



An Overview of Nigerian Macroeconomic and Financial Development

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Abstract

The Nigerian economy is one of the biggest in Africa. It has been based mainly on the petroleum industry since the late 1960s. Since 1973, a series of rises in the price of oil has led to a rapid expansion of the transportation, building, manufacturing, and government services industries [1, 2, 3]. Due to the considerable migration of rural residents into the more extensive urban areas, agricultural productivity became so stagnant that cash crops like cotton, peanuts, and palm oil lost their significance as export commodities [4, 5, 9].

After the pandemic-caused recession in 2020, the Nigerian economy improved, but macroeconomic stability declined. The inflation rate in Nigeria is very high, and millions of the Nigerian population lives in poverty due to global commodities shocks, the currency's falling value, trade difficulties, and monetization of the deficit [6, 7, 8, 10]. The rising oil price has had no positive impact on the Nigerian economy since 2021. The country's oil revenue growth is declining due to subsidies on gasoline, and the oil output rate is badly affected [11, 12, 14].

Over 40% of the Nigerian population in 2018 lived in poverty, and over 20% is badly affected and vulnerable. Researchers forecast that over 7.6 million Nigerian are likely to live in poverty between the years 2019 and 2024 because of the rapid population growth in the country [15, 16, 17].

The Nigerian economy is projected to grow by an average of 3.3% in 2022–2024. Still, risk factors like drops in oil production and increased insecurity are significant threats to the country's economic growth [19, 20]. Along with persistent budgetary and debt pressures, high inflation contributes to uncertainty. Furthermore, continued currency shortages and reduced liquidity could impact non-oil sector economic activity and jeopardize macroeconomic stability [21, 22, 13]. Strategic Revenue Growth Initiative (SRGI)

Nigeria has made some socioeconomic progress recently. However, the World Bank's 2020 Human Capital Index categorized Nigeria as 150 out of 157 in human capital development [23, 24, 18]. The Nigerian government needs to modify the economy, improve weak institutions and public financial management systems and resolve governance issues to achieve remarkable economic growth. [25, 26].

The constant high levels of inequality in terms of income and opportunities contribute to poverty in the country [27, 28]. Unemployment, social and regional disparities, and political discontent also contribute to a lack of economic growth and poverty. Over 8 million households have been pushed into poverty due to the negative impact of 2020-2022 high inflation [29, 30].

Keywords: Macroeconomic, Social-economic, Inflation, Nigerian Exchange (NGX), Gross domestic product (GDP), Exchange Traded Funds (ETF), COVID-19, Strategic Revenue Growth Initiative (SRGI).

Highlights

- To investigate and examine Nigerian economic growth
- To review macroeconomic and financial development
- To evaluate trade and exchange rate development
- To study Nigerian employment and labor market
- To evaluate the volume and value of trade security

Introduction

Nigeria's economy must expand more quickly to reduce poverty. Even though global oil prices are rising, the economy is severely constrained by "business as usual" economic management, which is not producing the expected results [31, 32, 33]. At least 80 million people in the country live in extreme poverty, which limits their future opportunities [34, 35, 36].

Nigeria's economy has grown more slowly due to decreased oil production and tempered non-oil activity. In the first three quarters of 2022, gross domestic product (GDP) increased by 3.1% year over year, barely exceeding the yearly population growth of 2.6%. Macroeconomic vulnerabilities have increased as Nigeria's growth performance, as well as its fiscal and external buffers, decoupled from high oil prices [39, 39]. It is essential to address the leading causes of this decoupling and implement reforms to strengthen the Nigerian macro-fiscal framework. The federal government's Strategic Revenue Growth Initiative (SRGI) is an excellent first step in reversing the previous downward trend in non-oil revenues as a proportion of GDP [37, 38]. This initial achievement must be maintained and expanded.

Nigeria's growth is being stifled, and its susceptibility to shocks is increasing due to the macroeconomic policy framework's flaws. Since the beginning of 2022, inflation has risen to 21.1% year-over-year, forcing up to five million more Nigerians into poverty. The rising cost of the gasoline subsidy, which is expected to top 5 trillion naira this year, has worsened fiscal problems [40, 41]. Despite higher income from oil exports, official reserves have decreased, and the currency market needs to be more balanced, which harms investment and the economic environment.

Methodology

Nigerian economy grew by 3.6% in 2021 after a 1.8% decrease in 2020, supported on the supply side by a 4.4% increase in non-oil production versus an 8.3% decline in the oil sector [42, 43]. Agriculture (2.1%) and services (5.6%) were the main contributors to the non-oil growth. Both public and private consumption boosted GDP on the demand side. In 2021, the per capita income rose by 1.0% [44, 45]. Due to a slight increase in receipts, the fiscal deficit depreciated from 5.4% in 2020 to 4.8% in 2021, with borrowing used to cover the difference. In 2021, the public debt was \$95.8 billion, or around 22.5% of GDP [46, 47].

The central bank in Nigeria in 2021 retained an 11.5% policy rate at 11.5% to promote the economy's revival. In 2021, the annual average inflation rose to 17.0% from 13.2% the year before, contradicting the 6-9% central bank objectives. The current account deficit in 2021 decreased from 4% of GDP to 2.9%, helped by increased oil revenues [50, 51]. The increase in gross reserves to \$40.1 billion in 2021 was facilitated by improved oil exports and the disbursement of the SDR allocation of \$3.4 billion (0.8% of GDP), awaiting a decision on its use. In December 2021, the NPL to gross loan ratio was 4.9% (the regulatory threshold is 5%), and the capital-adequacy ratio was 14.5% (the regulatory entry is 10%). With unemployment at 33.3% and poverty at 40%, respectively, they remained high [52, 53].

Macroeconomic and financial developments

The Nigerian economy is projected to experience 3.2% economic growth from 2022 to 2023 due to low oil production and increased insecurity. Inflation is anticipated to remain high in 2022 at 16.9% and above pre-pandemic levels in 2023, driven chiefly by the rise in diesel and gas prices and the increase in food and essential commodities cost. Russia and Ukraine conflict has also affected the country's supply chain [54, 55, 21]. While oil exports are anticipated to rise modestly, capital inflows are expected to recover. However, the expected positive impact of the oil price shock on exports can be offset by a poor output effect caused by decreasing oil production, which is fueled by inadequate infrastructure and increased insecurity [56, 57].

