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Debt and Integration: African Debt Dynamics and its Implications on Economic Pan-Africanism

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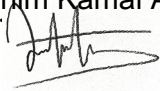
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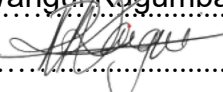
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DEDICATION

To my parents, whose unwavering support, guidance, and encouragement have been the cornerstone of my academic journey. Their endless sacrifices and belief in my potential have made this achievement possible, and I am deeply grateful for their constant support in my life.



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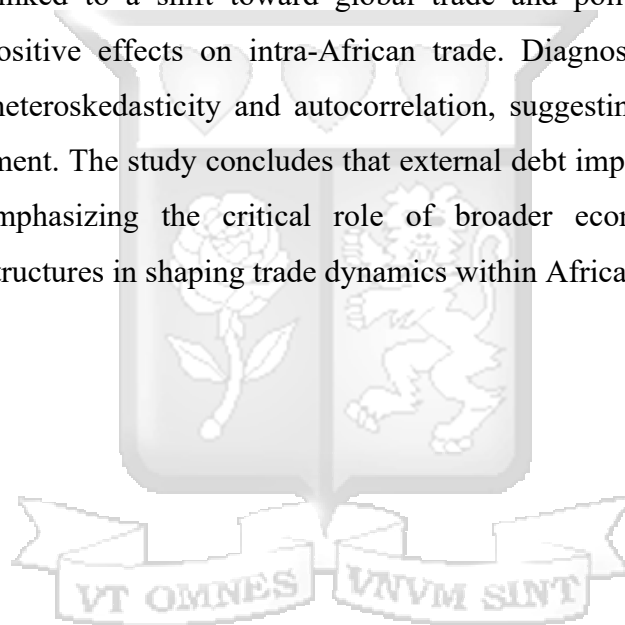
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I. Abstract

This study explores the relationship between foreign debt accumulation and intra-African trade, specifically investigating how external debt impacts both the total volume and the proportions of intra-African exports and imports in a country's total trade portfolio. Using a fixed effects panel model, data was analyzed from 19 African countries (balanced panel) and 33 countries (unbalanced panel) over the period from 2005 to 2022. The findings reveal that while external debt does not have a significant direct impact on the overall volume of intra-African trade, it indirectly affects trade through its influence on inflation, which negatively impacts trade. Additionally, governance quality and political stability emerged as significant factors, with better governance linked to a shift toward global trade and political stability showing marginally positive effects on intra-African trade. Diagnostic tests indicated the presence of heteroskedasticity and autocorrelation, suggesting the need for further model refinement. The study concludes that external debt impacts intra-African trade indirectly, emphasizing the critical role of broader economic conditions and governance structures in shaping trade dynamics within Africa.



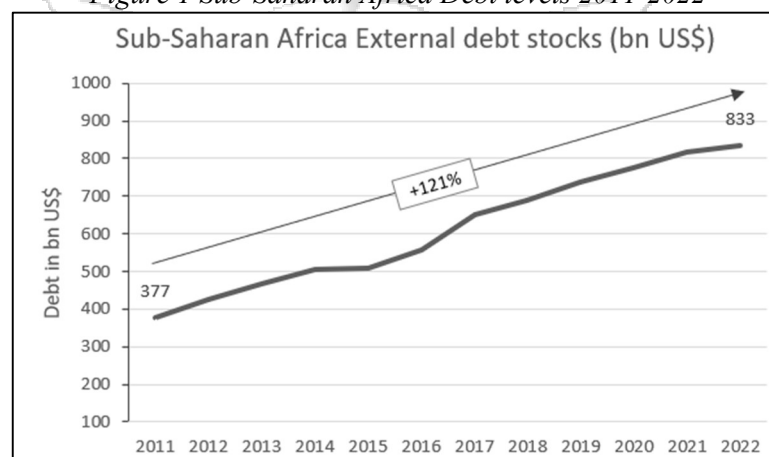
1. Introduction

1.1 Background

Pan-Africanism is a political and social movement that aims to strengthen the solidarity and unity of African nations with the purpose of fostering a collective identity from the shared challenges faced by the continent. It seeks to promote cooperation and cohesion among African countries to achieve greater political, economic, and cultural integration. Economic Pan-Africanism, a critical facet of this movement, focuses on enhancing trade integration between African countries. This aspect emphasizes the development of intra-African trade as a means to reduce dependency on external markets, boost regional economic growth, and create a self-sustaining African economy.

