

Globalisation and Economic Growth in West Africa

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Abstract

Economic integration among countries could be beneficial to trading partners if properly handled through appropriate regulation of production, distribution, and consumption. However, it appears developing countries often do not benefit from their relations with other countries at advanced stages of developed. It is in view of this that this research was conducted with concentration on West Africa. Panel Cointegration techniques including Fully Modified Ordinary Least Squares, Dynamic Ordinary Least Squares and Dumitrescu-Hurlin Panel Causality Test were applied using time series on Gross Domestic Product, Exports, Imports and Foreign Direct Investment of eight West African countries from 1960 – 2019. While a positive and significant long run causal relationship was found between Exports, Imports as aspects of globalisation and Gross Domestic Product, there was an observed negative long run relationship between Foreign Direct Investment and Gross Domestic Product. Export promotion, high import tariffs, the local content initiative, liberal migration policies and strong regulatory machinery were recommended.

JEL Codes: FGHO

1. Introduction

The Global DHL Connectedness Index (GDCI) 2020 indicates that Nigeria ranks behind 10 other African countries out of which Ghana, Cote d'Ivoire and Togo are from West Africa (Olaiya, 2020). The report tracks the cross-border movement of trade, capital, information, and people in 169 countries which account for about 99% of the global GDP. The lead author of GCI Prof. Steven Altman attributed the drop in Nigeria's index position to restrictive policies such as the border closure while noting that globalisation would fast-track post-covid recoveries among economies. The author however assured a brighter future given that the country had embraced and ratified the African Continental Free Trade Agreement (AfCFTA) the crux of which is trade liberalisation in Africa. Can Nigeria in isolation drive the growth of the ECOWAS sub region without other countries joining in the globalisation trend? How globalised are other countries in West Africa besides the above mentioned?

Globalisation entails the integration of individuals, firms, and governments globally. It could be economic, political, or cultural. The International Monetary Fund (IMF) identified four main aspects of globalisation to include trade and transactions; capital and investment movements; migration and movement of people, and knowledge dissemination (Giovanni, et al., 2008). Economic globalisation is the unification of the global factor and product markets through technology, it connotes trade openness (Gyglia, Haelg, & Sturm, 2018). The impact of this development on economic growth has become a subject of debate by the business community, professionals, the academia among others as to the emerging issues both positive and negative. The theory of Comparative advantage provides that countries would gain from opening their borders to licit businesses. The practicability of this theory was thrown into question after World War I and the Great Depression of 1930, this led to the proliferation of trade restrictions by nations to insulate their economies from the negative impact of trade liberalisation. Similarly, the Global financial crisis of 2007–2009 has casted more doubt on the gains from trade openness. Consequently, globalisation has received attention from scholars with a view to evaluating the actual impact of the global interconnectedness among countries.

The term also implies that regions, countries, and even sectors of an economy could be susceptible to crises spillovers among themselves. The form of such spillovers depends on the phase of the business cycle being experienced by the source economy. This has been rightly captured by Billio et al. (2016) who tagged some countries as vulnerable territories to shocks from other territories. Available literature has attributed the level of septicity to globalisation, and that a shock in an economy or a union can throw the trade partners of such an economy or union in disarray depending however on the sophistication of their financial authorities (Claessens & Forbes, 2004). Globalisation also entails that there is a high level of correlations among the economic entities (Phylaktis & Xia, 2009). These imply that the higher the level of integration among countries, the higher the propensity to transfer risks. Globalisation has negative effects on almost every aspect of human life; it increases health hazards (Goryakin, Lobstein, James, & Suhrcke, 2015). The origin and spread of Covid-19 could also be blamed on globalisation. This has in turn caused the global economy in losses due to business shutdowns (Coibion, Gorodnichenko, & Weber, 2020). Obviously, the phenomenon has created temporary dislocations to jobs within nations. Artificial Intelligence for instance has taken over jobs hitherto handled by lawyers, accountants, physicians among others with security concerns especially with the fear of Chinese domination of the world economy (Hammes, 2016). The scenario has threatened the security of nations (Cirdei, 2019). The Fourth Industrial Revolution for example has brought about income inequalities by increasing the gap between returns to capital and returns to labour though in the short run (Schwab, 2016). The net displacement to jobs by technology would in the long run lead to better jobs. Globalisation is a double-edged process with both winners and losers both domestic and international, this is the root of current forces of deglobalisation. (Roccu & Talani, 2019). Globalisation is not entirely evil. It may have promoted money laundering through cryptocurrency, but financial globalisation has also facilitated transparency and can instil financial system stability, ensuring liquidity and growth of an economy (Ezeanyejji & Maureen, 2019). With these conflicting views on the positives and negatives of globalisation, this research has been undertaken to evaluate the actual impact of globalisation on the economy of the West Africa sub-region.

1.1 Research Hypothesis

H₁: Globalisation does not affect economic growth in West Africa in the Long Run

1.2 Significance of the Study

With a population of about 412,996,732, 5.16% of the World's population, and a net migration of about – 177,000 (UN, 2021), it implies that there are more emigrants than there are immigrants to West Africa. It is therefore imperative to examine the linkages between the growth of the regional economy and the degree of integration with other economies in terms of movement of goods and capital and how these affect the growth of the subregion.

As outlined above, this paper intends to add to the existing literature on linkages of economies. It would analyse the spill-overs from trading partners of the sub-region. Evidence from the literature only indicates the direction of causality. This study would go a step further to measure the degree of impact of

globalisation on economic growth and how fast an equilibrium could be restored should there be a disequilibrium within the economy because of the country's open borders.

2. Review Of Relevant Literature

2.1 Indicators of Globalisation

Two major indicators of globalisation include international product movement and international factor mobility. The former refers to free trade in both imports and exports while the latter includes cross-border movement of productive inputs of labour, capital, technology and even entrepreneurship.