The marginal current account surplus of 0.1% of GDP anticipated for 2022 could become a 0.2% deficit in 2023. An increase in revenue collection will reduce the fiscal deficit to 4.5% of GDP on average. The Nigerian public debt is projected to increase to 40% of GDP on new borrowing by 2024. Rising instability and policy uncertainty, supported by the cancellation of the initially scheduled withdrawal of subsidies on premium motor spirits a year before the 2023 elections, could worsen the picture [58, 59, 21].

The interim dividend declaration and the favorable first-quarter corporate results caused investors' good attitudes, which caused activities on the Nigerian Exchange (NGX) Limited to be bullish in May 2022. At the end of April 2022, the total market capitalization increased by 5.1% to ₦51,018.37 billion from ₦48,523.47 billion [60, 61]. In comparison to ₦26,760.86 billion, ₦21,755.47 billion, and ₦7.14 billion at the end of April 2022, the value of the stocks, bonds, and Exchange Traded Funds (ETF) increased by 6.7%, 3.2%, and 4.4%, to ₦28,564.52 billion, ₦22,446.39 billion, and ₦7.50 billion, respectively (Figure 1).

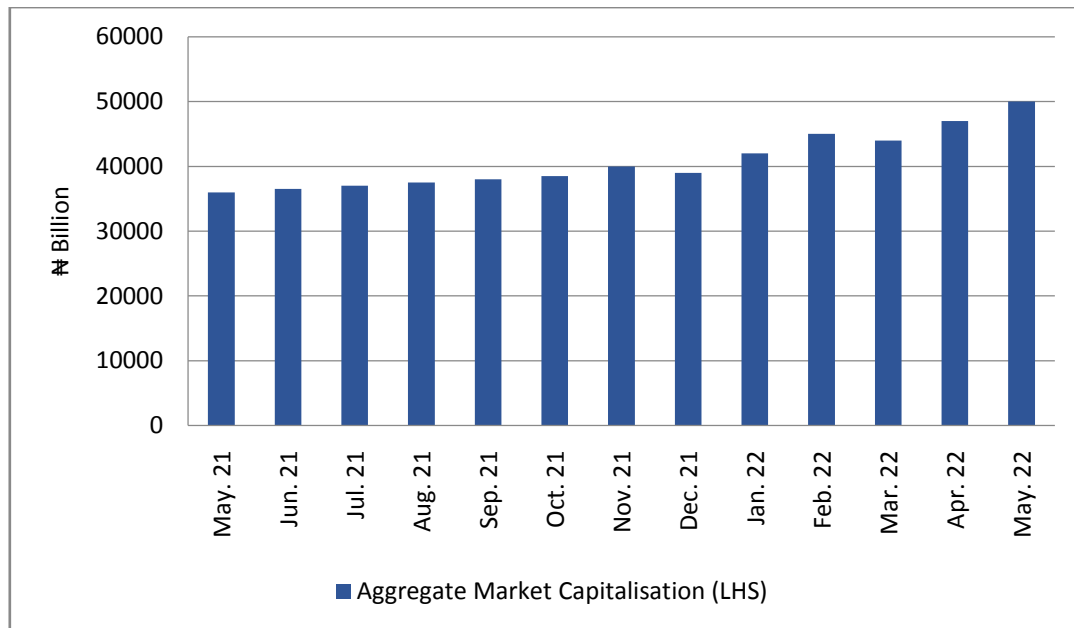


Figure 1. Aggregate of market capitalization (LHS)

The NGX All-Share Index (ASI) gained 5.1% between the beginning of May and the end, going from 50,126.41 index points to 52,990.28 index points [62, 63, 21]. An uptick resulted in investor confidence, an interim dividend declaration, an improved growth outlook, and favorable first-quarter 2022 corporate results (Figure 2).

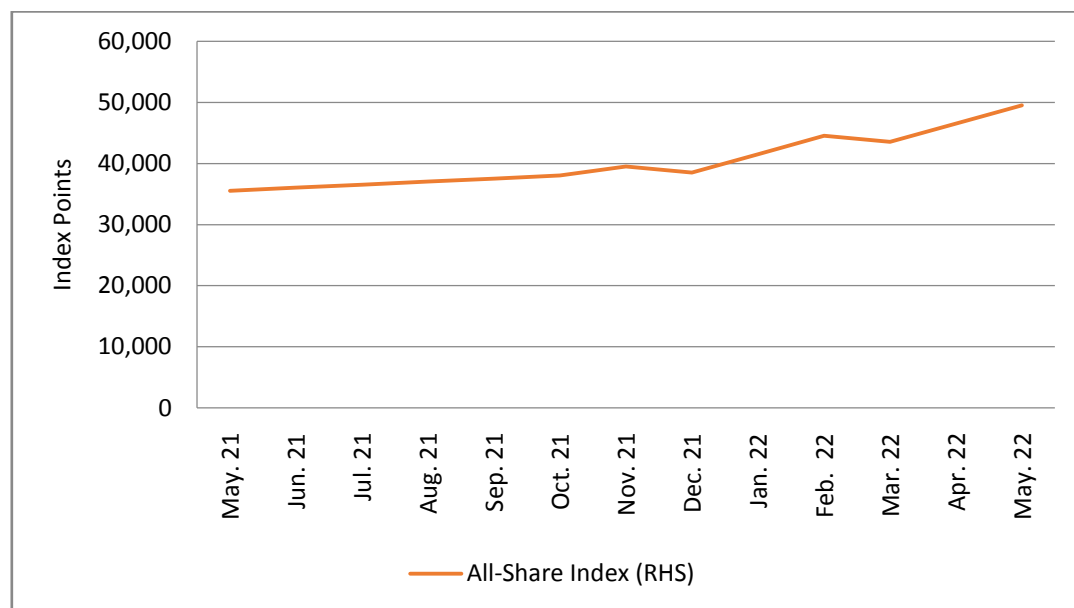


Figure 2. All-Share Index (RHS)

The various sectoral indicators showed a variety of trends. For instance, in comparison to the values in the previous month, the NGX- Alternative Securities Market (AseM) stayed steady [21, 64]. All other indexes except the NGX-Sovereign Bond, NGX- Capital Gain (CG), NGX-Growth, NGX-Banking, NGX-AFR Div Yield, NGX-MERI Value, NGX-African Bank Value, and NGX-Insurance trended upward at the same time (Table 1).

