Regional Integration and Economic Inequality: A Case of the East African Community

Catherine Masudio

Pan African University Institute of Governance, Humanities and Social Sciences
Yaoundé - Cameroon
masudiocatherine@gmail.com

Abstract: The idea and agenda of regional integration has been lauded for centuries by its proponents owing to the great and numerous benefits that the initiative fetches for Countries and regions involved in the collaborations, yet it also continues to pose adverse effects on countries and their citizens, notably among them is the resulting inequalities. This study thus sought to assess the impact of regional integration on economic inequality drawing from the experience of the East African Community (EAC) by utilizing panel data for five EAC countries covering 16years spanning from 2007 to 2022, obtained from secondary sources and analysed using the Newey West standard errors variance estimator. Results from the estimate found that elements of regional integration like access to internet services, imports, exchange rates, external debt stocks and gross capital formation all accelerate the rate of inequality and recommends governments of EAC partner states to reshape regional policies to increase access to technology and internet, lower interest rates, properly manage public debts and consider redistributive policies other than taxes to cater for the less privileged and promote inclusive growth.

Keywords: Regional Integration, Economic Inequality, Inclusive growth, East African Community, Newey west standard errors.

INTRODUCTION

In order to achieve economic growth and reduce poverty and inequality, many nations have pursued regional integration in one form or another. These efforts have focused on key structural areas such as labour market reforms, legal and regulatory reforms, payments system rationalisation, tariff reduction and harmonisation, and financial sector reforms (United Nations Economic Commission of Africa [UNECA], 2018) and the process has yielded significant outcomes for certain regional agreements (Alemayehu & Haile, 2007). Over time, integration groups have developed, ranging from continental to regional levels. Examples of these groups include the League of Arab States (LAS), Association of South East Asian Nations (ASEAN), European Union (EU), African Union (AU), North American Free Trade Area (NAFTA), and several others in the Caribbean and Asia (United Nations Conference on Trade and Development [UNCTAD], 2019).

In Africa alone, there are quite a number of regional groupings that were formed with the aim of championing the regional integration agenda on the continent, although only eight are recognized by the African Union and are in operation including; the Arab Maghreb Union (AMU), Community of Sahel-Saharan States (CEN-SAD), Common Market for Eastern and Southern Africa (COMESA), the Economic Community of Central African States (ECCAS), Economic Community of West African States (ECOWAS), Inter-Governmental Authority on Development (IGAD), the Southern African Development Community (SADC), the East African Community and the Economic Community of Central African States (ECCAS) (African Union Commission [AUC], African Development Bank [AfDB] and United Nations Economic Commission for Africa (UNECA), 2019).

A plethora of benefits are associated with regional integration, some of which are trade facilitation, market expansion, enhanced bargaining power, and a host of other benefits related to trade integration, free movement of people, and cooperative projects (Balassa, 1961). However, integration also has detrimental effects on both member states and other non-member nations, despite the benefits appearing to be numerous and substantial. For instance, trade areas with free tariffs for intra-trade risk a significant decline in the national fiscal income, yet tariffs remain a dependable source of revenue for the majority of developing countries, which is an opportunity cost for these countries. Countries prefer mediocre products due to the affordability of technological advancement or products from other member states, even though non-member states have better products or more efficient technologies (Cyn-Young & Racquel, 2019). The benefits of growth brought about by regional integration have not been fairly distributed, especially in Africa, which has resulted in the exclusion of significant proportions of the population and raised inequality (Ghosh & Yamarik, 2004).

Economic inequality in the EAC is demonstrated by data from the 2019 African Regional Integration Index (ARII), which indicates that while the EAC is one of the more integrated Regional Economic Communities (RECs) on the continent of Africa, with an average score of 0.537 out of one (1) compared to other RECs, only Kenya and Uganda, with scores of 0.792 and 0.717 respectively, are shown to be performing relatively well in comparison to other countries in the community, such as South Sudan and Burundi, which rank among the least integrated countries on the continent (AUC, AfDB & UNECA, 2019). According to McCarthy (1996), there is an argument that suggests that a high level of inequality can lead to macroeconomic instability and hinder

progress towards growth. Additionally, if growth drives an unequal distribution of opportunities and resources, it can then create an uneven and lop-sided development.

