



"An Economic Analysis of the Effects of Preferential Trade Agreements with sub-Saharan Africa on Trade Flow, Economic Growth and Poverty Reduction: Evidence from the African Growth and Opportunity Act"

Marco Alberto Nanfouet

ABSTRACT

The number of preferential trade agreements has increased substantially in recent decades, mostly facilitated by the delays of the Doha round of negotiations, rising regional integrations, and global production networks. Sub-Saharan Africa over these periods has received a considerable number of non-reciprocal preferential trade agreements, such as the African Growth and Opportunity Act (AGOA), from the USA, with the main aim to improve its own share of international trade flow and to boost economic growth and development in the region. However, after more than two decades with these non-reciprocal preferential trade regimes, sub-Saharan Africa remains the world's poorest region with the lowest share of international trade flow. The main objective of this study was to assess the effects of non-reciprocal preferential trade agreements on trade flow, economic growth and poverty reduction in sub-Saharan Africa with a focus on the African Growth and Opportunity Act. The analysis made use of data, on trade flow, GDP per capita, poverty rate, inflation, inequality, investment and remittance flows obtained from the World Integrated Trade Solution and the World Bank Development Indicators for 22 sub-Saharan African countries over 22 years. We employed the gravity model of trade and a dynamic growth model. The empirical estimations based on the gravity model revealed that receiving AGOA status has a positive impact on trade flow with the USA, although the effect is not significant. Moreover, our analysis revealed that agricultural exports have a positive and significant impact on economic growth and a negative effect on poverty levels in the region. Our findings support the view that international trade can contribute to economic growth and poverty reduction in sub-Saharan Africa.

CITE THIS VERSION

Marco Alberto Nanfouet. *An Economic Analysis of the Effects of Preferential Trade Agreements with sub-Saharan Africa on Trade Flow, Economic Growth and Poverty Reduction: Evidence from the African Growth and Opportunity Act*. Faculté des bioingénieurs, Université catholique de Louvain, 2024. Prom. : Gaspart, Frédéric. <http://hdl.handle.net/2078.1/thesis:48233>

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Faculté des bioingénieurs

An Economic Analysis of the Effects of Preferential Trade Agreements with sub-Saharan Africa on Trade flow, Economic Growth and Poverty Reduction: Evidence from the African Growth and Opportunity Act

Auteur : Marco Alberto Nanfouet

Promoteur(s) : Frédéric Gaspart

Lecteur(s) : Thomas Heckeley

Année académique 2024-2025

Mémoire de fin d'études présenté en vue de l'obtention du diplôme de Bioingénieur :...

Acknowledgments

This piece of work could not be realized without the support and assistance of other people in one way or the other. I would like to thank everyone who was directly or indirectly associated with my work and contributed to the success of this project. I want to use this opportunity to express my overwhelming joy for the realization of this project.

My sincere gratitude goes to God Almighty for his grace, love, strength and abundant mercy which have let me successfully throughout this project, for I could not have done this without His divine mercy.

I would like to express my deepest gratitude and thanks to my supervisor Professor Federic Gaspart for his encouragement and effort in guiding me throughout this project. You have been a wonderful supervisor throughout this project. Your advices and comments contributed greatly to the realization of this project.

I also wish to sincerely thank my co-supervisor Professor Thomas Heckeley. Words cannot explain how grateful I am for your brilliant comments and suggestions that greatly contributed in strengthening this project.

My profound gratitude to the AFEPA consortium for giving me the opportunity to study and experience the wonderful AFEPA Program and for the great technical support provided throughout the program. I also wish to express my special gratitude to the Erasmus Plus Scholarship for the financial support provided for my second year of the AFEPA program.

I am forever grateful to my mother Piebeng Hortence Lucile and to other family members for their constant support and encouragement throughout the realization of this project. Your supports and encouragements gave me the needed strength to complete this project.

Abstract

The number of preferential trade agreements has increased substantially in recent decades, mostly facilitated by the delays of the Doha round of negotiations, rising regional integrations, and global production networks. Sub-Saharan Africa over these periods has received a considerable number of non-reciprocal preferential trade agreements, such as the African Growth and Opportunity Act (AGOA), from the USA, with the main aim to improve its own share of international trade flow and to boost economic growth and development in the region. However, after more than two decades with these non-reciprocal preferential trade regimes, sub-Saharan Africa remains the world's poorest region with the lowest share of international trade flow. The main objective of this study was to assess the effects of non-reciprocal preferential trade agreements on trade flow, economic growth, and poverty levels in sub-Saharan Africa with a focus on the Africa Growth and Opportunity Act. The analysis made use of data, on trade flow, GDP per capita, poverty rate, inflation, inequality, investment and remittance flow obtained from the World Integrated Trade Solution and World Bank Development Indicators for 22 sub-Sahara African countries over 22 years. We employed the gravity model of trade and a dynamic growth model. The empirical estimations based on the gravity model revealed that receiving AGOA status have a positive impact on trade flow with the USA, although the effect is not significant. Moreover, our analysis revealed that agricultural exports have a positive and significant impact on economic growth and a negative effect on poverty levels in the region. Our findings support the view that international trade can contribute to economic growth and poverty reduction in sub-Saharan Africa.

Keywords: Preferential trade agreements; Economic growth; Poverty; Sub-Sahara Africa

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List of Abbreviations

AGOA: African Growth and Opportunity Act

PTA: Preferential Trade Agreement

USA: United States of America

NAFTA: North America Free Trade Agreement

USD: United States Dollars

GATT: General Agreements on Tariff and Trade

WTO: World Trade Organization

EU: European Union

USITC: United States International Trade Commission

Chapter One

1.1 Introduction

Trade has always been considered a cornerstone for transition to development (UNCTAD, 2022). Therefore, to promote economic growth and alleviate poverty in the Global South, developed countries since 1971 have granted trade preferences to low-income countries through the Generalized System of Preferences (GSP) on a non-reciprocal and voluntary basis (UNCTAD, 2020). With these non-reciprocal trade preferences, beneficiary countries do not have to liberalize their market as compared to reciprocal trade preferences (Ritzel & Fiankor, 2024).

However, with the voluntary nature of most non-reciprocal preferential trade, countries and products can be excluded from the non-reciprocal trade preference by the donor countries at any time (Kishore, 2017). This sometimes results in uncertainty with non-reciprocal trade preferences which can disrupt trade flow between the countries involved. Also, the rising number of regional trade agreements and economic partnership agreements (WTO, 2023) could also affect the effectiveness of non-reciprocal preferential trade.

Nevertheless, the number of preferential trade agreements with sub-Saharan Africa has continued to increase over the last decades, although the region remains the world's region with the lowest share of international trade flow and with the highest level of poverty (World Bank, 2024). The low international trade flow and the slow economic growth of most sub-Saharan African countries, despite the availability of these non-reciprocal trade preferences in existence for more than two decades, raise several questions about the effectiveness of non-reciprocal trade preferences in stimulating more trade flow and in promoting economic growth and poverty reduction in the region.

The empirical literature on the effectiveness of non-reciprocal trade preference in improving trade flow remains very controversial. Some research findings (Frazer & Biesebroeck 2010; Didia et al. 2014) revealed that preferential trade agreements have a positive effect on the trade flow of the beneficiary countries. Meanwhile, other research findings revealed no effect or trade diversion on the trade flow of the beneficiary countries (Borchert, 2009). Moreover, few research studies have

assessed the effect of preferential trade agreements on the economic growth and poverty alleviation of the beneficiary countries, and their impacts on growth and poverty reduction in sub-Saharan Africa remain inconclusive in the literature (Zahonogo, 2017).

In addition, after more than two decades of existence of the two main non-reciprocal trade preference (African Growth and Opportunity Act and the Everything but Arms) in sub-Saharan Africa no recent study have assessed their dynamic effects on trade flow, economic growth and poverty as Baier & Bergstrang (2007) revealed that most free trade agreements approximately double two members bilateral trade flow after 10 years.

This study will contribute to the ongoing debate by first examining the effects of non-reciprocal trade preference on the trade flow of the beneficiary sub-Saharan Africa countries. The study will then proceed with the assessment of the effects of preferential trade agreements on economic growth and poverty alleviation in sub-Saharan Africa. The findings of this study will provide important empirical evidence to policymakers that can be used for the formulation of more efficient trade policies. Also, the findings of this study will contribute to improving the literature on the effects of preferential trade agreements on trade flow, economic growth and poverty reduction in sub-Saharan Africa.

1.2 Motivation and Context of the Study

Trade liberalization has become more and more widespread in the last three decades, especially among developing countries (Zahonogo, 2017). Several reason account for the rapids trade liberalization or trade openness in many developing countries. Namely, the perceived limits of the imports substitution-based development strategies to foster rapid economic growth and development. The several calls from international financial institutions, such as the World Bank and the International Monetary Fund, for developing countries to embark on trade liberalization and to open up their external sector as a condition to receive financial support (Ewards, 1993)

The calls for trade openness for economic growth and development are based on some scientific evidence that showed that opened economies grew faster than their counterparts (Edwards, 1993). This is often motivated by the reason that more trade openness leads to increase output, more efficient use of resources and increase set of consumption possibilities, etc. Modern trade theories, proposed by Helpman & Krugman (1985) and by Romer (1986), emphasize the dynamic gains

from trade that constantly move countries production possibility frontiers outward. Also, it is often found in the literature that greater trade openness promotes private entrepreneurship, attracts foreign investment, fosters learning-by-doing, and favors the acquisition of new knowledge and technologies. This raises productivity and contributes to economic growth and development (Mullings and Mahabir, 2018).

Despite the above advantages associated with trade openness, pro-growth trade theories such as the endogenous growth model (Young, 1991; Grossman and Helpman, 1991; Lee, 1993; Eicher, 1999) argue that if market and institutional imperfection prevail, greater trade openness would rather lead to underutilization of resources, the concentration of economic activities to the extractive sector, and the specialization away from the technological sector (Mullings and Mahabir, 2018).

Giving the diverse literature on the role of trade openness in promoting economic growth and development. Some Eastern Asian countries with the implementation of export-led growth policies in the 1960s and 1970s registered lauded results and great success with the policies. The countries recorded significant economic progress, rapid growth, and development. The export-led-growth policies implemented by some Eastern Asian countries improve their exposure to international markets. The countries became more competitive and integrated into the world economy, with a considerable shift from the export of raw materials with relatively low economic value to the exportation of high-value added and technological products (Hammouda, 2004).

With the African experience, the effects of trade openness on economic growth and development are quite mixed in the literature. Some African countries that followed the Eastern Asian example of trade policies by shifting from inward-looking trade policies to outward-looking trade policies did not get the same results as their Eastern Asian counterparts. Some of the countries even experienced worsening economic situations after the trade reforms. Many of these countries, especially does in sub-Saharan Africa, have continue to experience lower levels of growth and high levels of poverty even after adopting the outward-looking trade policies.

Several research studies have tried to understand why the African experience of the outward-oriented trade policies didn't produce the awaited results. The endogenous growth model suggested that due to technological and financial constraints, many of these countries may lack the capabilities to fully exploit the gains from technologies developed in advanced economies

(Zahonogo, 2017). Some findings revealed the continued exportation of low-value primary raw materials as compared to their Eastern Asia countries counterparts, who mostly exported high-value secondary products after the implementation of the outward-looking trade policies. Trade openness policies in sub-Saharan Africa that were at some point perceived as a strategy for poverty reduction in the region did not succeed in curbing down poverty levels in the region.

Low growth and high poverty levels are still widespread in the region and the region remains the world's poorest region with rising levels of poverty in some countries (World Bank, 2023). The effects of trade openness on poverty levels in the trade literature remain very diverse. Gnanngnon (2019) revealed that poverty is positively related to trade openness in emerging developing countries but reduces the level of trade openness in relatively less emerging developing countries. Meanwhile, Ashraf (2018) empirically showed that greater trade openness increases the demand for finance, stimulates the liberalization of the domestic financial sector, and enhances the opportunities for lending diversification, which have significant effects on credit access and poverty levels. A good illustration of this is the significant reduction in poverty levels in some Eastern Asia Countries after the implementation of the outward-looking trade policies.

Given the diverse opinions on the impacts of trade openness on economic growth and development, different forms of trade policies have continued to emerge over time. Most trade policies seek to fully exploit the opportunities that come with international trade. Among the emerging trade policies are preferential trade agreements which many countries over the recent years have embarked on (Bao & Wang, 2019; Park, 2020). The rapid proliferation of preferential trade agreements in recent decades is mostly due to the delays in the Doha Round of negotiations that have weakened the multilateral trade system (Yao *et al.*, 2021). Moreover, the rapid spread of preferential trade agreements is motivated by countries' desire to avoid relatively high most-favoured nation (MFN) tariffs, rising regional integration and an increasing number of global production networks.