Table 1. Nigeria Exchange (NGX) Limited Indices

NGX Indices	End-April 2022	End-May 2022	Changes (%)
NGX-Main Board	2093.2	2346.1	12.1
NGX-Pension	1858.4	1877.7	1.0
NGX-MERI Growth	2289.2	2409.3	5.2
NGX-Industrial Goods	2185.3	2194.2	0.4
NGX- Premium	4818.1	4980.9	3.4

NGX-ASeM	659.0	659.0	0.0
NGX-Oil & Gas	524.4	547.6	4.4
NGX-Sovereign Bond	861.0	860.0	-0.1
NGX-Consumer Goods	618.1	651.7	5.4
NGX-CG	1367.9	1360.3	-0.6
NGX-Lotus II	3170.2	3273.0	3.2
NGX-Growth	1446.5	1432.6	-1.0
NGX-30	1886.3	1930.7	2.4
NGX-Insurance	193.1	181.2	-6.1
NGX-Banking	434.8	425.7	-2.1
NGX-AFR Bank Value	1033.2	989.2	-4.3
NGX-AFR Div Yield	3390.5	3305.9	-2.5
NGX-MERI Value	2333.8	2256.7	-3.3

Compared to the 12.15 billion shares and ₦103.01 billion, in 100,300 deals, at the end of April 2022, the total volume and value of traded shares increased by 197.6% and 195.1%, to 36.16 billion shares and ₦303.94 billion, respectively (Figure 3 and 4).

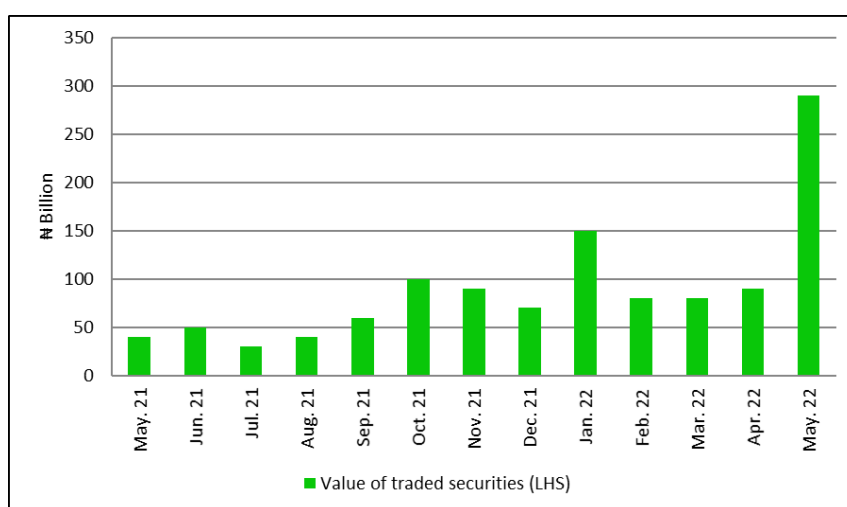


Figure 3. Value of traded securities

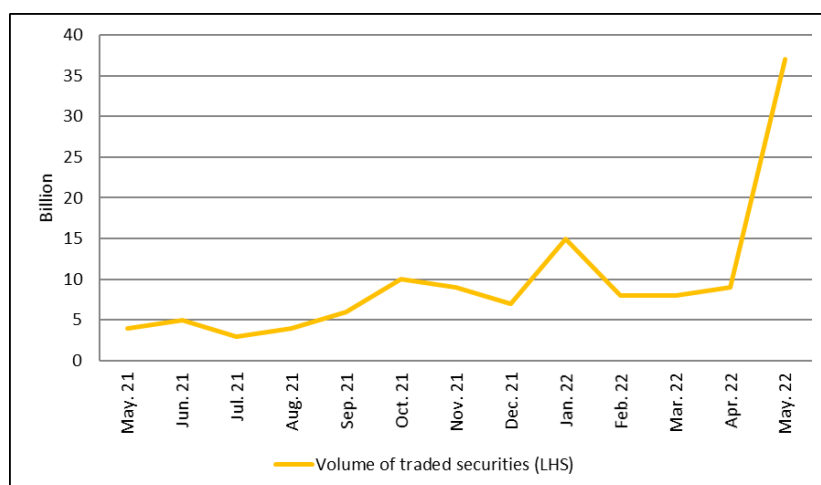


Figure 4. Volume of traded securities

In May 2022, the external sector's performance could have been more consistent. The higher crude oil prices are responsible for the enhanced export revenues. On the plus side, total trade climbed by 3.6%. In contrast, as a result of the crisis in Russia and Ukraine and the impact of policy rate increases in significantly advanced countries, foreign capital inflow fell. Compared to April, when it was ₦415.53 to 1 US dollar to one naira, the average exchange rate at the I&E window was relatively consistent at ₦415.95 to 1 US dollar [65, 21]. The number of foreign currency reserves on hand was sufficient because it could cover imports for 6.6 months, which is more than the standard import cover period of three months.

The trade balance has improved due to the ongoing war between Russia and Ukraine, driving up crude oil and gas prices. According to preliminary figures, Nigeria's total commerce climbed by 3.6% from US\$10.53 billion in April to US\$10.92 billion. Due to this outcome, the trade surplus increased by 26.0%, rising to US\$0.83 billion from US\$0.66 billion in the previous quarter [66, 67]. A breakdown reveals that overall export receipts increased by 5.0% to US\$5.87 billion from US\$5.59 billion in April. Similarly, imports of goods increased by 2.2% to US\$5.04 billion from US\$4.94 billion in April (Figure 5).

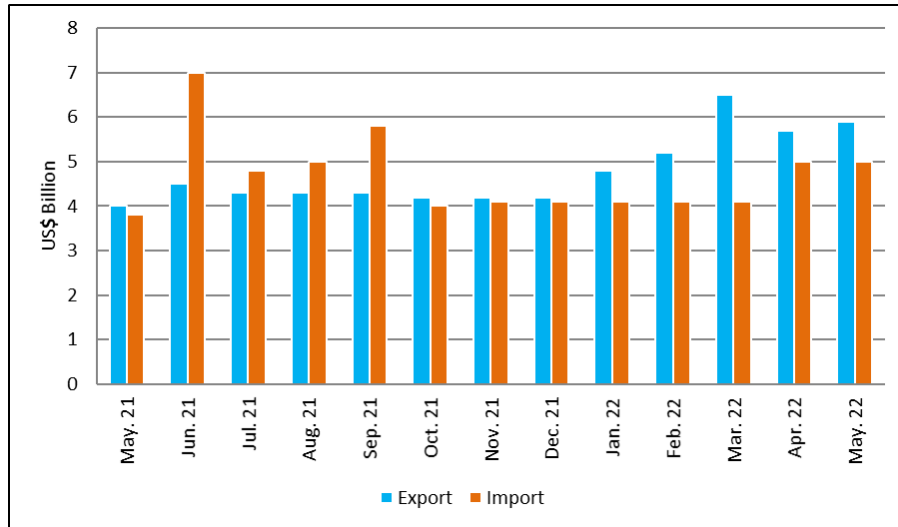


Figure 5: Nigerian export and import trade (US\$ Billion)

May saw higher crude oil and gas export receipts of \$5.13 billion compared to April's \$4.88. According to an additional study, crude oil export increased by 5.0% to US\$4.53 billion from US\$4.31 billion in April. The price increase of 9.6% to an average of US\$116.72 per barrel, up from US\$106.51 per barrel in the preceding period, was the main factor for the increase [68, 69]. Similarly, gas export receipts increased by 5.0% to US\$0.60 billion from US\$0.57 billion in April. According to compositional analysis, crude oil and gas exports still account for 88.5% of all exports (oil, 78.1%, and gas, 10.4%).