The region is characterised by social, political, and economic disparities that hinder growth, which some have defined as progress without change (UNECA, 2018). A portion of the region's inequality can be ascribed to the economic growth strategies the region adopted after becoming independent, including grafted capitalism, external dependency, the role of the public and private sectors, and the imposition of World Bank and International Monetary Fund policies like privatisation, structural adjustment programmes (SAPs), poverty alleviation strategy papers, and other campaigns (Jurcic, Bilas & Franc, 2011).

Research has also demonstrated that, due to a variety of factors, including differing degrees of economic development, the advantages of regional integration on a nation's growth, income, and development would not be distributed equally among participating countries (Shuaibu & Nchake, 2018). This would imply that broadening regional integration programmes would also be a factor in the widening of disparities in income. This is corroborated by a study (Gammadigbe, 2021) whose findings show that while regional trade agreements have boosted economic development, they additionally contributed to income disparity due to the division of integration's positive benefits.

Apparently, even after more than 50 years of cooperation since the first EAC was established in 1967 (Green, 1967), the region is still marked by high unemployment levels, widespread poverty, and a heavy reliance on raw materials despite its abundance in natural resources and agricultural endowments (Jurcic et al., 2011). In order to track the advancement of the regional integration agenda in the East African Community, this study aimed to evaluate the effect that regional collaboration has on inequality by incorporating a variety of regional integration components.

LITERATURE REVIEW

Different early economists have different ideas about how to characterise the extent of inequality. Some of the research on this subject originates from Karl Marc's ideologies, which prioritise economic growth above all else and disregard how it is distributed as long as everyone receives a share of the growth proportionately. Nonetheless, Adam Smith examined the components of income distribution, such as wages, profits, and rents, which are divided among capitalists, renters, and workers while in recent years, attention has been drawn to the disparity in the distribution of earnings prior to taxes (Birdsall, 2015). These can be observed in the disparities in income levels, education, health, and nutrition, which all affect standards of living, and are caused by distributional biases from growth that cause a particular population to accumulate disproportionately more wealth than others (World Bank, 2014).

In addition, the Stolper-Samuelson theorem (1941) discusses the role that economic integration plays in advancing inequality. It draws attention to the rising demand for low-skilled labour and the corresponding rise in wages that arise from increased trade among developing nations who prioritise increasing production of goods in which they are comparative advantages. Theoretically, as wealthy nations produce and export high-skilled goods, which demand high-skilled labour and put the impoverished with low-skilled labour at a disadvantage, inequality will increase (Stolper & Samuelson, 1941). The Factor-Price equalization Theorem (1948) however proposes that prices of output goods are equalized between countries as they move towards free trade which also causes the equalization of factor prices between countries involved in the trade (Suranovic, 2006).

Numerous studies have also examined the connection between regional integration and inequality. Bouvet's (2021) investigation, for instance, sought to determine whether the income disparities in the European Union increased as a result of deepened integration following the adoption of the Euro as a single currency. Using the synthetic counterfactual methodology, the study came to the conclusion that, in contrast to what would have happened if the region had not adopted the euro, greater integration to a single currency has increased gross income inequality while reducing net income (Bouvet, 2021).

On the contrary, Nguyen and Ezaki's (2005) study on the effects of regional integration on growth, poverty, and income distribution in Vietnam found that regional integration promotes inclusive growth by improving welfare, income distribution, and household income and consumption. This was determined after developing a globally linked Computable General Equilibrium (CGE) model to assess the impact of ongoing regional economic integration on Vietnam's growth, poverty reduction, and income distribution in 2001. According to Nguyen and Ezaki (2005), poor and rural households benefit more from regional integration than urban high-income groups.

More relatedly, a study by Santos-Paulino, DiCaprio, and Sokolova (2019) to investigate how regional integration impacts growth, inequality, and poverty using data from a sample of 100 countries covering the period spanning 1990-2015, estimated using the Ordinary Least Squares and the Generalised Method of Moments for panel data suggests that regional integration through trade and related policy is important for reducing inequality and poverty, particularly in developing countries.

Ametoglo et al. (2018) also conducted a study on the relationship between regional integration and inequality in ECOWAS from 2004 to 2013. The study used a dynamic specification to estimate the impact of regional integration on income inequality, employing the Least Square Dummy Variable technique to address endogeneity issues and bias approximations to extend the results to unbalanced panels. The study concluded that political integration reduces inequalities, whereas economic integration increases income disparities in the region. The study recommends structural reforms to improve inclusiveness and advocates for the implementation of coordinated regional welfare projects (Ametoglo et al. 2018).