According to the World Trade Organization, 82 preferential trade agreements were in force globally before the year 2000. Today, the number of preferential trade agreements in force has more than tripled, although we must distinguish between the cumulative notifications of preferential trade agreements and the cumulative preferential trade agreements in force (Yao *et al.*,

2021). As far back as in 2011, almost all member countries of the WTO were part of at least one preferential trade agreement (WTO, 2011).

Preferential trade agreements in the WTO are unilateral trade preferences. They include Generalized System of Preferential Schemes (under which high-income countries grants preferential tariff to imports from low-income countries) as well as non-reciprocal preferential schemes (WTO, 2021). Preferential trade can also be referred to as trade receiving preferential tariffs. According to the WTO (2011), intra-preferential trade agreements accounted for about 35% of the total world merchandise traded in 2008 compared to only 19% in 1990. Despite the diversified nature of preferential trade agreements, they all share a central feature that aims to increase market access between the member countries.

Initially, most preferential trade agreements were regional, but over time, cross-regional preferential trade agreements have become more pronounced, especially in recent decades (WTO, 2011). Also, preferential trade agreements have expanded in scope over time from the traditional tariff cutting and today include trade policy areas such as services in trade, foreign direct investment, intellectual properties and technical barriers to trade.

Preferential trade agreements are an exception to the WTO's non-discriminatory principle, as only signatories of the agreement enjoy the advantages of more favorable market access. Thus, countries are permitted to enter into preferential trade agreements under specific conditions covering trade in goods (Article XXIV of the General Agreement on Tariffs and Trade, 1994) and conditions covering trade in services (Article V of the General Agreement on Trade in Services). However, some schools of thought believe that preferential trade agreements are not consistent with some important principles of the WTO's multilateral trading systems and lead to unfair trade practices (Grant & Lambert, 2008).

An important requirement for exportation under most preferential trade agreements is the rules of origin, which all exporters must meet to be able to export under the preferential trade. The rule of origin actually defines the level of processing that must take place locally before the goods are considered to be products of the export country and to benefit from preferential market access. According to the WTO (2018), rule of origin are the criteria needed to determine the national source of a product. The main purpose of the rules of origin is to prevent trade deflection or

transshipment where products from non-beneficiary countries are redirected through a preference beneficiary country.

Several concerns have arose over time on the rules of origin, from the point of view that rules of origin can raise the cost of production if the product must be produced in a different manner to meet the requirement. Also, some researchers have argued that rule of origin raises the administrative cost to both the exporters as the exporter has to adhere to documentation requirement (exporter registration, record keeping, etc.) and to the custom authorities in terms of more human for the verification. The ad valorem cost of the rules of origin is estimated at 4% (Francois, 2006).

However, with the rapid proliferation of preferential trade agreements, the relationship between preferential trade agreements and poverty reduction, especially in the poorest countries in sub-Saharan Africa became more pertinent. This has become more prominent from the argument that sub-Saharan Africa needs to expand trade in order to create jobs, reduce poverty and aid dependence, as the domestic markets in most countries of the region are too small to enable local industries to achieve economies of large-scale production. However, the region's exports have experienced some levels of growth in the last decades, although most of the export growth came from increased exports of oil and raw materials.

It is often agreed in the trade literature that preferential trade agreements affect bilateral trade flow through trade creation that is increase in bilateral trade flow due to relative efficiency and through trade diversion, which is increase in bilateral trade flow due to preferences. The WTO is a comprehensive review reported significant trade diversion between MERCOSUR and the Caribbean. However, many scholars reveal that the trade creation of preferential trade agreements is often higher than the trade diversion effects (Felbermayr *et al.*, 2015).

Among the preferential trade agreements with sub-Saharan Africa is the African Growth and Opportunity Act (AGOA), which was initiated by the USA in 2000 and allows most exports from sub-Saharan Africa to enter the USA duty-free (Didia *et al.*, 2014). This preferential treatment of the USA aimed to serve as a big boost to the export and the manufacturing sector in sub-Saharan Africa. Again, the African Growth and Opportunity Act also aimed at spurring entrepreneurship in sub-Saharan Africa, thereby creating jobs and then promoting economic growth and development.

The eligibility criteria for sub-Saharan African countries to benefit from the AGOA include market-based economy, political pluralism, and respect for human rights, and elimination of barriers to USA trade. The African Growth and Opportunity Act initially started with 34 countries in sub-Saharan Africa (Frazer and Biesebroeck, 2010), and some other countries in the region over time became eligible and were added to the AGOA. Meanwhile some countries (Mali, Central African Republic, Cameroon, and Niger) lost their eligibility and were removed. As of 2023, 33 sub-Saharan African countries were designated as AGOA beneficiaries (USITC, 2024).

In the same vein, the European Union preferential trade agreement with sub-Saharan Africa, more commonly known as Everything But Arms (EBA), gives the least-developed countries duty-free and quota-free access to the market of the European Union in order to boost their economic development (Faber and Orbie, 2009). Everything But Arms involves every good from the least-developed countries except arms and initially started with 27 sub-Saharan African countries. The aim of this non-reciprocal trade agreement between the EU and most sub-Saharan African countries is to give a direct incentive in terms of tariff reductions that would foster export to the EU markets in order to support development and poverty reduction in the beneficiary countries. For a country to benefit from the Everything But Arms, the country has to respect the 15 principles of human rights conventions listed in Annex VIII of the EU Regulation 978/2012. A country benefits from the EU's Everything But Arms can be withdrawn if the country violates the principles, if the exported goods in question are produced under prison labour, or if the country is involved in systematic and serious unfair trade practices, systematic failures, or fraud to provide the origin of the product.

1.3 Problem Statement

Sub-Saharan Africa has in the last two decades received a series of non-reciprocal preferential trade agreements with the EU and the USA with the main aim to boost the region's exports for growth and development. Despite receiving several non-reciprocal preferential market access to the EU and the USA to boost economic growth and development. The region's share of international trade flow remains the lowest, with rising poverty levels (World Bank, 2024). Although the region has witnessed a slight increase in trade flow, the region accounted for only about 3% of the global exports and imports in 2019 (WTO, 2019). The region's total export in 2024 was valued at 396,403,088.66 in thousands of US dollars and total import was valued at

421,519,839.47 in thousands of US dollars with a deficit of 25,116,750.82 in thousands of US dollars (World Integrated Trade Solution, 2024). This high trade deficit and the slow economic growth of the region raise the questions on the effectiveness of preferential trade agreements in promoting economic growth and poverty reduction in the region.

Evaluating the effectiveness of these preferential trade agreements in promoting trade flow and economic growth in sub-Saharan Africa becomes indispensable, given the high proliferation of preferential trade agreements and the diversification of the region's trade partners. This study will assess the effectiveness of preferential trade agreements on trade flow, economic growth, and poverty reduction in sub-Saharan Africa with a focus on the Africa Growth and Opportunities Act implemented by the USA. Most studies on the effects of preferential trade agreements on trade in sub-Saharan Africa (Hinkle & Schiff, 2004; Frazer & Biesebroeck, 2010; Didia et al., 2014), focused mostly on trade flow (imports or exports) with little or no assessment of how these trade regimes affect growth and poverty levels in the region.

This study will evaluate the effects of preferential trade agreements on trade flow, economic growth, and poverty in sub-Saharan Africa with a focus on the USA's African Growth and Opportunity Act (AGOA). The findings of this study will provide a holistic assessment of the effects of preferential trade agreements in sub-Saharan Africa. Furthermore, the findings of this study will provide important empirical insight on the relationship between trade policies, trade flow, economic growth, and poverty and can hence contribute to policy formulation toward eradicating poverty. Moreover, the findings of this study will contribute to improve the literature on trade.

1.4 Research Questions

From the above research problem, the following research questions are raised:

1. What are the effects of the Africa Growth and Opportunity Act (AGOA) on the trade flow of the beneficiary sub-Saharan African countries?
2. What are the effects of agricultural export on the economic growth of the selected sub-Saharan African countries?
3. What are the effects of agricultural export on the poverty levels of the selected countries sub-Saharan Africa countries?

Based on these research questions, this study seeks to test the hypothesis of whether the USA Africa Growth and Opportunity Act has a significant effect on the trade flow of the beneficiary sub-Saharan African countries. Moreover, the study seeks to test if agricultural exports have a significant effect on the economic growth of the selected sub-Saharan African countries. Furthermore, the study will assess whether agricultural exports have a significant effect on the poverty levels of the selected sub-Saharan African countries.

1.5 Structure of the Study

This study is structured as follows, chapter one presented the introduction, background information, the objectives, statement of the problem, research questions, and hypothesis. Chapter two presents the concept, the theoretical framework, and the review of previous empirical studies. Chapter three describes the material and methods used for the study, chapter four will present the results and chapter five contains the policy implications and the conclusion of the study.

Chapter Two

Literature Review

2.1 Theoretical Framework

2.1.1 Comparative Cost Advantage

This theory of trade proposed by David Ricardo showed that potential gains from trade are far greater than Smith envisioned in the concept of absolute advantage. The theory holds that a difference in the comparative cost of production is the necessary condition for the existence of international trade (Zhang, 2008), and the difference reflects the differences in the production technique. According to this theory, technological differences between countries determine international division of labour, consumption, and trade patterns. This theory holds that trade is beneficial to all the participating countries.

This theory of trade relies on the opportunity cost concept and hypothesizes that even countries that are worse at producing any good will gain from trade. It then uses the notion of increasing marginal cost, which explains the shift in production factors from one good to another (Patnaik, 2005). Hence, this model believes that as a result of trade, countries will specialize and produce a large amount of goods and services as compared to a closed economy. The main assumption of this model of trade is that production costs are independent of factor prices and the composition of output, there is no government intervention, perfect competition exists in both the commodity and factor markets, labour is the only factor of production considered to be mobile within the country but immobile between countries, and that production functions are homogenous of degree one. This model of trade provided an important theoretical framework for explaining trade flow between countries, and has served as a baseline for the development of other trade theories. However, some of the critics of this model of trade includes the fact that the model cannot be used to determine how and at what value the terms of trade are determined. The model does not provide any explanation on issues related to the distribution of the gains from trade in a country (Zhang, 2008).

2.1.2 Heckscher-Ohlin Theory of International Trade

The Heckscher-Ohlin theory shows that international trade in commodities could alleviate the discrepancy between countries in relative factor endowment. This occurs when countries export those commodities that use intensively the factors in relative abundance. The Heckscher-Ohlin model of trade predicts that countries would specialize in industries most able to utilize their mix of national resources most efficiently (Zhang, 2008) and that free trade in commodities could serve to equalize factor prices between countries with the same technology, even though the production inputs do not have an international market. In other words, the Heckscher-Ohlin model of trade states that a country's export depends on its resource endowment, whether it is capital-abundant or labour-abundant, if labour-abundant, it will produce and export labour-intensive goods cheaply relative to the other. Likewise, a capital-abundant country will produce and export capital - abundant goods cheaply relative to the other country.

The Heckscher-Ohlin model of trade assumes that the production costs are endogenous in the sense that they are different in the trade and the autarky situation, even when all countries have access to the same technology for producing each good. Other assumptions of the Heckscher-Ohlin model includes no transportation costs or trade barriers, perfect competition in both commodity and factor markets, all production functions are homogenous of the first degree, the production functions are such that the two commodities always show factor intensity, and the production functions differ between commodities but are the same in both countries. Furthermore, there are four theorems in the Heckscher-Ohlin model namely, the factor-price equalization theorem by Lerner (1952) and Samuelson (1948, 1949), stating that free trade in final goods alone brings about complete international equalization of factor price. The Stolper-Samuelson theory by Stolper and Samuelson (1941) saying that an increase in the relative price of one commodity raises the real return of the factor used intensively in producing that commodity and lowers the real return of that factor's inputs. The Rybczynski theorem by Rybczynski (1955), stating that if commodity prices are held fixed, an increase in the endowment of one factor causes a more than proportionate increase in the output of the commodity which uses that factor relatively intensively and an absolute decline in the output of the other commodity. Lastly, the Heckscher-Ohlin Theorem by Heckscher (1919)

and Ohlin (1933), stating that country tends to have a bias towards producing and exporting the commodity which uses intensively the factor with which it is relatively well-endowed.

2.1.3 The Export-Led Growth Hypothesis

It postulates that export growth is one of the key determinants of economic growth and development. It actually considers export expansion as one of the main determinants of growth (United Nations Conference on Trade and Development, 2001). This strategy was pioneered by Germany and Japan in the 1950s and in the 1960s (Levy Economics Institute, 2011), and by the early 1980s the export-led growth orientation and trade promotion had already secured a wide consensus among researchers and policymakers. This was highly supported by the idea that trade openness was the main engine of the spectacular and rapid economic growth observed in Southeast Asia (World Bank, 1993). This theory suggests that growth in output and employment is a function of exogenous demand for a region's or a country's exports assuming perfect elasticity of input supply and demand.

