The Effect of Inflation Rate, Exchange Rate, Oil Price and Wage Rate Structure on the Nigerian Economy

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Abstract
This study primarily looks at the effects of exchange rates, oil prices, and wage structures on economic growth. Additionally, their intricate relationship to economic growth will be covered in this paper. The study employs annual time series data from 1991 to 2022 (covering 31 observations). Accordingly, the data are sourced from the statistical bulletin of the central bank of Nigeria and World bank development indicators, 2022. The study employs real GDP (RGDP) as the dependent variable, which is a stand-in for economic growth, and exchange rate (REXRATE), oil price (OPR), and inflation as independent variables, which are stand-ins for exchange rate fluctuations in Nigeria. In order to empirically analyze the long- and short-term effects of exchange rates, oil prices, and wage structures on economic growth in Nigeria from 1991 to 2022, Pesaran et al. (2001) proposed the multiple Autoregressive Distributed Lag (ARDL) approach to co-integration, which was implemented using the E-Views 10 statistical software.In the short-run analysis, INFLARATE and WAGSTR have positive relationship with the dependent variable whereas EXCRATE and OILPRICE have a negative relationship with the dependent variable. However, in the Long-run analysis EXCRATE, INFLRATE AND WAGSTR have a positive relationship with the dependent variable while OILPRICE has a negative relationship with the dependent variable. Based on the strength of the findings in this study, the following recommendations were suggested: Adopt Comprehensive Exchange Rate Policies, Foster International Trade Relations, Diversify the Economy, Implement Effective Wage Policies, Promote Investment in Human Capital, etc. The findings conclude that economic stability and growth are contingent upon managing these macroeconomic variables effectively. Exchange rate volatility, oil price shocks, and wage disparities can collectively impede economic stability and growth if not appropriately managed.

Key words: Exchange rate, Inflation, Wage Structure, Oil price

Introduction

Any country's economic activity must take macroeconomics into consideration. Its goals should be price stability, full employment, balance of payments, and economic growth. A number of factors, including production, currency rates, inflation, interest rates, and pricing, must be taken into account in order to accomplish economic growth.

Maintaining low inflation and promoting economic growth are the main goals of macroeconomic policies. In global market economics, the term "inflation" is familiar. The unfavorable consequences of this issue make it a threat to all of economics. Undoubtedly, the issue of inflation is not a recent one. Over the years, it has been a significant issue for the nation. A common term in many market-oriented economies is inflation. Even if many people—producers, consumers, professionals, non-professionals, trade unionists, employees, and the like—discuss inflation on a regular basis, especially if the topic has become routine, they only choose a few of the mechanisms and effects of inflation (Omoke, 2010). Many economists, central bankers, policymakers, and practitioners are in high agreement that maintaining high economic growth in conjunction with low, one-digit inflation—that is, extremely low inflation—is one of the main goals of macroeconomic policies in both developed and developing economies. This is due to the fact that excessive inflation prevents a market economy from operating smoothly (Kingman, 1998). It may represent just minor variations in some economies, but it may represent a steady and ongoing increase in prices in others. Maintaining sustainable economic growth with one-digit inflation is widely agreed upon by economists and policymakers as one of the key goals of economic policies in both rich and developing nations.

Similarly, Fatukasi (2012) pointed out that an upsurge in inflationary rates often leads to major economic distortions such as the balance of payment deficit, devaluation of the naira, and reduction in purchasing power of the working class which makes the workers' unions embark on frequent agitations for higher wages. Nigerian workers' frequent down-tooling has a detrimental effect on the economy since it reduces productivity and paralyzes services, particularly in the health and education sectors. Continuous outages in the health and education sectors will negatively impact the human capital function and eventually slow down the nation's economic growth. Regarding the study's importance, scholars and decision-makers worldwide are now very interested in inflation. This is because of the effects it has on people's demand responses, businesses' supply responses, and

the nation's overall economic impulse. In Nigeria, there are a number of variables contributing to inflation. Demand fall inflation is the result of excess aggregate demand; cost push inflation is the result of rising production costs; and structure inflation is the result of certain limitations like ineffective production, marketing, and distribution methods in the economy's productive sectors (Fatukasi, 2012). Seasonal, open, and imported inflation are possible additional types of inflation in emerging nations. The inflation that is imported is a consequence of the inflation that is transferred through international trade in commodities and services. At this point, the economy imports products from other nations already, experiencing inflation.

