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The Relationship between Remittances, Brain Drains and Economic Prosperity in Nigeria, 1990-2022

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Annotation: The paper examined the relationship between remittances, brain drain and economic growth in Nigeria. Migration rate, Worker's remittances, foreign aid, and exchange rates were the variables used in the study. The paper used time series data covering a period of 33years (1990-2022). In the analysis, the paper used descriptives statistics, Johansen cointegration, and error correction model (ECM) to determine the nexus among the variables. The result indicates a negative relationship between migration rate and real GDP which is statistically insignificant. It further shows a positive relationship with workers remittances and real GDP. This indicates that workers remittances influence real GDP positively and is statistically significant. The regression coefficient of foreign aid is negative. This implies that an increase in foreign aid will bring about a decrease in real GDP and is statistically insignificant. The result further indicates a negative relationship between exchange rate and real GDP. This indicates that exchange rate negatively influences real GDP, and it signifies exchange rate is statistically insignificant. The study concluded that there is need for government to create conducive and enable environment that will attract both local and foreign investment which will enhance more lucrative jobs opportunities in the country so as to discourage brain drain in the country.

Introduction

Remittances known as international transfers have gotten attention by many researchers across the globe and has been considered as an important driver of the economy of most developing countries. According to the Blouchotzi and Nikas (2014) Migration brings about remittances as gains and compensation to losing countries for their labour. Remittances is a key to poverty reduction, income redistribution and economic prosperity especially in rural areas (Al assaf 2014).

International Monetary Fund (IMF) Defines remittances as the value of monetary transfers that is sent from the workers residing abroad for more than one year to the origin country and recorded in different sections of the balance of payment. Therefore, remittances are an important and reliable source of foreign fund and wealth accumulation in the developing countries. Remittances are also used to increase national savings, reduce the problems of foreign exchange and balance of payments, and raise the national budget (Hadi, 1999).

The World Bank (2013) Publications ranked Nigeria the first country in terms of receiving remittances in Africa and fifth in the world after India, China, Philippines, and Mexico. The World Bank also reported that $21 billion was remitted into the country in 2013 fiscal year and predicted future increment of remittances inflow into the country. Similarly, World Bank reported that Nigerians living outside the country recorded to have remitted US$10 billion in 2010 which has put the country on top of other African countries as the biggest recipient of remittances. In a related development Hernandez and Bun (2006), argued that Nigeria is the largest recipient of remittances

in Sub-Saharan Africa. According to them Nigeria is reported to have received almost 65% of verified records of remittance inflows to the region and 2% of global inflows. The circumstances of Nigerians living abroad is considered as a way of escaping the problems associated with the home country and a reduction of human capital is somehow paying off for the country. This is similar with revelation that Nigerians living abroad increase the economy by $7billion in 2008 and Nigeria is ranked the sixth highest receiving remittances from its people living outside the country (World Bank, 2008; The Nation, 2009).

The concept of brain drains can also be considered as human capital flight which applied to emigration of educated and professional people originates in the 1950s when British Royal Society used the expression to explain the steady flow of scientists, researchers and technologies to the United State and Canada in the 1950s and early 1960s.

Emigration of educated people from developing to developed countries has increased in recent times. On the other hand, there has been an increased demand for highly experienced workers in developed economies facing labour shortages. According to Hall, (2005) Some factors that motivate researchers and scientist to move outside their country include institutional support structures and access to personally interesting research problems. Furthermore, factors such as low level of development, high political instability and religious/ethnic fractionalization at origin countries, jobs opportunities, foreign policies, wage difference, geographical location, former colonial links, and linguistic nearness between countries of origin and destination are main forces driving highly educated and experienced emigration from Africa (Docquier, et al, and Moufouk 2007). Migration and Remittances Factbook (2008) shows that the stock of emigrants from Sub-Sahara Africa was 15.9million or 2.1% of region's population. While emigration of physicians and nurses as of year 2000 was approximated to be 36,653 and 53,298 respectively or 28% and 11% of physicians and nurses trained in the region.

