{bmatrix}$$

$$X_t = \mu + \sum_{i=0}^{\infty} \phi_i \varepsilon_{t-i} \quad \dots\dots\dots(23)$$

The impact multiplier represents the instantaneous reaction of an external shock in one variable to another and can be written as:

$$\phi_{jk}(0) \quad \dots\dots\dots(24)$$

Plots of this function on y-axis with time on the x-axis would yield an impulse response graph. The summations of all of the impulse response functions as the forecast horizon approaches infinity are finite because the series are assumed to be stationary:

$$\sum_{i=0}^{\infty} \phi_{jk}^2 = k, \text{ where } k \in \mathbb{R} \quad \dots\dots\dots(25)$$

Although variance decomposition shows the importance of shocks in a variable to movements in another variable, the direction of these movements can only be discerned from the impulse functions. Thus, it is possible to see whether an impulse in a variable leads to a fall or rise in the other variables.

Model 2: The State Space Model.

Although, in some cases, non-linear parameters could be transformed to linear parameters, however, as pointed out by Dettoto et al (2010), when a time series is non-linear and subject to a regime change, a time varying parameter model can be more appropriate. The term ‘State Space’ originated in 1960 in the field of control engineering. It was employed to solve a broad range of dynamic systems problems. It

is used to capture the dynamics of an observed vector in terms of a possibly unobserved vector known as the state vector. The period under review was subject to a number of regime changes. Model 2 is applied to see if it can explain more on the nature of the relationship between economic crimes and the Nigerian economy.

Specifically, the State-Space Model is stated in this form:

$$RGDP_t = \alpha_o + \sum \alpha_i RGDP_{t-i} + (\tilde{\eta} + \delta_t) IFFs_t + \zeta_t \dots\dots\dots(26)$$

Where:

$RGDP_t$ = the first differences of the logarithms of the RGDP at time.

α_o = the intercept.

α_i = the autoregressive coefficient.

$IFFs_t$ = the first difference of the logarithm of IFFs rate at time t.

ζ_t = the normally distributed error term at time t.

The coefficient of $IFFs_t$ can be split into two different parts: the steady-state coefficient $\tilde{\eta}$ and the variation with respect to $\tilde{\eta}$ at time t, caught by δ_t . This is exactly what permits the modeling of a time-varying elasticity coefficient of IFFs variable.

This coefficient would be specified as:

$$z_t = \tilde{\eta} + \delta_t \dots\dots\dots(27)$$

The dynamics of δ_t is represented by the equations below:

$$\delta_t = \gamma \delta_{t-1} + \sigma_t \dots\dots\dots(28)$$

Where

γ = the coefficient of the state equation (measuring the inertia intensity of δ_t across time).

σ_t = normally distributed error term at time t .

Note that the steady-state coefficient ($\tilde{\eta}$) measures the effect a change in IFFs will have on RGDP while δ_t measures the speed of change in RGDP caused by IFFs along time.

The state equation (28) is determined by an AR (1) process. Additionally, the disturbance term of equation (28), is assumed to be serially independent. Thus, the model is based on a two-layer process. Firstly, an observed process (26) represented by: $RGDP_t$ and $IFFs_t$ and secondly an unobserved process/state equation (28) of the regression coefficient, δ_t . Equations (26) and (28) constitute a particular kind of state space model that can be estimated using a specific algorithm (filter) that permits the researcher to maximize a likelihood function. This algorithm is called the Kalman Filter. This model was used to analyse objective 'a'.

3.3.1. Justification of the Model

The researcher chose a model that is easily amenable to time series analysis employing OLS method of data analysis, which could also be incarnated in a state space model. The reason for this choice is because these models permit the identification of the dynamic essence of trended variables by accounting for lagged values. Secondly, this methodology allows the use of a pure autoregressive (AR) model, permitting to avoid variable selection bias. Thirdly, this type of model uses only a restricted number of variables, easing the data collected and permits the use of

State Space Models. Furthermore, the use of State Space Model (SSM) offers a number of important advantages over ARMA models. Firstly, it does not require the data to be stationary and this eliminates a problem on which Box-Jenkins Theory offers only minimal guidance. Secondly, SSM deals with missing and irregular spaced observations in a straightforward way while incorporating certain desirable features such as interventions, breakpoints and regression effects easily and naturally. Thirdly, SSM is built from components with direct interpretations. Finally, the time-varying component of crime coefficient adds forecasting power to the model.

3.4. Estimation Technique and Procedure.

The estimation techniques adopted in this work are the Ordinary Least Squares (OLS) and State Space Methods. The researcher chose these methods to ensure deeper understanding and robust econometric analysis. Firstly, OLS has some optimal properties, which is the Best Linear Unbiased Estimator (BLUE). Secondly, the computational procedure of OLS is fairly simple as compared with other econometric techniques and data requirements are not exhaustive. Thirdly, the least squares method has been used in a wide range of economic relationships with fairly satisfactory results. Fourthly, the mechanics of least squares are simple to understand. Fifthly, OLS is an essential component of most other econometric techniques. On the other hand, SSM does not require the data to be stationary and this eliminates a problem on which Box-Jenkins Theory offers only minimal guidance. Secondly, SSM deals with missing and irregular spaced observations in a straightforward way while incorporating certain desirable features such as interventions, breakpoints and regression effects easily and naturally. Thirdly, SSM is built from components with

direct interpretations. Finally, the time-varying component of crime coefficient adds forecasting power to the model.

Impulse Response Function (IRF) and variance decomposition were also used to determine the dynamic and long run impact of IFFs on the Nigerian economy. E-views and STATA 11 statistical software packages were used to estimate the results of this study.

3.5 Evaluation of Estimates.

Parameter estimates were evaluated under the following sub-headings: Economic a priori criteria, statistical criteria and econometric criteria.

Economic a priori Criteria

A priori expectation of the sign of the independent variables in relation to the dependent variable is stated below:

$$\beta_1 \text{ to } \beta_4 > 0; \beta_5 < 0.$$

Statistical Criteria.

The statistical criteria employed are the Coefficient of Determination (R^2), student's t-statistic and the f-statistic.

Coefficient of Determination

Coefficient of Determination (R^2) explores the explanatory power of the explanatory variables. The closer R^2 is to 1, the stronger the explanatory power of the explanatory variables in explaining the changes in the dependent variable and the closer it is to 0, the weaker its explanatory power.

Student's t-Test.

Student's t-test was used to determine the significance of parameter estimates and so accept or reject the null hypothesis. The estimated t-statistic is compared with its table value. If the former is greater than the later, the null hypothesis is rejected and the alternative hypothesis accepted.

State Space Parameters

Z- Test: Significance of the parameters was determined by looking at their probability values. Any probability value less than or equal to 0.05 is significant.

F-Statistic

This test statistic was used to test the overall significance of the model. It is also used to test for auto-correlation. The estimated f-statistic is compared with its table value. If the former is greater than the later, the null hypothesis is rejected and the alternative hypothesis accepted.

State Space Wald Test Statistic

This statistic is similar with F-statistic. It tests the overall significance of the model. The significance of the Wald statistic is determined by looking at its probability value. We reject the null hypothesis of non-significance of the model if the probability value is greater than 0.05 level. This statistic can be compared with f-statistic to determine which model is better.

Econometric Criteria.

The tests conducted under this sub-heading are tests for multi-collinearity, auto-correlation, normality test, heteroscedasticity test and mis-specification test.

Normality Test

The researcher used the Jacque-Bera test to determine whether the ECM is normally distributed. This test measures the difference in kurtosis and skewness of a variable compared to those of the normal distribution. In the Jacque-Bera test, we set the null and alternative hypothesis as follows:

H₀: The variable is normally distributed.

H₁: The variable is not normally distributed.

The test statistic is

$$JB = n \left[S^2 / 6 + \frac{(K-3)^2}{24} \right] \dots\dots\dots(29)$$

where n is the sample size, K is kurtosis coefficient, S is skewness coefficient. For a normally distributed variable, S = 0 and K = 3. Therefore, the JB test of normality is a test of the joint hypothesis that S and K are 0 and 3, respectively. In that case, the value of the JB statistic is expected to be zero. We reject the null hypothesis if the p-value \leq level of significance, that is, we reject the null hypothesis that the residuals are normally distributed if the computed p value of the JB statistic is sufficiently low, which will happen if the value of the statistic is very different from zero. But if the p value is reasonably high, which will happen if the value of the statistic is close to zero, we do not reject the normality assumption.

Heteroscedasticity Test

OLS models make the assumption that the variance in the error term is constant (homoscedastic). Heteroscedasticity results from a sequence of random variables having different variances. Heteroscedasticity violates this assumption of OLS and occurs when errors increase as the value of an independent variable increases. It is vital to test for violations of the Gauss-Markov assumptions, one of which is the absence of heteroscedasticity; thus making sure that we have the best linear unbiased estimate (BLUE). It implies that during regression analysis there is non-consistent variance. Heteroscedasticity is tested using the Lagrange multiplier, also known as Engle's Arch LM test.

The test procedure is as follows:

H_0 : There is no heteroscedasticity.

H_1 : There is heteroscedasticity.

The test statistic is

$$L_{ME} = nR^2 \dots\dots\dots(30)$$

Where n is the number of observations, and R^2 is the coefficient of determination of the augmented residual regression.

We reject the null hypothesis if the p-value \leq level of significance and conclude that there is Heteroscedasticity.

Serial Correlation Test

If error terms are correlated it holds some implication on the model. It is assumed that the disturbance term relating to any observation is not influenced by the disturbance term relating to any other observation. Auto-correlation may occur because of inertia or specification bias, or nonstationarity of dependent and explanatory variable or data manipulation (averaging, interpolation and extrapolation) or incorrect functional form. The presence of auto-correlation leaves the OLS estimators still linear unbiased as well as consistent and asymptotically normally distributed, but they are no longer efficient. Coefficients statistically insignificant could be declared significant too. Durbin-Watson d statistic and the Breusch-Godfrey (BG) test were used to detect auto-correlation.

Decision

If $d = 4$, there is negative serial correlation. If $d = 0$, there is positive serial correlation. If $d \approx 2$, there is no serial correlation.

Misspecification Test

Misspecification is as a result of the following (Rajab, 2011): incorrect functional form; inclusion of irrelevant variables; exclusion of relevant variables.

The consequences of a mis-specified regression are: the residuals are not normally distributed; there is serial correlation; regression is inconsistent with actual working of the economy; the parameter estimates are not robust to samples used.