Similar to oil export earnings, non-oil export earnings increased by 4.8% to US\$0.75 billion from US\$0.71 billion in April. This is because "Other non-oil Exports" and re-exports increased by 5% to US\$0.55 billion and US\$0.17 billion, respectively [70, 21].

The estimated total imports increased by 2.2% to US\$5.04 billion from US\$4.94 billion in the previous month, primarily due to a 52.0% increase in oil imports to US\$1.47 billion from US\$0.97 billion in April. However, compared to the last month's imports of US\$3.61 billion, imports of non-oil products fell by 1.2% to US\$3.57 billion. Non-oil imports accounted for the majority of the total import market share (70.8%), with oil making up the remaining 29.2% [71, 72].

According to estimated data on the sectoral use of foreign exchange for visible imports, industry accounted for the highest share 38.8%, followed by oil with 29.2%; manufacturing (14.5%), food (10.9%), minerals (3.1%), transport (2.2%), and agricultural (1.3%) made up the remainder (Figure 6).

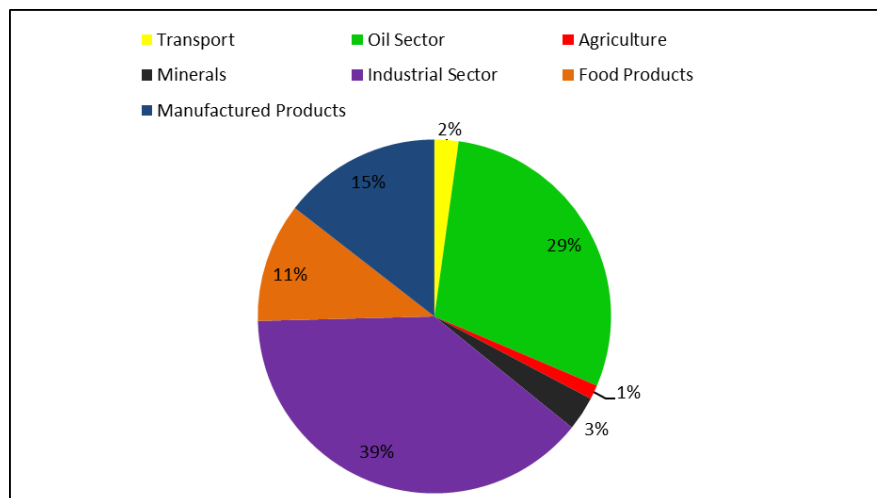


Figure 6. Import by Sector (May 2022)

Employment and labor market

The primary resource for the world's poorest people is labor. Accordingly, the labor market is the direct channel by which households and people benefit from economic growth. Even before the COVID-19 crisis, over 4 in 10 Nigerians lived below the poverty line [76, 77]. Understanding the labor market is essential to achieving Nigeria's ambitious goal of lifting 100 million people out of poverty by 2030 [73, 74].

Nigeria's young and expanding population presents particular difficulty in finding enough productive work; even before the outbreak, it was anticipated that more than 30 million young people would need employment in 2021 [21, 75].

Providing Quality Jobs for Young Nigerians, a New Report Titled "Good Jobs for a New Generation" After COVID-19" analyzes the composition of Nigeria's labor market and evaluates its response to two recent crises using two linked panel datasets from before and during the COVID-19 crisis, the General Household Survey (GHS) and the Nigeria COVID-19 National Longitudinal Phone Survey (NLPS). These include the 2016 recession brought on by dropping oil prices and the COVID-19-induced "double shock" to the economy and health [78, 79].

Research has revealed Nigeria's enduring difficulties in reforming its labor market, as well as how taking advantage of the lessons learned from these crises can shape bold policy decisions now, driving essential reforms that would improve the nation's prospects for future productivity and growth [80, 81]. A country that only depends on oil production and does not provide wealth, jobs, or a good atmosphere for the private sector to flourish is inviting poverty. The costs of goods and services will be revealed. People who own the interest or service could start to hoard it. If individuals are unable to buy, they cannot sell. If this keeps on, there is no chance for the nation's future under the current leadership (Table 2).

Table 2. Nigerian employment and labor market

Related	Last	Previous	Unit	Reference
Currency	453	453	naira	Jan/22
Stock Market	52616	52701	points	Jan/22
GDP Growth Rate	9.68	-0.4	%	Sep/22
GDP Annual Growth Rate	2.25	3.54	%	Sep/22
Unemployment Rate	33.3	27.1	%	Dec/20
Inflation Rate	21.34	21.47	%	Dec/22
Interest Rate	16.5	16.5	%	Dec/22
Cash Reserve Ratio	32.5	32.5	%	Jan/23
Balance of Trade	402412	-67282	NGN millions	Sep/22
Current Account	1890	5069	USD million	Sep/22
Current Account to GDP	-0.5	-3.9	% of GDP	Dec/21
Government Debt to GDP	37	34.5	% of GDP	Dec/21
Government Budget	-4.7	-4	% of GDP	Dec/21
Corporate Tax Rate	30	30	%	Dec/21
Personal Income Tax Rate	24	24	%	Dec/22

Discussion

The pandemic-linked supply disruptions, the ongoing Russia-Ukraine conflict, which has led to rising food, energy and commodities price and the exacting global financial environment, have all diminished the likelihood of more global development [83, 84]. The IMF's World Economic Outlook from April predicts that the global economy's growth rate will slow to 3.6% in 2022, which is 0.8%age points less than anticipated in January. The Growth in Emerging markets and Developing Economies (EMDEs) and Advanced Economies (AEs), initially projected to be 3.9% and 4.8%, respectively, is expected to drop to 3.3% and 3.8% in 2022 [85, 86].