In another study, Rodriguez-Pose (2012) examines the relationship between trade and regional inequality within a country to test the impact of trade on regional inequality as to whether increases in trade increases or decreases inequality levels. The study employed a static and dynamic panel data analysis of 28 countries over the period 1975-2005 and concluded that trade has a positive effect on regional inequality. In his study, he however highlights that these inequalities are prevalent in States that have differences in sector endowments, low shares of governmental expenditure, and higher internal transaction costs. In his study, he highlights the dwells on the need for structural adjustments to enable low- and middle-income countries to benefit from regional trade (Rodríguez-Pose, 2012).

METHODOLOGY AND ANALYTICAL FRAMEWORK

This study uses a panel dataset for five EAC countries spanning from 2007 - 2022 to conduct an empirical investigation into the relationship between regional integration and inequality, highlighting the preliminary diagnostic tests conducted to validate the data and estimation model used in the study. Although the EAC currently has seven member countries, the study only considered data for five of them, which have had stable and consistent membership since the period of data coverage, due to the availability of the necessary data for the study.

The independent variable in this study regional integration is measured based on three main proxies which are: trade integration, infrastructure integration, and macroeconomic integration, represented by imports and exports, percentage of internet users and official exchange rate. The dependent variable inequality is measured using the GINI coefficient while Gross Capital Formation (GCF) and External Debt Stock are included in the analysis as control variables. Data for the variables were obtain from three main sources; the International Monetary Fund Direction of Trade Statistics (IMF/DOTs), the World Inequality Database (WID) and World Bank World Development Indicators (WB/WDI). A summary of description for the study variables and their sources is presented in table 1.

Table 1: Description of variables and sources

Variable	Symbol	Description	Source
Independent variables			
Trade integration	EXP IMP	The total value of intra-regional goods exports (USD current) and the total value of intra-regional goods imports (USD current) in EAC.	IMF/DOTs
Infrastructure Integration	PIU	Percentage of the population that are internet users, an aspect of regional integration that facilitates social and economic integration.	WB/WDI
Macroeconomic Integration	EXR	Measured by the official exchange rates of currency in the region, which affects changes in demand for exports and imports.	WB/WDI
Dependent variable			
Economic Inequality	GINI	Measured by the GINI coefficient which assesses the income or wealth distribution of a population in relation to a perfectly equal distribution	WID
Control Variables			
Gross Capital Formation	GCF	Measured by percentage of GDP comprising additions of fixed assets from residents' investment and net changes in inventory levels	WB/WDI
External Debt Stock	EDS	Measures payment on external liabilities of an economy, particularly repayment of debts.	WB/WDI

Model specification

The study adopted the Newey West standard errors regression which is appropriate for panel data that covers a period of less than 30 years. The Newey West estimator is also a heteroskedasticity and autocorrelation consistent estimator which assumes that correlation dies with the increase in the distance between observations. It is known for its Standard Errors which are Heteroskedasticity and Autocorrelation Corrected (HAC), and uses autocorrelation with lags up to h where h is greater than 0 (h>0)

(Zaiontz, 2022). To assess the impact of regional integration on inequality, a regression model was run through the equation specified as;

$$lnGINI_{it} = \alpha + \beta_1 lnEXP + \beta_2 lnIMP + \beta_3 PIU + \beta_4 lnEXR + \beta_5 lnEDS_{it} + \beta_6 GFC_{it} +_+ u_{it} \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

In the above, log of GINI index (lnGINI) represents inequality which is the study's dependent variable, lnEXP (log of Exports), lnIMP (log of Imports), PIU (Percentage of internet users) lnEXR (log of Exchange Rate), lnEDS (External Debt Stock) and GCF (Gross Capital Formation are the independent variables in the equation while u_{it} is the error term.

Table 2: Summary of descriptive statistics.