To test for misspecification, the researcher used the Ramsey's Reset Test. This is a likelihood test that compares the likelihood function of original regression to an

augmented regression. If the likelihood function or the f- statistic of the original regression is greater than the augmented regression, then there is no mis-specification problem.

Test of Multi-collinearity

Multi-collinearity occurs when multiple explanatory variables are moderate/highly correlated with each other. When this occurs the variables provide redundant information. The consequences include inflated standard errors for the unstandardized coefficients, incorrect p-values, and sometimes sign switches. One way to test for this problem is to run a correlation matrix of all dependent variables and see whether some of them are moderately/highly correlated (a reasonably high correlation can be thought of as around .40 and higher). Variance inflation factor scores (vifs) can also be used to detect multi co-linearity. The general rule is that individual or average VIF scores greater than 10 indicate multi co-linearity.

Unit Root Test.

Time series data consist of observations, which are considered as a realisation of random variables that can be described by some stochastic processes. The concept of "stationarity" is related to the properties of these stochastic processes. Time series data are assumed to be stationary if the mean, variance and covariance of the series are independent of time, rather than the entire distribution. Non-stationarity in a time series occurs when there is no constant mean μ , no constant variance σ^2_t or both of these properties. It can originate from various sources but the most important one is the unit root.

Non-stationarity is a property common to many applied time series. This means that a variable has no clear tendency to return to a constant value or linear trend. It is generally correct to assume that economic processes have been generated by a non-stationary process and follow stochastic trends. One major objective of empirical research in economics is to test hypotheses and estimate relationships derived from economic theory, among other such aggregated variables. Pfaff, 2006 posits that classical statistical methods used in building and testing large simultaneous equation models, such as Ordinary Least Squares (OLS), were based on the assumption that the variables involved are stationary. The problem is that the statistical inference associated with stationary processes is no longer valid if time series are a realisation of non-stationary processes. If time series are non-stationary, it is not possible to use OLS to estimate their long-run linear relationships because it would lead to spurious regression. Spurious regression is a situation in which there appears to be a statistically significant relationship between variables but the variables are unrelated.

Variables for this study were tested for stationarity using the Augmented Dickey-Fuller test. The ADF tests the null of a unit root against the alternative of stationarity.

Augmented Dickey Fuller (ADF) Unit Root Test

The general form of ADF test can be written at level and first difference form as follows:

$$\Delta Y = \delta Y_{t-1} + u_t \dots\dots\dots(31)$$

Where: Δ = first difference operator. u = white noise term.

Y_{t-1} = Immediate previous observation. δ = coefficient of the previous observation.

The hypothesis to test the presence of unit root is stated thus:

Null Hypothesis: $H_0: \delta = 0$ (that is, there is a unit root or the time series is non-stationary or it has a stochastic trend).

Alternative Hypothesis: $H_1: \delta < 0$ (that is, the time series is stationary or possibly around a deterministic trend).

Test Statistic

Determine the test statistic using:

$$F_{\tau} = \hat{Y} / SE(\hat{Y}) \dots \dots \dots (32)$$

where $SE(\hat{Y}) =$ standard error of Y .

Decision:

Compare the calculated test statistic with the critical value of the ADF table to reject or accept the null hypothesis. If the absolute value tau $|\tau|$ is greater than the absolute ADF or Mickinnon critical tau value, then the null hypothesis of unit root that $\delta = 0$, is rejected and the conclusion is that the variable of the series does not contain a unit root and is stationary.

If, on the other hand, the absolute value tau $|\tau|$ is less than the absolute ADF or Mickinnon critical tau values, we do not reject the null hypothesis that $\delta = 0$, in which case the time series is nonstationary.

a) Standardisation of Data

Standardized coefficients are the estimates resulting from an analysis carried out on variables that have been standardized so that their variance is 1. This means that they

are in “standard deviation” terms or units and can be compared to each other. Recall that unstandardized coefficients literally tell us the change in ‘Y’ for every 1 unit change in ‘X’. The problem is that more often than not the units of analysis for all of our variables are different (for example, dollars and percentage unemployed) and they cannot be directly compared with each other. When the coefficients are standardized in standard deviation terms, they can be directly compared to each other and the researcher can tell which of the variables has the largest impact (Nicoletti, 2011). Standardization of data also enables the interpretation of the parameter estimates in terms of elasticity (Amakom, 2006).

3.6. Test of Hypotheses

The hypotheses to be tested are re-stated below:

1. H_0 : There is no long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

H_1 : There is a long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

2. H_1 : There is no significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

3. H₀: There is no bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

The Student's t-Test and the Wald test of the State Space Model were used to test hypothesis No. 1 and 2 with a view to either accepting or rejecting the null hypothesis while Granger Causality Test was used to test Hypothesis No. 3. Hypothesis 2 was also verified using the error correction model and forecast error variance decomposition. The null hypothesis of the hypothesis 1 and 2 will be rejected if the t-statistic and Wald test statistic are found to be significant. Similarly, if the f-statistic of the granger causality test is less than or equal to 0.05, we reject the null hypothesis that a IFFs does not granger cause RGDP and so accept that it granger causes RGDP.

3.7. Nature and Sources of Data.

All data were drawn from secondary sources such as the Central Bank of Nigeria Statistical Bulletin, 2013, World Economic Forum, World Bank data bank, Global

Financial Integrity Publications. Illicit Financial Outflows (IFFs) from Africa were compiled by an organization known as Global Financial Integrity headed by the former IMF Director, Raymond W. Baker. This compilation used accepted economic models, namely the World Bank Residual Method and IMF Direction of Trade Statistics. Table 4 presents a summary of the sources of data used in this study. Furthermore, all data are quarterly data. Cubic Spine interpolation was used to transform yearly Illicit Financial Outflows to quarterly figures using STATA 11 software package.

Table 4: Sources of Data

S/No.	Variables	Source
1.	RGDP	CBN
3.	HOUSEHOLD CONSUMPTION	CBN
5.	GROSS FIXED CAPITAL FORMATION	CBN
6.	GOVT. CONSUMPTION EXPENDITURE	CBN
7.	NET EXPORT	CBN
9.	ILLCIT FINANCIAL OUTFLOWS	GLOBAL FINANCIAL INTEGRITY.

Source: Researcher's Compilation.

Reliability of Data.

An important task in estimating the models is the choice of a good indicator to represent economic crime activity. Hence, we need a variable that is sufficiently well reported and has the same definition for all period considered. IFFs are chosen for their highest reliability among all economic crime variables as it embodies many other economic crimes and uses well established methods as well as reliable data source for its computation.

Data for other variables of the model were also drawn from highly reputable international organisations. These sources are susceptible to minimal errors of omission and commission and so are reliable. Data were also drawn from CBN Statistical Bulletin, 2013 compiled by seasoned researchers and as such are reliable.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS.

4.1. Introduction

This chapter was devoted towards providing answers to the research questions through the analysis of available data. At this stage, the truth or otherwise of the research hypotheses were verified and decisions taken. This exercise culminated in new findings that serve as contributions to existing knowledge. This chapter is, therefore, sub-divided into the following sub-headings below:

4.2. Data Presentation

Data for the study are presented in Appendix 1, Table 10. Because of the need to avoid spuriousness results, the time series data were first subjected to unit root test using Augmented –Dickey Fuller Test. The outcome of the unit root test, which was derived from Appendix 2 is presented in Table 5 below:

Table 5: Unit Root Test Result

VARIABLES	TEST STATISTIC	CRITICAL ADF	LEVEL OF SIGNIFICANCE	ORDER OF INTEGRATION
RGDP	-7.980	-3.569	1%	I(1)*
HCON	-8.661	-3.569	1%	I(1)*
GFCF	-14.353	-3.569	1%	I(1)*
GCON	-5.993	-3.569	1%	I(1)*
NX	-11.717	-3.569	1%	I(1)*
IFFs	-11.040	-3.569	1%	I(1)*

Source: Researcher's Compilation. N/B: *Stationary at 1st difference.

The result of the unit root test above showed that all the variables of the study have unit root problem. However, taking a first difference of all the variables eliminated their unit root problems. Having achieved stationarity at first difference for all the

variables, the next step was to determine if the variables are cointegrated and so do move together in the long-run.

Cointegration Relationship

The result of the cointegration test presented in Appendix 2, Table 12, shows that there is only one cointegrating vector. This implies that the variables have long run relationship and there is only one way they relate in the future. This long run relationship is further explained through a long run regression analysis.

Cointegration Regression

Table 6 below is a summary of the cointegration regression output, which was drawn from Appendix 2, Table 13.

Table 6: Summary of Cointegration Regression Result

Variables	Beta Coefficients	t-Statistic	Std. Error
HCON	0.30	2.93	0.13
GFCF	-0.15	-1.29	0.48
GCON	0.20	2.10	0.02
NX	0.02	0.17	0.17
IFFs	-0.59	-5.27	0.01
Adjusted R²	0.49		
F-Stat	12.14	F-Prob. 0.00	
T-Table	1.62		
F-Table	2.45		

Source: Stata 11 Long run regression output.

4.3. Data Analysis.

The result presented in Table 6 above showed that only household consumption, government consumption expenditure and illicit financial outflows are statistically significant in the long run. This conclusion is drawn because the critical t-values

corresponding to these variables are greater than their t-Table values. This implies that changes in RGDP are explained by household consumption, government and illicit financial outflows only. It, therefore, follows that GFCF and NX are not statistically significant and do not contribute to changes in RGDP.

Similarly, because the critical F is greater than the table F, the entire model is significant.

The adjusted R^2 shows that only 49 per cent of the changes in RGDP are explained by HCON, GCON and IFFs while 51% are explained by variables outside the model. However, the explanatory power of the explanatory variables is fairly moderate.

A further look at the result presented in Table 6 above also showed that the variables conform to a priori economic expectation except gross fixed capital formation, which is expected to relate with the RGDP positively but came out negative.

Furthermore, a unit change in any of the independent variables causes RGDP to change less than proportionately. This is because RGDP and other independent variables have fairly inelastic relationship. While a percentage increase in IFFs causes a decrease in RGDP by 59 per cent in the long run, on the one hand, a percentage increase in HCON will increase RGDP by 30 per cent in the long run, on the other. Similarly, a percentage increase in GCON will increase RGDP by 20 per cent respectively. However, IFFs makes the greatest impact on RGDP in the long run.

