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IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH IN   SELECTED AFRICAN COUNTRIES

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PREKYBOS ATVIRUMO ĮTAKA PASIRINKTŲ AFRIKOS ŠALIŲ EKONOMINIAM AUGIMUI	**IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH IN SELECTED AFRICAN COUNTRIES**

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ABSTRACT

This thesis examines how trade openness has affected economic growth in 30 African nations between 1990 and 2020. The Autoregressive Distributed Lag-Pooled Mean Group (ARDL-PMG) model was used with a panel data set to assess how trade and other factors affect economic growth. The generated results indicate that, in the long run, trade, industrial production, foreign direct investment, and urban population all have significant and favorable effects on economic growth; however, the results for the short run did not demonstrate the same favorable effects of trade, foreign direct investment, and economic growth. The encouragement of trade in Africa is believed to have significant policy ramifications. First, the thesis shows a positive relationship between trade openness and economic growth over the long term; however, the study did not find a similar positive relationship between trade and economic growth over the short term, so governments in these countries must come up with solutions to the trade issue in the short term. Second, the findings supported the potential of industrial production, foreign direct investment, and urban population in Africa. As a result, governments in these nations should assume responsibility for increasing investments in current production infrastructure so that outputs can increase, leading to a tremendous increase in industrial activities, which could help to address some supply/demand issues and add to the number of jobs available for the continent's expanding population.

KEYBOARD: Trade openness, Economic growth, African countries

Contents

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ABBREVIATION

Autoregressive distributed lag – Pooled Mean Group……………………………. ARDL-PMG

Akaike Information Criterion……………………………………………………. AIC

Augmented Dickey-Fuller…………………………………………………….. ADF

Error Correction Term………………………………………………………….ECT

Economic Community of West African States………………………………ECOWAS

Gross Domestic Product………………………………………………………….GDP

Gross Fixed Capital Formation………………………………………………….CAP

Foreign Direct Investment……………………………………………………..FDI

Industrial Production…………………………………………………………IP

International Monitory Funds……………………………………………………..IMF

Schwarz Bayesian Criterion…………………………………………………….SBC

Manufacturing Value-Added……………………………………………………MVA

Pool Mean Group……………………………………………………………….PMG

Mean Group……………………………………………………………………GM

Millennium Development Goals…………………………………………………..MDG

Dynamic Fixed Effects………………………………………………………….DFE

Inflation………………………………………………………………………INF

Im Pesaran-Shin……………………………………………………………….IPS

Levin Lin Chu Test…………………………………………………………...LLC

Trade Openness…………………………………………………………………TRA

Urban Population……………………………………………………………….Urbanpop

World Development Indicator…………………………………………………...WDI

INTRODUCTION

Background

According to the World Bank publication in 2018, Open trade policies that are more robust allow every economy to benefit from economic progress. The key to eradication of global poverty is trade. Open economies typically experience faster growth, greater innovation, higher levels of production, and greater opportunities for their citizen income. A crucial element of economic expansion and development is and will continue to be international trade. A pillar of international trade states that there is no single country that can manufacture all the needed goods and services for its people's demands. Geographical location, resources endowment of each country, and regional differences between these resources are key barriers. Based on these facts, trade openness enables economies to export goods and services, and raise revenue for the financing of the importation of goods and services which they domestically cannot produce, (African Development Bank). The continent of Africa is no exception to the challenges faced by other countries when it comes to the role of trade openness and its impact on economic growth and development.

Numerous studies have examined the link between trade openness and economic growth in the literature on trade growth. Trade openness has many benefits, including the capacity to increase opportunities for straightforward export and import while also generating employment. It might significantly accelerate economic growth. The major engine of economic growth, according to neoclassical economists, is trade expansion, and there is a strong substantial relationship between trade and economic growth. For instance, Mauritius exemplifies how trade can be used to drive the achievement of Millennium Development Goals (MDGs). According to Fernandez de Cordoba (2008), Trade policies that enabled Mauritius to create value-added services and adapt to global competition have helped to sustain the country's traditional exports, such as sugar and textiles. According to Betsy M. Oloyede et al. (2021), there is a slight but favorable association between trade openness and economic growth rates in the combined simulated ECOWAS. According to the

World Bank's 2019 report, some nations profited significantly from historically high oil prices, while others have challenges and have insufficient electricity supplies. Due to the high pricing, decreased reliance on the transportation system, and poor infrastructure, which often restricts intra-African commerce, some also experienced output shortages. The following authors believed that the goal of regional agreements is to facilitate market openness removing barriers preventing collaboration between nations in order to realize the goal of an African common market by lowering transaction costs such as tariff and non-tariff barriers Foroutan(1992); Olayiwola et al.,(2015); Osabuohien et al., 20190. Developing countries have not fully benefited from these global trends as most of their developed partners have done. This fact was further noted by International Monitoring Funds, IMF (2001). However, the progress of integration has been uneven in recent decades. Progress has been very impressive for several developing countries in Asia and, to a lesser extent, in Latin America; But progress has been less rapid for many other countries, particularly in Africa and the Middle East. The poorest countries haven't seen their fair share of world trade. In order to determine the trade creation and trade diversion intensities in COMESA, ECCAS, and ECOWAS, Musila(2005) used data from 20 African nations (1991-198) using the gravity model. The author concluded that creation and diversion varied by area and by time. Macroeconomic performance and trade, trade open was investigated by Semancikova (2016), employing descriptive and comparative analysis of substantial empirical studies, and the empirical findings show that trade and trade openness have a beneficial impact on macroeconomic variables.

Is there a strong link between trade expansion and economic expansion in Africa? In other words, does a greater degree of trade openness lead to faster economic expansion? Therefore, this thesis investigates the short- and long-term effects of trade openness on economic growth. In order to address this issue, the study employs the Pooled Mean Group (PMG) of Panel Autoregressive Distributed Lag (ARDL) estimation in a few African nations between 1990 and 2020. The use of the Pooled Mean Group Autoregressive Distributed Lag method is a development that identifies and limits issues with estimating short time series. To avoid issues with non-stationarity time-series data, it may also estimate long-run and short-run parameters simultaneously ((Dekle & Hamada, 2015). The methods, which use a variety of optimal variable delays, are statistically a far more effective strategy for evaluating cointegration relationships in small samples.

Research Gap

Despite the importance of the factors of production to promote industrial growth and economic development, the empirical evidence in the literature is relatively narrow, this study picks up the research gaps after the revision of previous studies. It's important to note that researchers, academic institutions, and international organizations from both rich and developing nations have given the literature on the link between trade and economic growth a lot of attention. See, (Osman et al., 2016), (Yalcintas & Kaya, 2017), (Lawal et al., 2020), (Kumari & Sharma, 2016) and (Tiwari et al., 2021). On the contrary, studies on trade impact on economic growth in Africa are limited despite the importance of industries to economic development and the productive role industries play in creating job opportunities and sustaining economies. The following empirical studies attempted to investigate consumption and supply in Africa but focused on individual countries.

This study examines the impact of trade openness and its influence on economic growth in selected Africa countries. According to the literature above, the nexus between trade, foreign direct investment (FDI), and manufacturing output have not been extensively investigated in Africa.

Research Objectives

General Objective

This research is focused on how trade openness has been managed within the member states of Africa and how these transactions have impacted the economies, growth and development of these countries. Furthermore, what employment opportunities have been provided, especially to the young generation in these countries.

Research questions

> ➤ How does trade openness impact economic growth in Africa?

Methodological Approach

The research for the thesis was conducted using panel data models and an empirical methodology. The Im-Pesaran-Shin Evaluate (IPS) of (Im et al., 2003), the Fisher Augmented Dickey-Fuller (ADF), and the Levin Chuc Test (LLC) presented by Levin et al. (2002) were used to examine the cross-section dependency of the data and test the stationary condition of all variables employed in this study (Dickey & Fuller, 1981). After verifying the stationarity of data, the Autoregressive Distributed Lag-Pooled Mean Group (ARDL-PMG) was used in the investigation which is based on the panel data approach. The panel ARDL model has a certain edge over the traditional method of testing cointegration. First, the method is used when the variables are mixed of level I(0) and the first difference I(1). Second, the model estimates the short-run and the long-run relationship simultaneously. However, the ARDL model's key premise is that none of the variables will change into the second-order (I(2)). To estimate the Panel ARDL, we can use one of the three estimations. These are Mean Group (MG), Pooled Mean Group (PMG), and Dynamic Fixed Effects (DFE) estimation. However, based on the results of the Hausman test, it is possible to determine which estimation method is most appropriate among the three panels of ARDL. Furthermore, the Mean Group (GM) estimator and the Pool Mean Group (PMG) estimator estimate of parameters are consistent because endogeneity may be present. These models take into account the lag of dependent and independent variables (Pesaran et al., 1999). The core contrast between these estimators is that the Mean Group squarely depends on estimating N time series regressions and summing coefficients. In contrast, the Pooled Mean Group estimator includes a mixture of pooling and summarizing coefficients (Pesaran et al., 1999). Using the Hausman test makes it possible to test whether there are systematic differences between these estimators based on their efficiency and consistency. These methodologies can be used in analyzing and discussing short-term and long-term relationships among variables, mainly PMG estimators. The PMG estimator controls the long-run coefficients (homogeneity), while the short-term coefficients (heterogeneity) differ. The PMG estimator also emphasizes the adjustment dynamics between the short and long run. When investigating the existence of heterogeneity in cointegrated panel data, the group mean

estimator provides a more accurate estimate(Pedroni, 1999). The study pursues (Pesaran et al., 1999) in structuring the model. Since economic growth and the electricity production relationship vary between two runs, this model permits us to determine long and short-run coefficients and the error correction factors that indicate the speed of long-term equilibrium.