The remainder of 2022 is predicted to see continued high levels of global inflation, primarily due to rising commodity and energy costs, supply and demand mismatches resulting from the conflict between Ukraine and Russia, and COVID-19's residual effects in some areas. Rising food prices cause price pressures in EMDEs as opposed to AEs, where labor shortages are more likely to be the cause. As a result, worldwide consumer prices are anticipated to rise to 5.7% in AEs and 8.7% in EMDEs, respectively, which are 1.8 and 2.8%age points higher than the predictions made in January [87, 88].

The expectation of increased crude prices, effective implementation of the Medium-Term National Development Plan (MTNDP), and the impact of the central bank of Nigeria (CBN) interventions in the real sector, among other factors, continue to support the economy of Nigeria's growth prospects. If not addressed, security issues and infrastructure deficiencies risk slowing growth [89, 90].

The short-term inflation outlook is for it to stay high due to seasonal influences, security concerns, rising energy prices, and the knock-on effects of the Russia-Ukraine war. However, persistent CBN and the federal government of Nigeria (FGN) investments in growth-enhancing industries are anticipated to reduce supply chain constraints and reduce inflationary pressure. In particular, rising global inflation may be imported from Nigeria's main trading partners [23, 46].

Conclusion

Nigeria has made some socioeconomic progress recently. However, the World Bank's 2020 Human Capital Index categorized Nigeria as 150 out of 157 in human capital development [23, 24, 18]. The Nigerian government needs to modify the economy, improve weak institutions and public financial management systems and resolve governance issues to achieve remarkable economic growth [32, 47, 59].

The constant high levels of inequality in terms of income and opportunities contribute to poverty in the country [27, 28]. Unemployment, social and regional disparities, and political discontent also contribute to a lack of economic growth and poverty. Over 8 million households have been pushed into poverty due to the negative impact of 2020-2022 high inflation [40, 51, 63].

Chronological data demonstrate that the jobless rate in Nigeria has increased steadily over the past few years. According to reports, more than 33% of the labor force was unemployed in the fourth quarter of 2020. A country that only depends on oil production and does not provide wealth, jobs or a conducive atmosphere for the private sector to flourish is inviting poverty. The costs of goods and services will be revealed. People who own the interest or service could start to hoard it. If individuals are unable to buy, they cannot sell [29, 72].

If this continues, the country's future is hopeless as far as this leadership is concerned. There are no unemployment benefits like we have in other nations. So, unemployed persons may commit crimes and terrorize the very privileged few. Such should not be allowed to happen. When a population as massive as 23 million is unemployed, one should not be surprised why crime is increasing [11, 42, 63].

In order for the Nigerian market to draw foreign direct investments, the government must create jobs. Even though it won't be simple, it is possible. Because of our unfriendly atmosphere, investors flee to neighboring countries to make investments. Nigeria is deteriorating. Before, it was horrible, but now it's even worse. More Nigerians are growing so poor that they can hardly feed themselves, primarily as a result of the government's terrible economic policies [8, 63, 48].

Reference

1. Adeyemo, F. (2021). Banking Regulation in Nigeria. *Banking Regulation in Africa*, 65–100. <https://doi.org/10.4324/9781003173960-3>
2. Impact of income inequality on economic growth – evidence from the Ten (10) biggest economies in Africa. (2020). *Journal of Economics and Sustainable Development*. <https://doi.org/10.7176/jesd/10-14-07>
3. Nigeria: Africa's biggest economy. (2014). *Africa Research Bulletin: Economic, Financial and Technical Series*, 51(3). <https://doi.org/10.1111/j.1467-6346.2014.05715.x>
4. Olorundare, & Kunle, J. (2017). Market access into the biggest market in Africa: Nigeria. *2017 IEEE Symposium on Product Compliance Engineering (ISPC)*. <https://doi.org/10.1109/ispc.2017.7935016>
5. Tsika, N. (2022). Cinematic independence: Constructing the big screen in Nigeria. Retrieved from <http://www.jstor.org/stable/10.2307/j.ctv2rb76f5?refreqid=search-gateway>
6. Corona virus pandemic outbreak and performance of selected Nigerian-Based Organizations. (2020). *European Journal of Business and Management*. <https://doi.org/10.7176/ejbm/12-23-09>
7. Fowowe, A. (2020). The reality of Nigerian legal system after covid-19 pandemic. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3709757>
8. Igoni, S., & Henry Ogiri, I. (2020). Causality of fiscal policies and per capita income development: Evidence from the Nigerian economy. *Economy*, 7(1), 19–24. <https://doi.org/10.20448/journal.502.2020.71.19.24>
9. Nigerian economy could buckle under covid-19 pressures. (2020). *Emerald Expert Briefings*. <https://doi.org/10.1108/oxan-es251394>
10. Okenna, N. P. (2020). An overview of the impact of the COVID-19 pandemic on Nigerian economy. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3654521>
11. Onoh, J. K. (2017). Multinationals in the Nigerian economy. *The Nigerian Oil Economy*, 1–18. <https://doi.org/10.4324/9781315142982-1>