An import is a good or service produced in another country but bought locally while export is a good or service produced domestically but sold to another country. Imports and exports are components of internal trade. Imported goods or services are attractive when there are cost differentials and free trade agreements and tariff schedules often specify the composition of imports. Economists and policy analysts disagree on the positives and negatives of imports. Exports are essential to economies as they expand both factor and product markets to people, firms and even the government for their goods and services. China, the US, Germany, the Netherlands and Japan were reported as the highest exporting countries in 2019 (Statista, 2020). Foreign Direct Investment is ownership of business interests by an individual or firms in one country in another country. It entails the provision of capital, management, and technology for use by an overseas business establishment. This is different from Foreign Portfolio Investment which is a mere provision of equity capital for companies abroad (Chen, 2021). All these are indicators of the openness of an economy termed globalisation. The number of minutes spent on international phone calls is another indicator of globalisation. The recent Twitter ban by the FGN is a drawback on globalisation as this would affect the aggressive growth of the technology sector which had witnessed a significant investment and contribution to the GDP, and a restrictive policy could affect the economy of the country in particular and the subregion at large in the long run (Conroy-Krutz, 2021). The ban has negative implications on globalisation as both trade and diplomatic relations have been affected.

International factor mobility among countries could also indicate the extent of globalisation. Labour and capital often cross borders due largely to wage and interest differentials respectively, among economies

2.2 Determinants of Economic Growth

Economic growth is an increase in the production of economic goods and services, compared from one period to another. It is measured in nominal or real (adjusted for inflation) terms. Economic growth is represented by the Gross Domestic Product (GDP).

There is no consensus on the factors that cause the growth of an economy. Some scholars believe growth is natural while others say it is man-made (Hishiyama & Takatera, 1960; Brewer, 2005). Others have denied the claim that natural capital spurs economic growth (Sandonato & Willebald, 2018). On the contrary, it has been proven that only negative shocks to energy and financial sectors affect economic growth (Shahbaza, Hoanga, Mahalikb, & Roubaud, 2017). The authors employed nonlinear autoregressive distributed lag bound testing on the Indian economy to show that changes in the labour force are uncorrelated with economic growth. Proponents of Absolute advantage, Comparative advantage and the Factor-Endowment theories of free trade also lent their credence to globalisation as a means of improved productivity (economic growth) and consumption (Carbaugh, 2014). The 2008 financial crisis revealed the extent of correlation between the financial and real sectors of the US economy (Gilchrist & Zakrajsek, 2008).

Generally, if the economy is growing, then the output will be increasing. The increased output takes care of local needs and exports. If the output falls short of the local demand, this then attracts foreign direct investment into the economy thus increasing the size of the economy. The growth in an economy cannot just begin in all the sectors simultaneously. Instead, there are source/lead indicators. There has been reported a bi-directional causality between economic growth and financial flows (Ishioro, 2013); and innovation (Pradhan, Arvin, Hall, & Nair, 2016). Some researches have linked growth to a contagion. Economies could grow by associating with larger economies since there is evidence of spillovers from the developed to emerging economies (Alomari et al. 2017). It has been discovered that, African economies are not highly correlated with global markets, this disconnectedness has been blamed for their underdevelopment (Agyei-Ampomah, 2017). It is therefore important for countries to embark on cross-border diversification for an aggressive growth to be promoted.

For instance, the real sectors of an economy depending on their level of contribution to the production process, sequentially respond to a shock in the financial sector interrupting the payment processing, disrupting credit availability and a consequent depression (Group of Ten., 2001). The transmission could result in an economic-wide recession. Causality has been established between imports, exports and economic growth (Bakari & Mabrouki, 2017) (Aluko & Adeyeye, 2020). The authors applied cointegration analysis and vector autoregressive models to test bidirectional causalities from import to economic growth and from export to economic growth.

2.3 Effects of Globalisation

Scholars investigated the globalisation-growth nexus and found that there is a positive relationship between economic globalisation and economic growth depending however on the political setting (Ahmad, 2019). The author employed panel data of 83 countries and the findings revealed geographical and institutional spill-overs of globalisation. Globalisation can affect growth and could be transferred to other economies depending on the public policies in place. Using a sample of 140 countries, Gray Gozgor and Priya Ranjan (2017) on their part found that inequality and redistribution increase with globalisation. This implies that globalisation could spur growth but not development if appropriate policies are not made to redistribute income. An examination of the downside of globalisation revealed some adverse effects if proper regulation is not applied (Collier, 2017). Globalisation has however reduced West African countries to exporters of primary products and importers of finished ones (Ibrahim, Ibrahim, Danguguwa, & Gimba, 2020). International trade brings about winners and losers, but if nothing is done to compensate the losers, the total joint productivity would eventually decline. On the connection between globalisation and economic growth, Nwosa (2020) employed a VECM and found a unidirectional causality from globalisation to economic growth. In

Romania, both economic and political globalisation were found to positively affect economic growth while social globalisation negatively affects economic growth (Olimpia & Dima, 2017). But it increases susceptibility of an economy to economic and financial crisis (Waluyo, 2019). The study recommended strong synergies in policies and risk management to properly harness the potentials of globalisation.

Globalisation in terms of migration has both negative and positive impacts on both the source and host economies. It causes instabilities in the source economy by way of reduction of labour supply and the size of the product market. It causes brain drain. It also exerts pressure on Immigration authorities in the host country beside so many non-economic implications. Both labour and capital income increase in the host country, both taxes and pressure on public goods increase in the host economy whereas remittances to the source country also increase. However, the net effect is a decline in GDP against the source country in favour of the host economy (Econ.ISU, 2021). Globalisation in the long run is beneficial but is also limited by the theory of Factor Price Equalisation (Mundell, 1957).

2.4 Globalisation and Developing Economies

Considering the impact of globalisation on the economies of developing countries, a positive relationship was established. It was recommended that developing countries should exercise caution and carefully monitor the inflow of Foreign Direct Investment as the dark side cannot be ignored (Adegboye, Osabohien, Olokoyo, & Matthew, 2020). The positive effect of capital inflows on growth is conditional upon the institutional quality in the receiving country (Arya, Banerjee, & Tony, 2019). Although FDI could create jobs in the local market, it is capable of also dominating local entrepreneurship in developing countries without relevant institutions to supervise the developments in the various sectors of their economies. Globalisation could create dumping, discourage the development of local skills, transfer risk to developing countries with low-risk management apparatuses (Vergos & Wanger, 2019). The authors also employed a Vector Error Correction Model (VECM) to evaluate the interdependencies between African markets and found some level of financial infectivity among economies in Sub-Sahara Africa. The natural resource curse among developing countries especially the Oil-Developing Countries (ODCs) is attributable to their association with Multinational corporations (MNCs). That the unethical practices of the MNCs have hindered the ODCs in harnessing fully the gains from their natural resource endowments (Adams, Adams, Ullah, & Ullah, 2019). Globalisation is therefore a threat to the Heckscher-Ohlin Factor Endowment Theory of International Trade. The trade wars and tariff escalations between the US and China are all due to the failures of globalisation (Oramah & Dzene, 2019). The unequal exchange between developed and developing countries has accumulated anti-globalisation sentiments as demonstrated in the US national elections of 2019 and Brexit referendum.