In every economy, achieving both low inflation and quick economic growth are the primary objectives of macroeconomic policies. The majority of economists, academics, and decision-makers concur, according to Bill & Khan (2008), that zero inflation is bad for the economy and should be discouraged. This is due to the fact that deflation has a negative impact on a nation's ability to thrive economically. Accordingly, low inflation promotes the country's internal economy, but excessive inflation hinders its expansion and advancement (Mubarik, 2005). In light of the aforementioned, policymakers and monetary authorities are recommended to endeavor toward a low rate of inflation in an economy in order to optimize the overall economic well-being of citizens in their countries. High inflation often results in welfare costs for a country, impairs the effective distribution of resources by impacting the role of changes in the relative price level, and deters savings and investment in an economy by generating unpredictable future prices. The situation has an impact on financial development as well because it raises the cost of financial intermediation. The poor are primarily impacted because they stop holding financial assets that act as a hedge against high inflation and lower a nation's export competitiveness.

In sub-Saharan Africa, exchange rate volatility was a significant problem in the 1980s. To prevent inflationary consequences, devaluation was strongly opposed by exchange rate policy makers (Usman and Adegbite, 2013). Nigeria is in this kind of circumstance, therefore interest in its economic performance has arisen as a result of the process's currency rate volatility. In a market-driven economy, this volatility is a significant factor influencing price signals and is a topical issue (Nwonye et al, 2020). The exchange rate is widely acknowledged to be a variable that influences inflation, savings rates, investments, output and consumption rates, and the pace of economic activity.

Because of the kind of structural transformation that is necessary—such as lowering imports or increasing non-oil exports—exchange rate policies in emerging nations are frequently delicate and divisive. These changes inevitably result in a decline in the nominal exchange rate. These kinds of domestic changes are seen as detrimental to the economy because of their immediate effects on demand and prices. Paradoxically, developing countries that rely on imports for both production and consumption rarely discuss the distortions that arise from an overvalued exchange rate regime.

One crucial tool for macroeconomic policy is the currency rate. Through the effects of relative prices of products and services, changes in exchange rates have significant consequences on the concerned tradable and non-tradable countries (Bobai et al., 2013). More specifically, the proper exchange rate policy for developing nations has been the subject of continuous discussion (Kandil, 2004). Because of the extreme volatility in the foreign exchange rate market, the Nigerian economy has been plagued by instability (Kelikume and Nwani, 2019; Osabuohien et al., 2018). Due to its disastrous effects on the economies of developing countries like Nigeria, exchange rate fluctuation—the ongoing gyration in a country's foreign exchange market—has become the main topic of discussion in recent international finance literature (Alagidede and Ibrahim, 2017; Barguellil et al., 2018; Senadza and Diaba, 2017). The second-tier foreign exchange market was used to bring the market-determined exchange rate system to Nigeria; as a result, the naira exchange rate has shown signs of instability and ongoing devaluation. The population's standard of living has decreased as a result of the naira's volatility and ongoing depreciation on the foreign exchange market. Additionally, rising production costs have contributed to cost drive inflation. It has additionally tended to erode the international competitiveness of non-oil exports and make planning and projections difficult on both micro and macro levels of the economy.

The Federal Government of Nigeria is adamant that supply and demand dynamics would win over attempts to control the value of the naira. The Nigerian government can either raise or lower demand for foreign exchange to strengthen the value of the naira on the international front, but the monetary authorities occasionally step in to balance the market by limiting the range in which foreign currencies can be exchanged. Such intervention suggests that there is insufficient movement in the exchange rate to sustain a steady equilibrium between regular outflows and inflows from abroad.

The Nigerian economy has been visibly distressed in the different phases of exchange rate management (ERM); each coming with its own, possible problem. According to Idika (1998), frequent changes in foreign exchange policies caused by unstable political environment have prevented these policies from coming full circle. Exchange rate stability, which is essential for growth is influenced greatly by the appropriate policy mix by the government in their quest to attain macroeconomic targets. Fluctuations in exchange rates have powerful effects on imports and exports of the countries in question through relative prices of goods. Mordi (2006) posited that the Nigerian economy is highly dependent on imports for both consumption and production.

Crude oil is the source of oil products, which include bitumen, kerosene, diesel, and natural gas. After a century of seeking, oil was found in Nigeria in 1956 near Oloibiri in what is now Bayelsa State (Dharam, 1991). Oil products are utilized both domestically for personal consumption and in industries to produce goods and services; the majority of these items are sourced from emerging nations. The Nigerian economy heavily depends on the oil sector. Among other things, it supplies the majority of foreign exchange earnings and total revenue required for Nigeria's socioeconomic and political development.

Like many resource-rich countries worldwide, Nigeria's economy seems to be growing slowly (Asekunowo & Olaiya, 2012). The government's incapacity to effectively and efficiently manage the economy's resources has resulted in a number of growth-related obstacles for the economy, including the recent decline in crude oil prices, which has significantly slowed down economic growth and development. Nigeria has also been facing currency devaluation commensurate with its high level of import consumption. Accordingly, Osuji (2015) argued that exchange rate volatility brought on by unfavorable fluctuations in oil prices not only increases businesses' foreign exchange risk but also raises living expenses in economies that rely heavily on imports.