12. Prince Okenna, N. (2020). Overview of the impact of COVID-19 pandemic on the Nigerian economy. *International Journal of Engineering Applied Sciences and Technology*, 5(3), 116–119. <https://doi.org/10.33564/ijeast.2020.v05i03.017>
13. Takefuji, Yoshiyasu. (2020). Birth rate under/after the COVID-19 pandemic can be influenced by economy <https://doi.org/10.22541/au.160039562.25271560>
14. Zhang, L., Sindakis, S., Dhaulta, N., & Asongu, S. (2022). Economic Crisis Management during the COVID-19 pandemic: The role of entrepreneurship for improving the Nigerian mono-economy. <https://doi.org/10.21203/rs.3.rs-1438381/v1>
15. Karshima, S. N. (2018). Prevalence and distribution of soil-transmitted helminth infections in Nigerian children: A systematic review and meta-analysis. *Infectious Diseases of Poverty*, 7(1). <https://doi.org/10.1186/s40249-018-0451-2>
16. Olaniyi, J. O. (2018). Manifestations of the symptoms of poverty in the electoral behaviour of Nigerian political actors. *Jostling Between "Mere Talk" & Blame Game?*, 285–314. <https://doi.org/10.2307/j.ctvh9yvcp.13>
17. Omotoso, S., & Fajimbola, J. (2017). Armed conflict, terrorism and feminized poverty in developing countries : The Nigerian example. *Ubuntu : Journal of Conflict Transformation*, 6(1), 83–99. https://doi.org/10.31920/2050-4306/2017/v6n2_3a4
18. Tanenbaum, S., Hilligoss, B., & Song, P. (2018). Health Care Innovation and children in poverty: Lived experiences of caregivers of children with disabilities in a Medicaid-serving Aco. *Journal of Children and Poverty*, 25(1), 3–20. <https://doi.org/10.1080/10796126.2018.1554182>
19. Adeleye, B. N., Romanus Osabohien, I., Isola Lawal, A., & De Alwis, T. (2021). Energy use and the role of per capita income on carbon emissions in African coun-tries. *PLoS ONE* 16(11), e0259488. <https://doi.org/10.1371/journal.pone.0259488>
20. Arjun, K., Sankaran, A., Kumar, S., & Das, M. (2020). Heliyon an endogenous growth approach on the role of energy, human capital, finance and technology in explaining manufacturing value-added: A multi-country analysis. *Heliyon*, 6(February), e04308. <https://doi.org/10.1016/j.heliyon.2020.e04308>
21. *EntralAnk of nigeria E ONOMI report - cbn.gov.ng*. Retrieved June 4, 2022, from <https://www.cbn.gov.ng/Out/2022/RSD/February%20Economic%20Report%202022A.pdf>
22. Barcenilla-Visús, S., & López-Pueyo, C. (2014). Semi- endogenous versus fully endogenous growth theory: A sectoral approach. *Journal of Applied Economics*, XVII(1), 1–30. [https://doi.org/10.1016/S1514-0326\(14\)60001-5](https://doi.org/10.1016/S1514-0326(14)60001-5)
23. Bhuiyan, E. M., & Chowdhury, M. (2019). Of. *Quarterly Review of Economics and Finance*. <https://doi.org/10.1016/j.qref.2019.10.005>
24. Adeusi, S. O., & Aluko, O. A. (2015). Relevance of financial sector development on Real Sector Productivity: 21st century evidence from Nigerian Industrial Sector. *International Journal of Academic Research in Business and Social Sciences*, 5(6). <https://doi.org/10.6007/ijarbss/v5-i6/1661>
25. Afolabi, A., & Laseinde, O. T. (2019). Manufacturing sector performance and economic growth in Nigeria. *Journal of Physics: Conference Series*, 1378(3), 032067. <https://doi.org/10.1088/1742-6596/1378/3/032067>
26. Bishnu, M., Ghate, C., & Gopalakrishnan, P. (2016). Factor income taxation, growth, and investment specific technological change. *Economic Modelling*, 57, 133–152. <https://doi.org/10.1016/j.econmod.2016.04.007>
27. Chu, A. C. (2018). From Solow to Romer: Teaching endogenous technological change in undergraduate economics. *International Review of Economics Education*, 27, 10–15. <https://doi.org/10.1016/j.iree.2018.01.006>
28. Financial innovation and economic growth in Nigeria a sectoral analysis. (2020). *Journal of Economics and Sustainable Development*. <https://doi.org/10.7176/jesd/11-16-14>
29. Impact of exchange rate undervaluation on manufacturing sector and economic growth in Nigeria. (2021). *Journal of Economics and Sustainable Development*. <https://doi.org/10.7176/jesd/12-20-07>
30. Su, D., & Yao, Y. (2017). Manufacturing as the key engine of economic growth for middle-income economies. *Journal of the Asia Pacific Economy*, 22(1), 47–70. <https://doi.org/10.1080/13547860.2016.1261481>
31. Udemba, E. N., Güngör, H., Bekun, F. V., & Kirikkaleli, D. (2021). Economic Performance of India amidst high CO2 emissions. *Sustainable Production and Consumption*, 27, 52–60. <https://doi.org/10.1016/j.spc.2020.10.024>
32. Dimas, P., Stamopoulos, D., Tsakanikas, A., & Vasileiadis, M. (2022). Globalinto input-output intan-gibles database: Industry-level data on intangibles for the EU-27 and the UK. *Data in Brief*, 41, 107932. <https://doi.org/10.1016/j.dib.2022.107932>
33. Lawal, A. I., Asaleye, A. J., Iseolorunkanmi, J., & Popoola, O. R. (2018). Economic growth, agricultural output and Tourism Development in Nigeria: An application of the ARDL bound testing approach. *Journal of Environmental Management and Tourism*, 9(4), 786. [https://doi.org/10.14505/jemt.v9.4\(28\).12](https://doi.org/10.14505/jemt.v9.4(28).12)