3. Methodology And Data

3.1 Data Preliminaries

A sample of eight West African countries comprising Benin, Burkina Faso, Ivory Coast (Côte d'Ivoire), Mali, Niger, Nigeria, Senegal and Togo is taken based on data availability.

The research examines Sixty-one years' annual data on Gross Domestic Product (GDP), Exports (EXPO), Imports (IMPO), and Foreign Direct Investment (FDI), all in billion US Dollars from 1960 to 2019. The USD is used since globalisation is an international phenomenon and the West African currency union is yet to take effect. The period is interesting due to the availability of data for all the indicators of interest. The data is obtained from GlobalEconomy.com, the World Bank and Worldometer. Its composition is based on data availability tailored towards the research idea. The variables representing globalisation are possible causal factors of GDP representing economic growth. The investigation is conducted using Panel Cointegration based on Fully Modified Ordinary Least Squares (FMOLS), Dynamic Modified Ordinary Least Squares (DMOLS), and the pairwise Dumitrescu Hurlin Panel Causality test. To show that these techniques support I(1) processes, the panels will be subjected to unit root tests to ascertain their orders of integration (Kirikkalelia, Sokri, Candemir, & Ertugrul, 2018).

3.2 Descriptive Statistics

3.2.1 Data Generating Processes

To evaluate the distributions of the variables, we proceed to examine their descriptive statistics by visual inspection of the series presented in Figs. 1 and their statistical properties in Table 1 below respectively

Table 1
Panel Descriptive Statistics

Statistic/Variable	GDP	EXPO	IMPO	FDI
Mean	21.39	4.513	4.000	0.366
Median	3.310	0.630	0.940	0.040
Maximum	546.7	143.7	88.74	8.840
Minimum	0.120	0.010	0.020	-0.740
Std. Dev.	69.90	14.43	10.56	1.114
Skewness	5.329	6.098	5.368	5.221
Kurtosis	32.33	45.39	34.29	32.65
Jarque-Bera	1919	3834	21562	1643
Prob. Value	0.000	0.000	0.000	0.000
Sum	1012	2135	1890	146.2
Sum Sq. Dev.	2306	9825	5265	494.1
Observations	473	473	473	399

The level of globalisation of sampled West African countries is uneven since the assumption of normality of the panels is rejected at 5% given that the Jarque-Bera values are statistically insignificant.

3.2.2 Panel Unit Root Test

To apply Panel Cointegration technique, the time series must be non-stationary at levels but stationary after first difference. To confirm the order of integration, we tested for stationarity using panel unit root and the results are hereunder presented in Table 1.

Table 2
Panel Unit Root Test Results

		LLC	Breitung	IPS	ADF-Fisher	pp-Fisher
	Variables	t-statistic	t-statistic	W-statistic	Chi-Square	Chi-Square
Levels	GDP	4.061 (1.000)	6.188 (1.000)	7.018 (1.000)	0.687 (1.000)	0.372 (1.000)
	EXPO	1.108 (0.866)	3.501 (1.000)	3.472 (1.000)	4.113 (1.000)	3.849 (1.000)
	IMPO	1.764 (0.961)	3.356 (1.000)	4.266 (1.000)	1.449 (1.000)	1.416 (1.000)
	FDI	0.299 (0.903)	2.543 (0.995)	0.691 (0.755)	16.39 (0.636)	46.12 (0.000)
1st Difference	GDP	-10.77 (0.000)	-8.421 (0.000)	-11.80 (0.000)	143.6 (0.000)	212.7 (0.000)
	EXPO	-11.56 (0.000)	-6.646 (0.000)	-11.37 (0.000)	130.8 (0.000)	255.9 (0.000)
	IMPO	-10.37 (0.000)	-6.069 (0.000)	-14.09 (0.000)	175.3 (0.000)	249.6 (0.000)
	FDI	-3.593 (0.000)	-2.575 (0.000)	-10.06 (0.000)	117.9 (0.000)	725.5 (0.000)

The panel unit root test results presented in Table 2 above indicate that all the panels are I(1), therefore we proceed to conduct Panel Cointegration test to ascertain the existence of any long run relationship between GDP and any of the globalisation indicators.

3.2.3 Test of Cointegration

Further, we test for cointegration to strengthen our choice of the models as shown in table 3 below.

Table 3 Summary of Panel Cointegration Results

Pedroni Residual Cointegration Test					Kao Residual Cointegration Test					
Alternative hypothesis: Common AR Coefficients (Within-dimension)					Alternative hypothesis: Individual AR Coefficients. (Between-dimension)					
Trend Assumption: Individual Intercept										
	Statistic	Probability	Weighted Statistic	Probability		Statistic	Probability	Statistic	Probability	
Panel v-Statistic	1.430	0.076 ^c	2.613	0.005 ^a				ADF	-7.761	0.000 ^a
Panel rho-Statistic	-2.316	0.010 ^a	-2.837	0.002 ^a	Group rho-Statistic	-3.021	0.001 ^a			
Panel PP-Statistic	-2.244	0.012 ^a	-3.005	0.001 ^a	Group PP-Statistic	-3.884	0.000 ^a			
Panel ADF-Statistic	-3.190	0.001 ^a	-0.279	0.390	Group ADF-Statistic	-0.433	0.333 ^b			
Pedroni Residual Cointegration Test					Kao Residual Cointegration Test					
Alternative hypothesis: Common AR Coefficient. (within-dimension)					Alternative hypothesis: Individual AR coefficients. (between-dimension)					
Trend Assumption: Individual Intercept and Trend										
	Statistic	Probability	Weighted Statistic	Probability		Statistic	Probability	Statistic	Probability	
Panel v-Statistic	-0.313	0.623	1.599	0.055 ^b						
Panel rho-Statistic	-0.298	0.383	-1.324	0.093 ^c	Group rho-Statistic	-1.216	0.112			
Panel PP-Statistic	-0.531	0.298	-2.268	0.012 ^a	Group PP-Statistic	-2.479	0.007 ^a			
Panel ADF-Statistic	-1.920	0.027 ^b	0.539	0.705	Group ADF-Statistic	0.705	0.760			
Pedroni Residual Cointegration Test					Kao Residual Cointegration Test					
Alternative hypothesis: Common AR Coefficient. (within-dimension)					Alternative hypothesis: Individual AR coefficients. (between-dimension)					
Trend Assumption: No Individual Intercept or Trend										
	Statistic	Probability	Weighted Statistic	Probability		Statistic	Probability	Statistic	Probability	
Panel v-Statistic	2.328	0.010 ^a	3.150	0.001 ^a						
Panel rho-Statistic	-2.938	0.002 ^a	-3.071	0.001 ^a	Group rho-Statistic	-3.232	0.001 ^a			
Panel PP-Statistic	-2.807	0.003 ^a	-3.079	0.001 ^a	Group PP-Statistic	-3.881	0.000 ^a			
Panel ADF-Statistic	-3.638	0.000 ^a	-0.980	0.164	Group ADF-Statistic	-0.805	0.211			

