The Effect of Monetary Policy on International Trade and Economic Growth in Nigeria

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ABSTRACT

The key objective of this study is to analyze the relationship between international trade, and monetary policy as it engineers economic growth in Nigeria. The study further tries to ascertained degree of significant, and impact between trade, and monetary policy proxied by export (XP), import (MP), trade balance (BOT), and money supply (MSS) to economic growth (GDP) in Nigeria. Theoretical hypotheses reveal and affirm a positive relationship between trade, and monetary policy, to economic growth. The study adopted the Classical Linear Regression Model (CLRM) with secondary data from 1991-2016. The (CLRM) method symbolizes the elementary technique of estimation pooled with a collection of other universal/customary and analytical tests. The R^2 of 99.6% shows the variation in GDP as explained by the prime regressors. Export and money supply have a positive and significant liner relationship to GDP. While, import and balance of trade, shows negative and non-significant relationship. The is therefore consistent with economic and trade theories which state that both developed and emerging economies grow from exporting products and services with comparative advantage and by diversification of the economy.

Keywords: Balance of trade, economic growth, gross domestic product, international trade, model stability test, net export, monetary policy

INTRODUCTION

International trade empirically has been identified globally by numerous economists as an "engine for growth and development". In 1772, Adams Smith articulated "trade as an engine for growth and development". Trade over time (bilateral and multilateral), stimulate export, import, technology, and cultural relationships. Economists unanimously acknowledged that, the trade makes the global economy better through comparative cost advantage and diversification rather than absolute cost advantage. Trade however, has multiplied significantly in developed and developing economies. Hence, according to [1], Gross Domestic Product (GDP), exchange rate, import, export, trade openness, and inflation rate significantly affect growth in both emerging and developed economies. [2], also noted that trade and export are not statistically significant in explaining economic growth in Nigeria, due to the monoculture export pattern of the economy. [3]; [4]; [5]; [6]; [7]; [8]; [9], equally affirm the relationship between trade and economic growth.

On the other hand, [10], [11], [12], [13], [14], [16], argued that trade may not boost economic growth in countries at all times especially among merging economies that are highly import dependent.

Problem Statement
Nigeria is highly blessed with gigantic natural and human resources which makes her a key player in international market with crude oil contributing 95 percent of foreign earnings, 80 percent to GDP, an above 90 percent of total export valued at $47.8 billion placing Nigeria as

the 49th largest exporter and import at $39.5 billion placing Nigeria as the 51st largest importer with trade balance rank 82rd. Nigeria trade balances from 1981-2017 average at ₦194, 684.84 million. Consequently, studying the effect of monetary policy on international trade and economic growth Nigeria is of great relevance especially as government embark on globalizing and technologically advancing the economy to benefit efficiently from its new trade agreement with china.

The overdependence on oil and negligence of other sectors of the economy has not just driven the nation into trade imbalances but, also to economic and financial recession. World Bank indices report from 2003-2015 ranked the Nigerian economy as one of the most unstable in the world with key defy taking on macroeconomic instability, motivated basically by external terms of trade shocks. In a bit to correct the economic imbalances the indirect monetary policy was adopted from 1986-2015 along with an array of exchange rates regimes from 1960s-2010. Despite the different monetary and exchange policy regimes adopted, the economy continued to witness persistent trade disequilibrium, foreign reserves decline, high inflation, and external debt. Which, therefore, empower economists to accredit the 2007-2010 and 2015-2017 economic, financial and trade crisis to CBN inability to realize its target and outcome in monetary policies in Nigeria.

[17]; [18] unanimously agreed that monetary policy instrument those not ideally translate to favourable bilateral and multilateral trade balance position, but the potency of such instruments to with stand external trade and economic shocks. Which then, triggered somber worry and inquiries giving birth to questions bothering on the potency of monetary policy mechanisms and if trade imbalances can be accredited to other factors outside monetary mechanism and exchange rate policy circle in Nigeria?

Objective of Study:
The fundamental intent of this study cuddles to examine the effect of monetary policy on international trade and economic growth in Nigeria. The study sort specifically to:
1. Determine the impact of monetary policy on economic growth in Nigeria
2. Determine the impact of monetary policy on balance of trade in Nigeria
3. Determine the impact of exchange rate channel on balance of trade in Nigeria

Research Questions
1. To what degree has monetary policy impacted on economic growth in Nigeria?
2. To what extent has monetary policy impacted on balance of trade in Nigeria?
3. To what extent has exchange rate channel impacted on balance of trade in Nigeria?

Research Hypothesis
1. Monetary policy has no positive and significant impact on economic growth in Nigeria
2. Monetary policy has no positive and significant impact on balance of trade in Nigeria
3. Exchange rate channel has no positive and significant impact on balance of trade in Nigeria

Justification Of The Study
Nigeria in contemporary era play host to economic and financial challenges virtually in almost all sectors of the economy. Empirically researches in recent times focuses on international trade and economic growth in Nigeria. Completely disregarding monetary policy which equally plays a role in ensuring trade balance and imbalances. The vital argument of this research is to analyze the short challenges of monetary policy and trade with its benefits to economic growth.

REVIEW OF RELATED LITERATURE

Conceptual framework:
Trade
International trade otherwise referred to as foreign trade or external is trade across national boundaries. It involves the exchange of goods and services by nationals of different countries. The benefits arising from international trade have been emphasized by different scholars. According to the Richardian theory of comparative advantage, trade still exist in nations with absolute cost advantage. [19] in his wealth of nations argued that, the principal benefit of trade "is not only importation of gold and silver but the exportation of the surplus for which there is no demand and the importation of products and services with demand. By engaging trade, countries specialize in the production of goods and services with comparative advantage. [20] described trade as an engine for growth and [21] lauded it as an elixir of growth.