Error Correction Model (ECM)

The ECM results are presented in Appendix 2, Table 14 and summerised below in Equation 33:

$$\Delta \text{RGDP}_t = 5211.46 - 0.005\text{IFF}_s - 0.32\text{ECT} \dots\dots\dots 33$$

The coefficient of the ECT is significant and correctly signed indicating that the series cannot drift too far apart and convergence is achieved in the long-run. The ECT indicates a feedback of approximately 32 per cent of the previous year's disequilibrium from long run elasticity of the explanatory variables corrected. That is, the coefficient of the error correction term measures the speed at which the level of real output adjusts to changes in the explanatory variable in an effort to achieve long run static equilibrium. It can be said, therefore, that the speed of adjustment is fair.

The coefficient of IFFs is significant in the short run since the z- statistic is within the 95 per cent confidence level and has probability less than 0.05. Consequently, a percentage increase in IFFs in the short run decreases RGDP by 0.5 per cent. However, the impact of IFFs on RGDP is infinitesimal in the short run. GCON accounts for about 31 per cent of the changes noticed in RGDP in the short run.

Diagnostic Tests

The results of the diagnostic tests conducted and presented in Appendix 2, Table 15 are summarised in Table 7 below:

Table 7: Results of the diagnostic tests conducted.

S/NO	Diagnostic Tests	Statistic	Probability
1.	Durbin Watson Statistic for Serial correlation	1.9	
	Breusch-Godfrey Prob. for Serial correlation		0.82
2.	VIF Mean for Multicollinearity	1.35	
3.	Breusch-Pagan Prob. For Heteroscedasticity		0.10
4.	Jarque-Bera Statistic for Normality Test	0.003	

	Jarque-Bera Prob		0.94
5.	Ramsey Reset F-Stat. for Mis-specification test	7.33	0.086

Multi-Colinearity Test

Test for multi-colinearity was conducted using Variance Inflation Factor Scores (VIFS). The result showed the absence of multi-colinearity as buttressed by the low VIFs mean (1.35).

Heteroscedasticity Test

Test for heteroscedasticity using Breusch-Pagan/Cook-Weisberg test shows a non-significant B-P probability warranting the acceptance of the null hypothesis of constant variance or homoscedasticity.

Test for Normality

Test for normality of the variance using Jarque-Bera Test shows non-significant Jarque-Bera test statistic and the JB statistic tending towards zero. This warrants the acceptance of the null hypothesis that the variance is normally distributed.

Mis-specification Test

Test for mis-specification was done using Ramsey Reset Test and the result shows that Ramsy F-statistic is not significance suggesting that the model has no omitted variables.

Causality Test

The summary of the causality test result was drawn from Appendix 2, Table 18. The result shows that IFFs Granger causes RGDP while RGDP Granger causes changes in IFFs. Furthermore, GCON Granger causes RGDP while RGDP does not Granger cause GCON.

Table 8: Summary of Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Probability
GCON does not Granger Cause RGDP	58	8.47213	0.00064
RGDP does not Granger Cause GCON		0.36199	0.69799
IFFS does not Granger Cause RGDP	58	4.81149	0.01202
RGDP does not Granger Cause IFFS		3.48957	0.03770

Variance Decomposition Analysis

An examination of the short-run dynamic properties of economic growth is further supplemented by forecast error variance decomposition. More importantly, Table 16 of Appendix 2 shows the fraction of the forecast error variance for each variable that is attributed to its own innovations and to innovations in another variable. Table 16 shows that shocks to GCON is the predominant source of variation in RGDP forecast errors, ranging from 87 per cent to 92 per cent over the ten-quarter horizon. RGDP own shocks constitute the second predominant source of variation in RGDP forecast errors. The variation ranged from 100 per cent to 4 percent over the ten-quarter horizon. GFCF and NX constitute the least source of variation in RGDP after IFFs.

Impulse Response Function

The result of impulse response functions of the RGDP model was documented in Table 17 of Appendix 2. The result shows that innovations in IFFs depress RGDP in the short run except in periods 1 and 2 respectively. Both GCON and HCON contribute positively to RGDP in the short run respectively. Nevertheless, RGDP responds the strongest to innovations in GCON.

Model 2: The State Space Model (SSM).

To detect the effect of economic crimes on the Nigerian economy, we proposed a State Space Model, with the variable representing economic crimes as the only explicative variable. Table 9 is the summary of the State Space result presented in Appendix 3.

Table 9: Summary of the State Space Result.

Variables	Coefficients	Std. Error	P>|z|
α_i (AR Coefficient)	0.98	0.03	0.00
$\tilde{\eta}$ (observed)	-1.50	1329.92	0.031
γ (unobserved)	0.56	0.56	0.034
δ_t (variation)	1.09	1939.56	0.041
Log Likelihood Function	-89.009		
Wald Chi	1583.30		0.00

The table above reports the Log-Likelihood Function at the maximum (Kalman Filter) and gives the result of the Wald Test against the null hypothesis that the coefficients on all the independent variables, state variable and lagged state variable are zero. The Wald Test is significant warranting the rejection of the null hypothesis at all conventional levels.

Because the estimated mean ($\tilde{\eta} = -1.50$) of the differenced series is smaller in magnitude than its standard error (1329.92), this indicates that there is no deterministic linear trend in the series suggesting that the model is suitable for long run analysis. Furthermore, a percentage increase in non-linear economic crime variable will decrease RGDP by 150 per cent.

The parameter of the state equation, $\delta_t = 1.09$ indicates a certain persistence of the crime coefficient. In other words, economic crimes effect exhibits low variation along time.

However, the evolution of the time-varying component of economic crimes coefficient $\gamma = 0.56$, indicates that almost 56 per cent of δ_t is influenced by its past value δ_{t-1} , giving a relatively high significant inertia to the evolution of the time-varying component of economic crimes coefficient. This is represented in Equation 34 below.

$$\delta_t = 0.56\delta_{t-1} + \sigma_t \dots\dots\dots 34$$

4.4. Evaluation of Hypotheses

This study revolved around the testing of the following research hypotheses either to accept or reject them:

HYPOTHESIS ONE

1. H_0 : There is no long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

H_1 : There is a long run relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) within the uninterrupted democratic dispensation period of 1999 to 2013.

The probability of the Wald Test in Model 2 is significant (0.005) being less than 0.05. This result warrants the rejection of the null hypothesis and the acceptance of

the alternative hypothesis which states that there is a long-run relationship between RGDP and IFFs within the period under review. Furthermore, a percentage increase in the non-linear component of economic crimes will decrease RGDP by 150 per cent in the long run.

Furthermore, in Model 1, the coefficient of IFFs is significant because the critical t-statistic is greater than the corresponding t-table. This, therefore, warrants the rejection of the null hypothesis and the acceptance of the alternative hypothesis, which states that there is a long-run relationship between economic crimes and RGDP. A percentage increase in IFFs will decrease RGDP by 59 per cent in the long run.

HYPOTHESIS TWO

2. H₀: There is no significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H₁: There is a significant short run impact of economic crimes (illicit financial outflows as proxy) on economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

The error correction model was used to investigate the short run relationship between RGDP and IFFs. The result presented in Appendix 2, Table 14 shows that the parameter estimate of IFFs is significant and the error correction term is also correctly signed and significant too, thus implying the existence of short run relationship between RGDP and IFFs. However, a percentage increase in economic crimes will

decrease economic growth by 0.5 per cent in the short run. This represents an infinitesimal impact on economic growth. This result is re-enforced by the outcome of the variance decomposition analysis.

HYPOTHESIS THREE

3. H_0 : There is no bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

H_1 : There is a bi-directional causal relationship between economic crimes (illicit financial outflows as proxy) and economic growth (Gross Domestic Product as proxy) in Nigeria within the uninterrupted democratic dispensation period of 1999 to 2013.

Granger Causality Test presented in Appendix 2 and summarised in Table 8 above was used as the yardstick for either accepting or rejecting the null hypothesis above. The probability of the f-statistic that IFFs does not granger cause RGDP is 0.01202 and significant. This warrants the rejection of the null hypothesis and the acceptance of the alternative hypothesis that IFFs granger causes RGDP. Conversely, the probability of the f-statistic that RGDP does not granger cause IFFs is 0.03770 and significant, which warrants the rejection of the null hypothesis and then conclude that RGDP granger cause IFFs. This leads to the conclusion that there is a bi-directional causal relationship between economic crimes and economic growth in Nigeria. Furthermore, the probability of the f-statistic that GCON does not granger cause RGDP is 0.00006 and significant. This warrants the rejection of the null hypothesis and the acceptance of the alternative hypothesis that GCON granger causes RGDP. Conversely, the probability of the f-statistic that RGDP does not granger cause GCON

is 0.69799 and not significant, which warrants the acceptance of the null hypothesis and then conclude that RGDP does not granger cause IFFs.

4.5. Discussion of Findings.

Having discussed the results of this study in line with the research hypotheses, the following implications of the research findings are highlighted:

- I. HCON, GCON and IFFs were found to be statistically significant. This implies that these variables of the model are responsible for the changes noticed in RGDP. While increase in HCON and GCON results in positive outcome for the Nigerian economy, increase in IFFs is devastating on the economy. It, therefore, follows that these variables matter so much in the growth of the Nigerian economy. A matrix of policies that increase HCON and GCON in order to boost income, standard of living and quality of life of the citizens will result in substantial reduction in economic crimes and so result in positive impact on the Nigerian economy. Anything to the contrary will exacerbate unemployment, poverty and income inequality and increase in economic crimes with obvious devastating consequences.
- II. It was also found that NX and GFCF were not statistically significant within the period under review. The reasons for the non-significance of GFCF and NX may not be far-fetched. There is infrastructure deficit that has hindered industrialisation and slowed domestic and foreign investments. Similarly, our export composition is mainly primary products and when coupled with inefficiencies, the result is the poor ranking in global competitiveness index (Blank et al, 2013).

Haken (2011) posits that the cost of financial hemorrhage has been significant for African countries. In the short run, massive capital outflows and drainage of national savings have undermined growth by stifling private capital formation. In the medium to long term, delayed investments in support of capital formation and expansion have caused the tax base to remain narrow. Naturally and to the extent that illicit capital flight may encourage external borrowing, debt service payments also increased and further compromised public investment prospects.