Variable	Obs	Mean	Standard Deviation	Skewness	Kurtosis
GINI	80	0.6683883	0.0584542	0.6383	0.0000
lnEXP	80	8.941495	0.5866783	0.1157	0.0000
lnIMP	80	9.137485	0.4002229	0.8942	0.0000
PIU	80	13.35615	16.34129	0.0000	0.0003
lnEXR	80	1.525778	1.028027	0.0000	0.0000
EDS	80	49.62071	37.95718	0.0000	0.0065
GCF	80	24.66277	10.17369	0.0155	0.3645

The descriptive statistics in table 2 shows that most of the variables are clustered around the mean with variables such as GINI, lnEXP, lnIMP and lnEXR showing a standard deviation of 0.058, 0.112, 0.587, 0.400, and 1.028 respectively. EDS has the highest deviation from the mean of 37.9 and GCF at 10.17. As regards to skewness, the distribution is symmetric for all the variables except GINI and lnIMP which have moderately skewed distributions. The data also shows the variables have platykurtic distributions as all the variables have kurtosis of less than 3.0.

Multicollinearity test

The study used the Variance Inflation Factor (VIF) metric which tests for the strength of correlation between the explanatory variables. Table 3 shows the results from the VIF test which shows multicollinearity.

Table 3: VIF multicollinearity test for the independent variables

Variable	VIF	1/VIF
lnIMP	1.99	0.503425
lnEXP	1.77	0.565775
PIU	1.17	0.857298
lnEXR	1.12	0.889757
GCF	1.13	0.883514
EDS	1.12	0.893419
Mean VIF	1.38	

According to the VIF test to detect multicollinearity presented in table 3, the VIF values generated for each of the explanatory variables in the model show that there is little to no correlation between an independent variable and the other independent variables. The highest VIF value is generated for the log of Imports variable which is 1.99 and is still within the accepted range of 1 and 5 which indicate moderate to no correlation.

Heteroscedasticity test

This was done using the White test which tests whether the variance of the errors from a regression model is constant and it does not require specification of a list of variables, as that list is constructed from the regressor list. Alternatively, white test can perform a specialized form of test which economizes on degrees of freedom (Baum& Cox, 2002).

Table 4: Results from the White test for heteroskedasticity

Model	Source	Chi^2	df	P value
1	Heteroskedasticity	144.86	27	0.0000
	Skewness	90.13	6	0.0000
	Kurtosis	2.14	1	0.1437

Results from the test for heteroskedasticity in table 4 shows a P-value of 0.0000 for the model specification showing significance and thus the null hypothesis that there is homoskedasticity is rejected. The alternative hypothesis which states that there is no heteroskedasticity thus holds for this panel data. This shows that the residuals or the error term is unequally scattered and the variance of the population of study is unequal, which may thus result in reduced precision of the coefficient estimates. This problem is however common for cross-sectional data, as there might be great variances between values for various cross sections, as well as resulting from changes in trends over time in the dependent variable.

Autocorrelation

As a measure of autocorrelation suitable for panel data, the study conducted the test discussed by Wooldridge for serial correlation which does not require many assumptions unlike other tests for autocorrelation (Drukker, 2003). The Wooldridge test for autocorrelation in panel data states its null hypothesis as evidence for no autocorrelation in the first order (Woodridge, 2016). The tests conducted show results of a p value of 0.0000 for the model when regressed, thus the null hypothesis is rejected. This implies that the panel data is serially correlated, that is, the errors associated with a given time period are carried over to future time periods which biases the standard errors thus causing results to be less efficient as the estimates of the standard errors tend to be smaller than the actual standard errors (Williams, 2015).

Unit root test

The data was also tested for the presence of unit roots using the IM Pesaran-Shin test for stationarity. The results are shown in the table 5.

Table 5: Results from unit root test results using IM Pesaran-Shin test (IPS)

Variable	Level Z-T-Tilde-Bar	Lag 1 W-T-Bar	Trend W-T-Bar	Differentiated Z-T-Tilde-Bar
GINI		-1.9844**		
LNEXP	-2.4603 *			
LNIMP	-1.5484 ***			
ΔPIU				-2.6599 **
LNEXR			-1.3625 ***	
ΔEDS				-6.6133 *
GCF	-1.3803 ***			

Note: * denotes significance at 1%, ** indicates significance at 5% significance level, whereas *** indicates significance at 10%

The result for unit root test in table 5 shows stationarity for only the log of exports, log of imports, and Gross Capital Formation variables at level, thus GCF, lnIMP and lnEXP are I(0), whereas the dependent variable, GINI reject the null hypothesis of the presence of unit roots at lag one (1) with 5% significance level. The log of exchange rate variable is stationary after adding a trend at 10% significance. The null hypothesis is rejected for Percentage of Internet Users and External Debt Stocks variables after differentiating at 5% and 1% significance levels respectively, and therefore conclude that both ΔPIU and ΔEDS are I(1).

