International Trade, Corruption and Economic Growth: Evidence from Selected Sub-Saharan Countries

Handel międzynarodowy, korupcja i wzrost gospodarczy: dowody z wybranych krajów subsaharyjskich

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Abstract

Sustainable development goal 17 emphasizes the importance of international trade in achieving inclusive growth. Likewise, countries with high level of corruption will experience limited growth. In order to examine the causality, this study considers the impact of international trade and corruption on the economic growth of selected sub-Saharan African countries (Angola, Ghana, Kenya, Nigeria, and South Africa) from the period 2000-2019. The granger causality test and fixed effect method of estimation were adopted. The result of the granger causality tests shows that there is no causality between import and economic growth, there is unidirectional causality between export and economic growth and there is no causality between control of corruption and economic growth. Furthermore, it was discovered that export, import, and control of corruption have a positive impact, 25.4%, 32%, 45.5% respectively, on the economic growth of selected sub-Saharan African countries. Hence from these findings, policies towards export promotion should be encouraged as export is crucial for the economic growth of these countries and policies to curb corruption should be implemented in order to promote economic growth in the selected sub-Saharan African countries.

Key words: international trade, corruption, economic growth, export, import, Sub-Saharan Africa
Słowa kluczowe: handel międzynarodowy, korupcja, wzrost gospodarczy, eksport, import, Afryka Subsaharyjska

1. Introduction

The need for countries to create partnerships is bigger than ever in a world that is fast evolving. In line with the SDG 17, which is partnership for the goals which seeks to promote and strengthen global partnership among nations of the world, this goal helps to encourage international trade by enabling a fair trading system and increasing volume of export of all countries especially developing countries to help contribute to their economic growth and development. Okenna and Adesanya (2020) states that the importance of international trade begins with resource disparity and restrictions that is, the fact that no country can fully produce all the products and services that the people require for their consumption. International trade is thus a core part of any economy that enables countries to specialize in the production of specific goods and serves as a major source of revenue to most developing countries that actively participate in trade.

International trade is defined in the 2030 Agenda for Sustainable Development as *an engine for inclusive economic growth and poverty reduction which contributes to the promotion of sustainable development*. Increase in poverty rate in African countries has contributed to the increasing crime rate and corruption which impedes growth rate in the region. It has also been observed from reviewed literatures that one of the causes of the limited economic growth in sub-Sahara African countries is corruption. According to World Bank, Transparency International and International Country Risks Guide, sub-Saharan Africa deals with a high level of corruption in comparison to other regions of the world. Countries with high level of corruption are unable to adopt sound redistributive policies and

are unlikely to benefit from long-term economic development. This in essence may hinder the achievement of sustainable development goal if necessary actions and policies are not put in place.

Despite several policies focused on encouragement of trade in Sub-Saharan Africa, trade did not achieve the desired purpose and the failure to achieve the objective can be attributed to the nature of government. Sub-Saharan countries have adopted numerous policies and schemes to aid and increase their openness to trade. Observing from a superficial point of view, as much as international trade is a core part of the economies of developing countries there are several factors that affect economic growth that has been overlooked. The improper functioning of the legal framework can hinder the effectiveness of the contracts, a fact that discourages international transactions and can discourage economic activities (Anderson and Marcouiller, 2002).This tends to point to the fact that the institutional framework in sub-Saharan African countries may not be very supportive for economic activities when compared to other regions of the world (Osabuohien, 2011). Countries in sub-Saharan Africa lose billions of dollars each year through corruption, the local and international efforts to reform governance have been inconsistent (Hanson, 2010).

International trade has with no doubt helped in speeding up the economic growth and development in sub-Saharan African countries. While international trade and economic growth has often been linked together in many researches, there has been many controversies regarding the importance of international trade on economic growth (Obadan and Elizabeth, 2013). There is also little evidence existing in relation to the nexus between international trade, corruption and economic growth. Therefore, this study examine the causality between international trade and economic growth in selected sub-Saharan African countries, the causality between corruption and economic growth in selected sub-Saharan African countries and the impact of international trade and corruption on economic growth in the selected Sub-Saharan African countries.