Trade Balance
Trade balance is the sum balance of export (oil and non-oil) and import (oil and non-oil) over a period of time and calculated by subtracting imports (X) from exports (Y). Trade balance is therefore the largest component of balance of payment (BOP)
When total export exceeds import (X-M>0) there is trade surplus;

when imports surpass exports (X-M<0) there is a trade deficit.
Trade imbalances weaken the local currency and therefore translate a negative effect on export and positive effect on import. Export becomes cheaper at the international market while import becomes expensive.
Trade surplus enhances the value of the local currency and therefore translate a positive effect on export and a negative effect on import.
The balance of Trade holds two chief conceptual definitions Narrow and Broad.
i.   The narrow conceptual definition is referred to as the merchandise definition which states "The differences in the value of merchandise exports and imports". In 1950 the definition was heavily critics by James Meade for ignoring the roles of the service sector in the trade balance. He equally acknowledged that the merchandise definition is only realistic where services constitute an insignificant portion of the trade.
ii.   The Meade broad definition of 1951, states that "Balance of trade is the differences in the value of goods and services exported and imported by a nation" and the service sector plays a vital role in trade. The above definition was widely accepted by modern economists in 1952 [23].

Therefore, expressed through macroeconomic equation as; $Y = C + I + G + (X – M)$
Where;
Y = National income,
C = Consumption,
I = Investment,
G = Government expenditure,
X = Exports,
M = Imports, and (X – M) = balance of trade in Meade's terms.

Exchange Rate: Exchange rate universally is adopted as a measure of a nation currency strength against another nation. With its increase and decrease positively and negatively impacting on export and import commodities. Aliyu, as cited in [22], noted that exchange rate increase drives a shift from imported goods to locally manufacture goods with an inflationary pressure drop on the economy. Whereas, exchange rate decrease leads to export increase and decrease import with an upward pressure on both inflation and interest rates in the economy.

The central objective of exchange policy in Nigeria anchors on domestic price preservation taking on external and internal trade balances for an overall macroeconomic stability [20]. Exchange rate measures the trading pattern and the rate of economic development of a nation (Loto as cited in [18]).

Economist over time therefore suggests that real exchange rate depreciation boost trade balance at the incident of trade imbalances, as long as the Marshall – Lerner (ML) condition is satisfied. The ML condition states that; "exchange rate devaluation or depreciation cannot improve trade balance if the absolute sum of long-term export and import demand elasticities are greater than unity that is greater than (>1)".

Theoretical Framework
Mercantilist Trade Theory

The 1630 Mercantilist economic philosophy cuddles the William Petty, Thomas Mun and Antoine de Montchrétie trade model founded upon the "commercial trade revolution", which support a shift from (indigenous to national economies), (feudalism to capitalism), (undeveloped to developed) trading system herein refers to as "international trade". Hence, the adoption and the implementation of William Petty, Thomas Mun, and Antoine de Montchrétie trade model has greatly contributed to the growth of the Nigerian economy. The resulting impact on international trade, intensifies the movement from unsophisticated gadget to sophisticated and contemporary gadgets. In the 16th and 17th centuries, the mercantilist economic philosophy was articulated by Adam Smith, which thus informed its adoption by key trading nations as effective and efficient trading system. The mercantilist economic philosophy states that; the wealth of a nation is a measured of her natural resources taking on (oil and non-oil) export product in the context of Nigeria. Thus, for nations like (Nigeria) to maximize its resources and gain from trade exports ought to be stimulated while import ought to be dispirit to ensure favourable trade balance position and growth.

The mercantilists believed that to achieve a favourabletrade balance position, trade ought to be a "zero-sum game" where the loss of one nation is a profit to another. By the 18th century, the theory was heavily criticized by David Hume, Adam Smith and David Ricardo leading to hug deterioration owing to the industrial laissez-faire revolution of the 18th century.

Adam Smith and David Ricardo affirm that trade ought not to be "a zero-sum game" but nations partaking in trade must gain at all levels. Trade balance and monetary policy objectives are the product of the mercantilist's philosophy.

Classical Theories of Trade

The classical trade theory of Ricardo 1817 and Smith 1776 recognizes import and export of a nation in relation to her trading pattern with other countries, to bring about a favourable and unfavourable trade balance position. Where nations allocate resources towards the production of export goods and services with economic advantage.

i. **Absolute Cost Advantage (Adam Smith model of 1776)**

The absolute cost advantage theory acknowledged that for nations participating in international trade to gain from trade, products with relative absolute cost advantage ought to be encouraged. The theory equally encourages production specialization among nations and free trade to ensure trade balance. The absolute cost advantage approach is a product of an argument against the mercantilist policies in favoure of producers (exporters) and to the detriment of consumers (importers) and in support of free trade. This is found in the work of the Adam Smith "The Wealth of Nations".