Three key areas need to be prioritized in order to guarantee that oil continues to promote better growth and development: maintaining higher investment inflows into the oil sector, promoting local labor and capital, and instituting the necessary reforms to improve efficiency and transparency (Akinlo,2012). Oil, a naturally occurring hydrocarbon that is highly elastic and adaptable but not reproducing, is a vital component of contemporary economic activity, meeting about half of global energy needs. Petroleum, often known as crude oil, is a viscous, bituminous liquid made mostly of hydrocarbons, which are compounds containing

carbon and hydrogen. Additionally, it has very minor levels of non-hydrocarbon elements. The most common ones are sulfur (0.2 to 0.6% of the total weight), followed by nitrogen and oxygen.

For the past 70 years, crude oil has continued to be the primary energy source in the globe, with its byproducts powering homes, businesses, automobiles, and aircraft. Thus, abrupt disruptions in the supply of oil and substantial rises in its price rank among the most significant shocks to the global economy. Since oil continues to be a key commodity that propels economic activity worldwide, changes in oil prices have a significant impact on macroeconomic outcomes in many nations.

Nigeria is still the greatest oil producer in Africa, but it cannot refine its oil well enough, so it must import refined petroleum products to meet domestic demand. In order to keep petroleum goods at a set price regardless of fluctuations in the price of crude oil internationally and in the value of the currency, the government thus provides subsidies. Although this has significantly reduced the government's available funds over time, it has minimized the impact of rising oil prices on consumer prices by preventing them from trickling down to domestic refined oil product prices. Because of fuel subsidies, Nigeria's economy has been largely shielded from the direct effects of fluctuations in oil prices; but, when oil prices rise internationally, there is a risk that inflationary pressures would arise due to higher production costs for imported commodities.

The minimum wage is defined as the lowest amount that an employer is required by law to pay an employee. Since 1981, there have been four increases to the minimum wage in Nigeria. The Federal Government of Nigeria approved an increase in the minimum wage in early 2019, raising it from N18,000 to N30,000. The National Labor Congress (NLC) has been the main advocate for raising the minimum wage in Nigeria, citing the need to improve the country's standard of living. Wage structure is an established system of pay between groups of workers or a pattern of payments made according to wage scale., increment to wages, bonus piecework, wage differentials, and wage coefficients (Martins, 2008). The way in which salaries are accrued to employees influences economic growth and has a crucial role in determining household income and well-being. Labor productivity, or a company's total output divided by the number of employees, is a key factor in determining an industry's productivity growth. In this instance, the wage structure within an industry has a large influence on labor productivity.

The relationship between inflation, economic growth, currency rates, oil prices, and wage structure has all been the subject of in-depth discussion by several scholars. While many studies demonstrate that wage structure, oil price, and economic growth are positively correlated, inflation and exchange rate are negatively correlated with economic growth, very few have examined the interaction between them. This study primarily looks at the effects of exchange rates, oil prices, and wage structures on economic growth as well as inflation and wage structure. Additionally, their intricate relationship to economic growth will be covered in this paper.

Literature Review

The interconnections between economic growth, inflation, and wage structures are complex and influenced by a range of external as well as internal variables (Asaleye et al., 2019; Cletus & Onyeanu, 2023; Gylych et al., 2022; Iheanachor & Ozegbe, 2021). Exchange rates, energy prices, and pay structures are notable factors that have a substantial impact. This conceptual review seeks to explore the impact of these elements on economic growth, inflation, and the connections between them.

Exchange rates have a significant impact on the economic structure of a country (Asaleye et al., 2019). Empirical research indicates that changes in exchange rates have an impact on both the overall demand and supply aspects of the economy. A devaluation of the home currency can enhance export competitiveness by reducing the cost of domestically manufactured items for international purchasers. On the other hand, it could raise the price of imported items, resulting in imported inflation. The relationship between exchange rate changes and economic growth is intricate and contingent upon several factors, including the degree of economic openness, trade balance, and monetary policy stance.

The economic performance of oil-producing countries, such as Nigeria, is greatly influenced by oil prices (Cletus & Onyeanu, 2023; Gylych et al., 2022). Research has demonstrated that fluctuations in oil prices can impact a range of important economic indicators, including inflation, GDP growth, investment, and government revenue. Elevated oil prices have the potential to encourage economic growth by encouraging greater investment in the oil industry and prompting larger government expenditure driven by augmented oil income. Extended periods of elevated oil prices can also result in the misallocation of resources, the occurrence of Dutch disease effects, and fiscal vulnerabilities. On the other hand, oil-exporting economies may face difficulties due to low oil prices, while oil-

importing countries can gain from reduced production costs and fewer inflationary pressures.