2.   Literature Review

Several studies that have contributed to a better understanding of the economic growth of the selected sub-Saharan African countries by identifying the role of international trade and corruption none of which have examine the link between the three. This study therefore fills the gap in literature by examining the nexus between international trade, corruption and economic growth in selected sub-Saharan African countries.

Egunjobi (2013) examined the impact of corruption on economic growth in Nigeria, it made use of time series data from 1980-2009 by using the regression analysis. It was discovered that as corruption increased it reduced the foreign direct investment and the expenditure on education also reduced. The study recommended policies to reduce corruption by creating incentives to encourage honest behaviour and penalties for corrupt practices

Mazin (2019) investigated the relationship between trade openness and economic growth using a panel data analysis on selected developing countries from 1998-2017. The empirical result shows that trade openness has no effect on economic growth, the policy recommended is that the government should focus on the development of this countries and that trade openness should be adopted but with adequate regulations.

Osabuohien (2011) analysed the impact of institutional framework on international trade performance in sub-Saharan African countries. The study made use of the fixed effects model and two-stage least squares technique for the period 1996-2008 using 34 selected sub-Saharan African countries. The result of the study showed that political institutions and financial institutions have positive relationships with international trade performance.

In a country study by Chitauro and Khobai (2015) on the impact of trade liberalization on the economic growth of Switzerland, the study made use of annual data from 1990-2014. The result of the Auto-Regressive Distributive Lag (ARDL) showed that there exist a positive relationship between trade openness and economic growth of Switzerland to test the existence of a long run relationship among the variables.

Rahman and Mamun (2016) investigated the energy use, international trade and economic growth nexus in Australia. This research employs econometric techniques like the Auto-regressive distributed lag bounds testing approach of co-integration, the granger casualty test and impulse response functions. This study finds the evidence of no long-run co-integration between the variables of interest. The Granger causality test confirms bidirectional causal relationship between international trade and per capita GDP growth, but does not find any Granger causal relationship between energy use and per capita GDP growth.

3.   Methodology

This study adopted the endogenous growth model to examine the impact of international trade and corruption on the economic growth in the selected Sub-Saharan Africa countries because it allows for policy variables in the economic growth equation. A typical production function in the endogenous growth model is specified as:

$$Y = f(A, K, L) \tag{1}$$

Where, Y=Output (gross domestic product (GDP), K=Physical capital input, L=Labour capital input.
Given the theoretical relationship, the model is specified as:

$$GDP = f(EXP, IMP, CC, TLF, GFCF) \tag{2}$$

Where f= functional relationship, GDP=Gross domestic product, Exp=Export, IMP=Import, CC=Control of corruption, TLF=Total Labour force, GFCF= Gross fixed capital formation.

The linear equation is expressed as
$$GDP_{it} = \alpha_0 + \alpha_1(EXP)_{it} + \alpha_2(IMP)_{it} + \alpha_3(CC)_{it} + \alpha_4(TLF) + \alpha_5(GFCF) + \epsilon \quad (3)$$
α_0 represents the intercept of relationship in the constant

α_1 to α_6 represents the coefficient of export, import, control of corruption, total labour force and gross fixed capital formation, ϵ=stochastic variable or the error term, i= country and t=time trend

From equation 3, the constant of the model and the coefficient of the independent variable are shown .All the variables in the model except from control of corruption are in log form. This study employed the use of a balanced panel data for analysis, the time period observed is from 2000-2019. The econometric methodologies used in this study are the Panel Unit-Root, Fixed effect model and the Granger Causality tests.

4. Results
4.1. Granger Causality
Testing of the hypothesis regarding causality between international trade and economic growth involved testing the hypothesis for causality between export and GDP and between import and GDP. This was because both exports and imports constitute international trade in the context of this study. The null hypothesis of the Granger causality test is there is no causality while the alternative hypothesis is that there is causality.

Hypothesis 1: Causalilty between International trade and economic growth.