The promotion of the export-led growth trade policy was also supported by the fact that most developing countries that followed inward trade policy under the import substitution strategy, especially in Latin America, achieved poor economic growth and development (Balassa, 1980), and some countries with that policy rather experienced a decline in real income between 1960 and 1990 (Barro and Sala-i-Martin, 1995). It is on this premise that non-reciprocal preferential trade agreements with sub-Saharan Africa have increased over the last two decades and continue to be promoted by multilateral institutions such as the World Bank and the International Monetary Fund with the main aim to boost the region's exports to stimulate growth and economic development. According to the World Bank (1993), export expansion stimulates growth and development through the following mechanism: economies of large-scale production, promotes technological progress, improves external earnings and foreign investment, etc. However, the role of export expansion in promoting economic growth and development remains controversial in the trade literature. This points to the fact that export expansion alone can lead to sustainable growth without strong institutions, good governance and capital improvement.

Another added advantage of this model is that it has not been constant but rather evolved to fit changing global circumstances and to fit individual country conditions. Firstly, it was adopted by Germany and Japan from 1945 to 1970, where both countries had their own industry base, and

export growth was driven by an undervalued exchange rate. Secondly, the experience of four East Asian countries, namely, South Korea, Taiwan, Hong Kong and Singapore, who adopted and used the policy between 1970 and 1985. These countries relied on undervalued exchange rate, and there was a need for foreign technology acquisition. This was done through strategic planning, and these countries benefited from the fact that technology was becoming more mobile. Thirdly, the export-led growth theory was again exemplified by Mexico's experience, which began with the trade liberalization in 1986, which set the stage for NAFTA and the creation of the North America Free Trade Area in 1994 (Levy Economics Institute, 2011). The fourth stage of the evolution of the export-led growth can be exemplified with China. China's model which made three major adjustments to Mexico's NAFTA, namely asymmetric global engagement with China maintaining greater tariffs on imports, undervaluation of the exchange rate that is maintained with capital control and lastly, the strategy for building an indigenous national technology base through forced technology sharing.

Despite the above advantages of the export-led growth model, some of its demerits are as follows. The export-led growth model is now afflicted with several problems, namely debt saturations of consumers in high-income countries such as the USA. This is due to the fact that the model relies on robust consumer markets in developed economies to buy the export and justify the FDI. For over 25 years those markets were artificially strong, fuelled by rising debt and asset price inflation. However, the pattern was unsustainable and is now over, leaving a hole in the logic of the export-led growth model. Second, the relative size of emerging economies has become so large and have such a large share of the global economy that their export is now driving a hole in the industrialized economies.

2.1.4 The Lam's View of the Endogenous Growth Model

The endogenous growth model was developed in the 1980s as a response to the criticism of the neoclassical growth model. Which assumed that a country's long-run growth rate is exogenously determined by a saving rate or a rate of technological progress (Lam, 2015). The endogenous growth model suggests that improvement in productivity can be linked to a faster pace of innovations and extra investment in human capital. It predicts positive externalities and spillover effects from the development of a high value-added knowledge economy which is able to develop and maintain a competitive advantage in growth industries in the global economy. The endogenous

growth model can be summarized as follows. Firstly, the rate of technological progress should not be taken as given in a growth model; appropriate government measures can raise a country's growth rate, particularly if they lead to a higher level of competition in a market and a higher rate of innovation. Secondly, there are potential increasing returns from higher levels of capital investment. Thirdly, it emphasizes that private investment in R&D is the central source of technical progress. Fourthly, the protection of property rights and patent provides the incentives to engage in R&D, and lastly, investment in human capital (education and training of the workforce) is an essential ingredient of growth (Lam, 2015). This model can explain the diverging effects of preferential trade agreements on growth and development given that it assumes that growth is endogenous and not exogenous.

2.2 Review of Previous Empirical Studies on the Effects of Preferential Trade Agreements (PTAs) on Trade Flow

Yao et al. (2021) assessed the impacts of preferential trade agreements on bilateral trade using a structural gravity equation. The study develops a product -based coverage index of PTAs using the World Trade Organization preferential trade agreements and calculated bilateral trade measures using EORA multi-regional input-output tables covering 189 countries worldwide over the period 1990 to 2015. The study revealed that countries sharing a common PTA could boost the trade volume compared to those without PTAs, thereby supporting the trade creation effects of PTAs. These findings are similar to the findings of Mora et al. (2023) who re-assessed the heterogeneous effects of trade agreements using intra-national trade flows and the gravity model which accounts for the adjustment of trade flow. They found that both the PTAs and GATT/WTO have a positive effect on bilateral trade flow. They also revealed that regional PTAs have a significantly larger effect on bilateral trade than interregional PTAs.

Adarov & Ghodis (2021). Analyzed the impacts of the Eurasian Economic Union-Iran Preferential trade agreements on mutual trade at aggregate and sectoral levels, using the gravity model of trade based on the global sample of bilateral trade flow at the harmonized system six-digit levels. Their findings revealed that total gains in mutual trade were estimated to reach over 72 million USD, with exports from Eurasian Economic Union to Iran anticipated to increase by 19.1% compared with a rise in export from Iran to the Eurasian Economic Union of up to 7%. These findings corroborate to some extent with the findings of Eicher & Henn (2011) who used a unified baseline

framework to minimize omitted variable bias with the gravity model and found that PTAs promote trade strongly by unevenly.

Didia et al. (2014), examine the African Growth and Opportunity (AGOA) and US trade relations with sub-Saharan Africa, using the gravity model of trade and trade data for 36 countries over 12 years. Their findings revealed that receiving the AGOA has a strong positive and significant on overall trade with the USA. Also, Tadesse & Fayissa (2008) assessed the effects of the African Growth and Opportunity Act on US imports from sub-Saharan Africa using trade data from 1991 to 2006 and the gravity model and found that AGOA has contributed to the initiation of new and the intensification of existing USA imports in both manufactured and non-manufactured goods and services product categories. These findings align with the findings of Frazer and Biesebroeck (2010) who assessed the trade growth under the African Growth and Opportunity Act using a triple difference- in-difference estimation. They revealed that the African Growth and Opportunity Act had a large and robust impacts on apparel imports into the USA as well as the agricultural products and manufactured products cover under the AGOA.

Also, Gil-Pareja et al. (2014) examine the export of some beneficiary countries of non-reciprocal preferential trade agreements. The study used trade data from 1960 to 2008 and an updated gravity equation. Their study revealed that non-reciprocal preferential trade agreements and the General System of Preferences have had a positive effects on the trade flow of the selected developing countries. The findings are somehow different from the findings of Borchert (2009) who employed a disaggregated panel data analysis to assess the trade diversion under selective preferential market access. His study revealed a significant intra-developing country trade diversion and that the losses for relative disadvantaged countries in terms of forgone trade of forgone trade volume are estimated to range between 2 to 20% of their total trade with the European Community.

Furthermore, Lambert & Mckoy (2009) assessed the trade creation and diversion effects of preferential trade association on agricultural and food trade. They employed the gravity model to isolate the effects of the various preferential trade agreements on both intra and extra-bloc for agricultural and food product trade for three time periods. They revealed that PTAs increased inter-bloc trade in both sector.

2.3 Previous Empirical Studies on the Effects of Preferential Trade Agreements Economic Growth and Poverty Reduction

Hur and Park (2012) assessed the effect of free trade agreements on the economic growth of the member countries using a non-parametric matching approach. Their findings revealed that free trade agreements exert an insignificant effect on aggregate growth from one to 10 years after launching. Furthermore, the study found an upward trend in the gap of per capita GDP within a bilateral free trade agreement. The findings of this study are different from that obtained by Zahonogo (2016), who employed a pooled mean group estimation technique to assess the impact of trade openness on the economic growth of 44 sub-Saharan Africa countries. The study revealed that trade thresholds exist below which greater trade openness has a positive effect on economic growth and above which the trade effect on growth declines. More so, Selinsgrove and Owoye (1998), examined trade liberation on economic growth in Africa. They employed a Vector Error Correction Model (VECM) and a sample of 12 sub-Saharan African countries. Their findings revealed that trade liberalization has a positive effect on the economic growth of 10 out of the 12 sub-Saharan Africa countries.

Gnangnon (2023) assessed the effect of unilateral trade preferences on the poverty reduction of the beneficiary countries. The study used a panel dataset of 77 beneficiaries of non-reciprocal trade preference provided by QUAD countries on poverty. The analysis relied on two main indicators of poverty, namely, the poverty headcount ratio and the poverty gap. The data was analyzed using the two-steps generalized method of moments. They revealed that an increase in the utilization rates of both the Generalized System of Preferences and other trade preferences is associated with poverty reduction in beneficiary countries, with the magnitude of the effect being higher for least developed countries than for other countries in the full sample.

These findings are somehow similar to the findings of Goff and Singh (2014), who examine the impact of trade on poverty reduction in Africa, using a panel of African countries from 1981 to 2010. The revealed that trade openness tends to reduce poverty in countries where the financial sector is deep, educational levels are high and institutions are strong. More so, Smith & Glauber (2020) revealed that free trade allows countries to exploit their comparative advantage in economic activities and hence leads to an increase in the average per capita income and long-term growth

rate. However, Stibora and De Vaal (2015) use a general equilibrium assessment with non-homothetic preference to examine whether preferential trade agreements benefit the poor. They found that preferential trade agreements only improve the welfare of countries that are too poor to import.

2.4 Previous Empirical Studies on the Effects of Preferential Trade Agreements on Poverty and Food Insecurity

Aragie et al. (2023) assessed the synergies and trade-offs between agricultural exports promotion and food security in Africa. The study used economy-wide model linked top-down micro-simulation modules to analyze the impacts of increased agricultural export promotion on the four dimensions of food security. The study revealed that agro-export promotion adversely affects all four dimensions of food security in urban areas and at the national level due to increased food prices. The findings further revealed that agro-export promotion benefits rural households. Also, Achajanzadeh-Darzi et al. (2015) assessed the trade preferences for developing countries' development and food security using an applied general equilibrium model. The analysis revealed that the EU PTA will have a negative impact on some developing countries' economies. The study also revealed that the EU preferential agreements provide export opportunities and contribute to higher incomes. The analysis of the study further revealed that the effect of the EU preferential trade agreements on food security is indirect.

Furthermore, Ritzel & Fiankor (2024) analyzed the effects of non-reciprocal trade preferences on the food export and food availability per capita of the global south countries. The study used the FAO Food Balance Sheet for the years 1960 to 2013, covering 14 food categories and 91 product groups. The data was analyzed using the fixed effects dummy regression. The findings revealed that non-reciprocal trade preferences have a positive effect on food export performance and on food availability per capita.

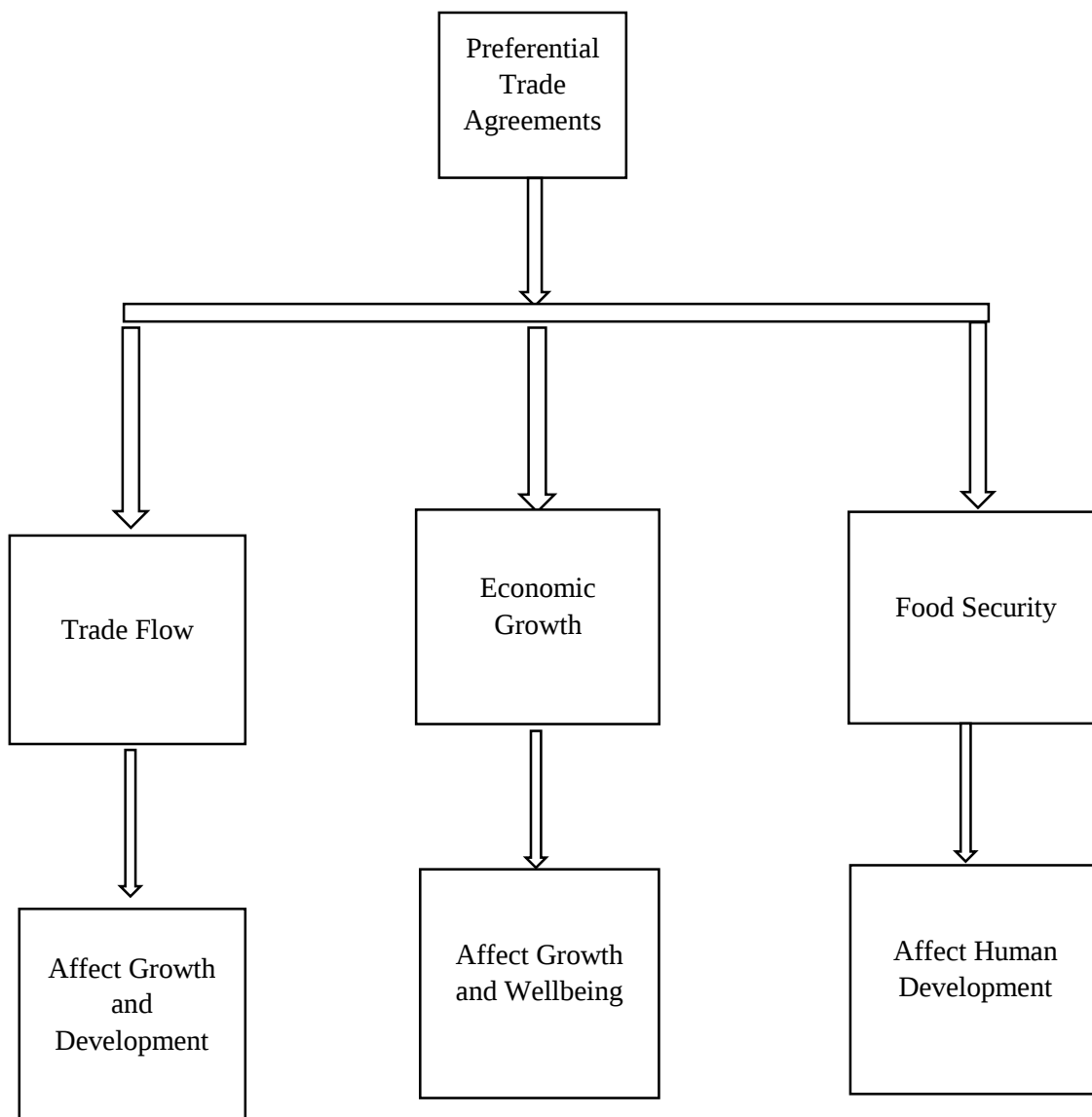


Figure 1. Effects of Preferential Trade Agreements in an Economy (Source, Author Conceptualization, 2025)