Finally, the Hausman test is conducted to verify which model is appropriate for the analysis; follow by the Granger causality test. Granger causality test is one of the famous causality tests in non-experimental and experimental fields, (Meivitawanli, 2021). Its mathematical formulation and statistical theory are based on stochastic process modeling with linear regression (Granger & Aug, 2007). The stationarity of the variables is key to the application of the Granger causality testSince economic growth and electricity production relationship vary between two runs, using this model allows us determine short and long-run coefficients, and the error correction factors that indicate speed of long-term equilibrium. After determining that there is cointegration between variables, the appropriate Akaike Information Criterion (AIC) or Schwarz Bayesian Criterion (SBC) were used in selecting the lag order of variable based on the most common lags across all counties.

Structure of the thesis

This research paper is divided into three main parts – an analysis of the impact of trade openness on economic growth in the selected African countries and analysis part comprising of quantitative examination. Following is a list of the paper's complete organizational elements:

1. The two sub-parts of the literature review are:

    1.1 Studies on trade openness and economic growth. This chapter breakdown the view idea of trade openness and the relationship between international trade economic growth and examining the different views and the impact international trade has on less developed countries.

    1.2 Reviews of publications on international trade and developing countries. The chapter Provide an explanation of how trade has been viewed in developing countries, the hassle faced with relation to competition and barriers with developed-nations. The lack of free trade among many African countries.

    2. Methodology consists of two sub-parts:

    2.1 Data collection. This chapter shows the theoretical structure, data generation and

the countries and variables used for the study.

2.2 Model specification. In this chapter, the choice of the model and estimator for the research analysis and the procedure implemented for this investigation is explained.

3. Empirical results and discussion comprise of four sub-parts:
   3.1 Descriptive statistics and correlation analysis. Proceeding from the above chapter structure and analysis, this part details and describes the links with the variables.
   3.2 Panel unit root test. The tests deployed for the study.
   3.3 Cointegrations. Finding the relationship for conclusions.
   3.4 Estimation of PMG results. This chapter explains and translate the outcome gathered and disclosing the impact of trade openness on economic growth in the selected African countries.

The conclusions and recommendations of the research is handed over.

CHAPTER 1: LITERATURE REVIEW

This part of the thesis focuses on the contributions made to the debate on economic growth and trade openness, and other publications on international trade around the world.

1.1 Studies on trade openness and economic growth

In the world of international economic theory, there is a fairly widespread belief that trade openness can help to promote high-quality economic growth. According to the neoclassical growth theory, trade openness can encourage capital formation and better resource allocation, which can both lead to higher-quality economic growth (Helpman, 1985; Rodrik, 1988).

The link between trade openness and economic growth has been researched by academics. Trade openness, according to Jamilah Idris (2016), was one of the key factors in economic growth. According to Keho Y. (2017), trade openness had a favorable effect on economic growth in the short and long terms, and trade openness and capital formation had a strong and positive complementary relationship that helped to foster economic growth. According to M. Huchet-Bourdon (2018), trade openness promoted economic growth over the long term. According to Abdullahi, Sokoto & Safiyanu (2013), international trade is enabled when a country sells goods produced locally to other countries. According to the International Institute of Corporate Finance, International trade is the transfer of goods or services between at least two nations, possibly through exports or imports.. Simply put, international trade is the business of buying and selling goods and services between/among countries stated by Abdullahi, Safiyanu, (2016).

As one of the possible results of international trade, economic growth, is the increase in the real capital income which is sustainable over a period of time by Abdullahi, Safiyanu et al. (2016). In Adewuyi (2002) work, economic growth is accelerated through the exchange of foreign earnings and market stimulus through international trade. In simple words, Justin Keupper (2021) defines developing countries as countries with a low gross domestic product per person and whose economic activities are basically dependent on agriculture.

The major engine of economic growth, according to neoclassical economists, is trade expansion, and there is a strong substantial relationship between trade and economic growth. For instance, Mauritius exemplifies how trade can be used to drive the achievement of MDGs.

According to Fernandez de Cordoba (2008), Mauritius's traditional exports, such as sugar and textiles, have been sustained by trade policies that have allowed it to adapt to international competitions and develop value-added services. Betsy M. Oloyede et al (2021) found between the combined simulated ECOWAS countries' trade openness and economic growth rate, there is a positive but minor correlation. According to the World Bank's 2019 report, although some nations benefit greatly from historically high oil prices, others face difficulties and a lack of authority. Due to high pricing, and decreased reliance on the transportation system, and poor infrastructure, which often restricts intra-African commerce, some also experienced output shortages. According to the following authors, regional agreements have the potential to increase trade openness by lowering transaction costs like tariff and non-tariff barriers and removing barriers to cooperation between nations in order to realize the goal of an African common market Foroutan(1992); Olayiwola et al.,(2015); Osabuohien et al.,(2019).. Developing countries have not fully benefited from these global trends as most of their developed partners have done. This fact was further noted by IMF (2001). However, the progress of integration has been uneven in recent decades. Progress has been very impressive for several developing countries in Asia and, to a lesser extent, in Latin America; But progress has been less rapid for many other countries, particularly in Africa and the Middle East. The poorest countries haven't seen their fair share of world trade. Musila (2005) used the gravity model to evaluate data for 20 African countries (1991-1998) in order to determine the intensities of trade creation and trade diversion in COMESA, EXXAS, and ECOWAS. The paper came to the conclusion that trade creation and trade diversion varied by area and by time period. Semancikova (2016) investigated the relationship between trade, macroeconomic and trade openness performance utilizing descriptive comparative analysis of key empirical research. The empirical findings show that trade openness and trade have a favorable impact on macroeconomic indicators.

There is a continued increase in international trade among developing countries as companies seek to expand their global presence. While international trade seeks to strengthen the relationship between developed and developing countries, there is still a long way for economies to thrive. Many international trades happen to be sponsored by the bilateral trade treaty and deals that seek to make developing economies thrive—for instance, the collaboration of British

companies and some developing economies in South America. Further, the trades varied in intensity as some of the products in the market. The offered trade increases the value of the developing economies. In comparison to the trade, there is an increase in rising factors of consumption that the developing economies have, and there is an uptake of goods that international trade has to offer. Whereas it is a mutual benefit to some extent, international trade has some limitations over developing economies. Thereby making some of them dependent on international trade, foregoing local manufacturing of their products. Likewise, trade policies are implemented to enhance trade but create economic impediments in the long run. According to (Abdullahi et al., n.d.)trade affects economic growth have produced a range of results, the study found that whereas imports have a negligible yet positive impact on GDP growth, exports have a 1% rise will result in growth. As the growth of GDP is negatively impacted by foreign exchange.

Baskaran et al. (2011) Reported that the number of nations participating in international trade networks has increased for many goods, which shows a significant conclusion of how the global trade economy has been more linked over the past decades. A big factor of endowment differential will result in higher bilateral trade flows when the trading network is more scattered.
 Acemoglu et al.(2010) Demonstrated how various forms of integration have diverse interactions with the entrance of intermediates. A country or the entire world may experience welfare losses under the integration of matching markets (i,e.., when economic integration results in the entry of foreign intermediaries in local markets), even though intermediaries always increase the benefits from trade under the integration of Walrasian markets(i.e.., when economic integration lead to the conversion of goods and prices across countries.