The theory based its root on the labour value theory and the assumption that labour is the only aspect of production. Adam Smith in 1776 submits that for trade balance to be realized in Nigeria,

goods with absolute cost advantage must be specialized on, an international trade must not be regulated or restricted by government policy and but determined by the invisible hands and market forces of supply and demand. Trade balance equilibrium and disequilibrium are products of differences in factors of production such as natural endowments, labour, capital and technology. [16]

ii.   Comparative Advantage (David Ricardo Model of 1817)

The comparative cost advantage tries to answer question bothering on absolute cost advantage on the professionalism of nations in the production of goods with absolute advantage and if international trade exists on such condition? The theory further states that, for nations partaking in international trade to sustain trade balances (export of visible and invisible products and services) goods with comparative advantage must be exported and imports must be based on others without comparative advantage owing to differences in technology, natural and human resources and not differences in relative absolute advantage. The 1817 model submit that trade ends where one nation has an absolute advantage over both products.

The Assumption of the 1817 model
a) Labour is the major and only production input.
b) The labour is the ratio of goods trade-off at variance across nations.

Absolute advantage focuses on unconditional productivity variation whereas the comparative advantage on relative productivity.

iii.   The Endowment Theory (The Heckscher-Ohlin Model)

The Eli Heckscher and Bertil Ohlin model is instituted, in fissure to the classical theory, which therefore tries to establish a clarification on the rewards and benefits enjoy by trading nations.

The model states that, for nation's part taking in international trade to derive maximum benefit from trade, export ought to be based on goods with abundant production features and import should be based on product with fairly scarce production features [14]. As such Nigeria ought to export her agricultural produce and import only heavy and high technology goods and services. The theory expands its concept of economic advantage via endowment and cost of factors of production.

The theory equally can be referred to as the comparative cost evaluation, which explains two contenting issues thus;
a) Factors that determine comparative advantage of nations and
b) Effects of trade on income factor of trading nations.

Within the Nigerian context, the key factors determining trade balance and comparative advantage position include vast natural and human resources (oil and non-oil) with proportional effect on income factors.

iv.   The Product Life Cycle

The product life cycle theory submits that trade cycle materializes where a product is manufactured by both parent firms and foreign subsidiaries, where production costs are cheaper [12]; [13]. Industrial improvement and market growth are fundamentals consider in clarifying trade patterns, since technology is a strategic factor in new product development with market structure shaping trade pattern. The monoculture and over depends on oil as the major medium of foreign earnings in Nigeria is, therefore, the major reason for trade imbalance experience in Nigeria.

v.   National Competitive Advantage (The Porter's Model of 1990)

Owing to argument surrounding international trade over time, Michael Porter of Harvard Business School in 1990, developed an established the porter's theory which states that; a nations competitive advantage in an industry rest solely on its capacity to upgrade and diversified her economy to achieve trade balance and economic prosperity. The model further encourages

economic diversification to correct imbalances and achieve trade balance and economic prosperity.

Porter enumerated dynamics answerable for national competitive advantage that are beyond natural resources, thus;
  i. Market proficiencies and local resources.
  ii. Characteristics of firms at the local level.
  iii. Sizable local market and demand sophistication.
  iv. Complementary industries and local suppliers.

Theories Of Economic Growth
i. Harrod-Domar Growth Model
The Harrod-Domar model conventionally and traditionally is regarded as the (AK model) rooting on the liner production function by output set by capital stock (K) with time held constant. It's, however, established that economic growth and

Total new investment is dogged by total savings.
Economic growth model is excessed as; Savings (S) in proportion, of national income (Y),
$$S = sY ....(1)$$
Therefore, Investment is demarcated as the change, in change in the capital stock (K)
Expressed and represented as ΔK; $I = \Delta K ....(2)$
Capital stock (K), stomach a direct affiliation to total national income (Y),
As expressed by the capital-output ratio (k), it, therefore, follows that; K = k or ΔK = k
$$Y = \Delta K \text{ Or } \Delta K = k$$
$$\Delta Y ....(3)$$
Domestic savings (S) equals net investment (I)
Consequently, $\Delta Y/Y$ characterizes GDP growth rate in relation to trade international.
Equation (7) so holds that GDP rate growth dogged cooperatively by domestic saving (s), and capital-output (k).
In the absenteeism of government, domestic income growth rate will be

development globally is an end product of economic affiliation with gross domestic product growth rate (G) depending directly on domestic savings rate (S) and inversely on the domestic capital-output ratio (C).
According to the AK model, investment is measured by economic growth and development. As such investment builds income, amplifies the net industrious volume of the economy via cumulative capital stock, increase in net investment, real income, output and maintenance of full employment at the long run to sufficiently ensure employ full capacity of growing in the stock of capital. It follows that any net addition to the capital stock in the form of new investment. The affiliation, in economics to capital-output quota, is roughly 3 to 1. Therefore, the capital-output ratio (K) shoulders domestic savings ratio, (S) that is fixed to the proportion of domestic output.

Expressed as; $$S = I ....(4)$$
Equation (4) shows that ....S = sY, and from equation (2) and (3);
$$I = \Delta K = k\Delta Y$$
Saving equal's investment in equation (4) and expressed as;
$$S = sY = k\Delta Y = \Delta K = I ....(5)$$
Or as
$$SY = k \Delta Y ....(6)$$
Dividing both sides of equation (6) first by Y and the by k,
$$\Delta Y /Y = s/k ....(7)$$

positive and significantly related to savings ratio.

ii. Neo-Classical Growth Theory
The Neo-classical model was first articulated by Robert Solow. The model holds that unrelenting escalation in capital investments amplified growth rate

briefly. Since capital to labour ratios is a continuous process. The decline in the marginal product of supplementary units' leads to decline in growth of the economy. Few Neo-classical economists who pledge to the model institute that, advancing the economy on a long-term trend, therefore, requires an increase in labour supply, and capital productivity. Technology is, however, established to be the modifications in growth rate between countries. Therefore the neo-classical model treats productivity enhancements as an exogenous variable. The above consequently shows that productivity improvement are assumed to be independent of the amount of capital investment employed.

iii. Endogenous Growth Model

The growth model economistssustain that productivity progress is associated directly to the stride of innovation and human capital investment. However, they sustained that for growth and development of the economy to be achieved, government and private sectors ought to rear innovation, along with the provision of incentives for inventive and knowledge as a basis of growth. Elites of endogenous growth model sustain that, there are positive externalities untapped, which tapped can boost the development of value-added knowledge economy to develop and maintain a competitive cost advantage in the international community.