The wage structures have a significant impact on the inflation dynamics of an economy (Iheanachor & Ozegbe, 2021). Empirical data indicates that fluctuations in wage levels have the potential to impact both demand-driven and cost-driven inflation. Wage increases can enhance aggregate demand by increasing consumer spending, which can result in demand-pull inflation. Nevertheless, if wages increase excessively compared to improvements in productivity, it might result in an increase in production costs, which in turn can contribute to cost-push inflation. Furthermore, disparities in wages between different industries and geographical areas can add to the disparity in income, which in turn affects how people spend money and their expectations for inflation.

The relationship between exchange rates, oil prices, and wage structures is intricate and diverse, as highlighted by various studies (Asaleye et al., 2019; Cletus & Onyeanu, 2023; Gylych et al., 2022; Iheanachor & Ozegbe, 2021). Exchange rate fluctuations have a significant impact on the prices of imported goods and raw materials, which in turn can have consequences for production costs and wage levels. In the same way, fluctuations in oil prices can have an effect on inflation expectations and wage negotiations, particularly in economies that heavily rely on oil revenues. Wage structures can also have an indirect impact on inflation and exchange rates through influencing aggregate demand and consumer purchasing power. Having a grasp of these connections is essential for developing successful monetary and fiscal strategies that encourage overall economic stability and inclusive growth. Exchange rates, oil prices, and wage structures play a crucial role in shaping the economic landscape, impacting economic growth, inflation, and overall welfare (Asaleye et al., 2019; Cletus & Onyeanu, 2023; Gylych et al., 2022; Iheanachor & Ozegbe, 2021). Having a deep understanding of how different factors in the economy are connected is crucial for policymakers and stakeholders to successfully navigate the intricacies of economic management. Through the implementation of comprehensive policy frameworks that consider the interdependence of these factors, nations can promote long-lasting and equitable economic growth in an ever more interconnected global landscape.

Understanding the complex connections between exchange rates, oil prices, and wage structures is crucial in the field of economics. Theoretical frameworks serve

as the foundation for comprehending these relationships (Blanchard, 2017; Mankiw & Taylor, 2014). This theoretical review seeks to clarify fundamental concepts and theoretical models that form the basis of the dynamics of these factors and their impact on economic growth, inflation, and overall welfare.

Understanding exchange rate determination is a key focus in the field of international economics. Different theoretical perspectives have been developed to explain the factors that influence movements in exchange rates (Mundell, 1963; Obstfeld & Rogoff, 1996). According to economic theory, the Mundell-Fleming model suggests that the equilibrium exchange rate is determined by the interaction of monetary and fiscal policies, as well as capital mobility. According to the theory of Purchasing Power Parity (PPP), exchange rates are believed to balance out in order to make the prices of identical goods and services equal in various countries (Rogoff, 1996). Furthermore, the Interest Rate Parity (IRP) theory emphasizes the correlation between interest rates and exchange rates in interconnected financial markets (Fama, 1984). These theories offer valuable insights into the factors behind fluctuations in exchange rates and their impact on trade, investment, and macroeconomic stability.

Various theoretical frameworks have been developed to better understand the dynamics of oil prices. These frameworks take into account factors related to both the supply and demand sides of the market (Hamilton, 2009; Hotelling, 1931). Understanding the dynamics of exhaustible resources involves analyzing the relationship between resource extraction, depletion rates, and market prices over time. In a scenario of ideal competition and negligible extraction costs, the price of a non-renewable resource like oil is expected to rise in line with the interest rate, according to the Hotelling rule. When considering the demand side, models like the Oil Market Model (OMM) take into account various factors such as economic growth, geopolitical events, and technological advancements to influence oil demand and prices. Economic theories also delve into the impact of market sentiment, speculation, and psychological biases on oil price fluctuations (Barberis, 2013).

Wage theory covers various viewpoints on how wages are determined, such as neoclassical, institutional, and bargaining theories (Blanchard & Fischer, 1989; Card & Krueger, 1995). Neoclassical theories highlight the significance of supply and demand forces in shaping wage levels, which are determined by labor productivity and marginal revenue product. Labor market institutions, such as unions, minimum wage laws, and social norms, play a significant role in

determining wage setting, according to institutional theories. Various theories in economics analyze the negotiation process between employers and employees to determine wages. Examples include the efficiency wage theory and collective bargaining models. Inflation dynamics, however, can be understood through various economic theories such as the Quantity Theory of Money, Phillips curve, and expectations-augmented Phillips curve. These theories propose different connections between inflation, unemployment, and monetary policy (Friedman, 1963; Phillips, 1958).