According to neoclassical theory of migration, labour moves from developing countries where wages are low to developed countries where wages are relatively high, and these wages differences motivate the movement between these countries. Remittances can be considered as a means of reducing poverty and a way of improving economic growth and development when immigrants send remittances to the home country. On the opposite direction, moving out of the country could affect the developmental process when the country loses highly educated and skilled workers which is regarded as brain drain. According to neoclassical theory of growth, the loss of human capital may negatively affect economic growth.

In the view of the above theory, the aim of this paper is to examine nexus and linkages between remittances, brain drain and economic prosperity in Nigeria. The paper is divided into five different sections. Section two is about the reviewing both theoretical and empirical literature while section three is the material and method. The results were discussed in section four and the last section concludes the study.

Literature Review

Several studies have carried out in the past on remittances and economic growth, or impact of brain drain on economic growth. But the review of the previous empirical literature revealed that little or no studies have been conducted on the relationship between the remittances, brain drain and economic prosperity which indicates the existence of a research gap. Some researchers viewed brain drain as detrimental to the source countries while some sees migration of highly skilled labour as an investment in human capital formation in the source countries.

Beine et, al (2001) examined the impact of migration prospects on human capital formation and growth in a small open economy, he differentiates two effects associated with migration. The brain effects and drain effects. The first effect which is potentially beneficial results from the fact that migration bring about investments in education due to higher expected return which is remittances when the economy is open to migration. The second effect is detrimental which is due to the departure of some, if not all educated workers.

Watanabe (1969) argued that emigration of highly educated and skilled workers in any considerable amount will have harmful effects on the source economy by slowing down its development, he also acknowledges that brain drain is cause and effects of slow development rates, thus implying that one possible way of reducing the brain drain is to increase economic development in the less developed countries. Similarly, Lundhal (1985) explains that brain drain triggers pre-modern era of less developed countries which pose obstacles to the structural change which is usually part of the development process. Rauch (1993) considered that the migratory movement are never ending and always occur in similar direction, because wages are permanently higher in the host country, which lead to divergence in per capita incomes. The out flow of highly educated workers is detrimental to the sending country and there would be no hope for the poor countries as the productivity of capital depends on a scale effect of employment. Wong and Yip (1999) states that brain drain has damaging effects on growth rate and welfare of the source country by observing the relationship between economic growth and brain drain in two sector, endogenous growth model. Using accumulation of human capital as the engine in their model they identified several features of brain drain. One of the essential findings is that brain drain has adverse effects on the wage rate of the unskilled workers but improves the wage rate of the skilled workers. The brain drain can also be seen as a negative externality on the people left in the source country (Kapur, 2017; Naicker & Ashuntantang, 2017; Rapoport, 2016), due for example, to imperfect substitution between skilled and unskilled labor (Dutt, 2017; Peri, 2016). The negative effects of brain drain have also been emphasized in the New Growth literature (Belot & Hatton, 2012; Dutt, 2017; Gibson & McKenzie, 2012; Kalipeni, Semu, & Mbilizi, 2012). Most studies underestimate the positive effects of migrations on human capital (Barguellil, Zaiem, & Zmami, 2013; Belot & Hatton, 2012; Larsen & Fondahl, 2015; Wahba, 2015).

According to Di Maria and Stryszowski (2008) the effect of migration prospect on economic growth is that it really affects human capital in the source countries, and consequently, it locks the countries in a vicious circle of improper accumulation of skills, lower economic growth, and persistent gaps from technological leaders. They further argued that to curb the negative effects of migration possibility they suggest that, subsidizing the type of education relatively lacking in the developing countries correct the incentives and restore optimality.

Some of researchers believed that migration of skilled labour which is referred to as brain drain could lead to investment in human capital formation in the source countries. According to Hemmi (2004) stated that the possibility to migrate, might cause conflicting influence on long run growth rate and transitional growth rate in developing countries. In a related development Djajic (1998) examine the welfare of implication of remittance flows back to the source country when foreign capital is available. He concluded that when remittance is used to finance capital accumulation of the returning migrants in the home country, international migration will necessarily improve the wellbeing of the remaining residents. However, Stark (2003) found a scenario in which per output worker and the standard of living of all workers are higher with migration than its nonexistence, and he concludes that the possibility of brain drain of highly educated workers from the source

country can confer a positive externality on unskilled workers in the country. Larramona and Sanso (2006) analysed the effects of migration changes on economic convergence in terms of capital/labour ratio and wages and they discovered that, migration positively affects the sending country because of the improvement in the capita/labour ratio and the savings of returning workers. Furthermore, Fan and Stark (2007) argued that, although, there is possibility of migration causing the unemployment rate of skilled individuals in the source country to rise, but it induces more individuals to acquire more education, and these will result in a high fraction of skilled individuals in the source country.