Monetary Policy

The monetary policy basically plays host to, two theoretical schools of thoughts; the Keynesian and Monetarist. Monetary policy approach in modern times is seen as an alternative to "elasticity approach" with the absorption and the Keynesian approaches been referred to as "foreign income multiplier" and "the Meade-Tinbergen-Keynesian economic policy approach" [8], [9]. The Monetary policy approach symbolized the homecoming of the classical tradition to the international monetary theory as recognized by David Hume, as summarized in the classical price-specie flow mechanism of international monetary disequilibria adjustment as indicated by Isaac Gervise in 1720.

The Hume's price-specie analysis flow of 1711-1776 was developed to provide answers to the mercantilist ideology of nations striving for a positive balance of trade or next export. The augment clinches to the effect of international trade on the gold standard as official means of payment.

He established that nation with positive trade balance will witness economic growth, increase in gold standard with anetexport value exceeding import. Hence, when there is trade imbalances import value exceed export values.

The Keynesian approach (KA) was developed basically on the work of John M. Keynes in the 20th century. The elasticities and absorption theories of balance of trade and payments are the most popular theories. Salvatore [19] upholds that, the trade balance is an end product of monetary policy approach which flows from the classical price-specie mechanism. Rooted in the concept that money has a significant role in influencing trade balance and also doubling as an adjustment mechanism to correct trade disequilibrium.

The Keynesian study money as it affects prices and output due to price inflexibility and uncontrolled unemployment. The IS-LM model on equilibrium money, goods market, and labour market disequilibrium cuddle the Keynesian analysis, with a general consensus in the 1960s that money possibly affects output and prices in the short term (Neoclassical Synthesis).

i. Elasticities Approach

The elasticities approach is associated with the Marshall-Lerner condition which states that; exchange rate changes and price devaluations restores equilibrium to trade balance in relation to price elasticities of demand (E_x) in export and import (E_m).

The approach clinches to price effect of devaluation. The Marshall Learner

condition recognized elasticities approach as imports and exports demand with the sum both greater than unity $(E_x+E_m>1)$ in absolute terms devaluation expand trade balance [5]. If the sum of price elasticities of demand for export and import in absolute expressions is less unity $(E_x+E_m<1)$ devaluation will worsen (an increasing deficit).

If the sum of the elasticities in absolute term is equal to unity, $(E_x+E_m=1)$ devaluation has no effect on trade and balance of payment with Robinson articulation of 1937 emphasizing on the effects of exchange rate changes on exports, imports and trade balance.

These approaches identify equilibrium trade balance and omit capital account on the grounds of excess or insufficiency in exports and imports resulting in either surplus or deficit.

The theory acknowledged the "J-curve effect", with empirical evidence confirming that Marshall-Lerner conditions are satisfied by most advanced economies, in broad-spectrum demand and supply elasticities are greater in the long run than in the short run.

According to [17] the assumption of the approach states that;

i.   Export supplies are perfectly elastic with Prices of products fixed in domestic currency.
ii. Income is fixed in nations devaluating their currency.
iii. Export and import demand has Price elasticities.
iv. Current account balance equals its trade balance.

Criticism

i. The elasticity approach cuddles the Marshallian elasticity in solving trade and payment deficits is misleading given that, it embraces only incremental

Y= C + Id + G + X-M where;
Y= National Income, C= Consumption expenditure, and total domestic investment, G= Autonomous government expenditure, X= Export, and Imports.

changes along demand or supply curve with problems associated with the shift in these curves. The assumption of a constant purchasing power of money is not applicable to currency devaluation.
ii. Sydney Alexander criticized the approach due to its negligence excluding all variables expect the relative price of export and import quantities which are only associated to trade rather than multi-commodity trade thus making it unrealistic.
iii. The Marshall-Lerner condition assumes the presences of perfectly elastic supplies of export and import, in reality, such is unrealistic since nations may not be in good condition to increase export supply in the face of currency devaluation.
iv. Devaluation will initiate inflation, and balance of payment will improve with a rise in domestic income in export and import-competing firms. Increase in domestic income will directly affect BOP via import demand increase and indirectly by an overall demand increase and commodity prices.

ii.   The Absorption Approach

The absorption approach on trade balance basically in an equilibrium nature embraces the Keynesian national income relationship.

The absorption theory states that; trade imbalances are products of absorption increase and production decrease, with domestic expenditure greater than national income.

Sydney Alexander developed the model and it was subsequently expressed mathematically as;

The sum of (C+Id+G) is total absorption.......................... (A) And
The Balance of Payment (X-M)................................... (B).
The equation becomes Y=A+B.................................... (1) OR

B=Y-
A...
...... (2) Which means that;
BOP on current account is the differences in national income (Y) and total absorption (A).