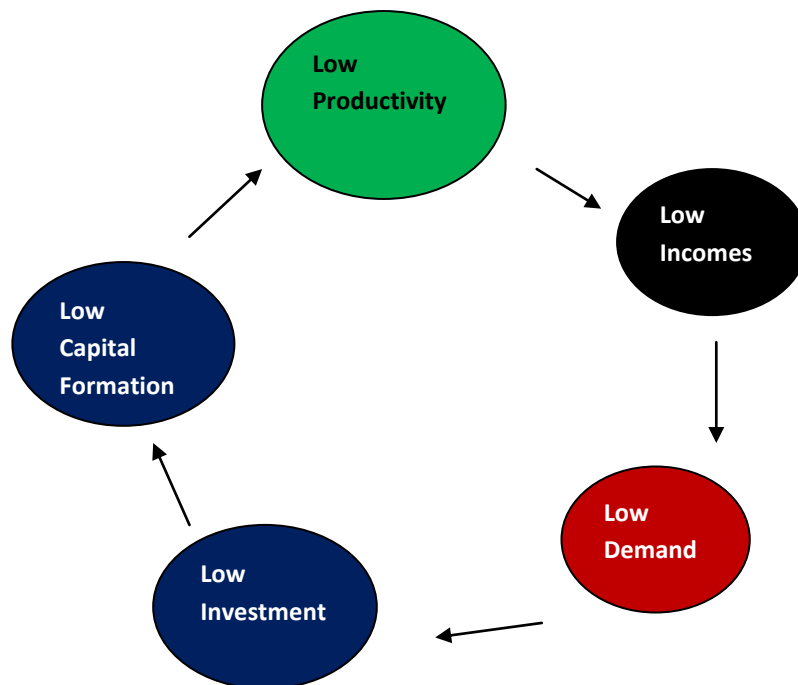
Similarly, Ezema et al (2012) observed that the productive and technological base of the Nigerian economy is weak, outdated, narrow, inflexible and externally dependent. Our infrastructure is poor, inadequate and lacks maintenance. The effectiveness of incentives has been generally low, giving rise to inadequate utilization of the factors of production. Furthermore, policy instability and summersaults are discouraging foreign investment despite the huge domestic market and the strategic location of the nation. The obvious effects have produced a weak private sector largely oriented towards distributive activities.

The Vicious cycle of poverty presented in Figure 10 illustrates the ripple effect of low capital formation in any economy. Low capital formation which constrains effective division of labour gives rise to low productivity. Low productivity reduces the profit margin/incomes of businesses which in turn causes a reduction in employment and incomes of households. Lower incomes

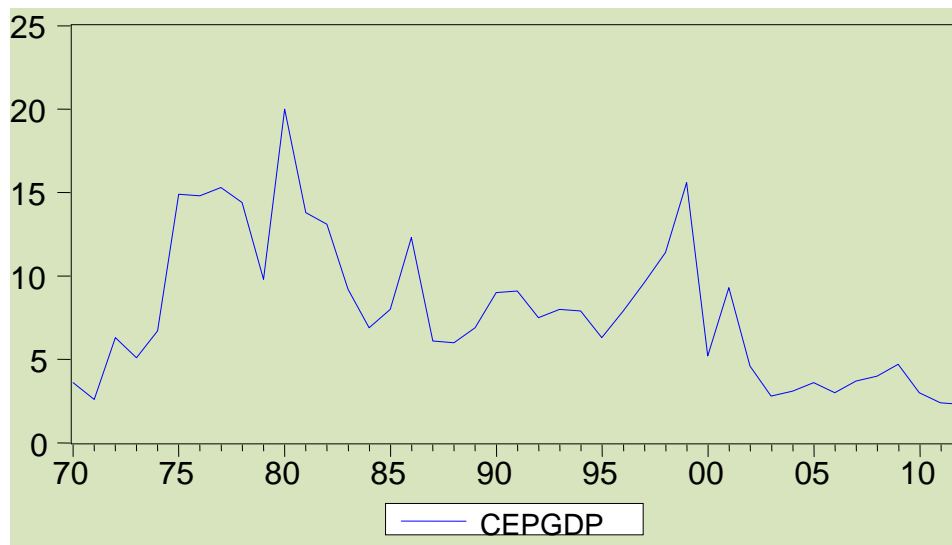
mean lower demand and a reduction in investments to avoid wastages or glut.

Lower investment means low capital formation and the cycle goes on and on.

Figure 10: Vicious Cycle of Poverty



- III. It was also found that GFCF, which is expected to relate with the GDP positively turned out to be negative. This is not surprising given our poor performance in capital formation over the years complemented by massive illicit financial outflow. The vicious cycle of poverty above explains more. Moreover, Nigeria's capital expenditure as a percentage of the GDP has been declining over the years as represented in Figure 11 below.

FIGURE 11: Capital Expenditure as a Percentage of GDP

IV. There is a strong evidence of non-linear relationship between economic crimes and the Nigerian economy. This sort of relationship does not present any systematic trend that is easily studied and understood. Therefore, more care and attention should be given to understanding this dynamic phenomenon. It, therefore, requires a multifaceted policy measures. Economic depression or negative economic growth produces widespread unemployment where large number of individuals may suffer severe and perhaps sudden reductions in income. This, in turn, has the potential to cause an increase in the proportion of the population with higher motivation to identify illicit solutions to their immediate problems. To this end, government must not only pursue policies that curb economic crimes but must also pursue vigorously policies that reduce unemployment, poverty and income inequality in the country. Gupta et al (2002) in a study on corruption, inequality and poverty observed that high levels of

economic crimes produce a more unequal distribution of income. To this end, policies that put more income in the households would not only enhance their living standards but also drive the amount of investments that businesses make in resources to produce goods. This was the conclusion of Keynes in his theory of business cycle.

- V It was also found that a bi-directional causal relationship exists between RGDP and IFFs. This implies that innovations in RGDP cause changes in IFFs and vice versa. That is to say that when economic crimes are perceived to be growing, it must be checkmated because its impact on the Nigerian economy is devastating. Conversely, when economic crimes are falling, this must be sustained because it makes positive impact on the Nigerian economy. When the Nigerian economy is growing, government and her agencies must be vigilant because the tendencies for economic crimes to increase may become greater but where economic growth results in increasing economic opportunities for individuals, it could make them less susceptible to crime. Conversely, when the Nigerian economy is confronted with dwindling fortunes, it tends to produce widespread unemployment where large number of individuals may suffer severe and perhaps sudden reductions in income. This, in turn, has the potential to cause an increase in the proportion of the population with higher motivation to identify illicit solutions to their immediate problems.

Therefore, there is a bi-directional causal relationship between economic crimes and the Nigerian economy. This result contrasts with Nageri et al (2013) who

conclude that causation flows mostly from economic crimes to low levels of income and growth.

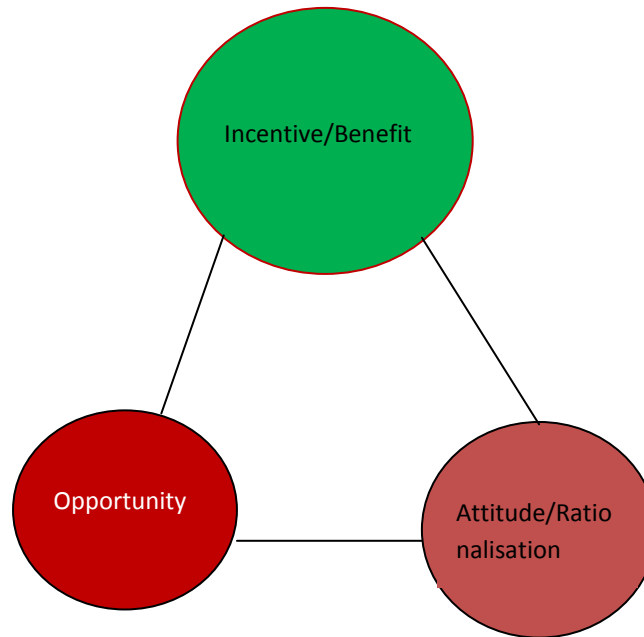
VI. It was also discovered that a long run relationship exists between economic crimes and the Nigerian economy. This implies that it takes time for the impact of economic crimes committed today to manifest on the Nigerian economy. Because the effect of economic crimes only bites harder in the long run, this explains why there has been lack of genuine commitment in the fight against economic crimes, thus 'sanding' the efforts of government in this direction. In the short to medium term, Nigeria still records growth in her GDP sending a wrong signal that all is still well with the economy even though the economy is sitting on a time bomb.

VII. The study found a short run relationship between economic crimes and the Nigerian economy. However, the effect of IFFs on RGDP is infinitesimal. This implies that the consequences of economic crimes committed today are not felt immediately. Perhaps, this partly explains why economic crimes have persisted despite government's numerous efforts to curb them. But one may ask if government has actually done enough to curb economic crimes in Nigeria. To answer this, recourse is had to Economic Crime Triangle represented in Figure 11 below. Lots of benefits are derived when economic crimes are committed without being caught. These benefits are most of the time very juicy and attractive. One could be made a billionaire with no dint of hard work. This is the beginning of the triangle and the motivation to commit economic crimes. The next question is: do opportunities to commit economic crimes exist? The answer obviously is yes. There are weak institutions that neglect the principles of accountability, probity, honesty and the rule of law in public affairs. International best practices are

relegated while mediocrity is celebrated leading to inefficiencies and more weakening of the institutions of the state. Thus, the numerous efforts of government to curb economic crimes are not matched with genuine commitment. For this reason, the opportunities to commit economic crimes abound.

Finally, on the triangle of economic crime, the economic crime offender rationalizes the cost-benefit implications of his action. Some of the rationalizations that are considered by the economic crime offender include: Is the benefit derivable greater than the punishment or vice versa? Is it possible to circumvent the law to the advantage of the economic crime offender? Is it possible to use the proceeds of economic crimes to secure the freedom of the economic crime offender? Does the economic crime offender have the capacity to use the state apparatus (power) to evade punishment or conceal his crime?

Therefore, there has been inadequate genuine commitment in government's policies and lack of concerted reactions from the citizens against economic crimes, which must be paid for in the future.

Figure 12: Economic Crime Triangle

Source: Parton et al (2009).

- VIII. It was also found that within the period under review, economic crimes made the greatest impact on the Nigerian economy in the long run than any other independent variables of the model. This implies that greater attention should be given to reducing the level of economic crimes in Nigeria. If this is not done urgently, our collective efforts at growing the economy and improving living standards would amount to nothing.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.

5.1. Introduction

This chapter presents at a glance the major findings of this study and the contributions to knowledge. The researcher proffered some recommendations based on the findings of this study.

5.2. Summary of Findings.

Having tested the hypotheses of this research with a view to achieving the objectives of this research, the findings of this research are summarised as follows:

- a. The study found a significant non-linear long-run relationship between economic crimes and economic growth.
- b. The study also found a significant non-linear short-run relationship between economic crimes and economic growth.
- c. The study also established a bi-directional causal relationship between economic crimes and economic growth.
- d. The study also found that economic crimes within the period under review grew significantly surpassing any other period.