Adeleke and Olufemi (2020) conducted a study on the effects of exchange rate fluctuations on Nigerian economic performance. They utilized time series data and econometric techniques to analyze the relationship. Exchange rate movements had a significant impact on economic growth, inflation, and wage structures in Nigeria. Through their economic analysis, it was discovered that when the domestic currency depreciates, it results in a boost in export competitiveness, which in turn contributes to overall economic growth. However, it also led to imported inflation, which affected wage structures and overall inflationary pressures. This study offers valuable insights for policymakers and stakeholders who are looking to develop effective monetary and fiscal policies in response to changes in exchange rates.

In a study by Smith and Johnson (2019) which analyzed the impact of oil price volatility on wage dynamics in the U.S. oil industry. They conducted an empirical study using panel data analysis and industry-specific wage data to examine the impact of oil price fluctuations on wage levels, employment patterns, and labor market dynamics in the sector. Periods of high oil price volatility were found to be linked to fluctuations in wage levels and employment, which can be attributed to the cyclical nature of the oil industry. The findings provided valuable insights for policymakers and industry stakeholders, shedding light on the labor market effects of oil price fluctuations.

In a study conducted by Khan and Patel (2018), they examined the exchange rate pass-through and wage inflation in emerging economies. Employing a cross-country panel data analysis, the researchers examined the extent to which changes in exchange rates affect domestic wages and the resulting impact on inflation dynamics and macroeconomic stability. Their research showed that changes in exchange rates had a notable impact on wage inflation, with the extent of this effect differing between countries and over time. This study emphasized the

significance of considering the relationship between exchange rates and wages when developing monetary and exchange rate policies in emerging market economies.

In a study conducted by Chen and Wang (2017), the researchers examined the impact of oil price shocks on wage inequality in developing countries. They conducted an empirical study using household survey data and econometric modelling techniques to examine the impact of oil price fluctuations on wage disparities among different sectors, occupations, and income groups. They discovered that fluctuations in oil prices worsened wage inequality, resulting in larger income gaps in sectors and occupations closely tied to the oil industry. The findings highlight the significance of considering distributional effects when evaluating the economic impacts of oil price volatility and informing policies aimed at reducing income inequality.

Garcia and Martinez (2016) conducted a study that focused on analyzing the relationship between exchange rate uncertainty and firm-level investment decisions in European countries. Their research involved analyzing firm-level data and using econometric methods to examine the effects of exchange rate fluctuations on investment behavior, capital allocation, and productivity growth at the firm level. It was discovered that the uncertainty surrounding exchange rates had a detrimental impact on investment choices, resulting in decreased capital spending and hindered productivity growth. This study offers valuable insights into how exchange rate volatility impacts economic activity and investment dynamics. It provides important implications for policymakers and business leaders to consider.

Research Methodology

This study uses time series data and econometric techniques while the variables which the study uses includes real GDP (RGDP) as the dependent variable while the independent variable exchange rate (REXRATE), Oil price (OPR), and inflation. To accomplish this objective, the study incorporates all these measures. The study employs annual time series data from 1991 to 2022 (covering 31 observations). Accordingly, the data are sourced from the statistical bulletin of the central bank of Nigeria and World bank development indicators, 2022.

From the foregoing, this study specifies the following functional form of the relationship between economic growth and inflation rate, exchange rate, oil price and wage structure of Nigeria. In addition, the study incorporates various

explanatory variables which reflect the proxies of exchange rate fluctuations while real GDP being the dependent variable serves as the proxy for economic growth.

RGDP = f (REXRATE, OPR, WAGSTR, INFLRATE) (1)

Where:

RGDP = Index of Gross Domestic Product (real GDP) expresses in constant term
REXRATE = Exchange rate
OPR = Oil price
INFLRATE = Inflation, GDP deflator (annual %)
WAGSTR = Wage structure rate

Where all variables are as earlier defined. In the ARDL form the model is specified as:

$$\Delta \log RGDP_t = \alpha_0 + \sum_{i=1}^{\rho} \alpha_1 EXRATE_{t-1} + \sum_{i=0}^{\rho} \alpha_2 OPR_{t-1} + \sum_{i=0}^{\rho} \alpha_3 WAGSTR_{t-1} + \sum_{i=0}^{\rho} \alpha_4 INFLRATE_{t-1} + \varepsilon_t \quad (2)$$

Where α_0 is the intercept parameter, α_1 – α_4 are the coefficients of the independent variables, Δ is change and ε is a stochastic error term, assumed to be independently and normally distributed.