Thus, BOP can be boost via an increase in domestic income and decrease in absorption.

Sydney Alexander, therefore, advocates for devaluation owing to it double impact as;

1. It increases export and decreases import, with a proportional increase in national income.
2. Additional income generated increases income level through a multiplier effect with an increase in domestic consumption level. National income and its net effect on the balance of payment is the difference in total income increase and absorption decrease.

DB = DY-DA... (3)

DA = total absorption depends totally on marginal propensity to absorb in the face of devaluation express as (a).

Devaluation established direct effect on absorption via income changes

Express as (D) thus, DA= aDY + DD............................... (4)

Substituting equation (4) in (3) we get

DB=DY-aDY-DD OR DB = (1-a) DY-DD .... (5)

The equation above shows key factors that explain devaluation effect on BOP which include;

Marginal propensity to absorb (a), Income change (DY), Direct absorption change (DD), Marginal propensity (MP) to absorb (1-a) is the propensity to save.

iii.   The Monetary approach (MA)

The Monetary approach (MA) to trade balance, explains the balance of payment changes to money demand and supply, as such David Hume "price-specie-flow" mechanism classifies balance of payment imbalances or trade imbalances as a "monetary phenomenon", Thus, again popularity in the 1970s [9]. The balance of payment imbalances or trade imbalances can be corrected via monetary policy measures. Money market disequilibrium under the (MA) approach is view as a fundamental factor inciting trade disequilibrium, the discrepancy in stock demand for money supply which therefore results, to external trade disequilibrium.

Increase in money demand and a decrease in money supply, according to the CBN can only be satisfied by inflows from abroad. Whereas, increase in money supply by CBN and decrease in money demand is eliminated by outflows to aboard.

The MA approach states that, trade imbalances aid in the restoration of equality in demand and supply of money everything being equal without government intervention.

The monetary approach model identifies; money supply and demand, as an equilibrium condition in trade balance: expressed mathematically as;

Mss= (INT+DOM).................... (1)
Mdd= F (RDOM, PRI, RIN)......... (2)
Mss = Mdd.............................(3)
Where; Mss= Money supply, INT = International Reserve, DOM= Domestic credit, Mdd= Money demand, RDOM = Level of real domestic income, PRI = Price level and RIN = Rate of interest.

The monetary theory recognizes the existence of a positive link between money demand and income (Mdd / RDOM>0), and money demand and the price level (Mdd / PRI>0).

Equally, there is the existence of a negative link between money demand and interest rate (Mdd /RIN<0). Increase interest rates lead to increase in the cost of holding cash and decrease in money

supply. Thus, fashioning out incentives for investing in interest-bearing

The reserve flow equation is written as;
$\Delta INT = [\Delta F (RODM, PRI, RNI)] - \Delta DOM \cdots \cdots \cdots (4)$
The combination of equations 1, 2 and 3, places the variables in a percentage change condition while isolating international reserves as the dependent variable.

Nations operating fixed exchange rate system experience trade balance deficit in the short-term. While nations operate floating exchange rate system experience monetary and expansion autonomy resulting to currency depreciation. Equation (4) present plain monetary

Empirical Literature
[21], empirically investigate the long run relationship between foreign trade and economic growth in Iran 1975 - 2008. Adopting the vector autoregressive model. Empirical results revealed that the national total population, trade volume, gross capital formation and tariffs have positive and significant upshot on economic growth in Iran.
[22], study the effects of international trade on economic growth in Pakistan 1973-2010. Adopting OLS and a chow test of a structural break. Empirical outcomes exhibited that, increase in import of production materials increases output and employment. Trade openness has positive and significant affliction on growth rate in Pakistan.
[20] Study trade openness and foreign direct investment as mechanisms of globalization in amplification of growth in Nigeria 1960-2011. Adopting the dynamic regression model. Result bare that, trade openness, foreign investment wielded negative effects on economic growth in Nigeria. The sanctions were that structural trade-oriented policy should be adopted in Nigeria.
[15], tested the hypothesis that holds the view that trade and economic openness promotes growth. By means of vector

securities.

MA stresses, money demand, and supply as a base of trade balance with trade balance regression function of MA expressed as:
$(X-M)_t = \beta_0 + \beta_1 Y_t + \beta_2 P_t + \beta_3 Ms_t$
Where; Ms is money supply.
MA is applicable to fixed and floating exchange rates system through the adjustment method.

approach equation, which established trade imbalances as a product of discrepancy in the growth of money demand and domestic credit. Whereas, monetary impact on trade balance ensures money market equilibrium [17].

error correction to capture the impact of openness and development on economic growth 1970 - 2010. The co-integration result bares a long run symmetry among variables. The study recommends legal and accounting reforms to reinforced operations in the financial sector, combined with proficient.
[14], evaluate trade on the Nigerian economy. By means of traditional export-led growth model 1970-2008. Results revealed that exports and foreign direct investment have appositive and significant impact on growth. The recommendation is for growth to attain policies alone will not stimulate exports but also diversification non-oil export commodities.
[11], empirically examine growth by trade in Nigeria. Employing OLS 1975 – 2012. Results indicate that trade and openness wielded significant stimuli on economic growth. Whereas, trade, FDI, and exchange rate are positively correlated with growth. Openness has negative stimulus on the exchange rate and is positively associated with growth. Political stability as a dummy variable in the model does not significantly affect economic growth.
[9] Examined foreign trade and economic growth in Nigeria. By means of vector autoregressive model and variance

decomposition techniques for quarterly trade data of 30 years (1981-2010). The result indicated a stable long-run relationship between trade and economic growth. Also, changes in growth in Nigeria are from "own shocks" and innovations arising from foreign trade.