5.3. Conclusion.

The study sought to investigate the impact of economic crimes on the Nigerian economy. In doing this, the nature of the relationship between economic crimes and economic growth was found to be non-linear with significant long-run relationship. Economic crime variable was found to be the most significant of all the variables of the model for economic growth and so deserves serious attention more than it has

received in the recent past because the consequences on the economy has been found to be devastating in the long run. Therefore, any nation that allows economic crimes to thrive will pay dearly for it through an economy of highly impoverished citizens which in turn diminishes the ability of future generations to sustain themselves. The father of modern economics, Adam Smith, recognized this fact when he said: “No society can surely be flourishing and happy, of which by far the greater part of the numbers are poor and miserable”.

As Haken (2011) pointed out that the costs of this financial hemorrhage have been significant for African countries. In the short run, massive capital outflows and drainage of national savings have undermined growth by stifling private capital formation. In the medium to long term, delayed investments in support of capital formation and expansion have caused the tax base to remain narrow. Naturally and to the extent that illicit capital flight may encourage external borrowing, debt service payments also increased and further compromised public investment prospects. Furthermore, World Bank (2013) observe that illicit capital flight has had adverse welfare and distributional consequences on the overwhelming majority of poor in numerous countries in that it heightened income inequality and jeopardized employment prospects.

A call for value re-orientation is, therefore, inevitable as all hands must be on deck to rout this deadly cancer-worm that has prevented Nigeria from taking its pride of place in the comity of nations. It is then that the national opulence will increase, which is capable of trickling down to the lowest ranks of the people. Above all, government must as a matter of serious concern, show more commitment to infrastructural

development, especially energy which is believed to booster industrial growth that would increase employment, income and reduce poverty.

5.4. Recommendations.

The summary of findings makes recommendations inevitable at this stage. The following recommendations are proffered bearing the justification of this study in mind:

- a. Infrastructural development (power, road etc) is critical to industrial growth and this should be pursued vigorously by the government. This will boost income, employment and the standard of living of the people as well as ensure effective reduction of economic crimes.
- b. Engaging the youth in skill acquisition and empowerment programmes in addition to creating an enabling environment (power, roads, tax policies- multiple taxation, credit facilities, building industrial clusters) for small and medium scale enterprises to thrive are strongly recommended
- c. Strengthening of existing institutions through capacity building is strongly recommended. This will ensure that Nigerians effectively take over key sectors of the economy from the expatriates (multi-national corporations are more or less conduits for money laundering and bribe payers) who have no stake in the prosperity of the nation.
- d. The education sector in Nigeria must be re-organised and re-positioned in such a manner that it delivers critical knowledge and skills that promotes self-reliance.

5.4.1. Agenda for Further Studies.

It is recommended for further research, “Impact of Illicit Financial Outflows on Nigeria’s Financial Stability”. This will further shed more light on the dynamic nature of economic crimes and also permit a deeper understanding of the impact of economic crimes on the Nigerian economy. Definitely, this insight will help those who manage the finances of the Nigerian nation, that is, the Ministry of Finance and Central Bank of Nigeria, to introduce and implement policies that would check illicit financial outflows and be on top of the monetary policy of government. It is only then that Nigeria can hope to achieve her dream of a robust economy and her vision 202020.

5.5. Contribution to Knowledge

The following are the contribution to knowledge:

- a. This study has provided an empirical/econometric model of economic growth and economic crimes in Nigeria with the nature of the relationship between the two variables established. Contrary to previous studies, this relationship was found to be non-linear exhibiting no systematic time trend. It was also found that economic crimes have long run relationship with economic growth with infinitesimal short run relationship. Furthermore, contrary to previous studies, this study found a bi-directional causal relationship between economic crimes and economic growth in Nigeria. All these new contributions to existing knowledge have illuminated the position of the Nigerian economy in the great debate of whether economic crimes are growth enhancing or growth reducing and have also enabled robust policy recommendations to be proffered.

REFERENCES

- Adewale, S. B. (2011). The crowding-out effects of economic crime in Nigeria: An empirical study. *E3 Journal of Business Management and Economics*. 2(2) 059-068.
- Ahmad, E., Ullah, M. A., & Arfeen, I. (2012). Does corruption affect economic growth? *Latin American Journal of Economics*. 49(2) 1-20.
- Aidt, T., Dutta, J. & Sena, V. (2008). Governance regimes, corruption and growth: Theory and evidence. *Journal of Comparative Economics*, 36, 195-220.
- Akindele, S.T. (2005). "A critical analysis of economic crime and its problems in Nigeria". *Anthropologist*. 7(1): 7-18
- Amakom, U. (2006). Money demand in Nigeria (1970-2005): An empirical evidence of stability and policy issues. *Journal of Policy and Development Issues (JPDI)*, 11(1).
- Albrecht, W.S., Albrecht, C.C. & Albrecht, C.O. (2006). *Fraud examination*. Mason: Thomson Southwestern Publishers.
- Abiodun, E. O. (2007). *Effects of corruption and economic reforms on economic growth and development: Lessons from Nigeria 2007*. A paper presented at African Economic Conference, 2007.
- Adegbie, F. F. (2012). Economic and financial crimes in Nigeria: Forensic accounting As antidote. *British Journal of Arts and Social Sciences*. 6(1) 7-10.
- Adepoju, F. (2010, August 4). Who will guard the guards? *The Nation*, p. 41.
- Barro, R. J. & Sala, M. X. (2004). *Economic Growth*. Cambridge: MIT Press
- Blank, J. Ko, C. Koivisto, M., Mbabazi, J. M., Ondiege, P., Speakman, J. & Verdier-Chouchane, A. (2013). Africa competitiveness report 2013: Assessing Africa's competitiveness in an international environment. *World Economic Forum*, 2013.
- Bryan, A. G. (1999). *Black's Law Dictionary*. England: West Group, St. Paul Minn.
- Beker, R.W. (2005). *Capitalism's achilles heel: Dirty money and how to renew the free market system*. London: Wiley.
- Cardenas, M. (2007). Economic growth in Colombia: A reversal of fortune? *Ensayos Sobre Politica Economica*. (25).
- Central Bank Statistical Bulletin, 2012.
- Chaikin, D., & Sharman, J.C. (2009). *Corruption and money laundering*. New york: Palgrave Macmillan.
- Chaikin, D., & Sharman, J.C. (2009). Analysis of corruption and economic growth in Nigeria. *Afro Asian Journal of Social Sciences* 4(42) 12-16.
- Chen, S. W. (2009). Investigating causality among unemployment, income and crime In Taiwan: Evidence from the bounds test approach, *Journal of Chinese Economics and Business Studies*. 3(7) 10.

- Colombatto, E. (2003). Why is corruption tolerated? *Review of Austrian Economics*.164, 367-379.
- Constitution of the Federal Republic of Nigeria, 1999.
- Czabanski, J. (2008). *Estimates of cost of crime: History, methodologies, and implications*. Berlin: Springer.
- Detotto, C. & Otranto, E. (2010). Does crime affect economic growth? *KYKLOS*, 63(3) 18-21.
- Detotto, C. & Pulina, M. (2009). Does more crime mean fewer jobs? An ARDL model. *Working Paper CRENOS* (5), 2009.
- Economic and Financial Crimes Commission Act, CAP E. 4, Laws of the Federation Of Nigeria 2004.
- Enders, W. & Sandler, T. (1996). Terrorism and foreign direct investment in Spain and Greece, *Kyklos*. 49(7) 40.
- Ekundayo, R. M., Obasaju, B., AdedoyinIsola, L. & IseOlorunkanmi, J. (2013). Analysis of corruption and economic growth in Nigeria. *Afro Asian Journal of Social Sciences*. 4(4) 2.
- Ernesto, U. S. (2012). Organized crime enablers: Global agenda council on organized crime. *World Economic Forum*, July 2012.
- Ezema, B. I. & Ogujiuba, K. (2012). The developmental state debate: Where is Nigeria? *Journal of Sustainable Development* 5(1) 22.
- Eseoghene, J. I. (2010). Bank frauds in Nigeria: Underlying causes, effects and possible remedies. *African Journal of Accounting, Economics, Finance and Banking Research*, 6(6) 11-14.
- Esty, D. and Michael P. (2002). National environmental performance measurement and determinants” in Daniel E. and Peter K. C., eds. *Environmental performance measurement: The global report 2001-2002*, New York: Oxford University Press.
- Fabayo, J.A., Posu,S., & Obisanya, A. A. (2011). Economic crime and the investment climate in Nigeria”. *Journal of Economic and Sustainable Development*. 2(4).
- Farida, M. and Ahmadi-Esfahani, F. (2007). Modelling corruption in a Cobb-Douglas production function framework. *Australian Agricultural and Resource Economics Society, 51 St. Annual Conference*. February 13, 2007.
- FATF (2010). Global report on money laundering. Retrieved from <http://www.fatf.gafi.org/members.en.htm> on 10/4/2014.
- Gaibullov, K. & Sandler, T. (2008). Growth consequences of terrorism in Western Europe, *Kyklos*. 61(6) 19.
- Gujarati, D. N. & Porter, D. C. (2009, 5th Ed.). *Basic econometrics*. New York: Mc Graw Hill.
- Gupta, S. D. (2004). Fiscal consequences of armed conflict and terrorism in low- and

- middle-income countries. *European Journal of Political Economy*, 20(2) 28.
- Gupta, S., Davoodi, H. R. & Alonso-Terme, R. (2002). "Does corruption affect income inequality and poverty," *Economics of Governance* 3: 23-45.
- Habibullah, M. S. and Abdul, H. B. (2009). Crime and economic conditions in Malaysia. *International Journal of Social Economics*. 36(3) 7.
- Hellman, J. S., Jones, G., Kaufmann, D. & Schankerman, M. (2000). Measuring governance, corruption and state capture: How firms and bureaucrats shape the business environment in transition economies. *World Bank Policy Research Paper*, No 2312. Washington D.C.
- Haken, J., (2011). *Transnational crime in the developing world*. Washington D.C: Global Financial Integrity Report.
- IMF (2012). *The IMF and the fight against money laundering and the financing of terrorism*.
- IMF (2004). "Fighting dirty money", IMF Survey, August 9, 2004, p. 242-244.
- IMF (2000). Economic issues: Improving governance and fighting corruption in the Baltic and CIS countries, July 2000, p 3.
- Ikpefan, O.A (2006). Growth of bank frauds and the impact on the Nigerian banking industry. *Journal of Social and Management Sciences*, Covenant University.
- Jain, A. K. (1998). *Economics of Corruption*. Boston, MA: Kluwer.
- Jhingan, M. L. (2007). *The economics of development and planning* (39th Ed.). India: Nisha Enterprises.
- Jhingan, M. L. (2009). *Microeconomic theory* (7th Ed.). India: Nisha Enterprises.
- Kant, C. (2002). What is capital flight? *The World Economy*, 3(25),341.
- Kar, D. (2011). *Illicit financial flows from the least developed countries: 1970-2008*. New York: UNDP.
- Kar, D., & Cartwright, S. D. (2012). *Illicit financial flows from Africa: Hidden resources for development*. Washington D. C: Global Financial Integrity Report.
- Kaufmann, D. & Kraay, A. (2002). Growth without governance. *Economia* 3: 169-229.
- Kaufmann, D. (2003). Rethinking governance: Empirical lessons challenge Orthodoxy. Discussion draft, World Bank, Washington DC.
- Khan, M. & Blankenburg, S. (2012). *Governance and illicit flows. Controlling flows of illicit funds from developing countries*. Washington D.C: The World Bank.
- Kunicova, J. & Ackerman, S. R. (2003). Electoral rules as constraints on corruption. New Haven CT: Yale University, Department of Political Science.
- Lambsdorff, J. G. (2003). How corruption affects productivity, *Kyklos*. 56(10) 5-9.