Chapter Three

Research Method

3.1 Description of the Study

Sub-Saharan Africa, with up to 49 countries accounts for only 2% of the global export and import in 2019, as North Africa, made up of only 5 countries, accounted for 1% of the continent's 3% share of global export and import in 2021 (WTO, 2022). Several reasons account for the region's lower share of global world trade, such as low trade openness as compared to the other regions and infrastructural challenges such as inadequate transport and communication networks (Abdel-Latif et al., 2025). This often leads to higher trade cost, hence making it more cost-effective for some importing countries to export goods from developed countries with robust infrastructures.

Over the past two decades, sub-Saharan Africa's main import partners have changed from advanced economies to emerging economies. The region's share of imports from advanced economies has declined from 50% in 2000 to 29% in 2020. China has emerged as important trade partner of sub-Saharan Africa, with its share of the region's import increasing from only 4% in 2000 to over 20% in 2020 (Abdel-Latif et al., 2025). The imports of consumer goods represent over 40% of the region's total imports, followed by capital goods and intermediate goods, each representing 25% of the region's total product imports (IMF, 2021). This is shown on the diagram below.

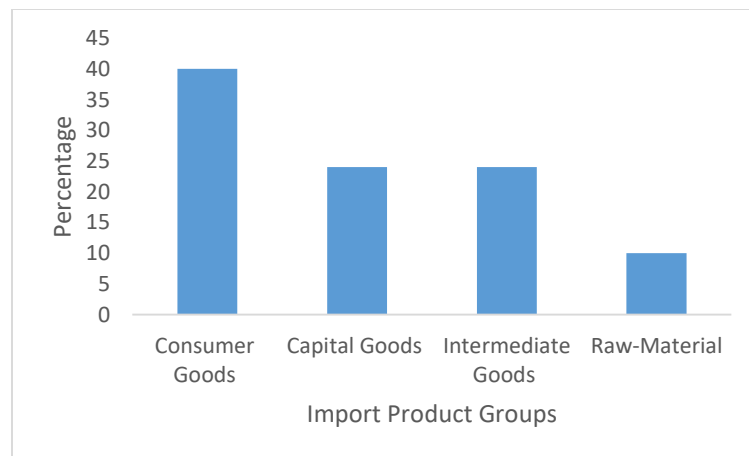


Figure 2. Sub-Sahara Africa Import Products Groups (Source; IMF, 2021)

The main exports of sub-Saharan Africa are oil, minerals and agricultural commodities. The region’s main export of raw material and commodities further underscores its vulnerability to external demand and financial shock. However, the region often lacks the means to transform its raw material into finished goods before export. Sub-Saharan Africa’s main export destinations include both emerging economies like China and advanced economies like the USA, Germany and Switzerland (Abdel-Latif, 2025). In 2021, the region’s main export goods were 43% raw material, 36% intermediate goods and 15% consumer goods (IMF, 2021). This is illustrated on the graph below.

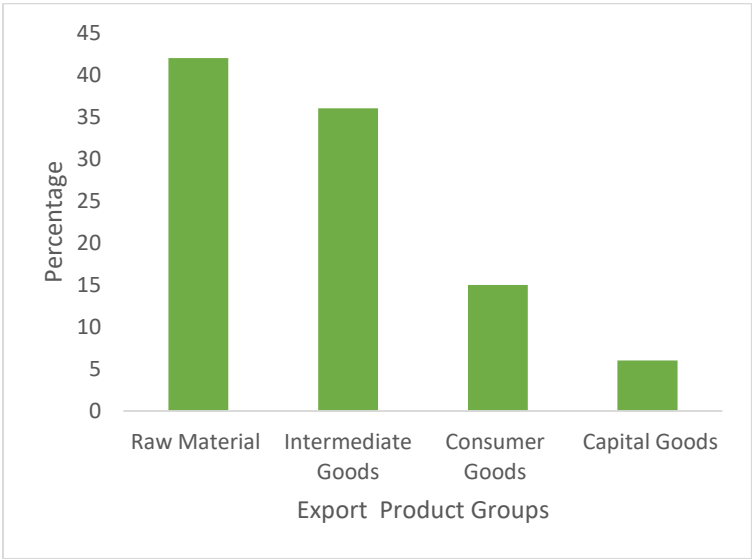


Figure 3. Sub-Sahara Africa Export Product Groups (Source: IMF, 2021)

Moreover, the growth path of the various country groups in sub-Sahara Africa differs from one country group to another. The oil-exporting sub-Sahara African countries have the highest fluctuating growth levels over time (IMF, 2024). This can be explained by the high volatility of

commodity prices at the international markets which manifests in the growth trajectory of the oil-exporting countries. This can also be explained by the fact that most of these oil-exporting countries rely entirely on oil exportation with little or no export diversification, which makes them more prone to market shocks.

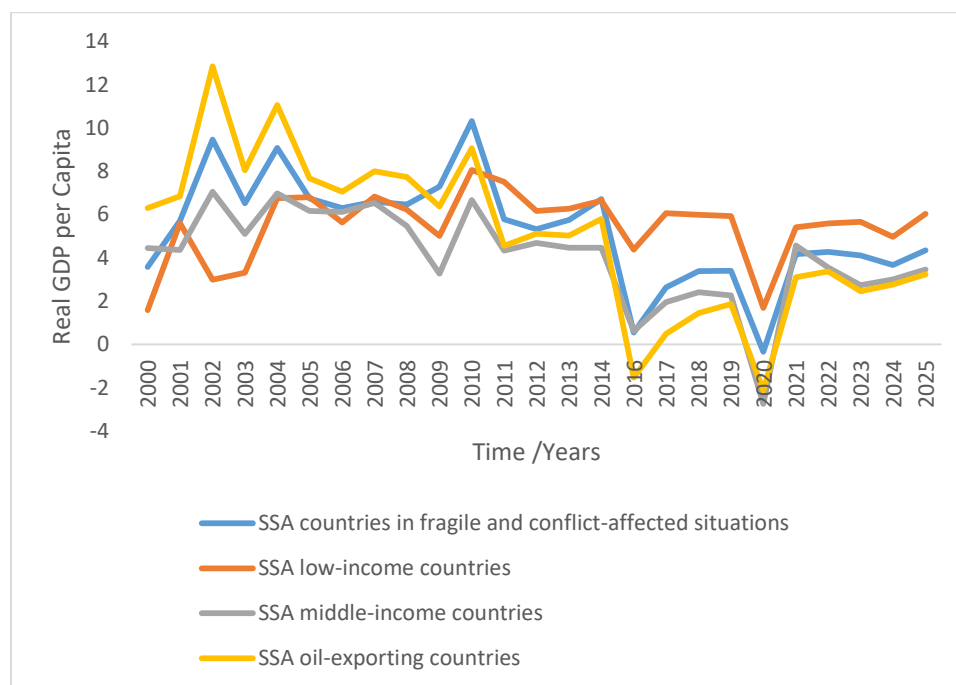


Figure 4. Growth Rate of the various sub-Saharan African Countries over time (Source: IMF, 2024)

In order to boost sub-Saharan Africa trade and to fully integrate the region into the world economy. Multilateral organizations such as the World Bank, International Monetary Fund and the World Trade organization have implemented a series of measures, such as the Aid for Trade Initiative of the World Trade Organization. Sub-Saharan Africa over the past years has received the biggest share of the Aid for Trade Initiative, with the main aim to boost the region's trade flow. Furthermore, the region has also benefited from preferential market access to advanced economies such as the USA and the EU. Despite these, the region's share of global trade remains very low, and the region continues to be the world's poorest region, with the highest number of food insecure persons (FAO, 2022). This study therefore focuses on some countries of sub-Saharan Africa that has over the years, benefited from these schemes to be able to explain the region's trade flow and their impacts on growth and poverty levels.

3.2 Sampling and Data Collection

The sub-Saharan Africa countries selected for the analysis are eligible countries for the USA Africa Growth and Opportunity Act (AGOA). The analysis is based on 22 sub-Saharan Africa countries for the period 2000 to 2022. This reference period will enable us to capture the real impacts of this preferential trade agreement on trade flow, following its implementation as from the year 2000. According to Baier and Bergstrang (2007), most trade agreements lead to significant impacts only after 10 years of their implementation. The list of the selected sub-Saharan African countries used for the study is shown on table one below.

**Table 1. List of the Eligible Sub-Sahara African Countries of the AGOA
Preferential Trade**

Country	Location
Benin	West Africa
Togo	West Africa
Zimbabwe	East Africa
Senegal	West Africa
Sierra Leone	West Africa
Malawi	East Africa
Rwanda	East Africa
Gambia	West Africa
Liberia	West Africa
Democratic Republic of Congo	Central Africa
Angola	West Central Coast of Southern Africa
Cameroon	Central Africa
Ghana	West Africa
Zambia	West Africa
Mali	West Africa

Gabon	Central Africa
Chad	Central Africa
Burkina Faso	West Africa
Guinea Bissau	West Africa
Ivory Coast	West Africa
Botswana	Southern Africa
Central Africa Republic	Central Africa

3.3 Gravity Model

This study employed a theoretically-motivated gravity equation using panel data with bilateral fixed and country- and –time effect, as suggested by Baier and Bergstrang (2007) to account the for endogeneity of preferential trade agreements (PTA). Following Anderson and Wincoop (2003) the gravity model for our analysis is stated as shown below. This framework of the gravity model enables us to obtain unbiased estimate of the parameters β_1 , β_2 , β_3 , β_4 and β_5

$$\ln(X_{ijt}) = \beta_0 + \beta_1 \ln(GDP_{it}) + \beta_2 \ln(GDP_{jt}) + \beta_3 \ln(Dist_{ij}) + \beta_4 (LANG_{ij}) + \beta_5 (ADJ_{ij}) + \beta_6 (PTA_{ijt}) - \ln P_i^{1-} - \ln P_j^{1-0} + \epsilon_{ijt} \dots \dots \dots 1$$

Where;

Depended Variable: $\ln X_{ijt}$ is the value of merchandise trade flow from exporter i to importer j.

Independent Variables: $Dist_{ij}$ is the distance between the economic centers of country i and country j, $\ln GDP_{it}$ and $\ln GDP_{jt}$ are the gross domestic products of the importing and exporting country respectively, $LANG_{ij}$ is a binary variable assuming the value of 1 if country i and country j share a common language and 0 otherwise, ADJ_{ij} is a binary variable which takes the value of 1 if country i and country j share a common land border and 0 otherwise, PTA_{ij} is binary variable which takes the value of 1 if country i and country j have a preferential trade agreement and 0

otherwise, $\ln P_i^{1-0}$ and $\ln P_j^{1-0}$ are the multilateral resistant terms and ϵ_{ij} is assumed to be the log naturally distribute error term.

For the analysis we used the import value of the USA imports from the selected sub-Sahara Africa countries. This is based on Baier and Bergstrand (2007) and Didia et al. (2015) argued that import values are more reliable than export values for the assessment of the effects of preferential trade agreements between high income and low income countries.

3.3.1 Predicted Signs of the Variables of the Trade Flow Model

Table 2 below shows the predicted signs of the explanatory (independent variables) of the trade flow model (Model 2). The predicted signs are based on the previous empirical studies.