4.2. Causality between Exports and GDP
Table 1 provides evidence of causality running from exports to GDP and not vice versa. This is because a statistically significant chi-square statistic (6.889) is obtained regarding causality running from value of exports (EXP) to GDP. The computed chi-square statistic is statistically significant at the 5% level of significance, this implies that export causes economic growth through the generation of revenue from goods exported thus contributing to the GDP. On the contrary however, the chi-square statistic of 0.04308 for causality running from GDP to exports is insignificant at the 5% level of significance.

Table 1. Granger causality test between exports and GDP, authors computation (2021)

Causality	DF	Chi-Sq	P-Value	Decision
EXP→GDP	1	6.889	0.000	Causality
EXP←GDP	1	0.04308	0.836	No Causality

4.3. Causality between Imports and GDP
Table 2 provides no evidence that import causes GDP or GDP causes imports. The chi-square statistic regarding causality in either direction between imports and GDP is statistically insignificant at the 5% level of significance. This suggests that import does not cause the economic growth neither does GDP cause import.

Table 2. Granger causality test between imports and GDP, authors computation (2021)

Causality	DF	Chi-Sq	P-Value	Decision
IMP→GDP	1	0.00658	0.935	No Causality
IMP←GDP	1	0.45632	0.499	No Causality

In conclusion, it was found that only exports causes GDP for the selected sub-Saharan African countries reflecting that the causality between exports and GDP is uni-directional. Imports does not cause GDP, and neither does GDP cause imports.

Hypothesis 2: Causality between Corruption and Economic Growth
Table 3 provides evidence that there is no causality running from control of corruption to GDP or GDP to control of corruption. In conclusion the F-statistic regarding causality in either direction between control of corruption and GDP is statistically insignificant at the 5% level of significance. This implies that the presence of control of corruption in this selected sub-Saharan African country does not translate into higher economic growth in their economy and economic growth does not cause control of corruption in those economy.

Table 3. Granger causality test between corruption control and Economic Growth, authors computation (2021)

Causality	DF	Chi-Sq	P-Value	Decision
CC→GDP	1	0.09750	0.9072	No Causality

In summary, it was discovered in this study that there is no flow of causality between import as a component of trade and economic growth among the selected Sub-Saharan African countries which contradicts the findings of Owolabi-Merus, Odediran, Inuk (2015) that found that economic growth Granger cause Import. The lack of causality between import and economic growth shows that import does not cause economic growth neither does economic growth cause import that the two variables are independent of each other. Also, it was revealed in the results of the study that there is a uni-directional causality between export and economic growth in the selected sub-

Saharan African countries, this implies that export causes economic growth, but economic growth does not cause exports. This finding was supported by Hailegiorgis (2012) whose result showed an evidence of uni-directional causality between export and economic growth. Control for corruption reduces embezzlement of money, bribery, nepotism and misallocation of resources. This study provides evidence that there is no causality running from control of corruption to GDP or GDP to control of corruption. Yapatake, Abeid and Ngaba (2017) supports the finding there is no bi-directional relationship between control of corruption and economic growth as the two variables are independent of each other.

This study carried out fixed and random effect analysis as well as Hausman test on the data. The result of the Hausman test indicated the validity of fixed effect method of estimation result over the random effect. Table 2 shows that the estimated panel data fixed effects regression has a high goodness of fit as the R-squared of the model is 0.9564 which implies that 95.64% of changes are explained by the estimated model. Hence the estimated model is valid and may therefore be interpreted.

Furthermore table 4, a one percent rise in exports will result in a 0.25 percent increase in GDP. Thus, exports as a component of international trade is important for economic growth of sub-Saharan Africa countries. This is in line with the findings of Otinga (2009) and the view of the International monetary fund (IMF) who believe that developing countries should focus on export led growth. A one percent rise in imports will also result in a 0.320 percent increase in GDP which implies that imports as a component of international trade is important 32 percent increase in economic growth. This finding was in line with the results of (Okenna and Adesanya, 2020; Azeez, Dada, Aluko, 2014; Ratombo, 2019) who found that import has a positive relationship with GDP. The endogenous growth theory also posits that developing countries can benefit from international trade by importing superior technologies and other resources from foreign markets which will result into increase of domestic competition and productivity.