- Lui, F.T. (1985). An equilibrium queuing model of bribery. *Journal of Political Economy*, 93, 760-781.
- Mankiw, G. (2006). *Principles of economics*. Europe: Thomson.
- Mauro, L. & Carmeci, G. (2007). A Poverty trap of crime and unemployment. *Review of Development Economics*. 11(6) 12-15.
- Méon, P. G. & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth? *Public Choice*, 122, 69-97.
- Nageri, K. I., Gunu U., & Abdul, F. A. (2013). Corruption and economic development: Evidence from Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review* 3(2) 25-28.
- Narayan, P. K. & Smyth, R. (2004). Crime rates, male youth unemployment and real income in Australia: Evidence from granger causality test. *Applied Economics*. 36(3) 12.
- Nicoletti, N.P. (2011). Introduction to stata 11: Getting started with stata programming. Lecture mimeograph, University of Buffalo (SUNY).
- Nigerian Criminal Code Act, CAP C.28, Laws of the Federation of Nigeria, 2004.
- Nuhu R. (2006). *The Role of EFCC in Sanitising the Nigerian Economic Environment in a Democratic Setting*. Being a paper presented at the Nigeria Economic Conference and Financial Exhibition, December 9th - 10th, 2004.
- Nwabude, E. S. (2014). *Impact of foreign direct investment inflow on growth of domestic investment in Nigeria*. (Unpublished Ph. D. Thesis). Nnamdi Azikiwe University, Awka, Nigeria.
- Ogujiuba, K., Nwogwugwu, U. C. & Enwere, D. (2011). Import substitution industrialization as learning process: Sub-saharan African experience as distortion of the “good” business model. *Business and Management Review*, 1(6), 08 – 21.
- Osisoma, B. C. (2009). Money laundering in Nigeria: An accounting response. *Nigerian Journal of Economic and Financial Crimes* 1(2) p. 41.
- OECD (2013). Measuring OECD responses to illicit financial flows from developing countries. *OECD*, 2013.
- OECD (2012). International drivers of corruption, tool for analysis. *OECD Publishing*, 2012.
- Okoye, E. I. & Gbeji, D. O. (2013). AN evaluation of the effect of fraud and related financial crimes on the Nigerian economy. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 2(7) 20.
- Parton, T., Rajarao, V., Skalak, S. (2009). The global economic crime survey. New York: PricewaterCoopers.
- Pellegrini, L. and Gerlagh, R. (2004). Corruption’s effect on growth and its transmission channels, *Kyklos*. 57: 429–456.

- Peri, Giovanni (2004). Socio-cultural variables and economic success: Evidence from Italian provinces 1951–1991. *Topics in Macroeconomics*. 4: 1–34.
- Pinotti, P. (2011). The economic consequences of organized crime: Evidence from southern Italy. *Bank of Italy*.
- Pfaff, B. (2006). *Analysis of integrated and cointegrated time series*. London: Springer.
- Powell, B., Manish, G. P., & Nair, M. (2010). *Corruption, crime and economic growth. Handbook on economics of crime*. New York: Benson Print .Indd.
- Reuter, P. (2012). *Draining development? Controlling flows of illicit funds from developing countries*. Washington, D.C: The World Bank.
- Rajab, S. (2011). *A study of cointegration models with applications*, (Unpublished Ph. D. Thesis). University of South Africa, Johannesburg, South Africa.
- Rotimi, E. M. & Obasaju, B. L. (2013). Analysis of corruption and economic growth in Nigeria. *Afro Asian Journal of Social Sciences* 4(4) 2.
- Swank, D. (2002). *Global capital, political institutions and policy change in developed welfare states*. Cambridge: Cambridge University Press.
- Tamuno, O. S. & Edoumiekumo, S. G. (2012). Industrialization and trade globalization: What hope for Nigeria? *International Journal of Academic Research in Business and Social Sciences* 2(6), 24-31.
- Todaro, M. P., & Smith, S. C. (2011). *Economic development*. India: Taj Press.
- Transparency International Report, 2014.
- UNECA, 2012. *Corruption and the private sector in Africa*. Addis Ababa: United Nations Economic Commission for Africa.
- UNECA, UAC, (2012). *Economic Report on Africa 2012: Unleashing Africa's potentials as a pole of global growth*.
- Wedeman, A. (1997). Looters, rent-scrappers and dividend-collectors: Corruption and growth in Zaire, South Korea and the Philippines. *Journal of Development Areas*, 19, 19-42
- Wei, W. S. (2006). *Time series analysis: Univariate and multivariate*. Boston: Pearson.
- World Bank(2013). Rethinking the Role of the State in Finance. *Global Financial Development Report*, 2013.

APPENDIX 1: DATA FOR THE STUDY

Quarterly	RGDP	HCON	GFCF	GCON	NX	IFFS
1999	80059.4	53920.7	8809.0	3601.2	11973.3	44241.5
1999	77992.1	55920.5	9268.4	4101.2	10827.4	45321.4
1999	76474.8	55880.4	9308.2	4610.5	12473.2	45421.2
1999	77657.2	55966.6	7940.3	4091.8	12619.4	51461.8
2000	84673.6	54938.8	10335.7	3920.0	12824.0	161400.1
2000	82213.6	56938.7	9376.2	4222.4	13994.0	154210.2
2000	80550.2	56898.2	10795.2	3827.9	14159.3	161737.1
2000	81741.2	56978.3	10835.6	4704.2	13659.1	159601.1
2001	91339.4	86333.6	1582.9	3125.2	-2751.1	74421.3
2001	89281.0	86873.2	2082.2	3665.1	-3211.3	73463.4
2001	87717.3	86793.4	544.4	3483.6	-3751.4	75666.7
2001	88596.6	85334.1	2122.8	4386.5	-3131.3	79115.4
2002	107423.1	88068.9	1484.2	2976.8	-1624.1	150211.0
2002	108976.9	87069.2	1984.2	4976.2	-2010.2	155307.3
2002	108668.6	88608.9	2484.3	3876.9	-2623.2	162111.2
2002	108134.9	88528.6	1984.0	3677.7	-2601.3	153599.8
2003	118970.3	103044.8	1868.7	2824.3	-7285.2	282334.4
2003	119580.7	104486.0	3247.9	2841.1	8642.9	300214.8
2003	119733.9	104566.3	3787.3	3001.3	-9025.1	310011.2
2003	118948.1	104026.4	4087.8	3130.6	-11087.4	368777.2
2004	114617.6	99872.2	11110.9	17248.8	3750.9	495281.3
2004	123702.9	100372.2	11510.2	18463.4	4021.2	500318.0
2004	142373.6	100412.8	9712.1	19628.8	4252.0	502124.1
2004	146881.9	98831.5	12110.5	23174.3	6979.5	503548.5
2005	120048.9	107528.3	9208.4	18683.8	-475.8	616569.0
2005	128755.5	109606.2	9948.8	19424.1	-675.8	611542.3
2005	153933.6	109067.0	10208.6	21683.8	-675.8	610569.0
2005	159193.4	110066.3	10249.4	26943.4	-875.8	627596.1
2006	128579.8	88123.6	14728.2	28935.5	16428.1	740281.2
2006	135438.6	88623.7	15857.2	29435.8	17605.1	746729.6
2006	162498.8	89623.4	16857.1	30935.8	20211.2	748212.1
2006	169304.4	88124.1	15986.2	28436.2	16176.1	751695.6

Quarterly	RGDP	HCON	GFCF	GCON	NX	IFFS
2007	135774.7	118187.3	22959.1	32700.4	-35125.6	985461.0
2007	142790.5	117362.9	21251.1	38838.8	-31508.4	1089065.0
2007	173087.5	143233.1	28450.0	45530.2	-40856.3	1110201.0
2007	182618.6	109182.1	17236.7	67352.9	-7516.0	1171533.0
2008	145966.98	80864.9	22870.48	44832.25	-2624.06	1201311.0
2008	154777.65	68127.7	19633.38	62336.64	4660.61	1320420.0
2008	187583.85	101454.2	24035.95	62812.36	-735.8	1610240.0
2008	199814.40	142993.98	22704.69	58974.13	-30811.62	1997457.0
2009	153481.05	110615.99	26926.53	54002.49	-38082.58	2010200.0
2009	166137.89	117890.21	25471.98	59426.49	-36671.68	2100100.0
2009	201256.99	146196.65	28960.07	54425.40	-28343.81	2001057.0
2009	214985.64	143520.54	38915.06	62763.65	-30238.81	2206122.0
2010	164792.33	114822.91	33182.55	49792.62	-33029.69	1341631.0
2010	179425.07	83488.60	26601.17	64373.22	-48455.39	1612240.0
2010	217038.09	154909.52	46242.96	61218.02	-14710.80	1800102.0
2010	232295.71	118571.98	36289.77	82687.13	-47182.30	2216550.0
2011	174358.04	141008.57	34070.00	61812.71	-26254.66	1268884.0
2011	190828.65	146589.51	24826.32	70144.39	-49229.89	1421634.0
2011	232308.35	130752.66	41735.76	67722.79	-51527.05	1782422.0
2011	249949.23	95602.90	26310.77	77282.63	-101682.93	1802595.0
2012	185318.20	82678.11	34640.49	60700.61	-47857.52	1051764.0
2012	203224.70	92826.10	21250.85	60266.89	-71845.11	1101213.0
2012	246600.53	128313.07	21572.06	59470.06	-73969.32	1089100.0
2012	267650.55	152220.04	24236.34	61563.39	-69752.85	2320980.0
2013	197419.33	134773.04	20700.06	53655.38	-30821.93	1243624.1
2013	212182.42	154832.20	25268.70	66142.82	-49284.31	1481870.3
2013	259839.44	162861.10	27418.40	924713.6	-30781.54	1662864.2
2013	284021.72	176450.80	29458.60	1104888.5	-31653.29	1960830.9