Lucas and Stark (1985) identified two ways that motivate immigrants to send money to home and these motivational factors are altruism and self-interest. The two motivational factors can further be broken down into: altruism, exchange, insurance, investment, inheritance, and strategic motive. The altruism is the common reason why money is sent home by immigrants. Altruism is a situation in which the transfer does not entail any present or future compensation, nor does it represent payment for any past debt (Lopez, Cordova and Olmedo, 2006). Lucas and Stark, (1985) also argued that the person sending money gets satisfaction from the well-being of the people receiving money at home and that the amount of remittance and the income are negatively violated. The reasons for altruistic behaviour of remitter may be to mitigate against poverty, low incomes, shocks, draught, which affect the well-being of the family. Cox, et al (1998) found the evidence for exchange motive for remittance that involve remitting money for services rendered, which may include taking care of the immigrant's children, house, property, repayment of loan borrowed by the immigrant to cover his/her migration cost or education etc.

According to Ruiz and Arranz, (2006), argued some investment where financial sector does not meet the credit of needs of local entrepreneurs are usually funded through remittances. Remittances could enhance investment by reducing the volatility of consumption, contributing to a more stable macroeconomic environment conducive to investment activities (Singh et al., 2010). Barajas et al. (2009) pointed out that the more integrated an economy is with the world financial markets, and the more developed the domestic financial system is, the less likely that remittances flows will stimulate investment by relaxing credit constraints.

Several empirical studies have been conducted on effect of remittances on economic growth, or impact of brain drain on economic growth but little or no study has been investigated on relationship between remittances, brain drain and economic prosperity in Nigeria. For example, Akindolie (2017) conducted research on the impact of remittances on the economic growth using ordinary least square method (OLS) and the result shows that remittances positively impact on the economic growth in Nigeria which indicates that one percent increase in official remittances will lead to a 0.2 percent increase in economic growth. Raji, el al..., (2018) examined the effects of brain drain on economic development in some selected African countries. They used pool ordinary least square method to analyse the result and the paper discovered a negative relationship between the brain drain, remittances and economic growth. However, the results show a positive relationship between human capital development and economic growth in Ethiopia, Kenya, and Nigeria.

In similar vein, Pradhan, et al..., (2008) carried out research on remittances and economic growth in developing countries by employing panel data covering 25 years from 39 developing countries for the period of 1980–2004 and discovered a positive and significant impact of remittances on economic growth. Fayissa and Nsiah (2012) examined the impact of remittances on economic growth and development in 36 African countries covering the period 1980–2004 and discovered a

positive relationship between remittances and economic growth. In similar study, Oshota, S.O and Badejo, A.A (2014) investigated the impact of remittances on economic growth in Nigeria between the period 1981 to 2011and found a positive impact of remittances on the economic growth of Nigeria in the long run. In the short run, the paper discovered a negative relationship between remittances and economic growth. A study of four government institutions was carried out by Kimani (2009) in Ethiopia. Addis Ababa University (AAU) is one of the institutions. The study shown that out of every 100 people sent abroad between 1982 and 1997, only 65 returned. In the same years, in the AAU, 17 staff from mathematics department refused to return home. Docquier and Marfouk (2006) conducted research in a cross section of 127 developing countries to assess the incentive effect of skilled migration. They found that brain drain migration contributes to a raise in the number of skilled workers existing in developing countries. Didia and Tahir (2021) carried out research on the impact of remittance inflow on economic growth in Nigeria both in the short run and long run using a set of annual time series data covering the period 1990-2018. Vector Error Correction Model (VECM) was used in analysing the result and their findings revealed that remittances reduce economic growth by 0.9% in the short run and in the long run, no significant impact is established. They conclude that despite being a large source of foreign exchange in the country, remittance inflow has no long run impact on total output in Nigeria. Adeseye (2021) investigates the relationship between emigrants' remittances and economic growth using time series data the period 1990-2018. He used multiple linear regressions- ANOVA, Correlation and Coefficient. The results show a positive significant relationship between remittance inflow and economic growth in Nigeria. He further argued that remittances are constant source of growth over decades in Nigeria. John, et al, (2020) studied the effect of diaspora remittances on economic growth in Nigeria using a set of primary data, and the result was analysed using the Ordinary Least Square (OLS) method. The findings established a significant positive relationship between the variables; however, the effect is insignificant.