Krugman (1979a) Presupposes a huge number of commodities continuous process of technological change, and technical advancement takes the shape of new product development rather than increased productivity in the production of existing products. The model assumptions are highly idealized and oversimplified, just like those of traditional models and it is not suggested as a replacement for current theories. Instead, it serves as a supplement by shedding light on the ignored facets of the global economy. postulated that the conventional focus on countries and sectors, research in theoretical and empirical studies of international trade increasingly emphasizes enterprises and goods. Numerous studies comparing businesses that trade with those that don't

have led to this shift in emphasis because they show that trading enterprises differ significantly from non-trading ones, and these differences have a big impact on how well we can evaluate the advantages of trade and how they are distributed among the various factors of production. While some of these findings are novel, others are extensions of earlier theories. The most recent models of global commerce have come a long way in incorporating the behavior of diverse companies to explain patterns of trade and productivity growth, but there are still many unsolved concerns.The conventional theory of trade, which is based on the comparative advantage, does not adequately account for the trade patters seen in the real world. Which specifically ignores how economies of scale and ineffective competition influence trade patterns. Rethinking international trade (Krugman, 1988) presents the idea of the "New Trade Theory" which includes the analysis of trade patterns as well as the economies' scale and imperfect competition. The study predicted that trade has advantages over and above conventional theory. As a result, trade can be more rivalry, which might encourage innovation and productivity growth.

Sarkodie & Strezov, (2019) study focused on the impact that FDI have on developing economies. The study further analyzed the extent of international trade on factors such as greenhouse emissions with a correlation of study that started from 1982 until 2016. The outcome of Sarkodie & Strezov, (2019) study is that South Africa, Indonesia, Iran, India, and China are some of the top five greenhouse emitters. While many international trades seek to develop and validate the extend to which SGD goals are achieved in the host countries. Enhancing energy efficiency and using cutting-edge energy sources like nuclear power, renewable energy, and biomass energy generating techniques that utilize carbon capture and storage are essential for greenhouse gas emission reduction (Sarkodie & Strezov, 2019). With the current economical growth in developing countries and developed countries, FDI is one of the biggest contributors of trade in most countries. As FDI seek to strengthens a countries foreign reserve exchange and product sensitization in the long run. Thereby, many developing countries are relying on FDI and bilateral trade to help establish foreign reserves but in the long run, fail to create a lasting bilateral trading.

International trade has a big impact on how long the globe can sustain itself and how well people are treated, according to Xu et al. in 2020. However, further research is needed to fully understand how global trade affects the achievement of the SDG targets (Xu et al., 2020). The

2020 analysis by Xu et al. showed how nine SDG environmental targets were met with favorable consequences on world trade. International trade boosted the SDG goal scores of the majority of the studied wealthy countries, but it dropped the SDG target scores of more than 50% of the studied underdeveloped nations. Rich countries' SDG goal scores were high when trade was taken into account because they fared poorly compared to poorer countries, but those scores would have been lower if trade had not been taken into account. Therefore, implying that developing countries depend on international trade in order to enjoy some type of enhanced SGD scores.

   According to Atkin and Khandelwal (2020), trade between developing and developed countries contributed more than trade between developed and developed nations to the achievement of these global SDG targets. In wealthier countries, foreign trade was more beneficial to achieving SDG targets than neighborhood trade, however in less developed ones, it was detrimental. According to Atkin & Khandelwal (2020), sustaining sustainable development depends on improving the accounting for and managing virtual resources in commerce. These resources become the confounding factors for the growth and development of such developing nations. In the long run, SDG ensures that trade between nations is more sustainable rather than being a one-time trade that does not last. To increase the outcome of the goals countries must ensure that they have a solid plan for their SDG as this ensures that they easily create time for their trading goods. Trade in this way becomes an enhancing trade rather than a competitive one since goods produced by one country is not produced by the other.

According to Barney (2001) Neo-classical microeconomics, often known as neo-classical price theory, focuses on how market forces affect the quantity, quality, and cost of goods and services offered in a market. This theory makes many of the same assumptions as the wider resource-based perspective, including the notion that economic players (whether they be corporations and or people) are boundedly rational utility maximizers, that are disseminated across a market, and other concepts. There is just one significant distinction between the neo-classical approach and its underlying assumptions.

It is true that the analysis of the relationship between the factor of endowment and technology was based on two-country, two-factor, and two-commodity configurations as investigated by (Jones, 2008). Because of international trade, the number of commodities a nation could need to produce

would not exceed the number of its producing factors, demonstrating the simplicity of the many-commodity, two-factor setting. Meanwhile, (Krugman, 1980) The ability of comparative cost theory to describe how international trade is actually structured examined by scale economies has long been the subject of serious doubt. In terms of standard theory, neither the extensive commerce among industrialized nations nor frequent two-way exchanges of differentiated products makes much sense. Many have therefore concluded that a new framework for understanding trade is required. The three fundamental components of such a framework are imperfect competition, economies of scale, and the potential for product diversification. Theory on international trade and heterogeneous firms concluded that there is a significant level of variability in many performance metrics, most notably size and productivity, according to their theoretical findings of production units within sectors. They agreed that for the empirical trade models, heterogeneity is important. Stated further that market share reallocation from less productive producers (who do not export) towards larger, more productive exporters because of trade, or more generally trade liberalization, which forces the smallest or least productive producers to leave the industry. A new route for productivity and welfare gains from trade is created by these reallocations. (Baldwin et al., 2005) spotlighted the consequences that come with changes in firm types that affect enterprises and the whole economy. The normative impacts of liberalization that were studied in the theory focus on trade's overall benefits and its effects on income redistribution. The study looked at how increased trade expansion affected lobbying activity, price variance, size-based stock market value of corporations, and trading patterns at the firm level.The arsenal of international trade theorists now includes an important new tool in the form of trade models with heterogeneous companies and beachhead costs. Diverse real-world aspects of trade have hitherto been mostly disregarded but can now be addressed by trade theorists because of heterogeneity and beachhead costs. Two main applications of the model have been concentrated on its features-that all active companies make pure profits and there are firm-level variations in trading behavior.

Krugman (1980) economies of scale theory of trade between industrialized and less developed nations accomplishes two main goals. Both the pattern of trade and the reasons why wages are greater in the industrialized country are explained. The point that a lot of literature on technology in international trade seems to be advocating. The advantage of industrialized nations lies more in their superior ability to utilize new technology than it does in their bigger endowments of

nonhuman inputs per worker or in their superior overall efficiency. Therefore, industrialized nations export recently created goods, and the rent on their monopoly in such goods accounts for their higher salaries. Because of economies of scale and unsatisfactory competition, the new trade theory claims that commerce can still take place even in the absence of comparative advantage. Because it highlights the significance of innovation and differences in global trade, this theory is still important today. Even if a company lacks a comparative advantage in a particular industry or product, it may still be able to compete within international markets if it can distinguish its products or obtain economies of scale.

The assumption that innovation and technology transfer can result in large variations in the income and wealth distribution between countries is even more striking now than ever before considering the role of technology involvement in everyday interactions in every sector, from industrial production, human capital building, infrastructural, trade and many other industries. And with this drive for technology, nations with a robust infrastructure for innovation and technology transfer are more likely to enjoy quick economic growth and development, which raises the level of income and wealth. Innovation, technology, transfer, and the world distribution of income, economic growth, and progress are primarily fueled by innovation and transfer of technologies according to (Krugman, 1979b), He argues that a few elements, including spending on Research and Development (R&D), education, and the existence of organizations that support and facilitate creativity, contribute to innovation and technology transfer. The role that technology transfer plays in promoting economic growth and development, particularly in undeveloped nations, is another point to consider. He contends that trade and the spread of knowledge and information are only a few of the avenues via which technology transfer can take place. However, policies such as foreign aid, and investment in education and infrastructure could help to mitigate these effects and promote more equitable distribution of income across countries.

For a deeper understanding of the impact of international trade, one must take into consideration the "Boundary Mystery", which is the observation that trade flows between nations that share a border are significantly lower than what would be anticipated based on their size and proximity to one another. The concept of "Economics Mass", which describes the scale of a nation's economy, serves as a key foundation in determining trade flows, along with traditional factors such as distance and transport costs. Specifically, countries with larger economies have more "gravity" in

the global economy, meaning that they can exert a greater pull-on trade flow. (Anderson & Van Wincoop, 2003) the theory uses a gravity model of trade, which is a widely used framework in economics that predicts trade flow based on variables such as GDP, distance, and trade barriers. They extended this model by incorporating the economics of mass as an additional determinant of trade flows. The hypothesis of their theory "gravity and gravitas" offers a convincing solution to the border conundrum and emphasizes how crucial it is to consider the economics of mass when analyzing trade patterns. According to (Gereffi et al., 2005) theory of Governance of global value chains, the framework explains how global production and trade systems operate, and how they are governed by various actors involved in the value chain. The theory is based on the idea that modern production and trade are no longer carried out by a single firm, but a network of firms. The process of firms upgrading and countries moving up the value chain is by acquiring new capabilities, technologies, and market knowledge.