APPENDIX 2**TABLE 11: UNIT ROOT TEST****UNIT ROOT TEST FOR RGDP****dfuller rgdp, regress**

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-1.236	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.6579

dfuller d.rgdp, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-7.980	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

UNIT ROOT TEST FOR HCON**dfuller hcon, regress**

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-2.402	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.1412

. dfuller d.hcon, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-8.661	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

UNIT ROOT TEST FOR GFCE**. dfuller gfcf, regress**

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-1.939	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.3138

. dfuller d.gfcf, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-14.353	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

UNIT ROOT TEST FOR GCON**. dfuller gcon, regress**

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	1.682	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.9981

. dfuller d.gcon, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-5.993	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

UNIT ROOT TEST FOR NX

. dfuller nx, regress

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-2.639	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.0852

. dfuller d.nx, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-11.717	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

UNIT ROOT TEST FOR IFFs

. dfuller iffs, regress

Dickey-Fuller test for unit root Number of obs = 59

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-1.645	-3.567	-2.923	-2.596

MacKinnon approximate p-value for Z(t) = 0.4594

. dfuller d.iffs, regress

Dickey-Fuller test for unit root Number of obs = 58

	----- Interpolated Dickey-Fuller -----			
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-11.040	-3.569	-2.924	-2.597

MacKinnon approximate p-value for Z(t) = 0.0000

TABLE 12: COINTEGRATION TEST

Johansen tests for cointegration

Trend: constant

Number of obs = 58

Sample: 1999q3 - 2013q4

Lags = 2

rank	parms	LL	maximum eigenvalue	trace statistic	5% critical value
0	42	-4053.8661	.	113.2893	94.15
1	53	-4029.8958	0.56245	65.3488*	68.52
2	62	-4017.7367	0.34248	41.0305	47.21
3	69	-4006.7406	0.31558	19.0383	29.68
4	74	-4001.2981	0.17111	8.1533	15.41
5	77	-3997.5169	0.12224	0.5910	3.76
6	78	-3997.2215	0.01014		

TABLE 13: COINTEGRATION REGRESSION OUTPUT

Source	SS	df	MS	Number of obs	=	59
Model	1.9779e+10	5	3.9558e+09	F(5, 53)	=	12.14
Residual	1.7276e+10	53	325966665	Prob > F	=	0.0000
				R-squared	=	0.5338
				Adj R-squared	=	0.4898
Total	3.7055e+10	58	638886204	Root MSE	=	18055

D.rgdp	Coef.	Std. Err.	t	P>|t|	Beta
hcon					
D1.	.3810697	.1301674	2.93	0.005	.3013722
gfcf					
D1.	-.6231129	.4838418	-1.29	0.203	-.147817
gcon					
D1.	.0450192	.0214165	2.10	0.040	.202921
nx					
D1.	.0288605	.16997	0.17	0.866	.0201416
iffs					
D1.	-.0464797	.008826	-5.27	0.000	-.5868724
_cons	554.8185	2401.268	0.23	0.818	.

TABLE 14: VECTOR ERROR CORRECTION MODEL OUTPUT

Vector error-correction model

Sample: 1999q4 - 2013q4

No. of obs = 57

AIC = 126.5788

Log likelihood = -3527.496

HQIC = 127.6932

Det(Sigma_ml) = 1.34e+45 SBIC = 129.4462

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D2_rgdg	10	9425.14	0.9470	821.6946	0.0000
D2_hcon	10	21586.6	0.5871	65.40315	0.0000
D2_gfcf	10	5167.28	0.8086	194.2744	0.0000
D2_gcon	10	104081	0.5713	61.30485	0.0000
D_nx	10	16070	0.3285	22.50764	0.0127
D2_iffs	10	281313	0.7695	153.581	0.0000
D_res	10	13526.4	0.7437	133.5077	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
D2_rgdg						
| _ce1						
| L1.	-.9870236	.1303909	-7.57	0.000	-1.242585	-.7314621
| _ce2						
| L1.	-.427557	.0716943	-5.96	0.000	-.5680753	-.2870387
| rgdp						
| LD2.	-.7820853	3.067189	-0.25	0.799	-6.793666	5.229495
| hcon						
| LD2.	.686857	1.162438	0.59	0.555	-1.59148	2.965194
| gfcf						
| LD2.	.2227497	1.855034	0.12	0.904	-3.41305	3.858549
| gcon						
| LD2.	-.1924338	.1519056	-1.27	0.025	-.4901634	.1052957
| nx						
| LD.	-.0161173	.1359343	-0.12	0.086	-.2825436	.2503089
| iffs						
| LD2.	-.0583684	.1412855	-1.41	0.041	-.2185462	.3352829
| res						
| LD.	1.869412	3.058545	0.61	0.541	-4.125227	7.86405
| _cons	-5355.351	1324.679	-4.04	0.000	-7951.674	-2759.028

D2_hcon						
| _ce1						
| L1.	.5166984	.2986375	1.73	0.084	-.0686203	1.102017
| _ce2						
| L1.	-.6995457	.1642032	-4.26	0.000	-1.021378	-.3777134
| rgdp						
| LD2.	.1337227	7.024857	0.02	0.985	-13.63474	13.90219

hcon |						
LD2. |	-.2805061	2.66236	-0.11	0.916	-5.498635	4.937623
gfcf |						
LD2. |	1.280717	4.248628	0.30	0.763	-7.04644	9.607875
gcon |						
LD2. |	.2306562	.3479131	0.66	0.507	-.4512409	.9125533
nx |						
LD. |	.0592233	.3113335	0.19	0.849	-.5509791	.6694257
iffs |						
LD2. |	.0077987	.3235896	0.02	0.981	-.6264253	.6420226
res |						
LD. |	.2382474	7.005059	0.03	0.973	-13.49142	13.96791
_cons |	-608.5929	3033.943	-0.20	0.841	-6555.013	5337.827

D2_gfcf |						
_ce1 |						
L1. |	.3222638	.0714861	4.51	0.000	.1821535	.462374
_ce2 |						
L1. |	-.244074	.039306	-6.21	0.000	-.3211124	-.1670356
rgdp |						
LD2. |	2.29343	1.68157	1.36	0.073	-1.002387	5.589246
hcon |						
LD2. |	-.8109336	.6373004	-1.27	0.203	-2.06002	.4381522
gfcf |						
LD2. |	1.358317	1.017012	1.34	0.182	-.6349906	3.351624
gcon |						
LD2. |	.015534	.0832814	0.19	0.852	-.1476947	.1787626
nx |						
LD. |	-.1038377	.0745252	-1.39	0.164	-.2499045	.042229
iffs |						
LD2. |	-.1028583	.077459	-1.33	0.184	-.2546752	.0489586
res |						
LD. |	-2.271557	1.676831	-1.35	0.176	-5.558086	1.014971
_cons |	257.4977	726.248	0.35	0.723	-1165.922	1680.918

D2_gcon |						
_ce1 |						
L1. |	-2.587763	1.439893	-1.80	0.072	-5.409901	.234376
_ce2 |						
L1. |	.433603	.7917126	0.55	0.584	-1.118125	1.985331
rgdp |						

LD2.	-52.53545	33.87064	-1.55	0.121	-118.9207	13.84979
hcon |						
LD2.	20.5527	12.83668	1.60	0.109	-4.60673	45.71213
gfcf |						
LD2.	-33.62506	20.48494	-1.64	0.101	-73.7748	6.524678
gcon |						
LD2.	.8523852	1.677478	0.51	0.611	-2.43541	4.140181
nx |						
LD.	1.304898	1.501107	0.87	0.385	-1.637218	4.247015
iffs |						
LD2.	2.552126	1.560201	1.64	0.102	-.5058115	5.610063
res |						
LD.	54.34337	33.77519	1.61	0.108	-11.85478	120.5415
_cons	6584.986	14628.29	0.45	0.653	-22085.93	35255.9

D_nx |						
_ce1 |						
L1.	.1217846	.222319	0.55	0.584	-.3139525	.5575218
_ce2 |						
L1.	-.0853385	.1222401	-0.70	0.485	-.3249247	.1542477
rgdp |						
LD2.	1.279019	5.229614	0.24	0.807	-8.970837	11.52888
hcon |						
LD2.	-.4876076	1.981978	-0.25	0.806	-4.372214	3.396999
gfcf |						
LD2.	.5148405	3.162867	0.16	0.871	-5.684264	6.713945
gcon |						
LD2.	-.0093902	.2590019	-0.04	0.971	-.5170246	.4982442
nx |						
LD.	-.2099152	.2317704	-0.91	0.365	-.6641769	.2443465
iffs |						
LD2.	-.0500438	.2408944	-0.21	0.835	-.5221882	.4221005
res |						
LD.	-1.399562	5.214876	-0.27	0.788	-11.62053	8.821407
_cons	-866.4498	2258.602	-0.38	0.701	-5293.228	3560.328

D2_iffs |						
_ce1 |						
L1.	12.01321	3.89179	3.09	0.002	4.385445	19.64098
_ce2 |						
L1.	-11.6846	2.139867	-5.46	0.000	-15.87867	-7.490543

rgdp |						
LD2. |	-37.96588	91.54668	-1.41	0.042	-217.3941	141.4623
hcon |						
LD2. |	21.61479	34.6954	0.62	0.533	-46.38694	89.61652
gfcf |						
LD2. |	17.0323	55.36736	0.31	0.758	-91.48574	125.5503
gcon |						
LD2. |	6.85581	4.533941	1.51	0.131	-2.030551	15.74217
nx |						
LD. |	-1.406318	4.057242	-0.35	0.729	-9.358367	6.545731
iffs |						
LD2. |	1.207183	4.216962	0.29	0.775	-7.05791	9.472277
res |						
LD. |	44.75619	91.28868	0.49	0.624	-134.1663	223.6787
_cons |	381.9796	39537.81	0.01	0.992	-77110.7	77874.66