Table 2. Predicted Sign of the Independent Variables of the Gravity Model

Independent Variables	Predicted Signs
Preferential Trade Agreements (PTA)	Positive
Distance (Dist)	Negative
Gross Domestic Product (GDP_{it})	Positive
Gross Domestic Product (GDP_{jt})	Positive
Common Language (LanG)	Positive

3.4 Growth Model

The Arellano-Bond estimator will be used to estimate the effects of agricultural trade on economic growth. An advantage of this model is that it enables us to control for permanent unobserved confounding variations. Another advantage of this model is that it enables us to draw conclusions from heterogeneous panels by considering long-run equilibrium relations (Zahonogo, 2016).

$$Y_{it} = \alpha_i + \beta_1 Y_{it-1} + \beta_2 Invest_{it} + \beta_3 Inflation_{it} + \beta_4 Pop_{it} + \beta_5 Inequality_{it} + \beta_6 remittance_{it} + \lambda_{1i} ATF_{it} + \epsilon_{it} \dots 2$$

Where;

Dependent Variable: Y_{it} is the growth rate of country i at time t

Independent Variables: Invest_{it} (Investment rate) is the rate of investment of country i at time t, InFlat (Inflation Rate) is the inflation rate of country i at time t, Pop_{it} (Population Growth Rate) is the population growth rate of country i at time t, Inequa_{it} (Level of Inequality) is the level of inequality of country i at time t, remit (Remittance flow) is the remittance level of country i at time t, ATF_{it} (Agricultural Trade Flow) is the agricultural trade flow of country i at time t, ε_{it} is an error term and a_i reflects the country specific effects.

3.4.1 Predicted Signs of the Variables of the Growth Model

Table 3 below shows the predicted signs of the explanatory (independent variables) of the growth model (Model 3). The predicted signs are based on the previous empirical studies.

Table 3. Predicted Sign of the Independent Variables of the Growth Model

Independent Variables	Predicted Signs
Agricultural Trade Flow	Positive
Inequality	Negative
Investment	Positive
Population growth	Positive/Negative
Inflation Rate	Negative
Remittance flow	Positive

3.5 Poverty Model

The Arellano-Bond estimator will be used to estimate the effects of agricultural trade flows on poverty levels in sub-Sahara Africa. An advantage of this model is that it enables us to control for permanent unobserved confounding variations. Another advantage of this model is that it enables us to draw conclusions from heterogeneous panels by considering long-run equilibrium relations (Zahonogo, 2016).

$$PV_{it} = a_i + \beta_1 PV_{it-1} + \beta_2 Invest_{it} + \beta_3 Remitt_{it} + \beta_4 Pop_{it} + \beta_5 Inequa_{it} + \lambda_{1i} ATF_{it} + \varepsilon_{it} \dots\dots 4$$

Where;

Dependent Variable: PV_{it} is the poverty level, (measured as the poverty headcount ratio of country i at time t)

Independent Variables: $Invest_{it}$ (Investment rate) is the investment rate of country i at time t , $InFlat$ (Inflation Rate) is the inflation rate of country i at time t , Pop_{it} (Population Growth Rate) is the population growth rate of country i at time t , $Inequa_{it}$ (Level of Inequality) is the level of inequality of country i at time t , $Remitt_{it}$ (Remittance Flow) is the level of remittances flow to country i at time t , ATF_{it} (Agricultural Trade Flow) is the agricultural trade flow of country i at time t , ε_{it} is an error term and a_i reflects the country specific effects.

3.5.2 Predicted Signs of the Variables of the Poverty Model

Table 4 below shows the predicted signs of the explanatory (independent variables) of the poverty model (Model 4). The predicted signs are based on the previous empirical studies.

Table 4. Predicted Sign of the Independent Variables of the Poverty Model

Independent Variables	Predicted Signs
Agricultural Trade Flow	Positive /Negative
Inflation	Positive
Investment	Negative
Population growth	Positive/Negative
Inflation Rate	Positive
Remittance Flow	Negative

3.6 Data Source and Description of the Variables

Table 5 below shows the description and the sources of the main variables used in the analysis.

Table 5. Description of the Variables

Variables	Description	Source
PTA(Preferential Trade Agreement)	Non- Reciprocal Preferential Trade Agreements with sub-	WTO list of PTAs

	Sahara Africa (1 if pair has a preferential trade agreement in year t, and =0 otherwise	
PX (Import value from country i to country j)	Value of Merchandised trade flow from export i to importer j	WTO, FAO, World Integrated Trade Solution
Share Land	A dummy variable which is equal to 1 if a country share a land border and 0 otherwise	CIA World Fact Book
Common Language	A dummy variable which take the value of 1 if the country pair share the same language and 0 otherwise	CIA World Fact Book
GDP	Real Gross Domestic Product in US Dollars	World Bank Development Indicators
Distance	Distance between the capital city of the country pair	CIA World Fact Book
Poverty Level (PV)	Head Count Poverty Index of country i at time t	World Bank Development Indicators
Population Growth	Rate of population growth of country i	World Bank Development Indicators
Inflation	Country i rate of inflation	World Bank Development Indicators
Inequality	Gini coefficient of country i inequality rate	World Bank Development Indicators
Remittance Flow	Level of remittance flow to country i at time t	World Bank Development Indicator
Investment Rate	Rate of investment of country i at time t	World Bank Development Indicator

Chapter Four

Results and Discussions

4.1 Descriptive Results

4.1.1 Trade Flow of sub-Sahara Africa

The analysis shows that the export value of sub-Saharan Africa has increased substantially over time. Furthermore, the analysis shows that the export value of sub-Saharan Africa changed significantly over time. For example, it is observed that the export value of sub-Saharan Africa rose from the periods 2000 to 2007 but fell between the periods 2008 to 2010. The fall in the export value of sub-Saharan Africa between the periods 2008 and 2010 can be attributed to the global financial crisis of 2008, which probably had a negative impact on trade. More so, the analysis shows that the export value of sub-Saharan Africa increased again in the early 2010s and remained relatively stable between the periods 2010 and 2015. In addition, the data shows that the export value of sub-Saharan Africa fell again between the periods 2015 and 2016 and thereafter began to rise again. More so, the export value of the region fell between the periods 2019 and 2020. This fall can be attributed to the global Covid-19 pandemic, which had a negative effect on global trade flow. More so, the analysis shows that the export value of the region began rising again since the year ending 2021. These findings are shown on Figure 5 below.

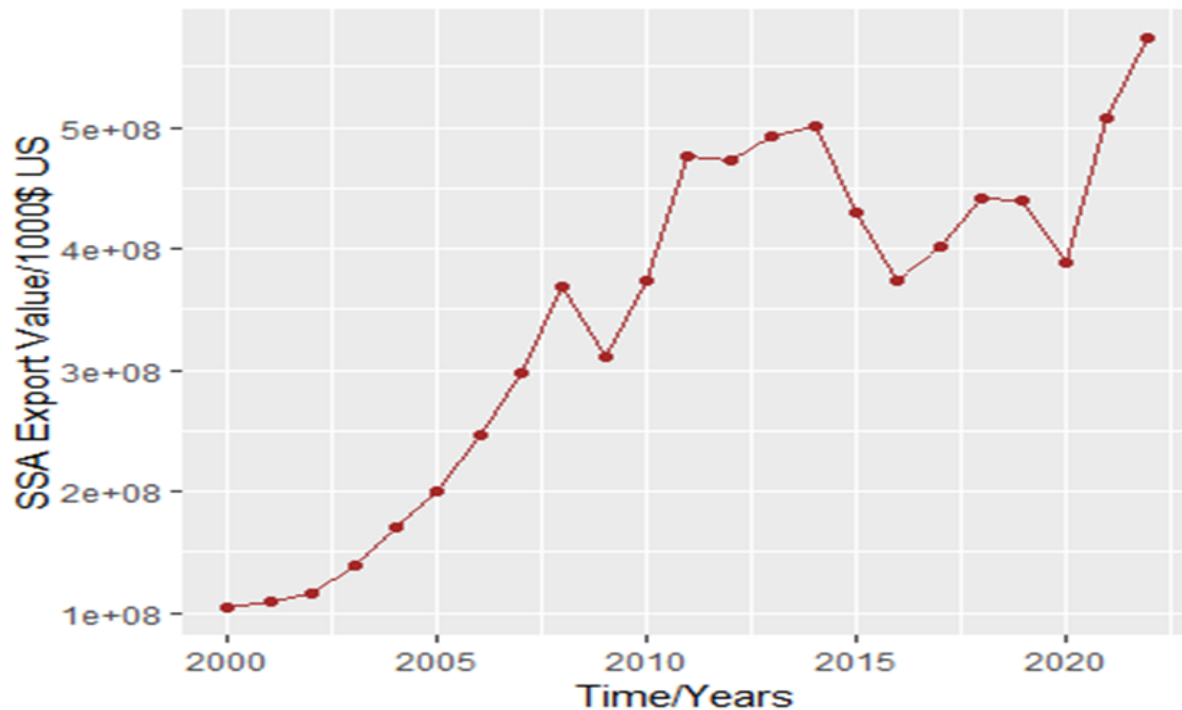


Figure 5. Export Values of sub-Sahara Africa over the Years (2000-2022)

Moreover, for the import value of sub-Saharan Africa, the analysis shows that the import value of the region increased with much variation over time. For example, the import values of the region rose substantially between the periods 2000 and 2007 and thereafter began falling until the year 2010. This fall can be explained by the global financial crisis of 2008, which most affected the imports of the region. More so, the analysis shows that the region's imports began increasing again from the early 2010s and remained relatively constant between the years ending in 2010 and 2015. Furthermore, the analysis shows that the region's imports fell again from the year ending in 2014 until 2015 and thereafter rose again from the year ending in 2015 until 2018. In addition, the data shows that the import values of sub-Saharan Africa fell substantially between the periods 2019 and 2020 and thereafter have been on a rise. The fall in the export values between the periods 2019 and 2020 can be due to the Covid-19 pandemic, which had a negative impact on the region's imports. These findings are shown in Figure 6 below.



Figure 6. Import Values of sub-Sahara Africa over Years (2000-202)

4.1.2 Trade Flow between the USA and sub-Sahara Africa

The analysis shows that sub-Saharan Africa's exports to the USA increased considerably between the periods 2000 and 2008. The increased export of sub-Saharan Africa to the USA within these periods can be explained by the implementation of the Africa Growth and Opportunity Act (AGOA). The AGOA gave some eligible sub-Saharan African countries free access to the USA market and hence could contribute to improving trade flow between sub-Saharan Africa and the USA. Furthermore, the analysis shows that sub-Saharan Africa's exports to the USA dropped substantially in 2009. This can be due to the global financial crisis of the year 2008, which had severe negative effects on trade flow between sub-Saharan Africa and the USA.

Moreover, the data shows that sub-Saharan Africa's exports increased substantially between the periods 2010 and reached the peak in 2014. This rise can further be explained by the gains from the AGOA, as Baier and Bergstrang (2007) found that the gains from free trade agreements increased substantially with time. In addition, the data shows that the sub-Saharan Africa's exports to the USA decreased within the periods 2015 and 2016 and thereafter rose again from the year

2017. Moreover, the data shows that sub-Sahara Africa export to the USA remained relatively constant between the periods 2018 and 2019 and thereafter fell in the year 2020. The fall in the export value of sub-Saharan Africa in the year 2020 can be explained by the Covid-19 pandemic which had a negative effect on trade flows due to measures implemented by governments to control the spread of the disease. More so, the analysis shows that sub-Saharan Africa's exports to the USA began increasing again in the year 2021.