Table 4. Panel Data Fixed Effects Estimation of the impact of International Trade and Corruption on Economic Growth, authors computation (2021)

Dependent Variable: Log GDP				
Independent Variables	Coef.	Std. Err.	T	P- Value
C	-10.312	2.038	-5.06	0.000
Log EXP	0.254	0.0696	3.65	0.000
Log IMP	0.320	0.0788	4.06	0.000
CC	0.455	0.0917	4.96	0.000
Log TLF	0.830	0.162	5.12	0.000
Log GFCF	0.348	0.0659	5.28	0.000
R-Squared: 0.9564				
F Statistic (5, 90) = 590.95			P-value = 0.0000	
No. of Obs = 100			No. of Countries: 5	

Control of corruption has a statistically significant coefficient of 0.455 which indicates that a one percent rise in control of corruption will result into 0.455 percent increase in GDP. This supported the findings of Yapatake, Abeid and Ngaba (2017). This implies that effective control of corruption is crucial to the economic growth of sub-Saharan African countries because the presence of corruption in the economy disrupts investment, trade, and other economic activities which in turn affects economic growth adversely thus an effective control of corruption helps to ensure accountability and transparency across all sectors in the economy which helps promote their economic growth. Furthermore, a one percent rise in total labour force will result into a 0.830 percent increase in GDP. Therefore increase in total labour force is important for the economic growth of selected Sub-Saharan Africa countries. This supported the findings of Ogundimu (2019) that total labour force has a positive impact on economic growth. A one percent increase in gross fixed capital formation will also lead to a 0.348 percent rise in GDP. This is in line with the findings of Matthews and Adegboye (2014) which showed that gross fixed capital formation has a statistically significant impact on economic growth. The implication of this result is that when there is a fall in capital it will result into a fall in investment in the SSA countries.

5. Conclusion

This study has exhaustively covered the main objective which is to determine the effects of international trade and corruption on economic growth of selected sub-Saharan African countries. It was discovered that international trade, control of corruption, total labour force and gross fixed capital formation have positive relationship with economic growth.

The presence of good trade policies and effective control of corruption is important for the economic growth of these selected sub-Saharan Africa countries. Thus, in order to achieve sustainable development goal 17 which emphasizes international trade for inclusive growth to occur in any country, this study recommends that necessary steps should be taken by the government to promote international trade and combat corruption for the attainment of continuous economic growth and advancement in these countries.