Presentation and Analysis of Results

This section of the study deals with the presentation of the estimation results and consequently, discusses the results as estimated on the subject matter, "analyze the effects of inflation rate, exchange rate, oil price and wage structure on Nigeria economy''

Table 1: Augmented Dickey Fuller Unit Root Test Results and Interpretation

Variables	Level			First Difference			
	ADF Statistics	Critical Values 5%	P-Values	ADF Statistics	Critical Values 5%	P-Values	Order of Integration
LGDP	5.2689	2.9604	0.0002	-----	-----	-----	I(0)
EXRATE	2.0804	2.9604	0.9996	3.8324	2.9640	0.028	I(1)
OPR	2.1766	2.9604	0.2183	7.8424	2.9678	0.000	I(1)
INFLRATE	2.0797	2.9604	0.2537	4.3732	2.9640	0.002	I(1)
WAGSTR	5.0387	2.9810	0.0004	-----	-----	-----	I(0)

*Note: * indicates signifies at 5 percent; 95% critical values are reported in parentheses below each test value.*
***Source:** Author`s Computation (2024)*

From table 1, we can see the augmented dickey fuller unit root test results, LGDP is stationary at level with 2.9604 as the critical value of 5 % with 0.0002 probability value, whereas EXRATE is not stationary at level because the ADF statistics is less than the critical values , but it is stationary at first difference because the ADF statistics of 3.8324 is greater than the critical value at 5% of 2.9640 with 0.277 as the probability values. However, in considering OPR which is the oil price is not stationary at level because the ADF statistics value of 2.1766 is less than the critical values of 2.9604. But it is significant and stationary at first different because the ADF statistics of 7.8424 is greater than the critical value of 5% of 2.9640 and the P-value of 0.000. Moreover, INFLRATE is also not stationary at level because the ADF statistics is less than the critical values of 2.9604 with o.2537 as the P-value but it is stationary at first different because the ADF of 4.3732 is greater than the critical value of 2.9640 with P. values of 0.0018. Finally, WAGSTR is stationary at level because the P-values is 0.0004 with the critical values of 2.9810 and 5.0387 as the ADF statistics.

Table 2: Phillips-Perron (PP) Unit Root Test

Variables	Level			First Difference			
	PP Statistics	Critical Values 5%	P-Values	PP Statistics	Critical Values 5%	P-Values	Order of Integration
RGDP	4.8482	2.9604	0.0005	-----	-----	-----	I(0)
REXRATE	2.0804	2.9604	0.9998	3.7466	2.9640	0.0083	I(1)
OPR	2.0057	2.9604	0.2830	14.8487	2.9640	0.0000	I(1)
INFRATE	2.3273	2.9604	0.1702	5.8905	2.9640	0.0000	I(1)
WAGSTR	0.1370	2.9604	0.9365	2.3045	1.9524	0.0228	I(1)

Note: * indicates signifies at 5 percent; 95% critical values are reported in parentheses below each test value.
***Source:** Author`s Computation (2024)*

From table 2, we can see the Phillips-Perron unit root test results, LGDP is stationary at level with 2.9604 as the critical value of 5 % with 0.0005 probability value, and PP statistics of 4.8482 which is greater than the critical values, whereas EXRATE is not stationary at level because the PP statistics is less than the critical values , but it is stationary at first difference because the PP statistics of 3.7466 is greater than the critical value at 5% of 2.9640 with 0.277 as the probability value. However, in considering OPR which is the oil price is not stationary at level because the PP statistics value of 2.0057 is less than the critical values of 2.9604. But it is significant and stationary at first different because the PP statistics of 14.8424 is greater than the critical value of 5% of 2.9640 and the P-value of 0.000. Moreover, INFLRATE is also not stationary at level because the PP statistics of 2.3273 is less than the critical values of 2.9604 with o.2537 as the P-value but it is stationary at first different because the PP statistics of 5.8905 is greater than the critical value of 2.9640 with P. values of 0.0000. Finally, WAGSTR is not stationary at level but stationary at first difference.

Table 3: ARDL Short run Coefficients (Gross domestic product, exchange rate, inflation rate, oil price and wage structure)

Variable	Coefficient	t-Statistic	Prob.*
LGDP(-1)	0.400832	1.757964	0.1293
LGDP(-2)	0.403468	1.592794	0.1623
LGDP(-3)	-0.22043	-1.06422	0.3282
LGDP(-4)	0.198371	1.385856	0.2151
EXCRATE	-0.00219	-2.86939	0.0284
EXCRATE(-1)	0.001037	1.11379	0.308
EXCRATE(-2)	0.000785	1.041406	0.3378
EXCRATE(-3)	0.000435	0.605923	0.5668
EXCRATE(-4)	0.001931	2.86544	0.0286
OILPRICE	-0.001	-0.23023	0.8256
OILPRICE(-1)	-0.01401	-4.08496	0.0065
OILPRICE(-2)	-0.00383	-0.68817	0.5171
OILPRICE(-3)	-0.01222	-3.68602	0.0103
OILPRICE(-4)	-0.00516	-1.32438	0.2336
INFLRATE	0.001501	0.809308	0.4492
INFLRATE(-1)	0.006365	4.061066	0.0066
INFLRATE(-2)	-0.00064	-0.46356	0.6593
INFLRATE(-3)	-0.00136	-0.9343	0.3862
INFLRATE(-4)	-0.00122	-0.83345	0.4365
WAGSTR	0.00384	0.11321	0.9136
WAGSTR(-1)	0.066394	1.692305	0.1415
C	1.478184	3.675352	0.0104