From table 3 above, ^a, ^b and ^c indicate rejection of the Null hypotheses of No Cointegrating relations at 1%, 5% and 10% significant levels. There is sufficient evidence of long-run relationship between the indicators of globalisation and economic growth going by both the Pedroni and Kao methods of Panel Cointegration Tests.

3.3 Model Specification

The presence of cointegration among the variables calls for the estimation of the FMOLS and DOLS models presented below

$$GDP_t = \lambda_t + \alpha_t + \beta_1 EXPO_t + \beta_2 IMPO_t + \beta_3 FDI_t + \mu_{it} \quad (1)$$

From Eq. 1 above: λ_t represents country-specific, α_t stands for deterministic time trends,

μ_{it} are the error terms, $i = 1, 2, \dots, N$ and $t = 1, 2, \dots, T$ are panel countries and time periods respectively. The FMOLS and DOLS correct endogeneity bias and serial correlation.

3.3.1 A Priori Expectations

On the a priori expectations and in this context, a positive relationship should exist between EXPO, IMPO, FDI and GDP. Since trade openness and the international capital movement entails some degree of integration of both source and destination countries.

4. Empirical Results

Table 4
Panel FMOLS and DOLS results

Dependent Variable	Panel Cointegration Regression Method	Independent Variables		
		EXPO	IMPO	FDI
GDP	FMOLS	0.839	4.939	-2.547
		(0.000)	(0.000)	(0.000)
	DOLS	2.540	3.167	-4.153
		(0.000)	(0.000)	(0.068)

Table 4 provides results of the estimated equation using FMOLS and DOLS. From the results, both EXPO and IMPO corresponds with the a priori expectations in that, there are evidence of positive relationship between them and GDP. However, there is a negative relationship between FDI and GDP. These results are the same for both FMOLS and DOLS techniques. The results are all statistically significant at 1% except for FDI which is significant at 10% under the DOLS technique. These imply that there exists positive long run relation between some aspects of globalisation and economic growth in West Africa while for others, the long run relationship is negative such as that between FDI and GDP.

Specifically, a dollar increase in Exports would increase the GDP by about 84 cents approximately for the FMOLS and 2 dollars 54 cents for the DOLS. Similarly, a dollar increase in the value of imports of member countries would trigger a dollar increase of 4.94 and 3.67 for FMOLS and DOLS respectively. Conversely, a dollar increase in the volume of FDI to West African countries would have a counter-productive effect by reducing the size of the GDP by 2.55 and 4.15 dollars for the FMOLS and DOLS respectively. Furthermore, we conducted a pairwise Dumitrescu-Hurlin Panel Causality test to also confirm the cointegration between globalisation and economic growth, the results are hereunder presented in table 5. These results are consistent with Olimpia and Dima (2017). The positive relationship between imports and GDP may be due to high tariffs on imports to West African countries.

Table 5
Pairwise Dumitrescu-Hurlin Panel Causality Test Results

Null Hypothesis:	Zbar-Statistic.	Prob.
EXPO does not homogeneously cause GDP	9.946	0.000
GDP does not homogeneously cause EXPO	5.375	7.645
IMPO does not homogeneously cause GDP	15.16	0.000
GDP does not homogeneously cause IMPO	12.82	0.000
FDI does not homogeneously cause GDP	9.206	0.000
GDP does not homogeneously cause FDI	14.38	0.000
IMPO does not homogeneously cause EXPO	14.18	0.000
EXPO does not homogeneously cause IMPO	19.50	0.000
FDI does not homogeneously cause EXPO	25.64	0.000
EXPO does not homogeneously cause FDI	44.58	0.000
FDI does not homogeneously cause IMPO	9.787	0.000
IMPO does not homogeneously cause FDI	14.78	0.000

The null hypothesis of Export, Import and Foreign Direct Investment do not cause Economic Growth in West Africa is individually rejected at 1% as test statistics in Table 5 above indicate. From the results, significant increases in all the globalisation indicators lead to increases in economic growth in West Africa. These results also show that the level of economic growth of countries of the subregion affects their levels of integration with other economies.

5. Conclusion

From the estimated model, there is a long-run relationship between globalisation and economic growth in West Africa. This implies that even if there are shocks in the economies of West African countries in the short run, due to open borders, economic integration could be beneficial long term. This result agrees with (Dreher, 2006). Since most of the aspects of globalisation do affect economic growth in the subregion, it is imperative for policy makers to harness their trade, investment, and migration policies to tap from the benefits of economic integration. Policies towards reversing the impact of FDI on economic growth must be designed and implemented especially through effective regulatory mechanism, efficient tax policies to block revenue leakages. The current litigation between the Nigeria's Federal Inland Revenue Service and Multichoice Nigeria should serve as an eye opener to other West African countries towards ensuring that earnings of foreign investors are taxed accordingly.

The evidence of beneficial globalisation is a boost to, and an assurance for countries hitherto sceptical about the AfCFTA as its potential benefits outweighs the cost if properly harnessed.