34. Douglas, C., Douglas, C., Douglas, C., & Douglas, C. (nd). The thethethe delayed solow model steady solow model delayed a delayed solow model a delayed solow model. *IFAC-PapersOnLine*, 51(14), 94–99. <https://doi.org/10.1016/j.ifacol.2018.07.205>
35. Obademi, E. O., & Elumaro, A. (2014). Banks and economic growth in Nigeria: A re-examination of the financial repression hypothesis. *American Journal of Business and Management*, 3(1). <https://doi.org/10.11634/216796061403516>
36. Lawal, A. I., Olayanju, A., Salisu, A. A., Asaleye, A. J., Dahunsi, O., Dada, O., Omoju, O. E., & Popoola, O. R. (2019). Examining rational bubbles in oil prices: Evidence from frequency domain estimates. *International Journal of Energy Economics and Policy*, 9(2), 166–173. <https://doi.org/10.32479/ijeeep.7768>
37. Doytch, N., & Narayan, S. (2021). Does transitioning towards renewable energy accelerate economic growth ? An analysis of sectoral growth for a dynamic panel of countries. *Energy*, 235, 121290. <https://doi.org/10.1016/j.energy.2021.121290>
38. Ezeabasili, V. N. (2017). Empirical investigation on the relationship between Bank credit and manufacturing sector growth in Nigeria, 1981-2014. *Account and Financial Management Journal*. <https://doi.org/10.18535/afmj/v2i6.03>
39. Lawal, A. I., Adebare Salisu, A., John Asaleye, A., Oseni, E., Bose Lawal-adedoyin, B., Olatunde Dahunsi, S., Oluwasola Omoju, E., Oyeronke Dicktonye, A., Bolatito Ogunwole, E., & Ayopo Babajide, A. (2022). Economic growth, exchange rate and remittance Nexus: Evidence from Africa. *Journal of Risk and Financial Management*, 15(6), 235. <https://doi.org/10.3390/jrfm15060235>
40. Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: Representation, estimation, and testing. *Econometrica*, 55(2), 251. <https://doi.org/10.2307/1913236>
41. Wu, M., & Ren, D. (2011). An empirical research of Sichuan Rural Financial Development and Economic Growth. *2011 International Conference on Management and Service Science*. <https://doi.org/10.1109/icmss.2011.5998743>
42. Lee, J.-W., & McKibbin, W. J. (2018). Service sector pro-ductivity and economic growth in Asia. *Economic Modelling*, November 2017, 1–17. <https://doi.org/10.1016/j.econmod.2018.05.018>
43. Fashina, O. A., Asaleye, A. J., Ogunjobi, J. O., & Lawal, A. I. (2018). Foreign aid, human capital and Economic Growth Nexus: Evidence from Nigeria. *Journal of International Studies*, 11(2), 104–117. <https://doi.org/10.14254/2071-8330.2018/11-2/8>
44. Lin, B., & Zhu, J. (2020). Chinese electricity demand and electricity consumption efficiency: Do the structural changes matter? *Applied Energy*, 262, 114505. <https://doi.org/10.1016/j.apenergy.2020.114505>
45. Iheanacho, E. (2016). The impact of financial development on economic growth in Nigeria: An ARDL analysis. *Economies*, 4(4), 26. <https://doi.org/10.3390/economies4040026>
46. Gabriel, L. F., & de Santana Ribeiro, L. C. (2019). Economic growth and manufacturing: An analysis using panel VAR and Intersectoral Linkages. *Structural Change and Economic Dynamics*, 49, 43–61. <https://doi.org/10.1016/j.strueco.2019.03.008>
47. Madsen, J. B., Saxena, S., & Ang, J. B. (2010). The indian growth miracle and endogenous growth. *Journal of Development Economics*, 93(1), 37–48. <https://doi.org/10.1016/j.jdeveco.2009.06.002>
48. Ghosh, T., & Mehul Parab, P. (2021). Assessing India's productivity trends and endogenous growth: new evidence from technology, human capital and foreign direct investment. *Economic Modelling*, 97 July 2020, 182–195. <https://doi.org/10.1016/j.econmod.2021.02.003>
49. N., E. J., & Maduka, C. E. (2017). Implications of fiscal policy measures on growth of the Nigerian economy. *International Journal of Trend in Scientific Research and Development*, Volume-1(Issue-6), 1045–1056. <https://doi.org/10.31142/ijtsrd5766>
50. Meier, F. D., & Quaas, M. F. (2021). Booming gas – A theory of endogenous technological change in resource extraction. *Journal of Environmental Economics and Management*, 107, 102447. <https://doi.org/10.1016/j.jeeem.2021.102447>
51. Halkos, G., de Alba, J. M., & Todorov, V. (2021). Analyzing manufacturing sector and selected development chal-lenges: A panel data analysis. *Energy*, 235, 121253. <https://doi.org/10.1016/j.energy.2021.121253>
52. Nyeche EW, B. E. D. (2015). The imperative of stock market on economic growth in Nigeria: “The endogenous growth model.” *Business and Economics Journal*, 07(01). <https://doi.org/10.4172/2151-6219.1000200>
53. Nkoro, E., & Uko, A. K. (2019). Financial structure and economic growth: The Nigerian experience, 1980-2017. *American Economic & Social Review*, 5(1), 33–48. <https://doi.org/10.46281/aesr.v5i1.261>
54. Isola, A., Ozturk, I., Olanipekun, I. O., & John, A. (2020). Examining the linkages between electricity consumption and economic growth in African economies. *Energy*, 208, 118363. <https://doi.org/10.1016/j.energy.2020.118363>
55. Bist, J. P. (2018). Financial development and economic growth: Evidence from a panel of 16 African and non-African low-income countries. *Cogent Economics & Finance*, 6(1), 1449780. <https://doi.org/10.1080/23322039.2018.1449780>