The purview of the literature indicated that little or no studies have conducted on the relationship between remittances, brain drain and economic prosperity and those little studies related to our research work focused on the remittances and economic growth or effects of migration on economic growth. In view of this problem in mind, it is the intent of this paper to fill in the identified gap by conducting research on the relation between remittances, brain drain and economic prosperity in Nigeria.

Methodology

This paper used secondary time series data sourced mainly from Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) covering the period of 1990 to 2022. The data consist of real gross domestic product, migration rate, workers remittances, foreign aid, and exchange rate.

Model specification

The model of this paper expresses real gross domestic product as the functions of migration rate, workers remittances, foreign aid, and exchange rate.

The model is express in lenear form as follows:

RGDP= f (MIGR, WRMT, FOAD, EXHR): The model is also expressed in logarithmic form which will allow us to interpret the result in elasticity. The below is the log form of the model as follows:

$$\mathbf{Lnrgdp = \beta_0 + \beta_1 lnmigr + \beta_2 lnwrmt + \beta_3 lnfoad + \beta_4 lpexhr + \varepsilon t}$$

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Where.
Inrgdp = Natural log of Real gross domestic product.
Inmigr = Natural log of Migration rate.
Inwrmt = Natural log of Workers remittances.
Infoad= Natural log of foreign aid.
Inexhr= Natural log of Exchange rate.

ε = error term **β_1, β_2, β_3, β_4,** are coefficient of percentage change in migration rate, workers remittances, foreign aid, and exchange rate respectively.

Methods of Estimation.

The paper used Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test, Granger causality test and Error Correction Method (ECM) to examine the effects of migration rate, workers remittances, foreign aid, and exchange rate on gross domestic product. The methods of estimation are as follows: The first procedure to be conducted is to test the stationarity of the data, which must be established, and the order of integration determined. This is done by employing the Augmented Dickey-Fuller (ADF) unit root test. Time series data are assumed to be non-stationary; therefore, it is necessary to carry out the unit root test because of the problem of non-stationary data producing spurious results. The second procedure is by applying Johansen co-integration test that is the existence of long run relationship among the variables. The number of co-integrating equations must be less or equal to (N-1). For instance, in a model with five variables, the number of cointegrating equations should be less than five. The third procedure is that, when the variables are found to be co-integrated, an over-parameterized model (ECM1) is developed which involves leading and logging of the variables, after which a parsimonious model (ECM2) is built which introduces short run dynamism into the model.

Results and Discussion.

The paper employed the used of descriptive statistics of the variables to explains the range, minimum, maximum, mean values, spread and normality of the variables. The descriptive statistics result of the jarque- Bera test revealed that all the variables- Real Gross Domestic Products, Migration rate, worker's remittances, foreign aids, and exchange rate were all normally distributed as shown in the table below.