6. Recommendations

With the long run relation between globalisation and economic growth in West Africa laid bare, it is our recommendation: -

- i. Aggressive export promotion policies be implemented by countries especially in agriculture and other sectors with comparative advantage, given the climate of the subregion. This would help expand their economies with increased local productivity and export.
- ii. There should increase in import tariffs especially on raw materials and finished products. However, intermediate goods such as machinery should be exempted.
- iii. The Lewis Growth model be applied to ensure that Multinational corporations investing in the subregion reinvest their surplus profits locally instead of repatriating same abroad. This way the local economies could benefit by way of expansion and increased employment.
- iv. West African countries should also fashion out appropriate migration policies that could benefit their economies such as ensuring the judicious use of diaspora remittances by way of tagging a percentage to the education of dependents of migrants. This could also support labour mobility and enhanced reward for labour.
- v. West African countries must empower their regulatory institutions to ensure adherence to bilateral and multilateral trade agreements while also ensuring patriotic policy implementations domestically.
- vi. The fight against corruption be strengthened among all the countries of the subregion as failure could erode the potential benefits of globalisation on their local economies.
- vii. Overall, there should be a proper mix of open borders with regulation through the instrumentality of the African Continental Free Trade Agreement.

Abbreviations

AfCFTA - African Continental Free Trade Agreement

GDP - Gross Domestic Product

EXPO – Export

IMPO – Import

FDI – Foreign Direct Investment

FMOLS – Fully Modified Ordinary Least Square

DOLS – Dynamic Ordinary Least Square

ECOWAS – Economic Community of West Africa

GCI – Global Interconnectedness Index

VECM – Vector Error Correction Model

MNC – Multinational Corporations

ODC – Oil-Developing Countries

US – Unites States

USD – US Dollars

LLC – Levin, Lin, Chu

IPS – Im, Pesaren, Shin

Declarations

Availability of Data and Materials

Data sets analysed and used for the study could be found at <https://www.theglobaleconomy.com/>

Competing Interests

The authors declare that there are no competing interests regarding this research

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Ethics Approval and Consent to participate

No ethical issues with respect to this research and relevant stakeholders have consented their participation

Authors' Contributions

ONA decided on the title of the research by expanding the scope. He also made recommendations in line with the results. **BW** handled every other aspect of the research. Both authors read and agreed on the outcome of the research.

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References

1. ABP (2018) *The Emerging Markets Of Africa*. Retrieved June 1, 2018, from Africa Business Pages: <http://www.africa-business.com/features/africa-emerging-business.html>

2. Abrams JR, Celaya-Alcala J, Gonda DB, Chen Z (2017) Analysis of Equity Markets: A Graph Theory Approach. *Department of Mathematics, University of Arizona*. Retrieved May 31, 2018, from <https://www.siam.org/students/siuro/vol10/S01563.pdf>
3. Adams D, Adams K, Ullah S, Ullah F (2019) Globalisation, governance, accountability and the natural resource 'curse': Implications for socio-economic growth of oil-rich developing countries. *Resour Policy* 6: 61, 128–140. doi:<https://doi.org/10.1016/j.resourpol.2019.02.009>
4. Adegboye FB, Osabohien R, Olokoyo FO, Matthew OA (2020) Foreign direct investment, globalisation challenges and economic development: an African sub-regional analysis. *International Journal of Trade Markets*, 13(4). doi:10.1504/IJTM.2020.111124
5. Agyei-Ampomah S (2017) *Stock market integration in Africa*. Retrieved 6 11, 2021, from SemanticsScholar: <https://pdfs.semanticscholar.org/e4ae/7aede145d720de43e05669421f155c04201e.pdf>
6. Ahmad M (2019) Globalisation, Economic Growth, and Spillovers: A Spatial Analysis. *Margin: The Journal of Applied Economic Research*, 13(3). doi:<https://doi.org/10.1177%2F2347631119841257>
7. Alomari M, Power DM, Tantisantiwong N (2017) Determinants of equity return correlations: A case study of the Amman Stock Exchange. *Rev Quant Financ Acc* 50:33–66. doi:<https://doi.org/10.1007/s11156-017-0622-4>
8. Aluko OA, Adeyeye PO (2020) Imports and economic growth in Africa: Testing for granger causality in the frequency domain. *J Int Trade Econ Dev* 4(16):29(7), 850–864. doi:<https://doi.org/10.1080/09638199.2020.1751870>
9. Andreia DM, Andreib LC (2015) Vector error correction model in explaining the association of some macroeconomic variables in Romania. *Procedia Economics Finance* 22:568–576. <https://core.ac.uk/download/pdf/81218049.pdf> Retrieved 3 3, 2021, from
10. Anetor FO (2019, December) Economic growth effect of private capital inflows: a structural VAR approach for Nigeria. *Journal of Economics Development* 21(1):18–29. doi:DOI 10.1108/JED-06-2019-0009
11. Arbelaez H, Urrutia J, Abbas N (2001) Short-term and long-term linkages among the Colombian capital market indexes. *International Review of Financial Analysis*, 10(3), 237–273. Retrieved June 18, 2018, from <https://www.infona.pl//resource/bwmeta1.element.elsevier-8d04335c-e1a1-3e65-b0a3-06de06e56e6b>
12. Arya V, Banerjee R, Tony (2019) Capital flows to Asia and Latin America: Does institutional quality matter? *The World Economy* 42(7)(17):1. doi:<https://doi.org/10.1111/twec.12783> 2039–2069.
13. Asteriou D, Hall SG (2007) *Applied Econometrics* (2 ed.). New York, China: Palgrave Macmillan. doi:10: 0-230-50640-2
14. Bakari S, Mabrouki M (2017, 1 2). Impact Of Exports And Imports On Economic Growth: New Evidence From Panama. *Journal Of Smart Economic Growth*, 2(1). Retrieved 3 3, 2021, from <https://jseg.ro/index.php/jseg/article/view/70>
15. Bernabe EM, Parcon-Santos HC, Hallig JM (2016) *Spillovers in ASEAN-5 Equity Markets*. Retrieved May 31, 2018, from ResearchGate: https://www.researchgate.net/publication/307370273_Spillover_in_ASEAN-5_Equity_Markets
16. Billio M, Captorin M, Frattaloro L, Petizon L (2016) *Network and risk spillovers: a multivariate GARCH perspective*. Retrieved May 31, 2018, from : <https://www.slideshare.net/SYRTOproject/network-and-risk-spillovers-a-multivariate-garch-perspective>
17. Binder JJ (2001) Stock Market Volatility and Economic Factors. *Review of Quantitative Finance and Accounting*, 17(1), 5–26. Retrieved June 1, 2018, from https://www.researchgate.net/publication/5157509_Stock_Market_Volatility_and_Economic_Factors
18. Binici M, K`oksal B, Orman C (2012) Stock return comovement and systemic risk in the Turkish banking system. *MRPRA Paper*. Retrieved June 1, 2018, from https://mpira.uni-muenchen.de/38663/1/Systemic_Risk_in_Turkey.pdf
19. Brand South Africa (2014) *South Africa's economy: key sectors*. Retrieved September 1, 2018, from Brand South Africa 1996–2016: <https://www.brandsouthafrica.com/investments-immigration/economynews/south-africa-economy-key-sectors>
20. Brewer A (2005) Cantillon, Quesnay, and the Tableau Economique. *Department of Economics, University of Bristol*. Retrieved 6 11, 2021, from http://www.efm.bris.ac.uk/economics/working_papers/pdffiles/dp05577.pdf
21. Cao D, Long W, Yang W (2013) Sector Indices Correlation Analysis in China's Stock Market. *Information Technology and Quantitative Management*. 17, pp. 1241–1249. Beijing: Procedia Computer Science. doi:doi: 10.1016/j.procs.2013.05.158
22. Carbaugh R (2014) *International Economics*. Boston: Cengage Learning. Retrieved March 1, 2021
23. Cartwright P & (2015) Do Spot Prices Predict Future Futures Prices? *Paris School of Business*. Retrieved July 17, 2018, from <http://dx.doi.org/10.13140/RG.2.1.5107.9843>
24. Chen J (2021, 2 12). *Foreign Direct Investment*. Retrieved from Investopedia: <https://www.investopedia.com/terms/f/fdi.asp>
25. Chuang I-Y, Lu J-R, Tswei K (2007) Interdependence of international equity variances: Evidence from East Asian markets. *Emerging markets Review*, 311–327. Retrieved May 31, 2018, from <https://www.infona.pl/resource/bwmeta1.element.elsevier-2348e109-8030-3fa2-822f-4a86714b91ac>
26. Cîrdeia IA (2019) *The Impact of Globalization on the Security Environment*. Sibiu: Nicolae Balcescu Land Forces Academy. doi:<https://www.researchgate.net/deref/http%3A%2F%2Fdx.doi.org%2F10.2478%2Fkbo-2019-0006>
27. Claessens S, Forbes K (2004) The Theory, Evidence and Policy Implications. *International Financial Contagion*. Retrieved 6 11, 2021, from <http://web.mit.edu/~kjforbes/www/Shorter%20Articles/InternationalFinancialContagion-Theory%26Evidence.pdf>
28. Coibion O, Gorodnichenko Y, Weber M (2020, 5). *The Cost of the COVID-19 Crisis: Lockdowns, Macroeconomic Expectations, and Consumer Spending*. Retrieved 6 11, 2021, from IZA Institute of Labour Economics: <https://www.iza.org/publications/dp/13224/the-cost-of-the-covid-19-crisis-lockdowns-macroeconomic-expectations-and-consumer-spending>
29. Collier SP (2017, 8 18). The downside of globalisation: Why it matters and what can be done about it. *The World Economy*, 41(4), 967–974. doi:<https://doi.org/10.1111/twec.12543>