Pavcnik (2017) evaluates the available data on how global commerce affects wages and employment prospects, impacting inequality and poverty. The debate compares to the empirical evidence from wealthy countries, even though the emphasis is mainly on developing countries, partly because there is more evidence in that setting. The report also covers attitudes toward global trade in more than 40 nations with varying levels of development, including views on the overall economic advantages of trade, its impact on workers' salaries and employment, and its role in promoting inequality (Pavcnik, 2017). A review of the available data on several policies that can lessen the negative consequences of import competition is the paramount ordeal of the study. As more studies are done to investigate the impact of trade especially international one in the developing countries there are new findings that expound on the influence on economies of developing countries.

Dozen & Vamvakidis (2016) investigates how global commerce affects production distribution across various sectors in emerging nations. According to estimates from a documentation of more than 90 developing nations for the years 1960 to 2000, increased trade openness causes production to grow while at the expense of agricultural dominated shares (Dozen & Vamvakidis, 2016). Contrary to the logic of the infant industry, trade, therefore, propels the industrialization of emerging countries. There is a continued high prevalence of protection in developed countries even though many have abandoned protection laws in recent years. The

average trade share is smaller for developing nations. Higher tariffs in emerging nations are a contributing factor to this. The real GDP per capita and the tariffs to imports ratio for the 2000s are negatively correlated that is why international trade started to rise past the 2010. During this time, the average tariff ratio for OECD nations was 0.95, whereas it was 12.7% for developing nations (Dozen & Vamvakidis, 2016).

Wang et al., (2018) notes that economic globalization encourages industrial specialization and creates a massive flow of goods between nations around the world, which causes major environmental issues. The study investigated the connection between global trade and green logistics. Using data from 113 nations and areas between 2007 and 2014, Heckman's two-stage method calculates an enhanced gravity model that primarily includes green logistics considerations (Wang et al., 2018). The findings show a positive association between trade volume and the logistics performance index (LPI) across nations that engage in both exports and imports, indicating a higher probability of both LPI and trade. The performance of exporting countries' green logistics, when considered throughout the sample, has a favorable impact on export volume and likelihood. There is a high difference of trade between developed countries and developing countries when it comes to green logistics. Also, the trade flow between countries varies as per their level of economy with regards to both import and exports. The performance of importing nations' green logistics hurts export volume and positively impacts export likelihood when it comes to trade between developing and industrialized nations (Wang et al., 2018). The current study's findings will help governments and exporters better grasp the connection between sustainable logistics and global trade, thereby enhancing their green policies and practices in the interest of sustainable development.

Vijayasri (2016) research has been done on the value of global trade and its significance concerning numerous challenges. Vijayasri (2016) explored how trade and economic growth are related while also discussing some of the drawbacks of trade. A developing economy's growth largely depends on its ability to conduct international trade. International specialization refers to the fact that various nations worldwide specialize in producing items and developing and implementing trade policies. The policies address tariffs, quotas, incentives, and taxes when it comes to the facilitations of trade and trade diversification. Many developing countries fail to ascertain their trade diversification as they are limited to growth and most of them resort to more imports than exports. Thus, it is widely acknowledged that international trade is crucial in

accelerating economic growth. As a result, it is impossible to separate the planning of international commerce from the overall growth strategy. The drawback of international trade is that, occasionally, profits are put before the welfare of the citizens of the countries that produce commodities and services.

Meyer & Peng (2016) detailed evidence on international trade within the confinement of East and central Europe with a distinct probing of institutions, resources, and transactions done in these two regions. Meyer & Peng (2016) considers the field's development during the previous ten years in this retrospective. It is believed that CEE should be studied as a developing economy rather than a distinct geographical entity, given the diminishing influence of its distinctive common history. Research based on developing economies base their findings on similar themes and theoretical concepts while also highlighting essential differences that limit generalizations to other developing economies. Meyer & Peng (2016) study emphasizes the necessity of improving our comprehension of the boundary conditions governing academic conceptions of business knowledge. The institution-based view has been more popular over the past ten years due to unique intellectual lineages in organizational theory, institutional economics, and the study of business-government negotiations. Meyer & Peng (2016) argues that the institution-based perspective is turning into a paradigm and make recommendations for moving this research agenda forward, including examining how businesses interact with other stakeholders. International trade in this context seek to follow the element of negotiations between government and trade institutions.

Kowalski, Gonzalez, Ragoussis, & Ugarte (2015) study focuses on the Global value chains (GVCs) that are frequently seen as a critical aspect of the current wave of globalization. Still, more needs to be understood about what motivates VGC involvement, the advantages of rising participation, and how developing countries interact with and profit from GVCs. These issues are addressed empirically in this essay. According to Kowalski, Gonzalez, Ragoussis, & Ugarte (2015) the findings, increased involvement will significantly affect export diversification, complexity, and productivity. Kowalski, Gonzalez, Ragoussis, & Ugarte (2015) discovered that structural variables, including geography, market size, and level of development, are significant predictors of VGC participation. However, active participation in fostering more trade and investment can also come through logistics, customs, intellectual property protection, infrastructure, and institutional changes (Bahoo, Alon, & Paltrinieri, 2020). This analysis reveals essential

distinctions and commonalities. It may serve as a starting point for policymakers in these regions as they evaluate the VGC engagement of their nations and weigh their options.

Shu, & Steinwender, (2019) study focuses on the empirical economics research on the effects of trade liberalization on business outcomes related to innovation. Shu, & Steinwender, (2019) analysis shows interesting heterogeneities at the national and corporate levels. Trade liberalization seems to boost innovation and productivity in developing nations. Innovation is typically encouraged in industrialized nations by export prospects and easy access to imported intermediates, although there is conflicting evidence regarding import competition, particularly for American businesses. At the firm level, the initially more productive firms experience more favorable effects of trade on innovation, whereas the initially less productive one's experience more adverse effects.

In summation, the impact of international trade on developing economies shares both a negative side and a positive side. As trade becomes the order of business for many developing countries, the sole responsibility of international trade is to ensure that there is continued bilateral trade that supports the economy and are in line with the trading conventions of the said economic region. By considering corruption as a significant issue in international business, scholars need to examine and expand these current theories. By ensuring that international trade hold their ground globally, developing countries continue to depend on such trade to ensure that they grow their economies. Whereas there is a lot of trade corruption for some of the international companies, some developing countries have resulted to endure such aspects as they are no set bounds on how to act on the said corruption. The literature review has analyzed the impact international trade has on SDG and it can impact the overall trade output of a country. Thereby, it is one of the pillars that seek to become the foundation of the international trade between developing countries and developed countries. Similarly, international trade has fostered FDIs that are increasingly being sort by various developing countries as they enable growth for their economies. Thereby, the impact of international trade on developing economies have both negative and positive sides that influence the outcome of the monetary values.

1.2 Reviews of publications on international trade and developing countries

Trade has facilitated developing countries' robust growth in recent years, with their proportion of trading increasing from 29% in 1996 to 37% in 2006 and their exports growing at a faster rate than industrialized countries. As a result, developing countries' export profits have grown. Meanwhile, GDP per capita in Africa, West Asia, and Latin America has increased by more than 16 percent in the previous five years, making it one of the most crucial indicators of millennium development goals success. According to Fernandes A et al (2020), a crucial way to improve economic activities and growth mainly post covid era is for governments to "consider incorporating tariff reductions and non-tariff trade measure (NTM) in their policy interventions, at least until economies recover.

Unfortunately, developing countries have continued to be targets of undue high tariffs on the global market. The United Nations Conference on Trade and Development issued a study by Fernandez de Cordoba in 2008 titled "Trade and the Millennium Development Goals: How Trade Can Help Developing Countries Eradicate Poverty" that supported this Global tariffs have decreased on average from 11% in 2000 to 7% in 2006. There is still proof, nevertheless, that trade obstacles and tariffs on goods with export potential for developing nations are disproportionately high. For instance, in 2005, agricultural exports from developing nations were subject to an average tariff of 8.9%. Tariffs on imports from developing nations are still twice as high as those on imports from developed nations (MGD report, UNCTAD 2016). On average, world tariffs have declined from 11 per cent in 2000 to 7 per cent in 2006. However, there is still evidence that developing countries face disproportionately high tariffs and trade barriers on products of export interest for them. For example, in 2005, developing countries' agricultural exports faced, on average, a tariff of 8.9 per cent. Developed countries still impose tariffs on imports from developing countries that are twice as high as those from developed countries, (MGD report, 2016).