Table 1

	RGDP	MIGR	WRMT	FOAD	EXHR
Mean	245.1779	2157.030	1.12E+10	1.90E+09	146.5567
Median	238.4500	15016.00	1.69E+10	1.64E+09	129.2200
Maximum	574.1800	107212.0	2.43E+10	1.14E+10	423.7200
Minimum	27.75000	-145917.0	10008540	1.52E+08	8.040000
Std. Dev.	184.7085	60028.54	9.83E+09	2.29E+09	116.6348
Skewness	0.186539	-0.450621	-0.098811	2.409281	0.840801
Kurtosis	1.416760	2.567861	1.128128	10.33721	2.932659
Jarque-Bera	3.638023	1.373600	4.871570	105.9481	3.894444
Probability	0.162186	0.503184	0.087529	0.000000	0.142670
Sum	8090.870	71182.00	3.69E+11	6.26E+10	4836.370
Sum Sq. Dev.	1091751.	1.15E+11	3.09E+21	1.68E+20	435317.9
Observations	33	33	33	33	33

Source: Author's Computation (E-view)

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The table above present the descriptive statistics of variables of interest. The mean and standard deviation of Real Gross Domestic Product (RGDP) is 245.1779 and 184.7085 respectively. The mean and standard deviation of Migration rate (MIGR) is 2157.030 and 60028.54 respectively. The mean and standard deviation for worker's remittances (WRMT) is 1.12E+10 and 9.83E+09 respectively. The mean and standard deviation of foreign aids (FOAD) is 1.90E+09 and 2.29E+09 respectively. The mean and standard deviation of exchange rate (EXHR) is 146.5567 and 116.6348 respectively.

The Unit Root (Stationarity) Results

Macroeconomic data usually exhibit stochastic trend that can be removed through only differencing. We employed the Augmented Dickey Fuller (ADF) to test the order of integration of the variables. The regressions were run for all the series at both level and first difference and, with constant and trend in the equation. As usual, the appropriate lag level applied in the unit root test follows the SIC criterion. The results of the ADF is presented in the table below.

Table 2. Unit Root Testing for Stationarity of the Variables at Levels and First Difference.

Variables	ADF test statistic at Levels	Test critical values at 5% level	Remarks	ADF test statistic at First Diff.	Test critical values at 5% level	Remarks
RGDP	-0.474841	-2.957110	Not Stationary	-3.830558*	-2.960411	Stationary
MIGR	-2.829807	-2.957110	Not Stationary	-6.178156*	-2.963972	Stationary
WRMT	-0.852092	-2.957110	Not Stationary	-4.756134*	-2.960411	Stationary
FOAD	-2.918898	-2.957110	Not Stationary	-5.903637*	-2.963972	Stationary
EXHR	1.893941	-2.957110	Not Stationary	-3.941255*	-2.960411	Stationary

Source: Author's computation *Note: *, statistically significant at 5% levels.*

The result shows that all the variables were stationary at their first difference (i.e. I (1). Hence the need for co integration because of the time series properties.

Johansen Co-Integration Test

The co-integration test establishes whether a long-run equilibrium relationship exist among the variables. To establish co-integration, the likelihood ratio must be greater than the Mackinnon Critical Value @ 5% levels of significance.

Table 3. Johansen Co-integration Result of RGDP and Migrants Remittances

Maximum Eigen Value	Trace Statistics	5% Critical Value	Hypothesized No.CE(S)
0.809954	105.2355	69.81889	r = 0*
0.640536	53.76028	47.85613	r ≤ 1*
0.366160	22.04289	29.79707	r ≤ 2
0.183477	7.908171	15.49471	r ≤ 3
0.051053	1.624474	3.841466	r ≤ 4

Source: Author's Computation.

**denotes rejection of the hypothesis at 5% significance level.*

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Using the trace statistics, table 4.4 shows two co-integrating equations at 5% significance levels. This implied that long run relationship exists among the variables. This led to the rejection of the hypothesis of no co-integration.

Error Correction Model (ECM)

Dependent Variable: D(RGDP)
Method: Least Squares
Date: 06/29/23 Time: 11:43
Sample (adjusted): 1991 2022
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MIGR)	-5.30E-05	0.000129	-0.412448	0.6833
D(WRMT)	6.27E-09	2.53E-09	2.480366	0.0197
D(FOAD)	-2.39E-09	2.92E-09	-0.816274	0.4215
D(EXHR)	-0.228099	0.258773	-0.881466	0.3858
ECT(-1)	-0.330910	0.114371	-2.893315	0.0075