FINDINGS AND DISCUSSION

The estimation from the Newey West standard errors regression to assess the impact of regional integration on inequality is presented in table 6.

Table 6: Estimates from the Newey West regression Estimator

Independent Variable	Coefficient	Standard Error	P Value
PIU	0.0004876**	0.0002063	0.019
lnEXP	0.0030248	0.0080894	0.703
lnIMP	0. 0363348**	0.0155837	0.020
lnEXR	-0.0249904*	0.0066186	0.000
EDS	0. 0003081**	0.0001239	0.014

GCF	0. 0014493*	0.0003962	0.00
Number of Observations	80	80	80
Number of IDs	5	5	5

Note: * denotes significance at 1%, ** indicates significance at 5% significance level, whereas *** indicates significance at 10%

Table 6 is a display of the key statistics from the Newey West regression estimation to assess the impact of regional integration on inequality. The estimated results show that PIU, lnIMP, EDS and GCF all increase the levels of inequality. The highest impact is from Imports, showing that a percentage point increase in imports increases inequality by 0.036 percentage points. Contrary to expectations is the positive effect of the percentage of internet users which further increases inequality by 0.00049, whereas EDS meets the expectation in the positive effects on inequality as a unit increase in External Debt Stock also results in increase in inequality by 0.0003081 units. This also agrees with other literature as foreign debt redirects funds for development to principal and interest payments (Berensmann, 2019). This result also aligns with empirical evidence from Krahnke et al (2022) who observed that greater income inequality is associated with countries that have a larger share of external liabilities (Krahnke et al., 2022). The results also show that an increase in investment (gross capital formation) increases inequality, in line with the results highlighted by (Purba et al., 2019) where they concluded that gross capital formation increases the aggregate income of an economy, but does not guarantee the equitable distribution of this income thus increasing income disparity. From this regression estimation, only the increase in exchange rate is estimated to reduce average inequality by 0.025. Contrary to the theoretical expectations, the results for exports in the estimation were insignificant.

Discussion

The stock of foreign debt plays a substantial role in shaping inequality as foreign debt redirects funds for development to principal and interest payments (Berensmann, 2019). In most developing countries, this translates to more public resource looting, corruption and fraud evident in many sub-Saharan countries coupled with poor debt management and low government revenues. An increase in investment (gross capital formation) has also been found to increases inequality. This is in line with the results highlighted by Purba et al. (2019) where they concluded that gross capital formation increases the aggregate income of an economy, but does not guarantee the income distribution of this income this increasing income disparity. Monetary policy has distributional effects on various economic activities in an economy, from savings to investments to consumption. A rise in exchange rates makes exports more expensive and thus reduces their competitiveness on the international market. It however also makes imports less expensive which then results in the increase in imported products (foreign competitors) which decreases the demand for domestic products. This then decreases domestic output and prices and increases the disposable income of consumers (European Central Bank, 2021). This distributive effect of exchange rates however does not guarantee the acceleration of economic growth, especially if domestic output is affected (Min & Cull, 2002).

On the positive effects of percentage of internet users on inequality, various studies and reports acknowledge this as part of the distributional effects of technological change. Technology is meant to be an inclusive tool that connects the world and facilitates communication and information flow. It however requires advanced skillsets to leverage on its benefits, skills which are hard to acquire and so making it a skill-biased tool for development and inclusivity which further increases the wage gap (European Central Bank, 2021). It also increases the educational gap and efficiency gap as evidenced during the Coronavirus (COVID-19) pandemic which favoured those with ease of access to technology and high technological skillsets than those without. To further illustrate, during the COVID-19 pandemic, some students continued their education through e-learning, whereas those in rural areas were side-lined from any educational activities, further resulting into early marriages and early pregnancies recorded in various countries (Houston, 2020; Mavhunga, 2021 and Davies, 2020). There is also the aspect of costs of internet access which are extremely high in the EAC region with varying connectivity rates across the member Countries, resulting in discrepancies and exclusion even amongst the registered internet users. In addition, some parts of the region especially the remote areas are still not connected to internet networks and hence have completely no accessibility.