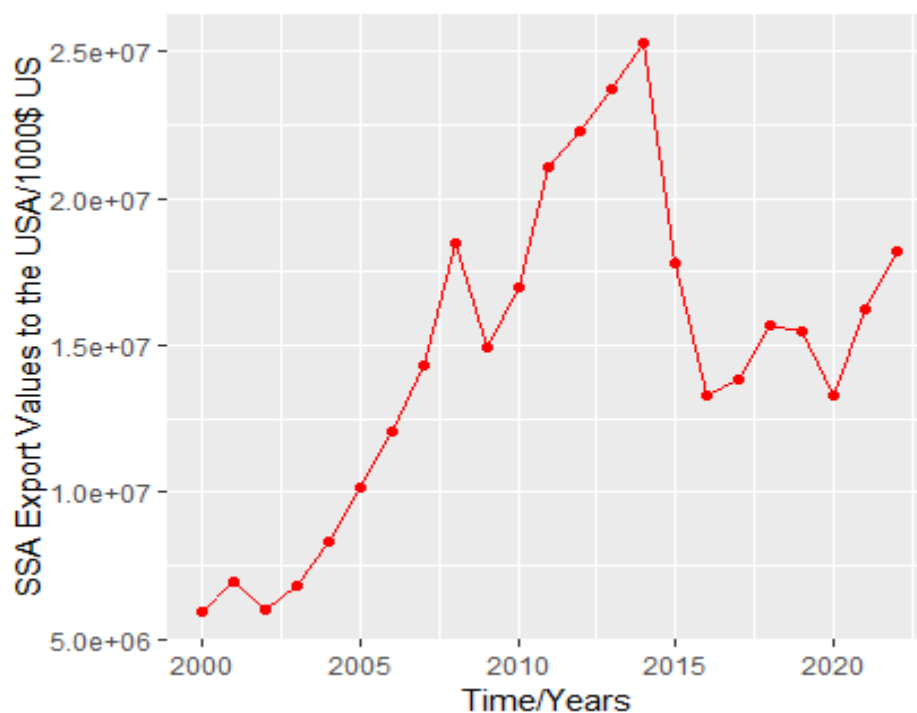


Figure 7. Sub-Sahara Africa Export Value to the USA over Years (2000-2022)

On the other hand, the analysis shows that USA imports from sub-Sahara Africa changed considerably over time. The analysis shows that the USA imports from sub-Saharan Africa increased substantially between the periods 2002 and 2008. This can be explained by the various trade agreements signed between the USA and some sub-Saharan African countries, among them the AGOA, which likely had a positive effect on trade flow. In addition, the analysis shows that USA imports from sub-Saharan Africa declined from the year ending 2008 to the year 2009 and thereafter between the periods 2010 and 2011. The decline observed between the years 2008 and 2009 can be due to the global financial crisis that had a negative impact on trade flow between the

USA and sub-Saharan Africa. Also, the analysis shows that USA's imports from sub-Saharan Africa countries consistently decline between the periods 2011 and 2015. This decline can be explained by changing trade partners, especially with sub-Saharan African countries trading much with China and other trade partners. In addition, the data shows that USA imports from sub-Saharan Africa remained relatively constant between the periods 2015 and 2020 and thereafter have been showing some small increase over time. This is shown on Figure 10 below.

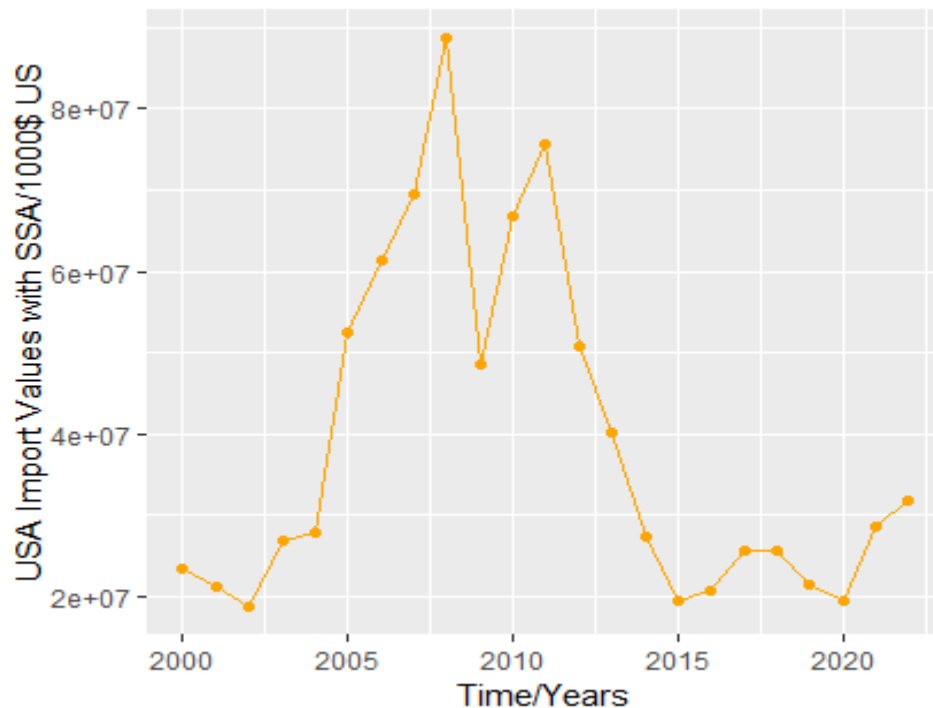


Figure 8. USA import Value with sub-Sahara Africa over the Years (2000-2020)

4.1.3 Trend of the Annual Growth Rate of sub-Sahara Africa

The analysis shows that the annual growth rate of sub-Sahara African changed considerably over time. The data shows that the annual growth rate of the region increased significantly between the periods 1990 and 1995 but began falling from the year ending 1995 until the year 1998. More so, the analysis also shows that the average growth rate of the region increased between the periods 2000 and 2007 and thereafter fell from the year 2008 to the year 2009. This fall can be associated with the global financial crisis of the year 2008, which had a negative impact on the growth rate of the region. The analysis further shows that the region grew faster after the global financial crises to reach a peak in 2010.

Moreover, the region's growth rate slow down again between the period 2011 and 2012 and thereafter grew again between the period 2013 and 2014. In addition, the analysis further shows that the region's growth rate increased between the period 2015 and 2016 and remained relatively constant within the period 2017 and 2018 and thereafter fell considerably between the periods 2019 and 2020. The data shows that the region's growth rate in 2020 fell below levels observed 1990s. This is most probably due to the Covid-19 pandemic, which had a negative impact on economic activities and contributed significantly to the economic downturn. Furthermore, the analysis shows that the economy of sub-Saharan Africa recovered from the pandemic and regained levels of growth similar to the pre-pandemic since the year 2021. These findings are shown in Figure 11 below.

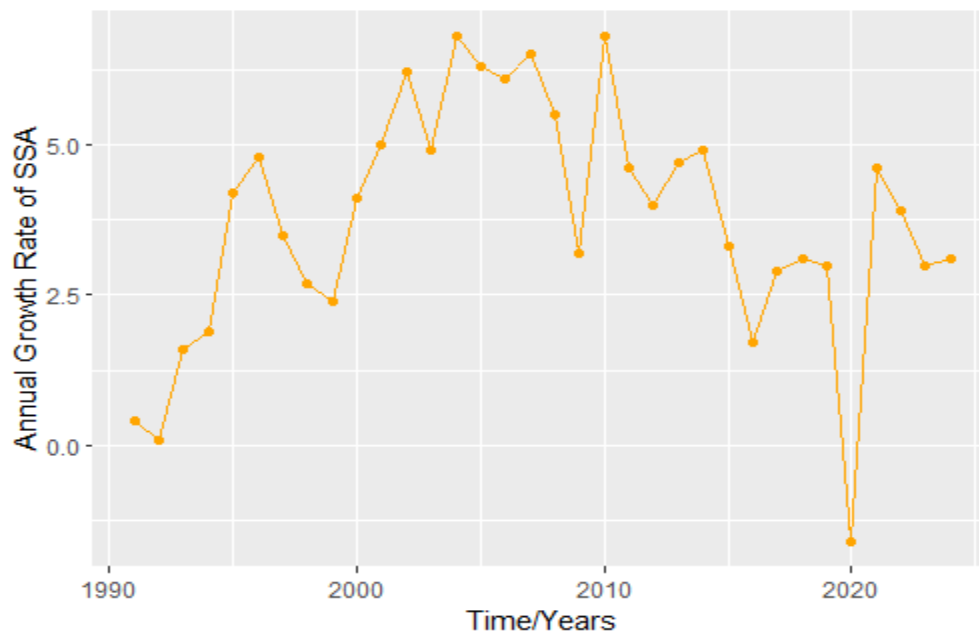


Figure 9. Growth Rate of sub-Sahara Africa over the Years (1990-2022)

4. 2 Inferential Results

4.2.1 Effect of the African Growth and Opportunity Act (AGOA) on trade flow between Sub-Sahara Africa and USA

We estimated the gravity model of trade using the fixed effect estimator with country and year fixed effects to be able to control for the time-invariant unobserved heterogeneity. Table one shows the fixed effect estimation results.

Table 6. Estimation of the effect of AGOA on trade flow between the USA and Sub-Sahara Africa

Variable	Coefficient
<u>Dependent Variable</u>	
USA Imports	
<u>Independent Variables</u>	
PTA(AGOR)	0.128 (0.120)
DlnGDP _d	0.796* (.042)
DlnGDP ₀	1.817 (0.962)
DlnDistance	-5.001*** (0.289)
Constant	0.227 (0.164)
Overall R ²	0.160
N ⁰ of Observations	484

Notes: Standard errors in Parentheses. ***, ** and * indicating statistical significance at 1%, 5% and 10%.

The findings show that the preferential trade agreement (AGOA) between the USA and beneficiary sub-Saharan African countries has a positive effect (0.1128) on trade flow between the USA and the beneficiary sub-Saharan African countries. Moreover, the coefficient of the per capita GDP of the beneficiary sub-Saharan African countries is positive (1.817), indicating that if the per capita GDP of the selected sub-Saharan African countries increases by 1%, trade flow (export to the USA) will increase on average by 1.817%, assuming all other variables of the model are constant. Furthermore, the coefficient of the per capita GDP of the USA is positive (0.796) and is not statistically significant. This implies that a 1% increase in the USA per capita GDP will, on average, increase imports from sub-Saharan Africa by 0.796%, assuming all other the variables of the model are constant. In addition, the coefficient of the distance between the two countries is negative (-5.001) and is significant at 1%. This indicates that the farther the distance between the USA and the selected sub-Saharan African country, the lower the trade flow.

4.2.2 Effect of agricultural trade flow (export) on poverty levels in sub-Sahara Africa

The study estimated the effects of agricultural export on poverty levels in the selected sub-Saharan Africa countries using the Arellano-Bond estimation and the fixed effect estimator.

Table 7. Estimation of the effects of agricultural trade flow on poverty levels in sub-Sahara Africa

Variable	Arellano-Bond Estimation	Fixed Effect Estimation
<u>Dependent Variable</u>		
Poverty _t		
<u>Independent Variables</u>		
Δ Poverty _(t-1)	0.938 (0.022)	-
Population growth	-1.078*** (0.359)	1.948 (0.168)
Inflation	0.005 (0.003)	0.0502** (0.012)
Investment	-0.030 (0.023)	-0.051 (0.134)
Remittance	-0.056 (0.199)	-0.005 (0.332)
Agricultural Export	-0.556 (0.459)	-0.108 (2.326)
Constant	1952.2 (429.8)	102.72 (97.14)
Overall R ²		0.11
N ⁰ of Observation	462	484

Notes: Standard errors in Parentheses. ***, ** and * indicating statistical significance at 1%, 5% and 10%.

The findings show that agricultural trade flow (export) has a negative effect on poverty levels in sub-Saharan Africa. The coefficient of agricultural export of the selected sub-Saharan African countries with the Arellano-Bond estimation is -0.556. This indicates that a 1% increase in the agricultural export of the selected sub-Saharan African countries will, on average, reduce poverty levels by 0.556%, assuming all the other variables of the model are constant. Using the fixed effect estimator, the analysis again reveals a negative effect of agricultural trade flow on poverty levels with a relatively smaller impact (-0.108). Moreover, the coefficient of inflation with the fixed effect estimator is positive (0.502) and is statistically significant at 5% level. This implies that a 1% increase in the inflation levels of the selected sub-Saharan African countries will, on average, increase poverty levels by 0.50%. With the Arellano-Bond estimation, the analysis again revealed a positive effect (0.005) of inflation on the poverty levels of the selected sub-Saharan African countries. In addition, the coefficient of remittances is negative (-0.056) with the Arellano-Bond estimation. This shows that a 1% increase in remittance levels in the selected sub-Saharan African countries will, on average, reduce poverty levels by 0.056%, assuming all other variables are constant.

The fixed effect estimator revealed similar results, with remittance flow having a negative effect (-0.005) on the poverty levels of the selected sub-Saharan African countries as well. The coefficient of investment rate is negative (-0.030) with the Arellano-Bond estimation and not significant. This implies that holding all the other variables of the model constant, a 1% increase in the investment rate of the selected sub-Saharan African countries will, on average, reduce poverty levels by 0.03%. We obtain similar results using the fixed estimator, with investment rate having a negative effect on the poverty levels of the selected sub-Saharan African countries.

4.2.3 Effect of agricultural trade flow (export) on Economic Growth in sub-Sahara Africa

The analysis shows that agricultural trade flow has a positive effect on the economic growth of the selected sub-Saharan African countries. The coefficient of agricultural export is positive (0.006) and is statistically significant at 5% level when we used the Arellano-Bond estimator. This implies that a 1% increase in the agricultural export of the selected sub-Saharan African countries will, on average, increase economic growth by 0.006%, assuming all the other variables of the model are constant.