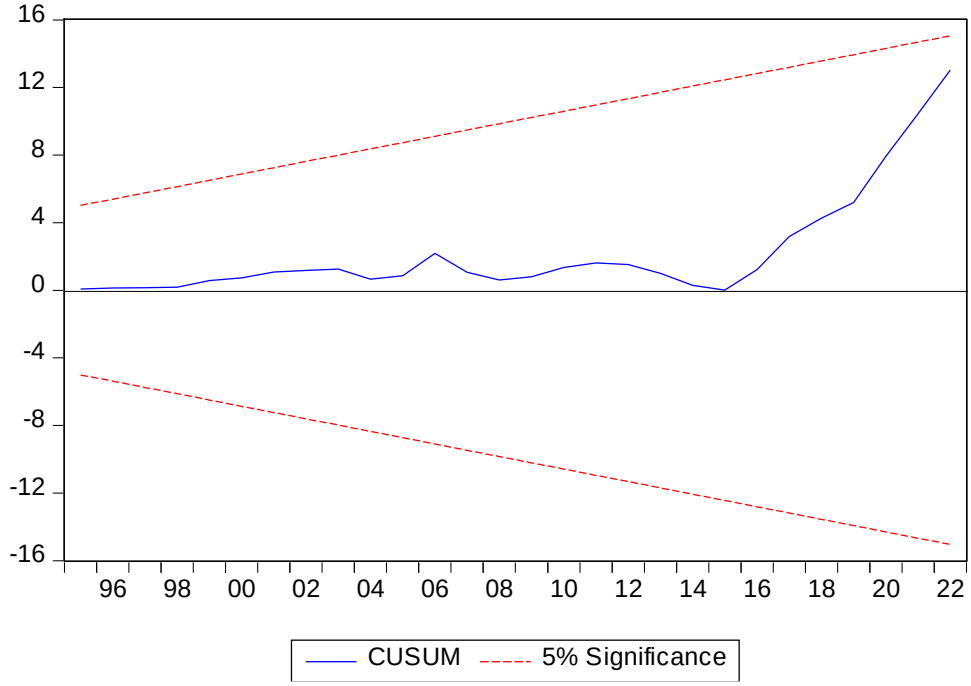
R-squared	0.361035	Mean dependent var	12.50031
Adjusted R-squared	0.266373	S.D. dependent var	37.95887
S.E. of regression	32.51254	Akaike info criterion	9.943730
Sum squared resid	28540.77	Schwarz criterion	10.17275
Log likelihood	-154.0997	Hannan-Quinn criter.	10.01964
Durbin-Watson stat	1.265020		

The coefficient of the error correction model (ECM) is negative. The coefficient in the ECM represents the strength and direction of the relationship between the variables. A negative coefficient in the ECM indicates an inverse relationship between the variables. Specifically, it suggests that an increase in one variable is associated with a decrease in the other variable, holding all other factors constant. This implies that the variables move in opposite directions to restore their long-term equilibrium relationship.

The coefficient of determination (R^2) is 0.361035. This indicates that the explanatory variables explained 36% variation in the dependent variable, while the remaining 64% variation is accounted for by another variable not included in this model. The regression coefficient of Migration rate (MIGR) is negative. This indicates that a rise in migration rate will bring about a decrease in RGDP. The probability of migration rate which is more than 0.6833 indicates the impact of migration rate on Real Gross Domestic Product (RGDP) is statistically insignificant. The regression coefficient of worker's remittances (WRMT) is positive. This indicates that workers remittances influence RGDP positively. A percent rise in workers remittances will bring about a more than

proportionate increase in RGDP. The probability of workers remittances which is less than 0.05 indicates that impact of workers remittances (WRMT) on RGDP is statistically significant. The regression coefficient of Foreign aids (FOAD) is negative. This implies that an increase in foreign aids will bring about a decrease in RGDP. The probability of Foreign aids (FOAD) which is more than 0.05 indicates that the impact of foreign aids on RGDP is statistically insignificant. The regression coefficient of exchange rate (EXHR) is negative. This indicates that exchange rate negatively influence Real Domestic Product (RGDP). An increase in exchange rate will bring about a decrease in RGDP. Also the probability of exchange rate is more than 0.05 and this signifies that the impact of exchange rate (EXHR) on Real Gross Domestic Product (RGDP) is statistically insignificant. The probability of the ECM which is less than 0.05 indicates that the overall model is statistically significant.