[7], study the validity of export-led growth hypothesis in Uganda. By means of Co-integration and Error-Correction Model along its causal affiliations between total labour force and exports. Results show that trade liberalization has a negative and non-significant impact whereas, total labour force Granger-causes total exports in the post-trade liberalization era.

[21] investigate the macroeconomic impact of trade on Nigeria economic growth. By means of (OLS) technique and along bivariate and multivariate models combination from 1970-2008.The

predictors used for trade are (exports and foreign direct investment) have a positive and significant impact on growth.

[5], scrutinize trade and growth in developing economies focus on Nigeria 1980 – 2010. By means of (OLS) method. The result shows that trade, foreign direct investment, government expenditure and exchange rate have a significant positive impact on growth in developing countries. From the reviewed empirical literature, it is evident that the gap this study intends to fill is to comparatively study the impact international trade on monetary policy and economic growth in Nigeria.   [3], empirically investigate openness to international trade and economic growth: under a cross country scope 1960-2000. The results signpost that openness and its variables are positive and significant to economic growth on the long run.

METHODOLOGY

Research Design

The study adopted the ex-post facto research design. [13], perceives expost facto research as one which is constructed upon a statistic that has before now materialized. Various issues from 1999-2016. It recycled a combination of descriptive statistics and regression and Augmented Dickey-Fuller (ADF) test used for unit root test.

Also, an array of diagnostic tests was carried out on the regression model to ensure that the key assumptions underlying the Classical Linear Regression Model (CLRM) were not violated. These tests include White's Heteroskedasticity Test, Ramsey Regression Error

Specification Test (RESET), Breusch Godfrey Serial Correlation Tests, Durbin Watson Test and the Cumulative Sum of Squares (CUSUM) recursive estimates tests/graph.

Population /Sample Size

The study center on international trade on monetary policy and growth with emphasis on export, import, money supply and balance of trade to GDP in Nigeria. The study spanned 1999 - 2016.The data is of secondary time series drawn from Central Bank of Nigeria (2016). Statistical Bulletin and Annual Report and Statement of Accounts.

Model specification

This study adopted the classical Linear Regression Model according to Brooks (2014) stated thus:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + ...B_n X_n + u$ -------- Eq 1

To capture international trade on monetary policy and economic growth in Nigeria, the essential variables are fitted

in on the CLRM and log-transformed to ensure linearity and it appears thus:

$LOGGDP_t = \beta_0 + \beta_1 LOGBOT_t + \beta_2 LOGMP_t + \beta_3 LOGXP_t + \beta4 LOGNMSSt + u_t$ ------Eq II

Where:

GDP$_t$ = Gross Domestic Product,
BOT= Balance of Trade,
MP= Import,
XP= Export,
MSS= Money Supply,
u= error term,
B$_1$, β$_2$, = coefficients of the parameter estimate or the slopes,
β$_0$=Intercept of the regression equation.

DATA ANALYSIS AND INTERPRETATION OF RESULTS

Table 1: Descriptive Statistics

Variable	Mean	Median	Skewness	Kurtosis	Standard Deviation	Jarque-Bera	Probability	No. of Obs.
LOGGDP	9.48	9.62	-0.35	1.96	1.56	1.71	0.42	26
LOGBOT	6.70	6.89	-0.53	1.94	1.70	2.45	0.29	26
LOGMP	7.51	7.61	-0.48	2.20	1.48	1.71	0.42	26
LOGMSS	7.55	7.62	-0.200	1.74	1.77	1.87	0.39	26
LOGXP	7.91	8.23	-0.62	2.20	1.51	2.39	0.30	26

Source: Authors' Computation

The Table "1" above, displays the elementary aggregative averages like mean, and median for all the "26" observations at differenced succession.

The spread and variation of series are signposted by means of the standard deviation. Significantly kurtosis displays the degree of peakedness along with skewness which measures the degree of or departure from symmetry. The Jarque-Bera Statistics measures normality and displays that all distributions are platykurtic since their kurtosis are all less than (2) with the p values of the JB Statistics is greater than 5%. The result shows a departure from normality and is consistent with economic and financial time series behavior. To auxiliary appraise the analytical affiliation of the variables under study, a scatter plot with fitted regression lines is presented in "Fig. 1" below. According to the slope of the regression line, a positive linear affiliation is inferred between GDP, Money Supply and Export respectively. Whereas, Balance of Trade, Import showed a negative affiliation with Gross Domestic Product.

Fig. 1: A Scatter Plot Gross Domestic Product and other variables under Study.
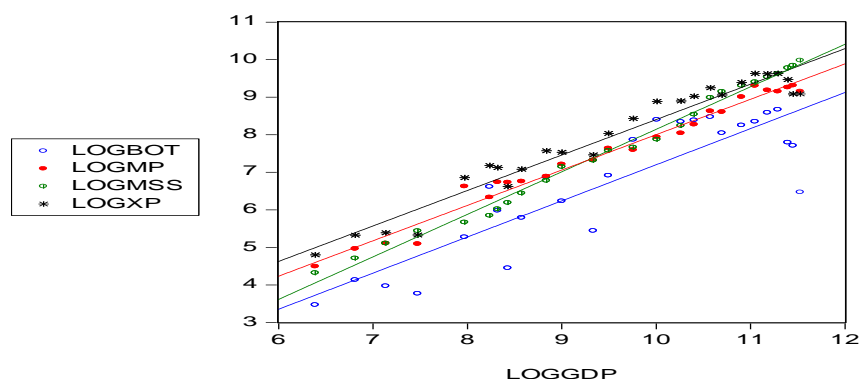
Source: Author's Computation

Tests for Unit Root (Group Unit Root)

To ensure that the dataset is stationary enough to allow for meaningful analyses, the variables were subjected to a unit root test following the Augmented Dickey Fueler Statistics.