30. Conroy-Krutz J (2021, 6 7). *Nigeria's Twitter ban could have a long-term economic cost*. Retrieved 8 7, 2021, from Quartz Africa: <https://qz.com/africa/2017673/nigerias-twitter-ban-will-have-a-longterm-economic-impact/>
31. David JM, Simonovska I (2016) Correlated beliefs, returns, and stock market volatility. *Journal of International Economics*, 99, 558–577. Retrieved May 31, 2018, from https://987a4c78-a-62cb3a1a-s-sites.googlegroups.com/site/joelmichaeldavid/correlation_final.pdf?attachauth=ANoY7cqQnpU8GZXqw3DXuhQd9bNRSMKXRk7FodqaYlsz30XFCc0RBvF-B2cWXinnvywYFa9wvssEKYTMw3EObsSZ81oSxtgrZxiSDApuY7vBQPFagNmwcmeN6l3wjVnWGLf1WJd5ndvsbdzGQ9oF
32. Dreher A (2006, 9 1). Does globalization affect growth? Evidence from a new index of globalization. *Applied Economics*, 38(10). doi:<https://doi.org/10.1080/00036840500392078>
33. Econ.ISU. (2021). *International Factor Mobility*. Retrieved 8 9, 2021, from Department E, Iowa State University: <http://www2.econ.iastate.edu/classes/econ355/choi/mob.htm>
34. Eiling E, Gerard B, Hillion P, Roon Fd (2012) International Portfolio Diversification: Currency, Industry and Country Effects Revisited. *Journal of International Money and Finance*, 31(5), 1249–1278. Retrieved May 26, 2018, from <https://core.ac.uk/download/pdf/30932806.pdf>
35. Erasmus S (2017) *Zimbabwe's top 10 economic challenges*. Retrieved September 5, 2018, from fin24: <https://www.fin24.com/Opinion/zimbabwes-top-10-economic-challenges-20171126>
36. Ezeanyej C, Maureen I (2019, 3). Foreign Portfolio Investment on Economic Growth of Nigeria: An Impact Analysis. *International Journal of Academic Management Science Research (IJAMSR)*, 3(3), 24–36. Retrieved 3 2, 2021, from <http://ijeais.org/wp-content/uploads/2019/03/IJAMSR190304.pdf>
37. Forbes KJ, Rigobon R (2002). Forbes KJ, Rigobon R (2002) No contagion, only interdependence: measuring stock market comovements. *Journal of Finance*, LVII(5), 2223–2261. Retrieved May 31, 2018, from <http://web.mit.edu/kjforbes/www/Papers/NoContagion-JOF.pdf>
38. Foresti P (2007) Testing for Granger Causality Between Stock Prices and Economic Growth. *Munich Personal RePEc Archive*(2962). Retrieved July 12, 2018, from https://mpira.ub.uni-muenchen.de/2962/1/MPRA_paper_2962.pdf
39. Forner C, Marhuenda J (2003) Contrarian and Momentum Strategies in the Spanish Stock Market. *European Financial Management*, 9(1), 67–88. Retrieved July 26, 2018, from <https://onlinelibrary.wiley.com/doi/abs/10.1111/1468-036X.00208>
40. Gilchrist S, Zakrajsek E (2008) Linkages Between the Financial and Real Sectors: An Overview. *Financial Stability and Linkages Between Financial and Real Sectors*. Boston University, NIBER, Federal Reserve Board. Retrieved June 11, 2021, from http://people.bu.edu/sgilchri/BOG_Gilchrist_Zakrajsek_24sep2008.pdf
41. Giovanni JD, Gottselig G, Jaumotte F, Ricci LA, Tokarick S, Yang M, Rees M (2008, 5). *Globalization: A Brief Overview*. Retrieved 4 17, 2021, from International Monetary Fund: <https://www.imf.org/external/np/exr/ib/2008/053008.htm>
42. Goryakin Y, Lobstein T, James WP, Suhrcke M (2015, 5). The impact of economic, political and social globalization on overweight and obesity in the low and middle-income countries. *Social Science & Medicine*, 67–76. doi:<https://dx.doi.org/10.1016%2Fj.socscimed.2015.03.030>
43. Group of Ten (2001) *REPORT ON CONSOLIDATION IN THE FINANCIAL SECTOR*. IMF. Retrieved 6 11, 2021, from <https://www.imf.org/external/np/g10/2001/01/Eng/pdf/file1.pdf>
44. Gyglia S, Haelg F, Sturm J-E (2018) *The KOF Globalisation Index – Revisited*. Zurich: Swiss Economic Institute. Retrieved 4 17, 2021, from https://ethz.ch/content/dam/ethz/special-interest/dual/kof-dam/documents/Globalization/2018/KOF_Globalisation%20Index_Revisited.pdf
45. Hammes TX (2016, 8 2). *The End Of Globalization? The International Security Implications*. Retrieved 3 2, 2021, from War on the Rocks: <https://warontherocks.com/2016/08/the-end-of-globalization-the-international-security-implications/>
46. Hishiyama I, Takatera S (1960) The Tableau Economique of Quesnay: Its Analysis, Reconstruction, and Application. *Kyoto University Economic Review*, 30(1), 1–46. Retrieved June 11, 2021, from https://repository.kulib.kyoto-u.ac.jp/dspace/bitstream/2433/125449/1/ecb0301_001.pdf
47. Hong H, Torous W, Valkanov R (2004) *Do Industries Lead Stock Markets?* Retrieved May 31, 2018, from Rady School of Management: <https://rady.ucsd.edu/faculty/directory/valkanov/pub/docs/industries.pdf>
48. Ibrahim A, Ibrahim S, Danguguwa K, Gimba S (2020 01). Globalization and the Future of West African Development: Issues, Challenges, Prospects and options. *Journal of Humanities Social Sciences*. doi:<http://dx.doi.org/10.9790/0837-2501072632>
49. Ifeachukwu NP (2020, 9 2). Globalisation, Economic Growth and Income Inequality in Nigeria. *Indian J Hum Dev*, 14(2). doi:<https://doi.org/10.1177%2F0973703020948484>
50. Ishioro BO (2013) STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE FROM ZIMBABWE. *EKON. MISAO PRAKSA DBK*, 343–360. Retrieved June 15, 2018, from <https://hrcak.srce.hr/file/166272>
51. Johansen S (1991) Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models. *Econometrica*, 59(6), 1551–1580. Retrieved June 20, 2018, from <https://www.jstor.org/stable/pdf/2938278.pdf?refreqid=excelsior%3A64cd8f107801441fece7a9b3d98e8eb4>
52. Johnson LL (1960) The Theory of Hedging and Speculation in Commodity Futures. *The Review of Economic Studies*, 27(3), 139–151. Retrieved June 29, 2018, from <http://www.jstor.org/stable/2296076>
53. Kirikkalelia D, Sokri A, Candemir M, Ertugrul HM (2018) Panel cointegration: Long-run relationship between internet, electricity consumption and economic growth. Evidence from OECD countries. *Investigacio Economica*, 77(303). Retrieved 8 9, 2021, from http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-16672018000100161
54. Kolluri B, Wahab M (2008) Stock returns and expected inflation: evidence from an asymmetric test specification. *Review of Quantitative Finance and Accounting*, 30, 371–395. Retrieved June 1, 2018, from <https://slideheaven.com/stock-returns-and-expected-inflation-evidence-from-an-asymmetric-test-specificat.html>