Table 8. Estimation of the effects of agricultural trade flow on economic growth in sub-Saharan Africa

Variable	Arellano-Bond Estimation	Fixed Effect Estimation
<u>Dependent Variable</u>		
ΔGDP_{t-1}		
<u>Independent Variables</u>		
ΔGDP_{t-1}	0.031 (0.070)	-
Population growth	0.029*** (0.008)	0.023** (0.009)
Inflation	-0.0007 (0.0003)	-0.0009 (0.0009)
Investment	0.00430 (0.005)	0.0005 (0.006)
Remittance	0.131** (0.006)	0.012*** (0.003)
Agricultural Export	0.006** (0.0005)	0.007*** (0.002)
Inequalities	-0.001 (0.009)	-0.0009 (0.0009)
Constant	102.72 (97.14)	0.315 (1.391)
Overall R ²		0.05
N ⁰ of Observation	462	484

Notes: Standard errors in Parentheses. ***, ** and * indicating statistical significance at 1%, 5% and 10%.

We obtained similar findings using the fixed effect estimator; the coefficient of agricultural export is again positive (0.007) and is statistically significant at 1% level. Context specific, agricultural

exports has a positive effect on economic growth in sub-Saharan African. Moreover, the coefficient of remittances is positive (0.131) and is statistically significant at 5% level using the Arellano-Bond estimator. This shows that a 1% increase in remittance flow to sub-Saharan Africa will, on average, increase economic growth by 0.131%. Using the fixed effect estimator, we obtained similar results, the coefficient of remittance flow shows a positive (0.012) and a statistically significant effect on the economic growth of the selected sub-Saharan African countries. Furthermore, the coefficient of inflation is negative (-0.0007) and significant when we used the Arellano-Bond estimator. This shows that a 1% increase in the inflation rate of the selected sub-Saharan African countries will, on average, decrease growth by 0.0007%.

With the fixed effect estimator, the coefficient of the inflation rate is again negative. Also, the coefficient of population growth rate with the Arellano-Bond estimator is positive (0.029) and is statistically significant at 5% level. This shows that a 1% increase in the growth rate of the selected sub-Saharan African countries will, on average, increase economic growth by 0.029%. We obtained similar findings with the fixed effect estimator, with the coefficient of population growth rate having a positive (0.023) and a statistically significant effect on the growth rate of the selected sub-Saharan African countries. Moreover, the coefficient of inequalities is negative (-0.001) and is not statistically significant when we used the Arellano-Bond estimator. This indicates that a 1% increase in the rate of inequalities of the selected sub-Saharan African countries will, on average, reduce economic growth by 0.001%, assuming all the other variables of the model are constant. Using the fixed effect estimator, we obtain similar results with the coefficient of inequalities showing a negative effect on economic growth.

4.3 Discussions of the Findings

This study assessed the effect of preferential trade agreements on trade flow, economic growth and poverty levels in sub-Sahara African with a focus on the USA African Growth and Opportunity Act (AGOA). The analysis revealed that the preferential trade agreements (AGOA) has a positive effect on trade flow between the USA and sub-Saharan Africa. The increased trade flow can be explained by the duties and quotas free access of sub-Saharan African exports to the USA markets. Our findings are similar to the findings of Didia et al. (2014), who examine the African Growth and Opportunity Act (AGOA) and US trade relations with sub-Saharan Africa and reveal that receiving the AGOA has a strong positive and significant effect on overall trade with the USA.

Furthermore, our findings are consistent with the findings of Frazer & Biesebroeck (2010), who assessed the trade growth under the African Growth and Opportunity Act using a triple difference-in-difference estimation and found that AGOA has a positive effect on trade flow between the USA and beneficiary sub-Saharan African countries.

Moreover, our findings corroborate the findings of Lambert & Mckoy (2009), who assessed the trade creation and diversion effects of preferential trade associations on agricultural and food trade and found that PTAs increased inter-bloc trade in both sectors. In addition, our findings are in line with the findings of Spilker et al (2018), who revealed that firms exporting heterogeneous products such as textile products to the USA benefited from preferential trade agreements. In addition, our findings are consistent with the findings of Spilker et al. (2018), who revealed that firms exporting heterogeneous products gain more from preferential trade agreements.

Furthermore, our analysis shows that agricultural trade flow has a negative effect on poverty levels in sub-Saharan Africa. This can be explained by the fact that more trade stimulates the liberalization of the domestic financial sector and enhances the opportunities for lending diversification, which can have a significant impacts on poverty levels (Ashraf, 2018). This can also be explained by the fact that greater exports create more job opportunities (Irz et al., 2001) and hence can contribute to poverty reduction. Moreover, increased agricultural exports can contribute to the expansion and the mechanization of agricultural production in low-income countries and hence lead to higher output, which has a direct effect on poverty levels. Estudillo & Otsuka (1999) revealed that raising agricultural production increased farm wages by 39% in Central Luzon. This can also explain the negative effect of agricultural export on poverty levels in the selected sub-Saharan African countries in this study.

Also, in the rural areas where the majority of the world's poor people live and practice agriculture as their main source of livelihood, increasing agricultural exports provides new markets to the farmers and hence can contribute to improving farm income and poverty reduction (Irz et al., 1999). Our findings are consistent with the findings of Goff and Singh (2014), who examine the impact of trade on poverty reduction in Africa, using a panel of African countries from 1981 to 2010, and reveal that trade openness tends to reduce poverty in countries where the financial sector is deep, educational levels are high and institutions are strong. Also, our findings can also be explained by the fact that a growth in the agricultural sector, which employs the majority of the

poor in sub-Saharan Africa (Goff & Singh, 2014) has the highest poverty reducing effect as compared to a growth in the other sectors of the economy. That is agriculture is the most important contributor to poverty reduction in developing countries like in sub-Saharan Africa (Cervantes-Godoy & Dewbre, 2010)

Moreover, our findings corroborate the findings of Gnangnon (2023), who assessed the effect of unilateral trade preferences on the poverty reduction of the beneficiary countries and found that an increase in the utilization rates of both Generalized System of Preferences and other trade preferences is associated with poverty reduction in beneficiary countries, with the magnitude of the effect being higher for least developed countries. Also, our findings are in line with the notion that trade openness can contribute to improving farm productivity which has a direct effect on poverty (Datt & Ravallion, 2002).

However, our findings contrast with the findings of Fambeu (2021), who examine the effect of trade openness on poverty reduction in the non-oil producing sub-Saharan Africa countries and found that trade openness has no impact on poverty levels. Several factors can contribute to explain this difference. Firstly, the time period for the study is relatively short (2005-2016), as poverty reduction is very persistent in time. Secondly, the study didn't account for time invariant unobserved heterogeneity, which could also affect the finding of the study.

Furthermore, our findings show that agricultural trade flow has a positive and a statistically significant effect on the economic growth of the selected sub-Saharan African countries. This can be due to the existing notion that greater trade openness promotes private entrepreneurship, attract foreign investment, fosters learning-by-doing and favours the acquisition of new knowledge and technologies, which can lead to an increase in economic growth (Mullings & Mahabir, 2018). Our findings are consistent with the findings of Selinsgrove & Owoye (1998), who examined the effect of trade liberalization on economic growth in Africa and found that trade liberalization has a positive effect on the economic growth of 10 out of the 12 sub-Saharan Africa countries.

Moreover, our findings corroborate the findings of Zohonogo (2016), who examined the relationship between trade and economic growth in sub-Saharan Africa and revealed that there is a threshold below which greater trade openness has beneficial effects on economic growth and above which the trade effect on growth declines. Also, our findings are in line with the findings of Bruecker & Mederman (2015), who estimated the effect of trade openness on economic growth in

sub-Saharan Africa and revealed that trade openness has a significant positive effect on economic growth in sub-Saharan Africa. In addition, our findings are consistent with the findings of Frankel & Romer (1999), who revealed that trade openness has a positive and significant effect on income. Also, the findings of this study are similar with the findings of Keho & Wang (2017), who revealed that trade openness has a positive effect on economic growth in Cote D'Ivoire in both the long run and the short run. They also found a strong complementarity between trade openness and capital formation that promotes growth.

Chapter Five

Policy Implication and Conclusion

5.1 Policy Implications

The findings of this study reveal that preferential trade agreements (AGOA) have a positive effect on trade flow between the USA and sub-Saharan Africa. These findings are consistent with several other studies (Frazer & Biesebroeck, 2010; Didia et al., 2014). This indicates that preferential trade agreements with sub-Saharan African countries can contribute to improving the region's share of international trade flow.

Furthermore, the findings of this study reveal that agricultural exports has a positive effect and a statistically significant effect on the economic growth of the selected sub-Saharan African countries. These findings are in line with the export-led growth policies which assume that more trade liberalization is a vector of economic growth. The findings of this study demonstrate the important role of agricultural trade flow on the economic growth process of the selected sub-Saharan African countries.

Moreover, our analysis revealed that agricultural trade flow has a negative effect on poverty levels in the selected sub-Saharan Africa countries. This shows that transforming sub-Saharan African agricultural production systems from a subsistence farming system to a more commercialized farming system with more access to foreign markets can stimulate growth and poverty reduction in the region.

5.2 Conclusion

The main purpose of this study was to assess the effects of preferential trade agreements on trade flows, economic growth and poverty reduction in sub-Saharan Africa. The main motivation for this study is that the number of preferential trade agreements with sub-Saharan African countries has continued to increase over time, but the region remains the world region with the lowest share of international trade flow and with the highest level of poverty. The main objective of this study was to assess the effects of preferential trade agreements (AGOA) on trade flows, economic growth and poverty reduction in 22 selected sub-Saharan African countries. We found that preferential trade agreements (AGOA) has a positive effect on trade flow between the USA and

the selected sub-Saharan African countries. The analysis further revealed that agricultural trade flows (exports) has a positive and a statistically significant effect on the economic growth of the selected sub-Saharan African countries.

This study mostly focused on economic factors such as countries GDP, distance, inequalities, inflation, investment, etc., but didn't account for the role of institutions and corruption, which can also affect a country's trade and economic growth. We consider this to be a useful extension of future research. Nevertheless, the findings of this study provide important insights on the role of preferential trade agreements and agricultural trade flows on sub-Saharan Africa trade, economic growth and poverty reduction.

References

- Aragie, E., Balie, J., Morales, C., & Pauw, K. (2023). Synergies and trade-offs between agricultural export promotion and food security: Evidence from African economies. *World Development*, 172, 106368
- Adarov, Amat., & Ghodsi, M. (2021). The impacts of the Eurasian Economic Union-Iran preferential trade agreement on mutual trade at aggregate and sectoral levels. *Eurasian Economic Review*, 11:125-157
- Achajanzadeh-Darzi, P., Bellora, C., Bureau, J. C., & Goburdhun, A. (2015). Assessing EU trade preference for developing countries development and food security. FOODSECURE Working Paper No 35
- Borchert, I. (2009). Trade diversion under selective preferential market access. *Canadian Journal of Economics*, 8
- Bao, X., & Wang, X. (2019). The evolution and reshaping of globalization: A perspective based on the development of regional trade agreements. *China & World Economy*, 27(1), 51-71
- Brueckner, M., & Lederman, D. (2015). Trade openness and economic growth: Panel data evidence from sub-Saharan Africa. *Economica*, 82, 1302-1323.
- Cervantes-Godoy., & Dewbre, J. (2010). Economic importance of agriculture for poverty reduction. OECD Food, Agriculture and Fisheries Working Papers. N° 23, OECD Publishing, OECD.
- Diaz-Mora, C., Esteve-Perez, S., & Gil-Pareja, S. (2023). A re-assessment of the heterogeneous effects of trade agreements using intra-national trade flows. *Economic Analysis and Policy*, 77, 940-95. <https://doi.org/10.1016/j.eap.2023.01.008>
- Datt, G., & Ravallion, M. (2002). Is India's economic growth leaving the poor behind. *Journal of Economic Perspectives*, 16 (3), 89-108
- Didia, D., Nica, M., & Yu, G. (2015). The gravity model, Africa Growth and Opportunity Act (AGOA) and the US trade relations with sub-Sahara Africa. *The international Journal of Trade and Economic Development*, 24(8): 1130-1151
- Eicher, S. T., & Henn, C. (2011). In search of WTO trade effects: preferential trade agreements promote trade strongly, but unevenly. *Journal of International Economics*, 82(2), 137-153. <https://doi.org/10.1016/j.jinteco.2010.12.002>
- Edwards, S. (1993). Openness, trade liberalization, and growth in developing countries. *Journal of Economic Literature*, 1358-1393