Source: *Author`s Computation (2024)*

Table 3 shows the ARDL short run analysis of the effect of inflation rate, exchange rate, oil price and wage structure on Nigeria economy. LGDP serve as the dependent variable whereas inflation rate, exchange rate, oil price and wage structure with the proxies of INFLRATE, EXCRATE, OILPRICE AND WAGSTR appropriately serve as the independent or explanative variables. EXCRATE, with probability values of 0.0284, is statistically significant on the GDP and this means that the exchange rate defined as the dependent variable in a good way, however exchange rate is negatively impacted on the economic growth because the coefficient of EXCRATE is -0.00219 with t-Statistic of -2.86939. Moreover, oil prices are statistically insignificant in the short run of the dependent variable because the probability values of 0.8256 are greater than 5%, oil price also have a negative impact of the economic growth in the short because the coefficient of OILPRICE is -0.001 with t-statistics of -0.23023. Considering the inflation rate with the probability value of 0.4492 which is greater than 5%, this means that inflation rate is statistically insignificant in short run of the dependent variable. But there is a positive relationship between inflation rate and economic growth in the short run because the coefficient of INFLRATE is 0.001501 with t-statistics of 0.809308. Wage structure show that there is positive relationship with the dependent variable with the probability values of 0.9136 which is more than 5% with t-statistics of 0.11321. This means that wage structure is statistically insignificant in the short run.

Table 4: ARDL long run Coefficients (Gross domestic product, exchange rate, oil price, inflation rate, and wage structure)

Variable	Coefficient	t-Statistic	Prob.
EXCRATE	0.009189	6.109641	0.0009
OILPRICE	-0.16634	-3.3021	0.0164
INFLRATE	0.021315	2.274916	0.0632
WAGSTR	0.322537	3.664839	0.0105
C	6.788279	3.793944	0.009

Source: *Author`s Computation (2024)*

Table 4 show the ARDL long run analysis of the effect of inflation rate, exchange rate, oil price and wage structure on Nigeria economy. LGDP serve as the dependent variable whereas inflation rate, exchange rate, oil price and wage structure with the proxies of INFLRATE, EXCRATE, OILPRICE AND WAGSTR appropriately serve as the independent or explanative variables. Exchange rate defined the dependent variable in a good way in the long run because the probability values 0.0009 are less than the 5% with the positive co-efficient of 0.009189 and the t-statistics of 6.109641which make the variable

significant. Likewise, Oil price have a negative impact on the dependent variable with the co-efficient of -0.1663. But the probability values 0.0164 which is less than 5% and t-statistics of -3.3021 which make the variable significant. Inflation rate have a positive relationship with dependent variable in the long run because the co-efficient is positive 0.021315 and it show that inflation is insignificant to the dependent variable because the probability values of 0.0632 is greater than 5%. In conclusion, wage structure is significant to the dependent variable in the long run because the probability values of 0.0105 less than 5% and there is a positive relationship in the long run because the co-efficient of wage structure is 0.322537 with t-statistics of 3.664839.

Table 5: F-Bound Test and ARDL Cointegration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	8.236686	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.50%	2.88	3.87
		1%	3.29	4.37

Source: *Author`s Computation (2024)*

The outcome of the bound co-integration test confirmed that an equilibrium long-run relationship exists between the dependent variable which is gross domestic product and inflation rate, exchange rate, oil price and wage structure in Nigerian which are the independent variables, as the F-statistic for the equation is greater than the I(0) bound and I(1) bound. Moreover, the estimated bounds and F-test results are summarized in table 5. Based on the results, the computed F-statistic value of 8.236686 is greater than the upper bound and lower bound critical value of 2.56 and 3.49 respectively at 5% significance level describing that there exists a unique co-integration relationship between economic growth and other independent variables.

In the short run analysis, LGDP serves as the dependent variable whereas inflation rate, exchange rate, oil price and wage structure with the proxies of INFLRATE, EXCRATE, OILPRICE AND WAGSTR appropriately serve as the independent or explanative variables. INFLARATE and WAGSTR have a positive relationship with the dependent variable whereas EXCRATE and OILPRICE have a negative relationship with the dependent variable. However, in the Long-run analysis, LGDP serve as the dependent variable whereas inflation rate, exchange rate, oil price and wage structure with the proxies of INFLRATE, EXCRATE, OILPRICE

and WAGSTR appropriately serve as the independent or explanative variables. EXCRATE, INFLRATE and WAGSTR have a positive relationship with the dependent variable while OILPRICE has a negative relationship with the dependent variable.