Table 2: Unit Root

Group unit root test: Summary
Series: LOGBOT, LOGGDP, LOGMP, LOGMSS, LOGXP
Sample: 1991 2016
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.84120	0.0000	5	117
Breitung t-stat	-6.06041	0.0000	5	112
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.75313	0.0000	5	117
ADF - Fisher Chi-square	64.1685	0.0000	5	117
PP - Fisher Chi-square	79.4624	0.0000	5	120

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Table 2 above displays pointers of individual unit root and common unit root tests with p values of (0.00000) that are less than 5% which makes us reject null and accept the alternative that there is no unit root at the second difference. This test essentially assures that the regression result would not be spurious.

Table 3:Regression Results

Dependent Variable: ΔGDP
Included observation: 26
Option in OLS: White Heteroskedasticity Consistent Errors and Covariance

Variables	Expectation	Coefficient	Std Error	t-Statistic	Prob.
LOGBOT	-	-0.119389	0.083808	-1.424563	0.1690
LOGMP	-	-0.002239	0.162639	-0.013769	0.9891
LOGMSS	+	0.596069	0.060479	9.855739	0.0000**
LOGXP	+	0.464177	0.224042	2.071832	0.0508
Other OLS Estimated	R-squared	=	99.6%		
	Adjusted R-squared	=	99.5%		
	F-statistic	=	1492.482		
	Prob(F-statistic)	=	0.000000		
	Durbin-Watson stat	=	(1.2)		

Note: In the stated Probability values * means significance at 5% level of significance
Source: Authors Computation

The summary of the appraised results in above "Table 3" shows the relationship between GDP, IMPORT, EXPORT, BALANCE OF TRADE and MONEY SUPPLY in Nigeria. Within the sample period and the scope of the formulated model tested. A positive and significant relationship between GDP and MSS and XP was revealed. This is reliable with apriori anticipation.

However, BOT, and MP show a negative and non-significant impact relationship on GDP. Which is a departure from our predictable sign and direction.

The R^2 of 99.6% shows the variation in GDP within as explained by the regressors. The Adjusted R^2 of 99.5%, shows the model regression line goodness of fit. The F-test 428.8974(0.0000*) shows that the overall regression is statistically significant at 5% rule of thumb. This proofs that the whole regression can be employed for a meaningful analyses.

Moreover, the DW statistics which is at 1.29 approximately 2, by the rule of thumb, rules out the suspicion of autocorrelation and proves that the data used for the analyses are well behaved. The result of the DW statistic is to be taken with caution as it cannot detect higher-order autocorrelation. We conducted a further confirmatory test for autocorrelation. The Breusch Godfrey LM serial correlation Test was used as a validity test for the DW statistics.

Table 4:Breusch Godfrey Serial Correlation LM Test Result
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.250613	Prob. F(12,9)	0.3753
Obs*R-squared	16.25299	Prob. Chi-Square(12)	0.1799

Source: Authors' Computation

The BG LM serial correlation test was conducted with a lag of 12 which by the rule of thumb represents one-third of the number of observations indicates that the pvalues of the F and Chi-square tests are all greater than 5%. This means that we accept the null hypothesis of no autocorrelation and reject the alternative hypothesis. This confirms the DW results and absolves the regression results of all forms of spuriousness.

Table 5: Test for Heteroskedasticity
Heteroskedasticity Test: White

| F-statistic	0.933587	Prob. F(14,11)	0.5562
Obs*R-squared	14.11810	Prob. Chi-Square(14)	0.4410
Scaled explained SS	4.795825	Prob. Chi-Square(14)	0.9885

Source: Authors' Computation

The White Test for heteroskedasticity as shown in the table above possibly will not allow for the acceptance of the null hypothesis of homoscedasticity. To therapy this concern which is a clear violation of one of the cardinal assumptions of the Linear Regression Model, in "Table 5". The white heteroskedasticity-consistent standard errors and covariance. This gives us a more robust standard error and t-estimates as reported above.