- Fambeu, A. H. (2021). Poverty reduction in sub-Saharan Africa: The mixed role of democracy and trade openness. *The Journal of International Trade and Economic Development*, 30 (8), 1244-1262
- Francois, J., Hoekman, B., & Manchin, M. (2006). Preference erosion and multilateral trade liberalization. *The World Bank Economic Review*, 20 (2), 197-216
- Faber, G., & Orbie, J. (2009). Everything but arms: Much more than appears at first sight. *Journal of Common Market Studies* 47 (4), 767-787
- Frazer, G., Biesebroeck, J. V. (2010). Trade growth under the African Growth and Opportunity. *The Review of Economics and Statistics*. 92(1): 128-144
- Frankel, J. A., & Romer, D. (1999). Does trade cause growth. *American Economic Review*, 89(3), 379-399
- Formaini, R. L. (2004). David Ricardo: Theory of free international trade. *Economic insight*.
- Felbermayr, G., Heid, B., Larch, M., & Yalcin, E. (2015). Macroeconomic potentials of transatlantic free trade: A high resolution perspective for Europe and the world. *Economic Policy*, 30(83), 491-537
- Gnangnon, S. H. (2023). Do unilateral trade preferences help reduce poverty in beneficiary countries? *International Journal of Economic Policy Studies*, 17(1), 249-288
- Gil-Pareja, S., Llorca-Vivero, R., & Martinez-Serrano, J. A. (2014). Do nonreciprocal preferential trade agreements increase beneficiaries export. *Journal of Development Economics*, 107, 291-304.
- Grant, J.H., & Lambert, D.M. (2008). Do regional trade agreements increase member's agricultural trade? *American Journal of Agricultural Economics*, 90(3), 765-782
- Keho, Y., & Wang, G. M. (2017). The impacts of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economic & Finance*, 5(1)
- Kishore, P. (2017). A critical analysis of conditionalities in the generalized system of preferences. *Int.Law* 54, 98-133
- Hur, J., & Park, C. (2012). Do Free Trade Agreements Increase Economic Growth of the Member countries. *World Development*, 40, 7, 1283-129. <http://dx.doi.org/10.1016/j.worlddev.2011.12.006>
- Lambert, D., & McKoy, S. (2009). Trade creation and diversion effects of preferential trade associations on agriculture and food trade. *Journal of Agricultural Economics*, 60(1), 17-39
- Le Goff, M., & Singh, R. J. (2014). Does trade reduce poverty? A view from Africa. *Journal of Africa Trade*, 1, 5-14

- Mullings, R., & Mahabir, A. (2018). Growth by Destination: The role of trade in Africa's recent growth episode. *World Development*, 102, 243-261.
<https://doi.org/10.1016/j.worlddev.2017.10.009>
- Irz, X., Lin, L., Thirtle, C., & Wiggins, S. (2001). Agricultural productivity growth and poverty alleviation. *Development Policy Review*, 19(4), 449-466
- Onafowora, A., O., & Owoye, O. (1998). Can Trade Liberalization Stimulate Economic Growth in Africa? *World Development*, 26, 3, 497-506`
- Park, L. (2020). Regional Trade Agreement in East Asia: Past and Future. *Development Policy Review*, 38(2), 206-225
- Patnaik, U. (2005). Ricardo's Fallacy: Mutual benefits from trade based on comparative costs and specialization? In the pioneers of development economics: Great economist on development, 31-41.
- Ritzel, C., & Fiankor, D. D. (2024). How do non-reciprocal trade preferences affect the food exports and food availability per capita of Global South Countries? *Global Food security*, 42, 100800
- Spilker, G., Bernauer, T., Kim, S., Milner, H., Osgood, I & Tingley, D. (2018). Trade at the margin: estimating the economic implications of preferential trade agreements. *Rev Int Organ*, 13, 189-242
- Smith, H. V., & Glauber, W. J. (2020). Trade, policy and food security. *American Journal of Agricultural Economics*, 51(1), 159-171
- Stibora, J., & de Vaal, A. (2015). Does preferential trade benefits poor countries? A general equilibrium assessment with non-homothetic preferences. *Review of International Economics*, 23(2), 239-270
- Tadesse, B., & Fayissa, B. (2008). The impacts of African Growth and Opportunity Act on USA imports from sub-Saharan Africa. *Journal of International Development*, 20, 920-941
- UNCTAD, (2022). Trade and development report. https://unctad.org/system/files/official-document/tdr2022_en.pdf
- UNCTAD, (2020). Generalized system of preference. <https://unctad.org/topic/trade-agreements/generalized-system-of-preferences>
- World Trade Organization (WTO). (2023a). Regional trade agreement database. <https://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>
- World Trade Organization (WTO). (2023b). List of preferential trade agreements. <http://ptadb.wto.org/ptaList.aspx>

- Yao, X., Zhang, Y., Yasmeen, R., & Cai Z. (2021). The Impacts of preferential trade agreements on bilateral trade: A structural gravity model analysis. PloS ONE 16 (3):e0249116.
<https://doi.org/10.1371/journal.pone.0249118>
- Zahonogo, P. (2016). Trade and economic growth in developing countries: Evidence from sub-Saharan Africa. *Journal of Africa Trade*, 3, 41-56.
<http://dx.doi.org/10.1016/j.joat.2017.02.001>

Appendix 1

Result Transcript

```
. xtabond lngdp pop inflation investent lnremittance lnagrifoodexport inequality, lags(1) pre(year) endog(lnagrifoodexport pop inflation inve
> stent lnremittance inflation inequality) vce(robust) artests(2)
note: inflation dropped from dgmiv() because of collinearity
note: lnagrifoodexport dropped because of collinearity
note: inflation dropped because of collinearity
note: pop dropped because of collinearity
note: inflation dropped because of collinearity
note: investent dropped because of collinearity
note: lnremittance dropped because of collinearity
note: inequality dropped because of collinearity
```

```
Arellano-Bond dynamic panel-data estimation      Number of obs      =      462
Group variable: countrycode                     Number of groups   =      22
Time variable: year
```

```
Obs per group:
min =      21
avg =      21
max =      21
```

```
Number of instruments =      448      Wald chi2(8)      =      6779.92
Prob > chi2          =      0.0000
```

One-step results

(Std. Err. adjusted for clustering on countrycode)

lngdp	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
lngdp						
L1.	.8372915	.0259615	32.25	0.000	.786408	.888175
year	-.0008633	.0008607	-1.00	0.316	-.0025503	.0008236
pop	.0196335	.0062757	3.13	0.002	.0073333	.0319337
inflation	-.0001613	.0000663	-2.43	0.015	-.0002912	-.0000313
investent	.0006306	.0004227	1.49	0.136	-.0001978	.001459
lnremittance	.0162288	.0048132	3.37	0.001	.006795	.0256625
inequality	-.0018887	.0012284	-1.54	0.124	-.0042963	.0005188
lnagrifoodexport	.0121104	.0083905	1.44	0.149	-.0043346	.0285555
_cons	2.598309	1.728825	1.50	0.133	-.7901253	5.986744

Instruments for differenced equation

```
GMM-type: L(2/.)lngdp L(1/.)year L(2/.)lnagrifoodexport L(2/.)pop
L(2/.)investent L(2/.)lnremittance L(2/.)inflation
L(2/.)inequality
```

```
Standard: D.pop D.inflation D.investent D.lnremittance
D.lnagrifoodexport D.inequality
```

Instruments for level equation

```
Standard: _cons
```

```
. estat abond
```

Arellano-Bond test for zero autocorrelation in first-differenced errors

Order	z	Prob > z
1	-2.679	0.0074
2	-.81324	0.4161

H0: no autocorrelation

```
. xtabond poverty pop inflation investent lnremittance lnagrifoodexport, lags(1) pre(year) endog(lnagrifoodexport pop inflation investent ln
> remittance inflation) vce(robust) artests(2)
note: inflation dropped from dgmiv() because of collinearity
note: inflation dropped because of collinearity
note: pop dropped because of collinearity
note: inflation dropped because of collinearity
note: investent dropped because of collinearity
note: lnremittance dropped because of collinearity
note: lnagrifoodexport dropped because of collinearity
```

```
Arellano-Bond dynamic panel-data estimation      Number of obs   =       462
Group variable: countrycode                     Number of groups =       22
Time variable: year

Obs per group:
      min =       21
      avg =       21
      max =       21
```

```
Number of instruments =    441      Wald chi2(7)    =    6562.03
                                      Prob > chi2    =    0.0000
```

One-step results

(Std. Err. adjusted for clustering on countrycode)

poverty	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
poverty						
L1.	.9380139	.0224679	41.75	0.000	.8939776	.9820502
year	-.0446646	.0487432	-0.92	0.359	-.1401996	.0508704
lnagrifoodexport	-.5564768	.4592348	-1.21	0.226	-1.45656	.3436068
pop	-1.077969	.3599786	-2.99	0.003	-1.783515	-.3724243
inflation	.0057966	.0039531	1.47	0.143	-.0019514	.0135445
investent	-.0300344	.0228716	-1.31	0.189	-.074862	.0147932
lnremittance	-.0562631	.1990153	-0.28	0.777	-.446326	.3337998
_cons	102.7254	97.14331	1.06	0.290	-87.67196	293.1228

Instruments for differenced equation

GMM-type: L(2/.)poverty L(1/.)year L(2/.)lnagrifoodexport L(2/.)pop

L(2/.)investent L(2/.)lnremittance L(2/.)inflation

Standard: D.pop D.inflation D.investent D.lnremittance

D.lnagrifoodexport

Instruments for level equation

Standard: _cons

. estat abond

Arellano-Bond test for zero autocorrelation in first-differenced errors

Order	z	Prob > z
1	-2.5182	0.0118
2	1.0604	0.2890

H0: no autocorrelation

```
. xtreg Dlnimport Dlnusagdp perca Dln dist Dlngdp ptaagoa year, fe vce(robust)
```

```
Fixed-effects (within) regression      Number of obs   =       484
Group variable: countrycode           Number of groups =       22
```

```
R-sq:                                Obs per group:
    within = 0.0921                    min =       22
    between = 0.2949                    avg  =      22.0
    overall = 0.0935                    max  =       22
```

```
                                F(4,21)      =      .
corr(u_i, Xb) = -0.0493          Prob > F      =      .
```

(Std. Err. adjusted for 22 clusters in countrycode)

Dlnimport	Robust					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Dlnusagdp perca	9.505949	2.129686	4.46	0.000	5.077025	13.93487
Dln dist	-4.851333	.1133039	-42.82	0.000	-5.086961	-4.615705
Dlngdp	1.820859	1.032985	1.76	0.092	-.3273514	3.969069
ptaagoa	.147231	.1166153	1.26	0.221	-.0952838	.3897458
year	-.0137303	.0063586	-2.16	0.043	-.0269538	-.0005067
_cons	27.396	12.72745	2.15	0.043	.9278139	53.86419
sigma_u	.07301906					
sigma_e	.87368497					
rho	.00693649	(fraction of variance due to u_i)				

```
. xtreg Dlngdp pop inflation Dlnremittance Dlnagrifoodexport investent inequality year, fe vce(robust)
```

```
Fixed-effects (within) regression      Number of obs   =       484
Group variable: countrycode           Number of groups =       22
```

```
R-sq:                                Obs per group:
    within = 0.0861                    min =       22
    between = 0.0592                    avg  =      22.0
    overall = 0.0530                    max  =       22
```

```
                                F(7,21)      =     5.36
corr(u_i, Xb) = -0.5690          Prob > F      =     0.0012
```

(Std. Err. adjusted for 22 clusters in countrycode)

Dlngdp	Robust					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
pop	.0233747	.008401	2.78	0.011	.0059038	.0408456
inflation	-.0000956	.0000879	-1.09	0.289	-.0002784	.0000871
Dlnremittance	.0125417	.0038333	3.27	0.004	.0045701	.0205134
Dlnagrifoodexport	.0077927	.0025562	3.05	0.006	.0024768	.0131086
investent	.0005557	.0006214	0.89	0.381	-.0007366	.0018481
inequality	-.000858	.0008585	-1.00	0.329	-.0026433	.0009274
year	-.0001692	.0006746	-0.25	0.804	-.001572	.0012337
_cons	.3153786	1.381682	0.23	0.822	-2.557987	3.188745
sigma_u	.02007698					
sigma_e	.05089289					
rho	.13466827	(fraction of variance due to u_i)				

```
. xtreg poverty pop inflation Dlnremittance lnagrifoodexport investent year, fe vce(robust)
```

```
Fixed-effects (within) regression      Number of obs   =      484
Group variable: countrycode           Number of groups =      22
```

```
R-sq:                                Obs per group:
    within = 0.4295                      min =      22
    between = 0.0465                     avg =     22.0
    overall = 0.1124                     max =      22
```

```
corr(u_i, Xb) = -0.0493                F(6,21)         =      6.10
                                           Prob > F        =     0.0008
```

(Std. Err. adjusted for 22 clusters in countrycode)

poverty	Robust					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
pop	1.948553	1.362937	1.43	0.168	-.8858302	4.782935
inflation	.0502206	.0128242	3.92	0.001	.0235512	.0768901
Dlnremittance	-.0059599	.3329548	-0.02	0.986	-.6983773	.6864576
lnagrifoodexport	-.1079854	2.326427	-0.05	0.963	-4.946056	4.730085
investent	-.051411	.1340575	-0.38	0.705	-.3301989	.2273769
year	-.952619	.2178684	-4.37	0.000	-1.405701	-.4995369
_cons	1952.315	429.8782	4.54	0.000	1058.334	2846.295
sigma_u	15.518837					
sigma_e	7.9521775					
rho	.792032	(fraction of variance due to u_i)				