55. Kutlu V (2010) The Long Term Relation Between Indirect and Direct Real Estate. *Network for Studies on Pensions, Aging and Retirement (Netspar)*, 1–50. Retrieved July 11, 2018, from https://www.netspar.nl/assets/uploads/MA_Vesile_Kutlu_2010.pdf
56. Magee L (2015) Unit Roots, Cointegration, VARs and VECMs. *Winter*. Retrieved 3 5, 2021, from https://socialsciences.mcmaster.ca/magee/761_762/02-Time%20series%20models%20B-notes.pdf
57. Marcus A (1989) An Equilibrium Theory Of Excess Volatility And Mean Reversion In Stock Market Prices. *NATIONAL BUREAU OF ECONOMIC RESEARCH*, 3106. Retrieved July 3, 2018, from <http://www.nber.org/papers/w3106.pdf>
58. Masih AM, Winduss T (2006) Who Leads the Australian Interest Rates in the Short and Long-Run? An Application of Long Run Structural Modelling. *Review of Pacific Basin Financial Markets and Policies*, 9(1), 1–24. Retrieved June 20, 2018, from https://www.researchgate.net/publication/23552184_Who_Leads_the_Australian_Interest_Rates_in_the_Short_and_Long_Run_An_Application_of_Long_Ru
59. Mundell RA (1957) International trade and factor mobility. *Am Econ Rev* 47(3):321–335. <https://www.jstor.org/stable/1811242> Retrieved 8 9, 2021, from
60. Nicolo GD, Kwast MS (2002) Systemic Risk and Financial Consolidation: Are They Related? *IMF Working Paper*, 1–26. Retrieved June 1, 2018, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=879527
61. Olaiya TT (2020) *Nigeria ranks behind 10 African countries in globalisation index*. The Guardian. Retrieved 8 7, 2021, from <https://guardian.ng/news/nigeria-ranks-behind-10-african-countries-in-globalisation-index/>
62. Olimpia N, Dima S (2017, 4 22). Impact of Globalisation On Economic Growth in Romania: An Empirical Analysis of Its Economic, Social and Political Dimensions. *Studia Universitatis „Vasile Goldis” Arad – Economics Series*, 27(1). doi:<https://doi.org/10.1515/sues-2017-0003>
63. Omar WA, Hussin F, Asan AG (2015, 1 6). The Empirical Effects of Islam on Economic Development in Malaysia. *Research in World Economy*, 6(1). doi:10.5430/rwe.v6n1p99
64. Oramah B, Dzene R (2019, 9 26). Globalisation and the Recent Trade Wars: Linkages and Lessons. *Global Policy (Wiley Online Library)*, 10(3), 401–404. doi:<https://doi.org/10.1111/1758-5899.12707>
65. Oyedele T (2019, July 11) African Continental Free Trade Agreement: What You Need To Know And The Real Issues For Nigeria. *Mondaq*
66. Patro DK, Qi M, Sun X (2013) A simple indicator of systemic risk. *Journal of Financial Stability*, 9, 105–116. Retrieved June 1, 2018, from <https://bfj.uchicago.edu/sites/default/files/research/simple%20indicator.pdf>
67. Pedroni P, Vogelsang T (2005) Robust Unit Root and Cointegration Rank Tests for Panels and Large Systems. *International 11th International Panel Data Conference* (p. 52). Texas: Texas A&M. Retrieved from <https://pdfs.semanticscholar.org/7130/f169430ac74f14904e1f1bb915258d4e86e6.pdf>
68. Phylaktis K, Xia L (2009) Equity Market Comovement and Contagion: A Sectoral Perspective. *Financial Management*, 381–409. Retrieved 6 11, 2021, from <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1755-053X.2009.01040.x>
69. Pradhan RP, Arvin MB, Hall JH, Nair M (2016) 2 4). Innovation, financial development and economic growth in Eurozone countries. *Applied Economic Letters* 23(16):1141–1144. doi:<https://doi.org/10.1080/13504851.2016.1139668>
70. Ranjan GG (2017) Globalisation, inequality and redistribution: Theory and evidence. *The World Economy* 20(12):2704–2751. doi:<https://doi.org/10.1111/twec.12518>
71. Rocco R, Talani LS (2019) Introduction: The Globalisation Debate—From De-Globalisation to the Dark Side of Globalisation. In R. Rocco, & L. S. Talani, *The Dark Side of Globalisation, International Political Economy Series* (pp. 1–17). Cham: Palgrave Macmillan. Retrieved 3 2, 2021, from https://doi.org/10.1007/978-3-030-05117-4_1
72. Sandonato S, Willebald H (2018, 3). Natural Capital, Domestic Product and Proximate Causes of Economic Growth: Uruguay in the Long Run, 1870–2014. *Sustainability: Natural Resources Economics*, 10(3), 715. doi:<https://doi.org/10.3390/su10030715>
73. Schwab K (2016, 1 14). *The Fourth Industrial Revolution: what it means, how to respond*. Retrieved from World Economic Forum: <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond>
74. Shahbaza M, Hoanga TH, Mahalikb MK, Roubaud D (2017) Energy consumption, financial development and economic growth in India: New evidence from a nonlinear and asymmetric analysis. *Energy Econ* 63:199–212. doi:<https://doi.org/10.1016/j.eneco.2017.01.023>
75. Simatele M (2015) Market Structure and Competition in the South African Banking Sector. *Peocedia Economics Finance* 30:825–835. doi:[https://doi.org/10.1016/S2212-5671\(15\)01332-5](https://doi.org/10.1016/S2212-5671(15)01332-5)
76. Statista. (2020, 12 1). *Top 20 export countries worldwide in 2019*. Retrieved 3 3, 2021, from <https://www.statista.com/statistics/264623/leading-export-countries-worldwide/>
77. Uduk M (2019) July 17). SEC, NFIU sign agreement to tackle capital market fraud. *Vanguard*, Interviewer
78. UN (2021, 8 4). *West African Population*. Retrieved from Worldometer: <https://www.worldometers.info/world-population/western-africa-population/>
79. Vergos K, Wanger B (2019, 3 30). Evaluating interdependencies in African Markets: A VECM. *Risk Market Journals: Bulletin of Applied Economics*, 6(1), 65–85. Retrieved 3 3, 2021, from <https://www.riskmarket.co.uk/bae/journals-articles/issues/evaluating-interdependencies-in-african-markets-a-vecm-approach/?download=attachment.pdf>
80. Waluyo DB (2019, 2 13). *Globalisation and Deglobalisation: The Indonesian Perspective*. Retrieved 3 2, 2021, from Central Bank of Indonesian: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3332008
81. Wanger B (2021) Human Capital Development in Nigeria: The Role of Diaspora Remittances (Yet Published). *Economic Department, Nile University of Nigeria*. Retrieved 8 29, 2021