Figure 2; Test for model Stability (Regression Specification Error Test)
To sanction the constancy of the model over the sample period and the absence of wrong functional form and model specification error. The Ramsey RESET (Regression Specification Error Test) and the Recursive Estimates Bound Graph was adopted.
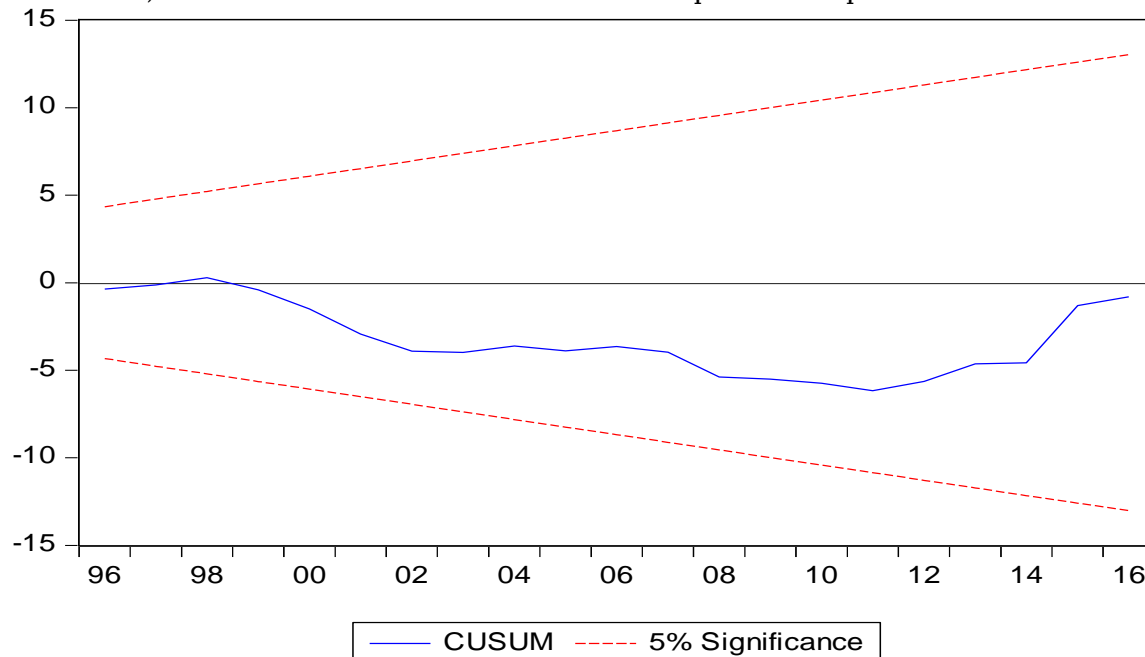
"Figure 2": Recursive Estimates Bound Graph (*Source: Authors' Computation)*

The recursive graph displays the red lines which are the upper and lower bounds

and the blue line which is the model. This indicates that the model is blue and within bounds.

The Ramsey RESET test as shown in "Table 6" below, conducted on a lag of 2, shows that there is no model specification error. Indicating that irrelevant variables were not included and essential variables were not omitted.

Table 6: Ramsey RESET Tests Results
Ramsey RESET Test
 Equation: UNTITLED
Specification: LOGGDP C LOGBOT LOGMP LOGMSS LOGXP
Omitted Variables: Powers of fitted values from 2 to 3

	Value	Df	Probability
F-statistic	3.045569	(2, 19)	0.0712
Likelihood ratio	7.229969	2	0.0269

Source: Authors' Computation

SUMMARY, RECOMMENDATION AND CONCLUSION

This paper scrutinizes the relationship between monetary policy, trade, and economic growth in Nigeria. The (CLR) technique signifies the elementary technique of estimation pooled with a collection of other universal/customary and analytical tests. The motivation is to evaluate whether there is a significant impact running from trade and monetary policy proxied by export (XP), import (MP), money supply (MSS), and balance of trade (BOT) to economic growth (GDP) in Nigeria. The R2 explains that 99.6% of the variation in GDP in the model is explained by the prime explanatory variables. Export was recognized to be positive and significant to GDP. Import and balance of trade was recognized to be negative and non-significant. This is stable and in agreement to economic and trade theories. Developed and developing economies grow from exporting goods with comparative cost advantage. This is more real in Nigerian context owing to the mono cultural pattern of the economy paving way for over-reliant on import. The recommendationis economic and trade diversification will boost and increases growth along with a constant policy review to reduce overdependence on foreign products and boost domestic production for export.

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	LOGBOT	LOGEXP	LOGGDP	LOGMOSP	LOGIMP
1991	3.467210	4.800206	6.390308	4.322807	4.494107
1992	4.134534	5.325989	6.813225	4.710521	4.963901
1993	3.972943	5.388021	7.138129	5.108004	5.109753
1994	3.767469	5.328164	7.474664	5.439339	5.092454
1995	5.275733	6.857158	7.970809	5.666738	6.626887
1996	6.615954	7.177434	8.237249	5.846005	6.332616
1997	5.981278	7.124207	8.321577	6.024125	6.740184
1998	4.449241	6.622546	8.431415	6.190623	6.730324
1999	5.788289	7.080843	8.576850	6.444052	6.759853
2000	6.867663	7.573389	8.838911	6.778170	6.892664
2001	6.233967	7.532599	9.003825	7.146237	7.213901
2002	5.444503	7.464039	9.335408	7.317186	7.321648
2003	6.915377	8.035242	9.495637	7.577081	7.640236
2004	7.869301	8.434416	9.759692	7.664731	7.594404
2005	8.399688	8.888279	10.01099	7.877742	7.937680
2006	8.346680	8.899005	10.26334	8.242206	8.041902
2007	8.388861	9.025186	10.40412	8.542354	8.271792
2008	8.475227	9.248377	10.57536	8.988221	8.629303
2009	8.047402	9.060252	10.69841	9.149646	8.608980
2010	8.255179	9.393618	10.90801	9.308822	9.007486
2011	8.352508	9.631460	11.05058	9.406934	9.305274
2012	8.589099	9.625051	11.18044	9.539312	9.186719
2013	8.669500	9.633122	11.29094	9.626435	9.152650
2014	7.792230	9.469661	11.39688	9.780149	9.262817
2015	7.710165	9.087626	11.45259	9.846986	9.312542
2016	6.468870	9.086546	11.52771	9.980804	9.156978