But despite these improvements, the past two decades, have seen series of reports ranging from World Bank Data, International Labour Organization (ILO), United Nations Conference on Trade Development (UNCTAD), United Nations High Commissioner for Refugees (UNHCR) and scholarly contributions to ECOWAS youth unemployment but, unfortunately, fell short of defining International Trade Impact on youth unemployment. Also, there has not been clear international trade policies and obligations to fully adhered to bridging the gap of Africa youths' unemployment rate stood at 17.4% to that of 10.6 Asia pacific youth unemployment as of 2020, (ilo.org 2020).

To examine the impact of non-tariff measures on Moroccan exports, Khouilid & Echaoui (2017) employed the elasticity of imported demand and an approximated gravitational equation for a sample of 28 nations at various stages of development. Non-Policy-induced trade obstacles are becoming increasingly important, according to Gençand Law (2014). Lee & Swagel (1997) explore the political and economic causes of non-tariff barriers, as well as the impact of protection (both tariff and non-tariff) on trade flow, using data on trade flows, output, and trade obstacles from 41 countries in 1988. Dardorf & Stern (1997) examine the existing approaches for quantifying NTBs, including frequency type measurements, price comparison measures, quantity, impact measures, and comparable nominal rate measures.

South Sudan, Botswana, Angola, and Guinea-Bissau are the four developing African countries with the highest concentration index, approaching or even exceeding 0.9 in 2019, indicating that their trade is concentrated on a very few products, according to the United Nations Conference on Trade and Development SDG pulse. South Sudan and Angola rely heavily on petroleum commerce, whereas Botswana relies heavily on precious stones and Guinea-Bissau on fruits and nuts. LDCs as a group had an average index of 0.21 in 2019. Yemen has the highest export concentration index among Asian LDCs in 2019 (0.42), with a value of 0.42. African countries have the most concentrated product mix of developing economies, (UNCTAD, 2021).

In the emerging economies of America, where Guatemala, Mexico, and Panama had the lowest concentration index in 2019, and Asia, where Turkey, Thailand, and China are the top three most diversified nations, the export mix is more varied. Because they lack the skills needed by the booming textile and clothing export industry, as proven by Nicita, the vast majority of the poor are unable to take advantage of the new employment prospects (2006). In the instance of Madagascar, export-driven growth in the textile and garment industry only marginally reduced overall poverty. Furthermore, the majority of the impoverished live in rural regions, where the employment effect is minimal. The findings show that a rise in textile exports has a positive impact on poverty reduction only in urban areas, mostly through job creation rather than salary increases. As a result, the poor must be aided in acquiring the skills that the rising sectors require. Fosu and Mold (2008) show that liberalization has a moderate or adverse impact on poverty in Sub-Saharan Africa due to a fast reduction in the import-competing sector and a lack of offsetting policy.

In International Trade: The Position of Africa in Global Merchandise Trade (2017), Nahanga Verter listed many steps that must be taken to improve international trade impacts on the continent. He mentioned increased trade cost due to procedural bottleneck and bureaucracy at the borders, lack of free-trade among many African countries, burdensome access to soft loans and poor-quality control system among others.

The majority of early research revealed evidence of a positive correlation between exports and growth, which was used to support the export-led growth theory; however, recent evidence from time-series studies has cast aspersions on the export-led growth hypothesis (Medina, 2001). Using Nigeria as a case study, Oviemuno (2007) identified international trade as a catalyst for development in developing countries. He examined export, import, inflation, and currency rates and determined that the value of Nigeria's exports and inflation rate are not development accelerators. Usman (2011) then used OLS approaches to evaluate the success of Nigerian foreign commerce and economic growth. According to him, export, import, and the exchange rate all have a detrimental impact on real output.

Finally, experts agree on the enormous value trade adds to economic progress and the benefits that African countries often reap from such endeavors. However, a proper structure for foreign trade in Africa is required. In addition, to assure greater impacts and outcomes from international trade on the continent, infrastructure development, increased production through human capital development, and improved intra-trade activities among African nations are necessary.

CHAPTER 2: METHODOLOGY

2. Material and Methods

2.1 Data Collection

The study uses annual panel data from 1990 – 2020 for 30 African countries to estimate the relationship trade openness, economic growth and rest of the variables. The selection of countries and periods is based on data availability (see table 2). In this study, the gross domestic product growth annual (gdpA) is the dependent variable, while Trade (tra) representing exports and imports, Foreign direct investment inflows (fdiinflow), electricity production (elp), industrial production (ip), manufacturing value added (mva), per capita income (cap), and inflation (inf) are the independent variables and the determinants of economic growth. The available data is sourced from the World Development Indicator database (WDI 2021). With the exception of power output and inflation, the variables are expressed in million USD (at constant 2015 US-Dollars). Data on power generation are expressed in billion tons, while inflation is expressed in local currency per USD unit.

Table 1: Variables description

Variable	Acronym	Source	Scale Unit
Gross domestic product (annual growth)	GDPA	WDI	Annual
Trade (Exports and Imports)	TRA	WDI	Annual
Industrial production (output)	IP	WDI	Annual
Manufacturing value-added	MVA	WDI	Annual
Foreign direct investment	FDI	WDI	Annual
Gross fixed capital formation	CAP	WDI	Constant 2015
Urban population	Urbanpop	WDI	Annual
Inflation rate of the GDP implicit deflator	INF	WDI	Annual

Table 2: List of countries and region

Country Name and Region (Northern)	Country Name and Region (Southern)
Egypt	Botswana
Morocco	Eswatini
Tunisia	Namibia
	South Africa
Country Name and Region (Central)	**Country Name and Region (Western)**
Cameroon	Benin
Chad	Burkina Faso
Congo, Democratic Republic	Cote d'Ivoire
Congo, Republic	Gambia, The
Gabon	Ghana
Country Name and Region (Eastern)	Guinea-Bissau
Burundi	Guinea
Kenya	Mauritania

Mauritius	Nigeria
Mozambique	Sierra Leone
Rwanda	Togo
Tanzania	
Uganda	

2.2 Model Specification

The Autoregressive-Distributed Lag (ARDL) model and Pooled Mean Group (PMG) estimator is selected for this study. Before implementing the model, it is recommended to check the status of the data series, Ewing et al. (2007) and examine the stationary conditions of all variables within the model using Augmented Dickey & Fuller (1979). Pesaran et al. (1999) also proposed that ARDL bound test is suitable when some variables are stationary at I(0) and the remaining at I(1). The ARDL model has a certain edge over the traditional method of testing cointegration. First, the approach is applicable when the variables are a combination of I(0) and I(1). Second, the model estimates both the short- and long-term relationships between variables. The Mean Group (GM) estimator and the Pool Mean Group (PMG) estimator, two dynamic mean group estimators, are employed because they consistently estimate the parameters despite the potential for endogeneity. These models account for the lags of both dependent and independent variables (Pesaran et al., 1999b). The code difference between the two estimators is that MG relies on estimating N time-series regressions and averaging the coefficients, while the PMG estimator includes a combination of the pooling and averaging coefficients (Pesaran et al., 1999b). It is possible to test if there is a systematic difference between the two estimators, based on their consistency and efficiency, by using the Hausman test.

The PMG estimator in particular, is useful in evaluating subjects pertaining to both short- and long-term relationships between variables. Long-term coefficients are controlled by this estimate for all sample nations taken into account in the panel, however short-term coefficients typically clash amongst sample countries. The modification dynamics between the short and long terms are given priority by the PMG estimator at the same time. When analyzing examples with existing heterogeneity in cointegrated panel data, the group-mean estimators offered more precise results (Pedroni, 1999). By building an empirical model, this study advances (Pesaran et al., 1999b).Since the relationship between economic growth and electricity production could differ in both runs, the use of this model allows for the determination of short-term and long-term

coefficients and error correction coefficients that indicate the long-term equilibrium speed. After establishing the existence of cointegration between the variables, the appropriate Akaike Information Criteria (AIC) or Schwarz Bayesian Criteria (SBC) were used in selecting the lag order of the variable based on the most common lags across all counties.

The functional relationship between the gross domestic product growth annual and all other factors is described as follows, according to the research of Kong et al. (2020):

$$gdpA = f(tra)\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

Including the control variables in equation (3.1) can be specified as follows:

$$(3.2)$$

$$gdpA_{it} = a + \beta tra_{it} + ip_{it} + mva_{it} + fdi_{it} + cap_{it} + urbanpop_{it} + inf_{it} + \vartheta_i + \epsilon_{it}$$

Equation (3.2) describes the gross domestic product annual growth $gdp\,A_{it}$ to depend on trade tra_{it}, urban population $urbanpop_{it}$, industrial production ip_{it}, manufacturing value-added mva_{it}, foreign direct investment inflows fdi_{it}, per capita income cap_{it}, , and inflation inf_{it} at time t, ϑ_i represents country-specific effect and ϵ_{it} as the error term that represents other factors not captured in the model.