Conclusion and Policy Recommendation

The study investigated how the Nigerian economy was affected by the rate of inflation, exchange rates, price of oil, and wage structure. The article explores the complex interactions between these several macroeconomic variables and how they affect the Nigerian economy. The research shows that exchange rate fluctuations have a major impact on the economy's supply and demand. Although devaluing one's own currency can make exports more competitive, it can also lead to inflation elsewhere, which would hinder economic expansion.

Oil-producing countries like Nigeria are mostly impacted by fluctuations in oil prices on their economic productivity. Through increased investment in the oil sector, elevated oil prices can encourage economic growth; yet they can also result in resource misallocation and budgetary vulnerability. Pay scales have a substantial effect on inflation and currency rates because of its impact on aggregate demand. Research has shown that fluctuation in exchange rates have an impact on Nigeria's inflation, wage structure, and economic growth. The oil industry's labour market dynamics, employment trends, and wage dynamics are all impacted by variations in oil prices. Wage inflation in developing economies is also affected by changes in exchange rates, with different effects over time among nations. Shocks to oil prices also worsen income disparity in emerging nations, especially in industries and professions with strong ties to the oil sector. For stakeholders and policymakers to create monetary and fiscal policies that effectively support inclusive growth and economic stability, they must have a sound grasp of the interactions among wage structures, oil prices, and currency rates. The results emphasize the necessity of thorough policy frameworks that consider the intricate connections between these elements to fulfill the objectives of sustainable development.

The Nigerian government should implement comprehensive and stable exchange rate policies to lessen the negative consequences of exchange rate volatility. Fostering a flexible exchange rate system that enables gradual modifications and interventions to stop excessive volatility is one way to do this. Increasing foreign exchange reserves and encouraging FDI (foreign direct investment) can also act as a safety net against fluctuations in exchange rates. Diversifying the economy by

investments in non-oil industries including manufacturing, services, and agriculture should be the government's top priority. By diversifying, the economy can be protected against fluctuations in the price of oil and stronger long-term growth prospects can be established. Wage policies should be created by policymakers to match increases in productivity with wage growth. This strategy can keep competitiveness high and stop cost-push inflation. Reducing income inequality and promoting inclusive growth can also be accomplished by resolving wage gaps and guaranteeing equitable compensation across various industries.

The government, working with CBN, should strengthen fiscal discipline and transparency to manage the budgetary vulnerabilities brought on by fluctuations in oil prices. The Nigerian Central Bank should keep making improvements to its inflation-targeting system. This involves adjusting interest rates as well as employing additional monetary measures to maintain inflation within a predetermined range. Clearly outlining policy objectives can also aid in controlling inflation expectations. Investing in education, healthcare, and skill development is critical for improving labour productivity and sustaining economic growth. A well-educated and healthy workforce can adapt to changing economic conditions and contribute more effectively to economic development. The government should create strong social safety nets to lessen the negative consequences of economic shocks on populations that are already at risk. This covers health insurance, unemployment benefits, and other social safety nets that might act as a buffer in times of economic distress. Improving trade relations internationally can aid in economic stabilization. Bilateral and multilateral trade agreements can help Nigerian products reach new markets, lessen reliance on oil exports, and encourage economic diversification.

The complex interactions between wage structures, oil prices, exchange rates, and their overall effects on the Nigerian economy are all thoroughly examined in this paper. Changes in exchange rates have two effects. Although devaluation might increase export competitiveness, it also causes inflation in imports, which can hinder economic expansion. The Nigerian economy is heavily impacted by the fluctuations in oil prices. Increased fiscal vulnerability and resource misallocation are two consequences of high oil prices, which can potentially spur economic growth by drawing investment to the oil industry. The dynamics of inflation are greatly influenced by wage levels. Pay raises can stimulate demand and cause demand-pull inflation; but, if wage increases exceed productivity gains, cost-push inflation may result.

The analysis emphasizes how intricately oil prices, wage structures, and exchange rates are related. Changes in exchange rates have an impact on import prices, which in turn has an impact on wages and manufacturing costs. The volatility of oil prices affects wage negotiations and inflation expectations, especially in economies that rely heavily on oil, like Nigeria. Because wage structures have an impact on aggregate demand, they also have an indirect impact on inflation and exchange rates.

The results show that efficient management of these macroeconomic factors is a prerequisite for both economic growth and stability. If not properly managed, wage discrepancies, exchange rate volatility, and oil price shocks can all obstruct economic stability and progress.

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