References

1. ADELEYE J. O., ADETEYE, O. S., ADEWUYI M. O., 2015, Impact of International Trade on Economic Growth in Nigeria (1988-2012), *International Journal of Financial Research*, 6(3): 163-172.
2. AZEEZ B. A., DADA S. O., ALUKO O. A., 2014, Effect of International Trade on Nigerian Economic Growth: The 21st Century Experience, *International Journal of Economics, Commerce and Management*, 2(10): 1-8.
3. BOAKYE R. N., GYAMFI E., 2017, The Impact of Foreign Trade on the Economic Growth of Ghana, *International Journal of Business Marketing and Management*, 2(3): 20-26.
4. BRÜCKNER M., LEDERMAN D., 2012, Trade causes Growth in Sub-Saharan Africa, *Policy Research Working Paper*s, DOI:10.1596/1813-9450-6007.
5. DAVID I. O., 2012, Corruption: Definitions, theories and concepts, *Arabian Journal of Business and Management Review (OMAN Chapter)*, 2(4): 37.
6. DYNAN K., SHEINER L., 2018, GDP as a Measure of Economic Well-being, *Working Paper,* 43.
7. EGUNJOBI T. A., 2013, An Econometric Analysis of the Impact of Corruption on Economic Growth in Nigeria, *Journal of Business Management and Economics,* 54(93): 054-065.
8. GEMECHU D., 2002, *Exports and Economic Growth in Ethiopia: An Empirical Investigation*, First International Conference on the Ethiopian Economy.
9. GETIE A., HAIYUN L., 2019, The Impact of Trade Openess for the Economic Growth of Ethiopia, *Journal of Global Economics*: 2375-4389.
10. GIL-PAREJA S., LLORCA-VIVERO R., MARTINEZ-SERRANO J. A., 2019, Corruption and International Trade: A Comprehensive Analysis with Gravity, *Applied Economic Analysis*.
11. GRIECO J. M., IKENBERRY G. J., 2003, *State Power and World Markets: The International Political Economy*, New York, W.W. Norton Company Inc.
12. HAMEED D., IQBAL A., DEVI, K., 2012, Relationship between Exports and Economic Growth of Pakistan, *European Journal of Social Sciences*, 32(3): 453-460.
13. HARRIS D. J., 2007, The Classical Theory of Economic Growth, *The new Palgrave Dictionary of Economics*.
14. HOWITT P., 2010, Endogenous Growth Theory, *Economic Growth. The New Palgrave Economics Collection,* eds. Durlauf S.N., Blume L.E., Palgrave Macmillan, London, DOI: 10.1057/9780230280823_10.
15. MATTHEW O., ADEGBOYE F. B., 2014, Trade Openness, Institutions and Economic Growth in sub-Saharan Africa (SSA), *Developing Country Studies*, 4(8): 18-30.
16. MAURO P., 1995, Corruption and Growth, *The Quarterly Journal of Economics*, 110(3): 681-712.
17. MENSAH A., OKYERE, E. 2020, Causality Analysis on Export an Economic Growth Nexus in Ghana, *Open journal of statistics*, 10: 872-888.
18. MESSERLIN P., 1995, The Impact of Trade and Capital Movements on Labour: Evidence on the French case, *OECD Economic Studies*, (24): 89-124.
19. MOGOE S., MONGALE I., 2014, The Impact of International Trade on Economic Growth in South Africa: An Econometrics Analysis, *Mediterranean Journal of Social Sciences,* 5(14): 60, https://www.mcser.org/journal/index.php/mjss/article/view/3130.
20. OKENNA N. P., ADESANYA B. M., 2020, International Trade and the Economies of Developing Countries, *American International Journal of Multidisciplinary Scientific Research*, 6(2): 31-39.
21. OSABUOHIEN S. E., 2011, *Analysis of International Trade Performance in Selected sub-Saharan African Countries: Impact of Institutional Framework,* Doctoral dissertation, Covenant University, Ota, Nigeria.
22. OTINGA H. N., 2009, *The Impact of International Trade on Economic Growth in Developing Countries (Exports for rapid Economic Growth) a case study of Kenya*, Doctoral dissertation, University of Nairobi, Kenya.
23. PACIFIC Y. K. T., RAMADHAN A. A., & GABRIELLA N. M. A., 2017, Does Control of Corruption, Accelerate Economic Growth in Botswana, *Global Journal of Human-Social Science Research,* 17(6): 41-50.
24. POPOOLA O., ALEGE P.O., GERSHON O., ASALEYE, J. A., 2019, Human Capital Channels and Productivity Growth: Evidence from Nigeria, *Economics and Sociology,* 12(4): 59-73, DOI: 10.14254/2071-789X.2019/12-4/3.
25. RAHMAN M. M., SHAHBAZ M., FAROOQ A., 2015, Financial Development, International Trade, and Economic Growth in Australia: New Evidence from Multivariate Framework Analysis, *Journal of Asia-Pacific Business*, 16(1): 21-43.
26. RUTTIENS A., 2013, *Mathematics of the Financial Markets: Financial Instruments and Derivatives Modelling, Valuation and Risk Issues*, John Wiley & Sons.
27. SIDDIQUI K., 2018, David Ricardo's Comparative Advantage and Developing Countries: Myth and Reality, *International Critical Thought*, 8(3): 426-452.
28. SOI N., KOSKEI I., BUIGUT K., KIBET J., 2013, Effect of International Trade on Economic Growth in Kenya, *European Journal of Business and Management*, 5(10): 131-137.
29. TARHAN S., 2008, *Public Investment and Corruption in an Endogenous Growth Model, MPRA Paper,* 34204.