Equation (3.2) presented the relationship in the following Panel ARDL form, as suggested by Pesaran et al. (1999):

$$(3.3)$$

$$
\begin{aligned}
\Delta gdpA_{it} = a &+ \sum_{i=0}^{m} \beta_1 \Delta gdpA_{it} + \sum_{i=0}^{n} \beta_2 \Delta tra_{it-i} + \sum_{i=0}^{n} \beta_3 \Delta ip_{it-i} \\
&+ \sum_{i=0}^{n} \beta_4 \Delta mva_{it-i} + \sum_{i=0}^{n} \beta_5 \Delta fdi_{it-i} \\
&+ \sum_{i=0}^{n} \beta_6 \Delta cap_{it-i} + \sum_{i=0}^{n} \beta_7 \Delta urbanpop_{it-i} + \sum_{i=0}^{n} \beta_8 \Delta inf_{it-i} \\
&+ \delta gdpA_{it} + \delta tra_{it-i} + \delta ip_{it-i} + \delta mva_{it-i} + \delta fdi_{it-i} + \delta cap_{it-i} \\
&+ \delta urbanpop_{it-i} + \delta inf_{it-i} + \vartheta_i + \varepsilon_{it}
\end{aligned}
$$

Where gdpA, tra, ip, mva, fdi, cap, urbanpop, and inf are variables of the study, while **i** represents country **i** at time **t**, ϑ_i represents country-specific effect and ε_{it} "White noise" Equation (3.3) can be transformed into an equation for bound testing that takes into account both short-run

and long-run dynamics. In the panel ARDL form above, the short-run coefficients are β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8 while the long-run coefficients are represented by δ.

If cointegration is confirmed, then the following specification for equation (3.3) can be put in a panel error correction model (PECM)::

$$
\begin{aligned}
\Delta gdpA_{it} = a + \sum_{i=0}^{m} \beta_1 \, \Delta gdpA_{it} + \sum_{i=0}^{n} \beta_2 \, \Delta tra_{it-i} + \sum_{i=0}^{n} \beta_3 \, \Delta ip_{it-i} \\
+ \sum_{i=0}^{n} \beta_4 \, \Delta mva_{it-i} + \sum_{i=0}^{n} \beta_5 \, \Delta fdiinflow_{it-i} + \sum_{i=0}^{n} \beta_6 \, \Delta cap_{it-i} \\
+ \sum_{i=0}^{n} \beta_7 \, \Delta elp_{it-i} + \sum_{i=0}^{n} \beta_8 \, \Delta inf_{it-i} + \delta ECM_{it-1} + \vartheta_i + \epsilon_{it}
\end{aligned}
$$

Where, ECM_{it-1} is the error correction term and δ captures the speed of adjustment from the short-run dynamics to the long-run equilibrium. The ECM coefficient, δ, is expected to be negative and statistically significant for the long-run equilibrium between GDP growth and the explanatory variables.

3. Empirical result and discussion

3.1 Descriptive statistics and correlation analysis

The empirical part of this thesis begins with the descriptive statistics and the correlation analysis. Tables 4.1 and 4.2 below show the descriptive statistics and correlation coefficient for the different variables. What each variable's trend looks like is shown in Table 4.1. Next, it was discovered that inflation and trade openness had substantial standard deviations. So high dispersion is found in these two variables. However, the descriptive statistics do not show high dispersion for the rest of the variables. From the descriptive table, it is clear that all the mean is different from zero. The maximum and minimum are 175.798 and 19.6816 percent for the dependent variable (TRA). It indicates a high variation in trade in these countries.

Moreover, the study also used correlation analysis to identify how independent variables correlated to the dependent variable and revealed how they are interrelated. The study used correlation analysis also to check the multicollinearity problem among the independent variables. Accordingly, Table 4.2 indicates a strong positive correlation of 0.0039 between trade openness and economic growth. In contrast, a relatively strong negative correlation is observed between inflation and economic growth. It is also observed there is no multicollinearity problem among the independent variable since their values are not greater than 0.8 percent. The variance inflation factor (VIF) is also employed to verify the absence of multicollinearity issues. Accordingly, the VIF confirmed the non-existence of collinearity issues (see Table 4.3).

Table 4.1: Descriptive Statistics

Statistic	TRA	IP	MVA	FDI	CAP	Urbanpop	INF	GDPA
Mean	66.7992	25.63467	11.71299	2.956897	21.03963	3.777263	51.59188	3.69629
Max	175.798	72.15267	40.06365	46.27524	93.54746	17.49907	26765.86	35.2208
Min	19.6816	4.555926	.2326077	-11.62481	-2.424358	-1.47704	-21.16523	-50.24807
Std. Dev	28.3457	11.00373	6.114028	4.88057	9.169698	1.698589	895.555	4.994709

Observation	930	930	930	930	930	930	930	930

Table 4.2: Correlation Coefficients between Variables

Variables	GDPA	TRA	IP	MVA	FDI	CAP	Urbanpop	INF
GDPA	1.0000							
TRA	0.0039	1.0000						
IP	-0.0330	0.4754	1.000					
MVA	-0.0500	0.1786	0.2509	1.0000				
FDI	0.1112	0.3058	0.080	-0.0846	1.0000			
CAP	0.0841	0.3337	0.3595	-0.0769	-0.3428	1.0000		
Urbanpop	0.1393	-0.3694	-0.1775	-0.2966	-0.0100	-0.0506	1.0000	
INF	-0.0851	-0.0373	-0.0241	0.0230	-0.0290	-0.0585	0.0335	1.0000

Table 4.3: Variance Inflation Factor

Variable	VIF	1/VIF
TRA	1.64	0.609079
IP	1.48	0.676334
CAP	1.35	0.740141
Urbanpop	1.25	0.799941
FDI	1.23	0.813319
MVA	1.20	0.836215
INF	1.01	0.994623
Mean VIF	1.31	

3.2 Panel unit root tests

The stationary condition of all variables used in this thesis are tested using the Pesaran-Shin Test (IPS) of (Im et al., 2003), the Levin Lin Chu Test (LLC) proposed by (Levin et al., 2002), and the Fisher Augmented Dickey-Fuller (ADF) proposed by (Dickey & Fuller, 1981). It is observed that some of the variables of interest (GDPA, IP, FDI, CAP, Urbanpop and INF) are of I(0), and MVA and TRA are of I(1) combination. Therefore, our variables used in this thesis are a combination of I(0) and I(1). Furthermore, none of the variables is stationary at the second difference (I(2). Thus, applying the Panel ARDL approach to such assumptions is highly recommended.

Table 4.4: Panel Unit Root Test Results for IPS, LLC and ADF

Variables	IPS		LLC		ADF	
	Level	First Difference	Level	First Difference	Level	First Difference
TRA	-0.9975 (0.1593)	-12.4604*** (0.0000)	-1.3722* (0.0850)	-8.6912*** (0.0000)	78.7375 * (0.0528)	450.7679 *** (0.0000)
GDPA	-5.5455*** (0.0000)	-21.7099*** (0.0000)	-1.4523* (0.0732)	-12.2432*** (0.0000)	223.9612*** (0.0000)	815.4494*** (0.0000)
IP	-1.6522** (0.0493)	-16.0846*** (0.0000)	-2.3491*** (0.0094)	-12.6021*** (0.0000)	94.6410*** (0.0029)	548.4891*** (0.0000)
MVA	-0.4116 (0.3403)	-12.1103*** (0.0000)	-1.9043** (0.0284)	-9.0965*** (0.0000)	76.8303* (0.0705)	410.8054*** (0.0000)
FDI	-5.4315*** (0.0000)	-17.3339*** (0.0000)	-5.3104*** (0.0000)	-12.1292*** (0.0000)	168.5574 *** (0.0000)	639.3406 *** (0.0000)
CAP	-1.5905* (0.0559)	-15.2383*** (0.0000)	-1.7188** (0.0428)	-13.1129*** (0.0000)	93.1508*** (0.0039)	520.3395*** (0.0000)
Urbanpop	-15.1592*** (0.0000)	-15.3435*** (0.0000)	-14.9787*** (0.0000)	-19.1752*** (0.0000)	-11.7220*** (0.0000)	-12.4102*** (0.0000)

INF	-11.3209*** (0.0000)	-22.7459*** (0.0000)	-10.3904*** (0.0000)	-15.9702*** (0.0000)	295.9364*** (0.0000)	878.4574*** (0.0000)

Note: Probability values are reported in parenthesis. ***, **, and * denote the 1%, 5%, and 10% significance levels

3.3 Cointegrations

After testing and defining the stationarity order, the Pedroni's cointegration test (1999) is used to discover potential relationships between variables. Heterogeneity issues are explained using specific parameters that vary in each sample and country. The test usually consists of seven statistical outcomes used in conducting panel data cointegration. Of seven statistics, four statistics are situated on "within dimension," and the other three statistics are based on "between dimension." The null hypothesis of no cointegration is put to the test using these seven statistics. The null hypothesis of no cointegration, which is rejected at a 1% significant level, is shown by four out of the sample's seven statistics (Panel t-statistics, Panel adf-statistics, Group t-statistics, and Group ADF-statistics), it is then deduce that cointegration exists among the variables and suitable for analysis, (see table 4.5).