Figures

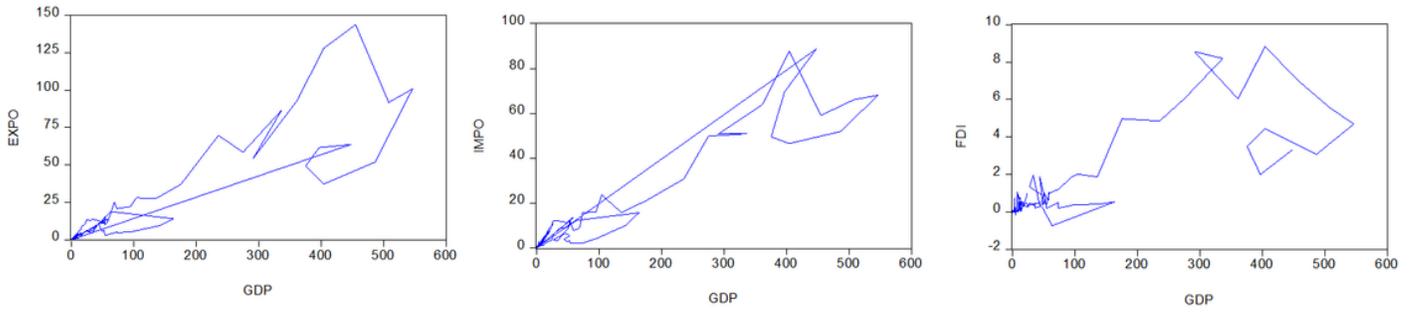


Figure 1

Graphs of the series From the graphs of the series above, there is a positive relationship between GDP and the indicators of globalisation though not very linear, especially for FDI.

Supplementary Files

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