CONCLUSION

The need for equitable distribution of income and resources that leaves no one behind was the main consideration for this study, also taking into account the need to deliberately and consciously shape regional integration initiatives and policies towards the achievement of inclusive growth so that citizens, and countries are not marginalized, and to reduce inequalities that defeat and demean growth. Drawing from the empirical findings, the study recommends the need for reshaping regional and individual government policies to enable conditions for an environment that will increase access to technology and the internet, beginning with the incorporation of digital skills education in curricula and subsidising internet service provisions through reduction of taxes and

penalties paid by internet providers in order to lower prices of the services. This will help ensure that more people can benefit from the opportunities of globalization, regional integration and technology. There is also need for central banks to take inequality into account when creating monetary policies so as to ensure that they do not leave the population worse off. This includes setting lower interest rates to stimulate growth, and strengthening the exchange rate to facilitate growth and reduce inequality. More relatedly, there is need for proper debt management and policies to disincentivise the accumulation of unpaid debts. Lastly, policy makers and governments of the EAC member states should consider other redistributive policies other than taxes, notably social and money transfers from the wealthy urban population to the less privileged and disaster-stricken populations.

Acknowledgement

REFERENCES

African Union. (2022). Regional Economic Communities (RECs). https://au.int/en/organs/recs

Alemayehu, G & Haile, K (2007). Regional Economic Integration in Africa: A Review of Problems and Prospects with a Case Study of COMESA'. *Journal of African Economies*, Vol 17(3) p. 358.

Ametoglo, M., Guo, P. & Wonyra, K. (2018). Regional integration and income inequality in ECOWAS zone. *Journal of Economic Integration*. Vol. 33. 604-628.

AUC, UNECA & AfDB. (2019). African Regional Integration Index 2019. 2nd Edition. African Development Bank Publication, Abidjan, Cote d'Ivoire.

Balassa, B. (1961), Towards a theory of economic integration. *Kyklos,* 14: 1-17. doi.org/10.1111/j.1467-6435.1961.tb02365.x

Bardesi, H. (2020). Measuring the Effect of the Internet on Economic Growth: The Case of Saudi Arabia. *International Journal of Economics and Finance*, *12*, 61. https://doi.org/10.5539/ijef.v12n12p61

Baum, C. F., & Cox, N. (2002). *"WHITETST": Module to perform White's test for heteroskedasticity*. http://fmwww.bc.edu/RePEc/bocode/w

Berensmann, K. (2019). *Why developing countries are facing a renewed debt crisis*. German Institute of Development and Sustainability (IDOS). https://www.idos-research.de/en/the-current-column/article/why-developing-countries-are-facing-a-renewed-debt-crisis-1/

Birdsall, N. (2015). *Rising Inequality in the New Global Economy*. UNU-WIDER. https://www.wider.unu.edu/publication/rising-inequality-new-global-economy

Bornhorst, F., & Baum, C. F. (2007). IPSHIN: Stata module to perform Im-Pesaran-Shin panel unit root test. In *Statistical Software Components*. Boston College Department of Economics. https://ideas.repec.org/c/boc/bocode/s419704.html

Bouvet, F. (2021). "Regional integration and income inequality: a synthetic counterfactual analysis of the European Monetary Union," Oxford Review of Economic Policy, Oxford University Press, vol. 37(1), pages 172-200.

Cyn-Young, P & Racquel, C. (2019). Assessing the Impact of Regional Integration on Inclusive Growth. https://aric.adb.org/blog/assessing-the-impact-of-regional-integration-on-inclusive-growth

Davies, P. (2020). Teen pregnancies rise in Malawi amid coronavirus pandemic. *Africa News*. https://www.africanews.com/2020/09/04/teen-pregnancies-rise-in-malawi-amid-coronavirus-pandemic/

Drukker, P. (2003). Testing for Serial Correlation in Linear Panel Models. *The Stata Manual*, *3*(2), 168–177.

Economic Commission for Africa (2018), *Assessing Regional Integration in Africa IV African Union African Development Bank Economic Commission for Africa Enhancing Intra-African Trade*, Addis Ababa, Ethiopia. https://unece.org/DAM/trade/TF_JointUNRCsApproach/ECA_IntraAfricanTrade.pdf

European Central Bank. (2021). *Monetary policy and inequality*. https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211109_2~cca25b0a68.en.html

Gammadigbe, V. (2021). *Is Regional Trade Integration a Growth and Convergence Engine in Africa?* IMF Working Paper No. 2021/019. International Monetary Fund.