56. Moutinho, V., Madaleno, M., & Elheddad, M. (2020). Determinants of the environmental kuznets curve considering economic activity sector diversification in the OPEC countries. *Journal of Cleaner Production*, 271, 122642. <https://doi.org/10.1016/j.jclepro.2020.122642>
57. Juhro, S. M., Narayan, P. K., Iyke, B. N., & Trisnanto, B. (2020). Is there a role for Islamic finance and R&D in endogenous growth models in the case of Indonesia? *Pacific-Basin Finance Journal*, 62, 101297. <https://doi.org/10.1016/j.pacfin.2020.101297>
58. Lansing, K. J. (2012). Speculative Growth, Overreaction, and the Welfare Cost of Technology-Driven Bubbles. *Journal of Economic Behavior & Organization*, 83(3), 461–483. <https://doi.org/10.1016/j.jebo.2012.02.011>
59. Kwoke, I. E., Osuh, K. O., & Nwubuiwe, O. L. (2017). The Nexus Between Capital Market and power (electricity) sub-sector in Nigeria. *International Journal of Innovative Research and Development*, 6(6). <https://doi.org/10.24940/ijird/2017/v6/i6/jun17011>
60. Moutinho, V., & Madaleno, M. (2020). Economic growth assessment through an ARDL approach: The case of african OPEC countries. *Energy Reports*, 6, 305–311. <https://doi.org/10.1016/j.egy.2020.11.253>
61. Lawal, A. I., Nwanji, T. I., Asaleye, A., & Ahmed, V. (2016). Economic growth, financial development and trade openness in Nigeria: An application of the ARDL bound testing approach. *Cogent Economics & Finance*, 4(1), 1258810. <https://doi.org/10.1080/23322039.2016.1258810>
62. Khan, M. A., Qayyum, A., & Sheikh, S. A. (2005). Financial development and economic growth: The case of Pakistan. *The Pakistan Development Review*, 44(4II), 819–837. <https://doi.org/10.30541/v44i4iipp.819-837>
63. Narayan, P. K., Liu, R., & Westerlund, J. (2016). A GARCH model for testing market efficiency. *Journal of International Financial Markets, Institutions and Money*, 41, 121–138. <https://doi.org/10.1016/j.intfin.2015.12.008>
64. Ogbuabor, J. E., Anthony-Orji, O. I., Manasseh, C. O., & Orji, A. (2020). Disaggregated Analysis of Monetary Policy Effects on the agricultural sector in Nigeria. *Applied Studies in Agribusiness and Commerce*, 14(3-4), 47–58. <https://doi.org/10.19041/apstract/2020/2-3/6>
65. Oyeranmi, S. G. (2023). The notion of Nigerian healthcare system management. *International Journal of Research Publication and Reviews*, 04(01), 1157–1166. <https://doi.org/10.55248/gengpi.2023.4136>
66. Salisu, A. A., Vinh, X., & Lawal, A. (2020). Hedging oil price risk with gold during COVID-19 pandemic. *Resources Policy*, 70(October), 101897. <https://doi.org/10.1016/j.resourpol.2020.101897>
67. Abiola, O. K., & Othman, I. W. (2022). Financial Management and firms' profitability: Evidence from Nigerian manufacturing listed firms. *Business and Economic Research*, 12(2), 190. <https://doi.org/10.5296/ber.v12i2.19786>
68. Osakwe, A., Ibenta, S. N., & Ezeabasili, V. N. (2019). Monetary policy and the performance of the manufacturing sector in Nigeria (1986-2017) monetary policy and the performance of the manufacturing sector in Nigeria (1986-2017). *International Journal of Academic Research in Business and Social Sciences*, 9(2), 399–413. <https://doi.org/10.6007/IJARBS/v9-i2/5553>
69. Stoian, A., & Iorgulescu, F. (2020). Fiscal policy and stock market efficiency: An ARDL bounds testing approach. *Economic Modelling*, 90 March 2019, 406–416. <https://doi.org/10.1016/j.econmod.2019.12.023>
70. Giorgioni, G., & Kok, S. K. (2016). Empirical assessment of the finance–growth nexus in Frontier Markets. *Handbook of Frontier Markets*, 321–339. <https://doi.org/10.1016/b978-0-12-809200-2.00014-2>
71. Papetti, A., Menghi, R., Germani, M., Germani, M., & Marconi, M. (2020). ScienceDirect sciencedirect an energy energy assessment assessment method method for for SMEs: SMEs: Case case study study of of an Italian Italian mechanical mechanical work-shop workshop an. *Procedia Manufacturing*, 43, 56–63. <https://doi.org/10.1016/j.promfg.2020.02.107>
72. Ullah, A., Pinglu, C., Ullah, S., Zaman, M., & Haider, S. (2020). Heliyon the nexus between capital structure, firm-specific factors, macroeconomic factors and financial performance in the textile Sector of Pakistan. *Heliyon*, 6(8), e04741. <https://doi.org/10.1016/j.heliyon.2020.e04741>
73. Adamopoulos. (2010). The relationship between Credit Market Development and economic growth. *American Journal of Applied Sciences*, 7(4), 518–526. <https://doi.org/10.3844/ajassp.2010.518.526>
74. Domingues, E. P., de Souza, K. B., & Magalhães, A. S. (2017). Decomposing Brazilian Manufacturing Industry Dynamics in the mid-2000s: Macroeconomic factors and their sectoral impacts. *Economia*, 18(3), 411–432. <https://doi.org/10.1016/j.econ.2017.05.004>
75. Vu, K. M. (2011). ICT as a source of economic growth in the information age: Empirical evidence from the 1996 – 2005 period. *Telecommunications Policy*, 35(4), 357–372. <https://doi.org/10.1016/j.telpol.2011.02.008>
76. Ilaboya, J. O., & Ibrahim, S. (2006). Impact of stock market performance on the level of economic activities: Evidence from nigerian stock market. *Nigeria Journal of Business Administration*, 6(1). <https://doi.org/10.4314/njbm.v6i1.38565>

77. Pesaran, M., Shin, Y., & Smith, R. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326. <https://doi.org/10.1002/jae.616>
78. Zhang, H., Wei, Y., & Shuzhong, M. (2021). Journal of Asian economics overcoming the ‘Solow Paradox’: Tariff reduction and productivity growth of Chinese ICT firms. *Journal of Asian Economics*, 74, 101316. <https://doi.org/10.1016/j.asieco.2021.101316>
79. Sanya, O. (2014). Nigerian financial sector and Manufacturing Industries. *IOSR Journal of Applied Chemistry*, 7(3), 41–46. <https://doi.org/10.9790/5736-07314146>
80. Pulicherla, K. K., Adapa, V., Ghosh, M., & Ingle, P. (2022). Current efforts on sustainable green growth in the manufacturing sector to complement “make in India” for making “self-reliant India.” *Environmental Research*, 206, 112263. <https://doi.org/10.1016/j.envres.2021.112263>
81. Zhenhui, X., & Pal, S. (2022). Journal. *Journal of Management Science and Engineering*. Available online 28 May 2022. In Press, Journal Pre-proof. <https://doi.org/10.1016/j.jmse.2022.04.001>
82. Lagos: The Political Foundations of Economic Diversification in Nigeria’s commercial capital. (2022). *Economic Diversification in Nigeria*. <https://doi.org/10.5040/9781350237674.ch-7>
83. Abu-Bader, S., & Abu-Qarn, A. S. (2008). Financial development and economic growth: Empirical evidence from six MENA countries. *Review of Development Economics*. <https://doi.org/10.1111/j.1467-9361.2008.00427.x>
84. Mazza, J. (2016). Stage 2: From employment to labor intermediation services. *Labor Intermediation Services in Developing Economies*, 65–112. https://doi.org/10.1057/978-1-137-48668-4_4
85. Oyeranmi, S. G. (2023). Establishment of local fish farm “La’ prestige agro” llc in Nigeria. *International Journal of Research Publication and Reviews*, 04(01), 1955–1963. <https://doi.org/10.55248/gengpi.2023.4156>
86. Adeniyi, O., Omisakin, O., Egwaikhide, F. O., & Oyinlola, A. (2012). Foreign direct investment, economic growth and financial sector development in small open developing economies. *Economic Analysis and Policy*, 42(1), 105–127. [https://doi.org/10.1016/s0313-5926\(12\)50008-1](https://doi.org/10.1016/s0313-5926(12)50008-1)
87. Oyeranmi, S. G. (2023). Interaction between waste management and energy generation systems in terms of material properties and environmental impact in the European Union. *International Journal of Progressive Research in Engineering Management and Science*. <https://doi.org/10.58257/ijprems30525>
88. Odhiambo, N. M., & Akinboade, O. A. (2009). Interest-rate reforms and financial deepening in Botswana: An empirical investigation. *Economic Notes*, 38(1-2), 97–116. <https://doi.org/10.1111/j.1468-0300.2009.00211.x>
89. Review for "impact of globalization on human rights: Evidence from Sub-Saharan africa". (2020). <https://doi.org/10.1108/ijse-12-2019-0752/v1/review1>
90. FAMA, E. U. G. E. N. E. F. (1990). Stock returns, expected returns, and real activity. *The Journal of Finance*, 45(4), 1089–1108. <https://doi.org/10.1111/j.1540-6261.1990.tb02428.x>