Table 4.5: Pedroni's Cointegration Tests Result

Pedroni's Cointegration Tests Statistics			
Within Dimension Test Statistics		Between Dimension Test Statistics	
Panel v-statistics	-1.528		
Panel rho-statistics	.5049	Group rho-statistics	1.83
Panel t-statistics	-13.69	Group t-statistics	-16.2
Panel adf-statistics	-7.234	Group adf-statistics	-8.79

After establishing cointegration, the study can apply one of the three Panel ARDL estimations based on the Hausman test. However, it is also important to identify the optimal lag length each variable will use since the number of lags applied to each variable produces different results during the estimation. Accordingly, based on the Akaike Information Criteria (AIC), the number of lags used in the study are (1,0,0,0,0,0,0,0). After confirming the number of lags used in the estimation, the study employed the Hausman tests to select the appropriate and effective

estimation among the three panels' ARDL estimations. Consequently, the Hausman test was applied over MG and PMG, and thus, since the p-value is 0.9493, which is greater than 0.05, the null hypothesis of homogeneity cannot be rejected, thereby confirming that the PMG estimator is more appropriate for this study than the MG estimator. After verifying PMG accuracy, the study again employed the Hausman test to select between PMG and DFE. The p-value of 0.9291 further confirms that PMG is the most and best estimation over DFE. Therefore, our estimation for this study will be based entirely on the Pooled Mean Group (PMG) estimation.

3.4 Estimation of PMG Results

The PMG estimation was selected over other panels' ARDL estimation based on the Hausman test results. Thus, the Hausman test confirmed the efficiency and advantages of applying the PMG estimator as the appropriate estimator for investigating the long-term and short-term links between trade openness and economic growth over the MG and the DFE estimators. In addition, the PMG is thus more appropriate than MG and DFE since it can let the short-run coefficient be different across countries and allow the coefficients to be homogenous in the long run. According to the PMG estimation, Table 4.6 presents the short and long-run effects of trade openness on Africa's economy. Using the Akaike Information Criterion (AIC), the optimal lag length of panel ARDL (1,0,0,0,0,0,0,0) was selected for estimating the results.

Accordingly, with the error correction term (ECT) (adjustment coefficient) statistically significant at the 1 percent level of significance and with a projected negative sign, the findings of the estimations suggest that economic growth and the explanatory variables are in equilibrium over the long run. According to the error correction coefficient of 0.89, short-run variations from long-run equilibrium are corrected and adjusted at a rate of 89 percent each year for African countries. Furthermore, in the regression, most variables such as trade openness (TRA), industrial production (IP), foreign direct investment (FDI), and urban population (Urbanpop) are positively related to economic growth in the designated African countries from 1990 to 2020. In contrast,

manufacturing value-added (MVA), and inflation (INF) negatively affect economic growth during the study period.

In light of this, the PMG results regarding the effect of trade openness on economic growth confirm that, at a significance threshold of 5%, trade openness has a favorable and significant impact on economic growth in Africa. The findings strongly support the hypothesis that trade openness and economic growth are positively correlated over the long term in all nations. suggesting a one-unit increase in trade would lead to a 0.0187 unit increase in economic output. The results indicate that when trade openness is high in a country, there is a huge probability of an increase in industrial products which contributes greatly to economic growth. Furthermore, high trade openness leads to an open market which creates opportunities for investment to flow and is highly beneficial for economic growth. The findings further indicate that trade openness is an essential component that helps drive economic growth in all countries in the long run. Moreover, as these countries move towards sustainable development and economic booms, the role of trade in economic activities will become much more appreciative and significant.

The result in this analysis is in accordance with the studies of Nelson and Natalia (2018), who find technology shares practical relationship trade and lead to growth in developing countries. In contrast, Philippa Dee and Jyothi Gali (2003) found little impact of trade on investment. Similarly, George Alessandria Horag Choi established that the welfare gain cannot be recovered from a trade, therefore the long run effects are strongly discounted. Observation shows a significant and positive relationship between foreign direct investment and trade during the study period in the long run. Consequently, each increase in foreign direct investment by one unit raises economic growth by 0.270 units with a significant significance level of 1 percent. The outcomes demonstrate that the economic growth of African countries has been primarily driven by the increase in foreign direct investment which gave rise to a lot of job opportunities, reduced unemployment rates, and technological advancements. Our current finding is in line with the study of Marc J. Melitz (2022) who found a similar result in developing countries.

Additionally, industrial production (IP) positively influenced Africa's economic performance in both long and short runs, the results indicate conclusive influence on economic growth in both runs, which are significant at 5% and 10% significant levels. The implication is that as Africa increases industrial production, its economic performance enhances in the long and

short runs, which may result in a decrease in imports of various goods and services, which then supports the economy's growth in a variety of ways. With increasing industrial production in a country, the capital it uses to import goods and services gradually decreases so that the country can use this capital to finance some development projects in its country. The findings are consistent with (Zhao & Jianmin, 2018) and (Mukhlis et al., 2017), who used Indonesia and China-Russia case studies, respectively, to demonstrate that industrial production led to economic growth. On the contrary, manufacturing value-added is significant negative in both the long and short runs, while gross fixed capital formation (CAP) is completely insignificant in both runs.

The regression results in Table 4.6 indicates that inflation has substantial adverse effects on economic growth in selected African countries between 1990 and 2020, both in the short-run and in the long run. The coefficients, however, suggest that the effect is higher in the short run rather than in the long run. The implication is that when countries experience high inflation rates, the economy becomes more unstable in the short run, hindering economic growth. This study indicates that due to the excessive fluctuation in inflation in Africa due to the absence of sound monetary policy, the economy suffers in many ways. This conclusion agrees with (Ikpesu, 2021) and (Abdulqadir & Asongu, 2021), who confirm that inflation constrains economic growth in Sub-Saharan Africa. Unlike inflation, urban population has a positive significant impact on economic growth in both short and long runs. The implication is obvious in any given economy, as population increases trade and other economic activities increase leading to economic growth.

However, manufacturing value-added and inflation are significant and negative impact on economic growth in both the short and long runs. In this regard, almost all African countries are categorized as developing countries. As a result, their inflation and value-added manufacturing are lower than other developing countries. Thus, they are not benefiting from value-added manufacturing like other developing countries in other regions. Additionally, the manufacturing sector of Africa has received less attention from governments, which has had major impact on the infrastructure associated with the production of finish-goods. As a result, the manufacturing sector contribution to economic growth is negative, meaning the sector may be a source of environmental problems in some African countries.

Table 4.6: Pooled Mean Group Estimation: Panel short-run and long-run coefficients

Long-run		Short-run	
Variable	Estimates	Variable	Estimates
TRA	0.0187** (0.00946)	D.TRA	-0.0333 (0.109)
IP	0.0812* (0.0418)	D.IP	0.117** (0.0547)
MVA	-0.161** (0.0632)	D.MVA	-0.253** (0.0213)
FDI	0.270*** (0.044)	D.FDI	0.0576 (0.0763)
CAP	0.0738 (0.0329)	D.CAP	0.0127 (0.0331)
Urbanpop	0.439*** (0.156)	D.Urbanpop	0.892*** (0.028)
INF	-0.00630 * (0.00377)	D.INF	-0.0613** (0.0250)
ECT			-0.886*** (0.0334)
			1.937***

Constant			(0.034)
Observations (N)	930		930
Hausman Test			
MG vs PMG		0.9493	
DFE vs PMG		0.9291	

Note: ***, ** and * indicate the significance of the 1%, 5% and 10% levels, respectively.

Conclusion and policy implications

The aim of the thesis is to establish the impact trade and other explanatory variables have on economic growth in the selected African countries. Country-level annual panel data were utilized for 30 countries, covering 1990-to 2020. This study used only world development indicators (WDI) as a data source. In this study, Pooled Mean Group (PMG) estimation estimates the short- and long-term effects of explanatory variables on economic growth. Furthermore, before considering the main results using PMG estimation, the study checked the stationarity of all variables to make sure no one was stationary at the second difference (I (2). Moreover, each optimal lag length for dependent and independent variables was identified since the appropriate lag length is critical while estimating the main results.