Fig; 1 Stability Test



The model is well fitted within the acceptable significance level of 0.05. We can conclude that this model is stable and free from structural change. The CUSUM sum of squares shows that the model is also fitted within the 5% level of significance, consequently, there is no deviation or structural break that can alter the stability of the model. Invariably, the graphs fall inside the range. Hence, the model is stable.

Discussion of Finding

The short-run estimation of the ECM model revealed that MIGR had a negative and insignificant impact on RGDP in Nigeria. The negative relationship confirmed the prior expectations that migration distorts development process when the home country loses highly educated and skilled workers, which in the short run affects the economic growth. The results support some of the studies that underscored the positive effects of migrations on human capital (Barguellil, Zaiem, & Zmami, 2013; Belot & Hatton, 2012; Larsen & Fondahl, 2015; Wahba, 2015).

Conversely, it was established the WRMT had a positive and a significant impact on RGDP in Nigeria. The positive relationship confirmed the prior expectations that workers remittances have

significantly impacted the economic growth. The finding is in line with the study carried out by Adeseye (2021); John, et al, (2020); which established a positive and significant relationship between WRMT and GDP in Nigeria. This study is however, in contrast to the studies carried out by Didia and Tahir (2021); in which they confirmed that no significant relationship existed between WRMT and Real Gross Domestic Product in Nigeria.

However, FOAD was found to have a negative and insignificant impact on Real Gross Domestic Product in Nigeria. This confirmed the prior expectations that foreign aid has negative relationship with GDP. This revelation is in line with the study carried out by Akindolie Oluwatayo (2017) who examined the impact of remittances on the economic growth in Nigeria using ordinary least square method (OLS) where he established a negative and insignificant relationship between with and Real Gross Domestic Product. Finally, EXHR was found to have a negative and insignificant impact on Real Gross Domestic Product in Nigeria in the short run. This result does not confirm the prior expectation that exchange rate has positive and significant relationship with economic growth in Nigeria.

Conclusion

The paper basically conducted to determine the relationship between remittances, brain drain and economic prosperity in Nigeria. To achieve the objectives of the research work, the paper used, Descriptive Statistics, Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test, and Error Correction Method (ECM) to examine the effects of migration rate, workers remittances, foreign aid, and exchange rate on gross domestic product. Time series data for 33 years starting from 1990 to 2022 were used for the analysis. This paper represents one of the little available research projects that examine the relationship between remittances, brain drain and economic prosperity which the paper used proxy as economic growth.

The paper revealed that regression coefficient of MIGR is negative which indicates that a rise in migration rate will cause a decrease in RGDP. Also, the probability of migration rate which is more than 0.6833 indicates the effect of migration rate on RGDP is statistically insignificant. The result further shows the regression coefficient of WRMT is positive. This shows that WRMT influence RGDP positively. A percent rise in WRMT will bring about a more than proportionate increase in RGDP. The probability of WRMT which is less than 0.05 indicates that impact of WRMT on RGDP is statistically significant. The regression coefficient of FOAD is negative. An increase in FOAD will bring about a decrease in RGDP. The probability of FOAD which is more than 0.05 indicates that the impact of FOAD on RGDP is statistically insignificant. The regression coefficient of EXHR is negative. This indicates that exchange rate negatively influences RGDP. An increase in EXHR will bring about a decrease in RGDP. Also, the probability of EXHR is more than 0.05 and this signifies that the effect of EXHR on RGDP is statistically insignificant. The probability of the ECM which is less than 0.05 indicates that the overall model is statistically significant.

To reduce the effect of brain drain in Nigeria, the paper recommended that there is need for government to create conducive and enable environment that will attract both local and foreign investment which will enhance more lucrative jobs opportunities in the country. Sound macroeconomic policies is needed by policymakers to stimulate the economy. Government should encourage migration by improving the relationship with foreign countries to reduce difficulties in migration and more citizens can work abroad and send remittances back home.

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