Ghosh, S & Yamarik, S. (2004). Are Regional Trading Arrangements Trade Creating? An Application of Extreme Bounds Analysis. *Journal of International Economics* 63(2):369-395https://www.researchgate.net/publication/223760620_Are_Regional_Trading_Arrangements_Trade_Creating_An_Application_of_Extreme_Bounds_Analysis

Green, R. H. (1967). The Treaty for East African Co-operation: a summary and interpretation. The Journal of Modern African Studies, 5(3), 414-419.

Houston, A. (2020). *Motherhood too soon? Child, early, and forced marriage and adolescent pregnancy in COVID-19*. https://www.care.org/news-and-stories/health/motherhood-too-soon-child-early-and-forced-marriage-and-adolescent-pregnancy-in-covid-19/

Jurcic, L., Bilas, V., & Franc, S. (2011). Regional Economic Integration and Developing Countries: The Example of South African Regional Integration - SADC. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2232667

Krahnke, T., Harms, P., Hoffmann, M., & Kohl, M. (2022). Inequality and the Structure of Countries' External Liabilities. *IMF Working Papers*, *2022*(138), 1. https://doi.org/10.5089/9798400210372.001

Mavhunga, C. (2021). Zimbabwe Reports Major Rise in Teen Pregnancies During Pandemic. *Voice of Africa*. https://www.voanews.com/a/covid-19-pandemic_zimbabwe-reports-major-rise-teen-pregnancies-during-pandemic/6204648.html

McCarthy, C. (1996). Regional Integration: Part of the Solution or Part of the Problem?, in Ellis, S., ed., Africa now: Policies, People, Institutions. London: James Curry Ltd.

Min, H., & Cull, R. (2002). Inequality, the Price of Nontradables, and the Real Exchange Rate: Theory and Cross-Country Evidence. *Research Gate*. https://www.researchgate.net/publication/2519852_Inequality_the_Price_of_Nontradables_and_the_Real_Exchange_Rate_Theory_and_Cross-Country_Evidence

Nguyen, T.D. & Ezaki, M. (2005). "Regional Economic Integration and Its Impacts on Growth, Poverty and Income Distribution: The Case of Vietnam," Review of Urban & Regional Development Studies, *Wiley Blackwell*, vol. 17(3), pages 197-215.

Purba, B., Masbar, R., Maipita, I., & Jamal, A. (2019). *The Effect of Capital Expenditure and Gross Fixed Capital Formation on Income Disparity in West Coast Region of North Sumatera* (Earth and Environmental Science 260).

Rodríguez-Pose, A. (2012) Trade and Regional Inequality. *Economic Geography*, 88(2),109-136, doi: 10.1111/j.1944-8287.2012.01147.x

Santos-Paulino, A, DiCaprio, A & Sokolova, M.V. (2019). The Development Trinity: How Regional Integration Impacts Growth, Inequality and Poverty. *The World Economy*. 42. 10.1111/twec.12788

Shuaibu, M & Nchake, M. (2018). "Does Inclusive Growth Matter for Regional Integration in Africa? An Empirical Assessment," *International Journal of African Development*: Vol. 5: Iss. 1, Article 6

Stolper, W., & Samuelson, P. (1941). Protection and Real Wages. *The Review of Economic Studies*, *9*(1), 58–73.

Suranovic, S. (2006). *Factor-Price Equalization: Trade*. International Econ.Com. http://www.internationalecon.com/Trade/Tch60-14

UNCTAD. (2019). *Developing Countries in International Trade: Trade and Development Index*, Geneva: UNCTAD.

Williams, R. (2015). *Serial Correlation: Very Brief Overview*. University of Notre Dame.

Woodridge, J. (2016). *Introductory econometrics modern approach*. Cengage. https://www.abebooks.fr/rechercher-livre/titre/introductory-econometrics-modern-approach/auteur/jeffrey-wooldridge/

World Bank. (2014). *Theorist Eric Maskin: Globalization Is Increasing Inequality*. World Bank. https://www.worldbank.org/en/news/feature/2014/06/23/theorist-eric-maskin-globalization-is-increasing-inequality

Zaiontz, C. (2022). *Newey-West Standard Errors | Real Statistics Using Excel*. Real Statistics Using Excel. https://www.real-statistics.com/multiple-regression/autocorrelation/newey-west-standard-errors/