D_res |						
_ce1 |						
L1. |	-1.428502	.187129	-7.63	0.000	-1.795268	-1.061735
_ce2 |						
L1. |	.2129726	.1028912	2.07	0.038	.0113095	.4146358
rgdp |						
LD2. |	4.688859	4.401841	1.07	0.287	-3.93859	13.31631
hcon |						
LD2. |	-1.627397	1.668259	-0.98	0.329	-4.897125	1.642331
gfcf |						
LD2. |	1.288351	2.66223	0.48	0.628	-3.929523	6.506225
gcon |						
LD2. |	-.6274094	.2180056	-2.88	0.004	-1.054692	-.2001263
nx |						
LD. |	-.0618497	.1950844	-0.32	0.751	-.4442082	.3205088
iffs |						
LD2. |	-.1782558	.2027642	-0.88	0.379	-.5756664	.2191549
res |						
LD. |	-4.123173	4.389435	-0.94	0.348	-12.72631	4.479961
_cons |	-5252.184	1901.097	-2.76	0.006	-8978.266	-1526.102

Cointegrating equations

Equation	Parms	chi2	P>chi2

_ce1	5	42.41703	0.0000
_ce2	5	292.8852	0.0000

Identification: beta is exactly identified

Johansen normalization restrictions imposed

beta |	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
<hr/>						
_ce1 |						
rgdp |						
D1. |	1	.	.	.	.	.
hcon |						
D1. |	-2.78e-17	.	.	.	.	.
gfcf |						
D1. |	-1.121234	.3204506	-3.50	0.000	-1.749305	-.4931621
gcon |						
D1. |	.3144276	.1296178	-2.43	0.015	-.5684737	.6038140
nx |	.0617399	.0285772	2.16	0.031	.0672196	.1177503
iffs |						
D1. |	-.0051991	.0053369	-1.97	0.043	-.0050614	.0156591
res |	-.3152583	.0597026	5.28	0.000	.1982435	.4322732
_cons |	-5211.467	.	.	.	.	.
<hr/>						
_ce2 |						
rgdp |						
D1. |	(omitted)					
hcon |						
D1. |	1	.	.	.	.	.
gfcf |						
D1. |	3.234428	.7630774	4.24	0.000	1.738824	4.730033
gcon |						
D1. |	.104118	.3086541	0.34	0.736	-.5008329	.7090689
nx |	-.0340994	.0680499	-0.50	0.616	-.1674748	.099276
iffs |						
D1. |	.0713683	.0127085	5.62	0.000	.0464601	.0962764
res |	1.62634	.1421675	11.44	0.000	1.347697	1.904983
_cons |	-9489.075	.	.	.	.	.

TABLE 15: DIAGNOSTIC TESTS

HETEROSKEDASTICITY TEST

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H_0 : Constant variance

Variables: fitted values of D.rgdp

chi2(1) = 2.66

Prob > chi2 = 0.1027

AUTOCORRELATION TEST

Breusch-Godfrey LM test for autocorrelation

lags(p) |	chi2	df	Prob > chi2
1 |	0.050	1	0.8237

H₀: no serial correlation**. estat dwatson**

Durbin-Watson d-statistic (6, 59) = 1.942453

MULTI – COLINEARITY TEST**. estat vif**

Variable |	VIF	1/VIF
nx |		
D1. |	1.60	0.625165
gfcf |		
D1. |	1.50	0.667728
iffs |		
D1. |	1.41	0.708331
hcon |		
D1. |	1.20	0.830080
gcon |		
D1. |	1.06	0.943988

Mean VIF | 1.35

Descriptive Statistics and Normality Test

	RGDP	HCON	GFCF	GCON	NX	IFFS
Mean	101600.9	17303.32	33094.56	-6092.237	858488.9	101600.9
Median	100933.5	13419.35	27689.80	-2612.250	683938.6	100933.5
Maximum	154909.5	46243.00	89124.00	57693.80	2320980.	154909.5
Minimum	53920.70	544.4000	2824.300	-62110.40	44241.50	53920.70
Std. Dev.	28109.40	12658.83	28224.94	21457.40	706700.0	28109.40
Skewness	0.006716	0.538978	0.399010	-0.400729	0.555741	0.004416
Kurtosis	3.052608	2.266816	1.725855	3.987799	2.050465	2.522608
Jarque-Bera	0.003092	3.965609	5.273996	3.775526	4.986351	0.0011002
Probability	0.943185	0.137683	0.071576	0.151410	0.082647	0.573185
Oservations	58	58	58	58	58	58

MISSPECIFICATION TEST

estat ovtest

Ramsey RESET test using powers of the fitted values of D.rgdp

Ho: model has no omitted variables

F(3, 50) = 7.33

Prob > F = 0.0864

TABLE 16: VARIANCE DECOMPOSITION

Variance Decomposition of RGDP:

Period	S.E.	RGDP	HCON	GFCF	GCON	NX	IFFS
1	8150.323	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	10898.47	80.19994	0.346399	0.179914	3.578703	0.226427	15.46862
3	43816.41	9.115895	1.631220	0.618097	87.63715	0.026944	0.970689
4	74165.46	6.608164	1.734668	0.606469	90.41289	0.097346	0.540461
5	106128.3	4.915531	3.894917	0.297045	89.35878	0.382670	1.151057
6	167813.9	5.025259	1.557776	1.554341	91.05276	0.289848	0.520015
7	450478.0	5.219808	0.975799	0.220881	93.11682	0.236551	0.230145
8	1041976.0	6.298163	2.163475	0.051853	90.90485	0.057615	0.524041
9	1168828.0	7.108410	3.889581	0.808017	87.15325	0.116564	0.924181
10	1914671.0	4.626134	1.455660	0.762241	92.10051	0.691616	0.363834

TABLE 17: IMPULSE RESPONSE FUNCTION

Response of RGDP:

Period	RGDP	HCON	GFCF	GCON	NX	IFFS
1	8150.323	0.000000	0.000000	0.000000	0.000000	0.000000
2	5369.446	-641.4365	462.2726	2061.713	518.5959	4286.385
3	-8930.585	-5559.316	-3413.652	40966.76	-498.3395	512.7876
4	-13728.40	-8006.137	4635.968	57364.17	-2199.379	-3330.481
5	-13790.00	18527.75	-312.9452	71354.76	6143.807	-9995.898
6	29352.04	12.56889	20106.45	124808.5	6206.822	-4098.536
7	95798.69	39261.95	3241.834	404129.3	19960.16	-17905.03
8	240390.2	146659.3	10711.75	-893310.7	-12062.30	-72267.24
9	169505.5	172187.9	-102351.4	-451314.7	-31095.21	-83283.77
10	-269221.6	15038.38	-130018.0	1478418.	-154149.1	-26687.95

TABLE 18: PAIRWISE GRANGER CAUSALITY TESTS

Date: 05/02/15 Time: 22:30

Sample: 1999:1 2013:4

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
HCON does not Granger Cause RGDP	58	0.96123	0.38899

RGDP does not Granger Cause HCON		2.25882	0.11444
GFCF does not Granger Cause RGDP	58	1.80553	0.17435
RGDP does not Granger Cause GFCF		2.43534	0.09731
GCON does not Granger Cause RGDP	58	8.47213	0.00064
RGDP does not Granger Cause GCON		0.36199	0.69799
NX does not Granger Cause RGDP	58	2.73694	0.07393
RGDP does not Granger Cause NX		1.71134	0.19045
IFFS does not Granger Cause RGDP	58	4.81149	0.01202
RGDP does not Granger Cause IFFS		3.48957	0.03770
GFCF does not Granger Cause HCON	58	2.76482	0.07209
HCON does not Granger Cause GFCF		1.45271	0.24310
GCON does not Granger Cause HCON	58	2.71120	0.07568
HCON does not Granger Cause GCON		1.79632	0.17586
NX does not Granger Cause HCON	58	1.47142	0.23882
HCON does not Granger Cause NX		1.37946	0.26060
IFFS does not Granger Cause HCON	58	1.88807	0.16140
HCON does not Granger Cause IFFS		5.50117	0.00675
GCON does not Granger Cause GFCF	58	0.48333	0.61942
GFCF does not Granger Cause GCON		0.61773	0.54300
NX does not Granger Cause GFCF	58	0.28502	0.75314
GFCF does not Granger Cause NX		5.17996	0.00882
IFFS does not Granger Cause GFCF	58	5.72151	0.00563
GFCF does not Granger Cause IFFS		1.43387	0.24748
NX does not Granger Cause GCON	58	0.45816	0.63493
GCON does not Granger Cause NX		4.92365	0.01093
IFFS does not Granger Cause GCON	58	0.20256	0.81726
GCON does not Granger Cause IFFS		4.27528	0.01900
IFFS does not Granger Cause NX	58	3.39519	0.04098
NX does not Granger Cause IFFS		0.30607	0.73762

TABLE 19: CHOW BREAKPOINT TEST

Chow Breakpoint Test: 2007:2

F-statistic	3.369012	Probability	0.007617
Log likelihood ratio	21.10637	Probability	0.001756

Chow Breakpoint Test: 2011:1

F-statistic	2.683035	Probability	0.025375
Log likelihood ratio	17.37815	Probability	0.007989

APPENDIX 3**TABLE 20: STATE SPACE MODEL ESTIMATION**

searching for initial values ..

Iteration 4: log likelihood = -127.52773 (not concave)

(switching technique to nr)

Iteration 14: log likelihood = -89.009225 (not concave)

Iteration 15: log likelihood = -89.008681

Iteration 16: log likelihood = -89.008674 (not concave)

Iteration 17: log likelihood = -89.008674 (backed up)

Refining estimates:

Iteration 3: log likelihood = -89.008674 (not concave)

Iteration 4: log likelihood = -89.008674 (backed up)

State-space model

Sample: 1999q3 – 2013q4	Number of obs	=	58
	Wald chi2(2)	=	1583.30
Log likelihood = -89.008674	Prob > chi2	=	0.0000

	OIM					
RGDP |	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
<hr/>						
D.rgdp |						
L1. |	.9775832	.0245681	39.79	0.000	.9294306	41.025736
<hr/>						
iffs |						
L1	-1.495419	1329.924	17.43	0.031	-2605.108	2608.099
<hr/>						
var(iffs) |	1.090462	1939.566	12.01	0.041	-3800.389	3802.57
L1.var(iffs)|	.5587538	.5599506	17.00	0.034	-.5387292	19.656237

Note: Tests of variances against zero are conservative and are provided only for reference.