The study discovered that trade openness, industrial production, foreign direct investment and urban population have a substantial and positive impact on economic growth in the long term; however, the short-term results is also positive and significant for industrial production and urban population but did not show a positive correspondence between trade openness, foreign direct investment and economic growth. For manufacturing value-added and inflation, the results are significant-negative and capital formation insignificant. According to the long-run results, the economy of African countries is driven by trade openness, industrial production, foreign direct

investments and urban population, which are essentially necessary for increasing economic activities leading to consumption and direct adding new jobs that lead to the creation of new markets, businesses, and job openings, which provide more opportunities for individuals to earn an income and lift themselves, their families and their communities out of poverty.

However, the study pointed out that capital formation had not reached the level needed to promote economic growth in Africa. The consequence is that because of low amount of private investment in African nations and the view that both foreign and domestic investors hold that the risk-adjusted rate of return on capital is poor, African countries are still not benefiting from capital formation. Indeed, the result is not surprising since earlier studies also found an insignificant relationship between economic growth and capital formation in this region (Taiwo, 2019)(Uneze, 2013). These authors argue that economic growth in this region is low due to low capital formation in the region. The findings have substantial policy implications for African countries. First, the result of the thesis demonstrates a positive connection between trade and economic growth in the long run; however, the study failed to show that same positive effect in the short run, so governments in these countries need to develop strategies for resolving this issue in short run. Second, because the findings show a negative association between manufacturing value-added and economic growth, African governments should review their policies and highlight areas that require additional screening to reverse the negative effect of manufacturing value-added on economic growth.

PREKYBOS ATVIRUMO ĮTAKA PASIRINKTŲ AFRIKOS ŠALIŲ EKONOMINIAM AUGIMUI

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SANTRAUKA

48 puslapiai, 8 lentelės, 33 literatūros šaltiniai.

Šiame tyrime nagrinėjamas prekybos atvirumo poveikis ir jo įtaka ekonomikos augimui pasirinktose Afrikos šalyse – kaip prekybos atvirumas buvo tvarkomas Afrikos valstybėse narėse ir kaip šie sandoriai paveikė šių šalių ekonomiką, augimą ir vystymąsi.

Šį magistro darbą sudaro trys pagrindinės dalys: literatūros apžvalga, straipsnių apie tarptautinę prekybą apžvalga, metodologija, empirinių rezultatų pristatymas ir jų aptarimas, išvados bei rekomendacijos.

Literatūros apžvalgoje nagrinėjamos besitęsiančios diskusijos apie prekybos augimą ir ekonomikų atvirumą bei apžvelgiama tarptautinės prekybos padėtis ir jos įtaka besivystančioms rinkoms ir tautoms. Taip pat aptariami dėl rinkos barjerų kylantys sunkumai, su kuriais susiduria mažiau išsivysčiusių šalių rinkos.

Literatūros apžvalgą seka metodologijos dalis, kur pateikiami metodai, modeliai ir autoriaus panaudota struktūra empiriniam tyrimui, taip pat aiškinami vertinimai, tyrimui naudota duomenų procedūra.

Remiantis metodologija, pateikiami aprašomosios statistikos ir koreliacijų analizės empiriniai rezultatai ir aptarimas. Šioje dalyje išsamiai aprašomos sąsajos su kintamaisiais, atskleidžiamas atvirumas ekonomikos augimui ir jo poveikis pasirinktoms Afrikos šalims.

Baigiamojo darbo tikslas – atskleisti prekybos įtaką ir aiškinamuosius kintamuosius, susijusius su ekonomikos augimu pasirinktose Afrikos šalyse. Tyrime naudojami 30 šalių metiniai duomenys, apimantys 1990–2020 m. laikotarpį, o kaip pagrindinis duomenų šaltinis pasirinkti tik pasaulio vystymosi rodikliai (angl. – WDI). Tyrime pasitelkiant PMG vertinimą analizuojamas trumpalaikis ir ilgalaikis kintamųjų poveikis ekonomikos augimui. Be to, prieš nagrinėjant pagrindinius rezultatus naudojant PMG vertinimą, tyrime patikrintas visų kintamųjų stacionarumas, siekiant įsitikinti, kad antrame skirtume niekas nebuvo stacionarus (I (2). Be to, kiekvienas optimalus delsos (angl. – lag) ilgis yra labai svarbus priklausomiems ir nepriklausomiems kintamiesiems, kadangi jo pasirinkimas yra reikšmingas vertinant gautus pagrindinius rezultatus.

Tyrimas atskleidė, kad prekybos atvirumas, pramoninė gamyba, tiesioginės užsienio investicijos ir miestų populiacija turi didelę ir teigiamą įtaką ekonomikos augimui ilgalaikėje perspektyvoje. Trumpalaikiai rezultatai taip pat yra teigiami ir reikšmingi pramonės gamybai ir miestų populiacijai, tačiau neparodė teigiamo ryšio su prekybos atvirumu, tiesioginėmis užsienio investicijomis ir ekonomikos augimu. Taigi, siūlomos svarbios politinės paskatos paskatinti prekybą Afrikoje. Pirma, šis darbas parodo teigiamą ryšį tarp prekybos atvirumo ir ekonomikos augimo ilgalaikėje perspektyvoje, tačiau neparodo tokio pat teigiamo poveikio tarp prekybos atvirumo ir ekonomikos augimo trumpuoju laikotarpiu. Todėl šių šalių vyriausybės turi parengti strategijas trumpuoju laikotarpiu išspręsti prekybos problemą. Antra, rezultatai patvirtino pramonės gamybos, tiesioginių užsienio investicijų ir miestų populiacijos potencialą Afrikoje. Taigi, šių šalių vyriausybės turėtų prisiimti atsakomybę daugiau investuoti į dabartinę gamybos infrastruktūrą, kad gamybos apimtys didėtų ir taip ženkliai didintų ir pramoninę veiklą, tam, kad tai galėtų išspręsti kai kurias pasiūlos ir paklausos problemas bei sukurti daugiau darbo vietų augančiai populiacijai Afrikos žemyne.

IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH IN SELECTED AFRICAN COUNTRIES

A-Roland Anderson

MASTER THESIS

GLOBAL BUSINESS AND ECONOMICS

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

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SUMMARY

48 Pages, 8 Tables, References 33

This study examines the impact of trade openness and its influence on economic growth in selected African countries, how trade openness has been managed within the member states of Africa, and how these transactions have impacted the economies, growth, and development of these countries.

This Master thesis comprises three main parts: the literature review, the review of the publication on international trade, the methodology, the empirical results, and the discussion, a conclusion, and recommendations.

Literature review examines the ongoing debate on trade growth, and the openness of economies and reviews the stand of international trade and its impact on developing markets and nations. The hassle faced with market barriers by less-developed nations.

Succeeding the literature review is the Methodology, paper shows the methods, models, and the structure the author deployed, and the estimation, and the data procedure implemented for the investigation are explained.

Following the methodology are the empirical results and discussion of the descriptive statistics and correlations analysis. This part detail and describes the links with the variables, disclosing how openness on economic growth and its impact on the selected African countries.

The aim of the thesis is to demonstrate trade influence and the explanatory variables with economic growth in the selected African countries. Country-level annual panel data were utilized for 30 countries, covering 1990-to- 2020. This study used only world development indicators (WDI) as a data source. In this study, Pooled Mean Group (PMG) estimation estimates short- and long-term effects of explanatory variables on economic growth. Furthermore, before considering the main results using PMG estimation, the study checked the stationarity of all variables to make sure no one was stationary at the second difference (I (2). Moreover, each optimal lag length is critical for dependent and independent variables was identified since the appropriation of the lag is critical while estimating key main results.

The study discovered that trade openness, industrial production, foreign direct investment, and urban population have a substantial and positive impact on economic growth in the long term; however, the short-term results are also positive and significant for industrial production and urban population but did not show a positive correspondence with trade openness, foreign direct investment, and economic growth. Important policy implications are suggested for the promotion of trade in Africa. First, the thesis demonstrates a positive connection between trade openness and economic growth in the long run: but the study failed to show that same positive effect between trade openness and economic growth in the short run, therefore governments in these countries need to develop strategies to resolve the problem with trade in the short run. Second, the results confirmed the potential of industrial production, foreign direct investment, and urban population in Africa. Therefore, governments in these countries should take the responsibility to invest more in current production infrastructures so that outputs could increase thereby leading to a huge increase in industrial activities, and that could solve some of the supply/demand problems and create more jobs for the growing population on the African continent.

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