However, economic Pan-Africanism faces significant challenges and hurdles particularly due to a critical knowledge gap regarding the impact of foreign debt on regional trade dynamics. In today's globalized world, understanding how foreign debt impacts these dynamics is crucial for sustainable development, especially given that Sub-Saharan Africa's total public debt rose from \$380 billion in 2011 to over \$830 billion in 2021, a staggering increase that underscores the continent's growing financial strain¹.

Figure 1 Sub-Saharan Africa Debt levels 2011-2022



Source 1 International Debt Statistics - World Bank

¹ [International Debt Statistics | DataBank, World Bank Group](#)

High debt levels in African countries directly impact public services such as healthcare and education, exacerbating poverty and inequality. A UN report² highlights that many countries spend more on debt servicing than on critical social services combined, leaving children and communities with little to no access to essential needs and reducing the prospects for sustainable development. In Mozambique, for instance, the financial strain from high debt burdens, where wage bills and debt-service costs amounted to nearly 90% of tax revenues in 2021-2023 (*World Bank in Mozambique*, 2024), has led to decreased government expenditure on healthcare, social welfare, and education; further deepening socio-economic grievances and instability

While it is apparent that foreign debt plays a pivotal role in shaping the economic landscapes of African nations, it also has broad implications for intra-African trade. Notably, scholars like Eichengreen & Hausmann (1999) emphasized that high levels of foreign debt can lead to currency devaluation and exchange rate volatility, creating uncertainty and hindering trade transactions within the continent. Additionally, the persistent Balance of Payments (BOP) constraints, as discussed by Reinhart & Rogoff (2009), highlight the challenges African countries encounter in financing imports and promoting regional trade due to substantial debt servicing obligations.

Given that the export-led growth theory suggests that increased trade activities, particularly exports, is one of the key determinants of economic growth, policymakers are faced with growing pressure to establish the right environment necessary to promote trade (Medina-Smith, 2001). In addition, the fact that exports can also drive economic growth by easing foreign exchange constraints (McKinnon, 1964), promoting foreign exchange accumulation (Baharumshah & Rashid, 1999), relieving import reliance (Esfahani, 1991) and encouraging better allocation of resources (Mahadevan, 2007) emphasizes the importance of promoting trade.

Intra-African trade is particularly crucial as it helps optimize the benefits of globalization, creating more diversified and resilient economies. By expanding intra-African trade, countries can reduce their reliance on external markets, mitigate the risks associated with global economic uncertainties, and build stronger regional value

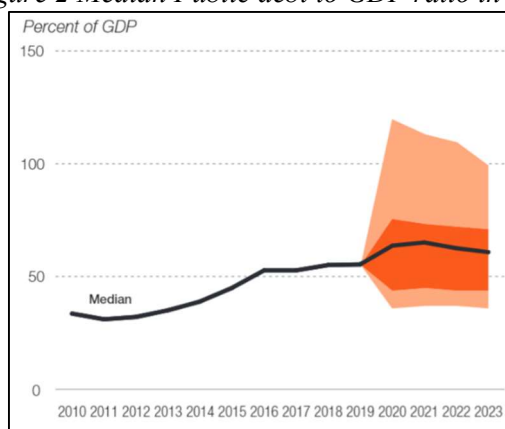
² [*Many Countries Spending More on Debt than Education, Health and Social Protection Combined | UN News, 2021*](#)

chains. This regional integration can lead to economies of scale, increased competitiveness, and greater economic stability, all of which are essential for sustainable economic growth. This was seen in the European Union (EU) where the harmonization of economic policies and regulations across the EU has contributed to greater economic stability, reducing uncertainties and fostering a conducive environment for investment and growth. (Peritz et al., 2022)

Recent empirical studies, in addition, reveal a significant increase in public debt across African countries since 2013. According to Ndung et al. (2021), the public debt in Africa started to rise sharply after 2013, reversing the gains from the Heavily Indebted Poor Countries (HIPC) initiative. This increase in debt was largely driven by a commodity price boom, which led many African nations to borrow heavily from private institutions rather than relying on concessional loans. This shift to market-based loans, with their higher interest rates and shorter maturity periods, has exacerbated the debt burden for many African countries.

The African Development Bank reports that following significant debt relief initiatives in the early 2000s, the median public debt-to-GDP ratio in Sub-Saharan Africa (SSA) fell from 85.3% in 2001 to 34.3% in 2011. However, by 2019, this ratio had risen to about 58%, and the COVID-19 pandemic further accelerated the debt burden, with projections indicating that the median debt-to-GDP ratio could reach close to 70%. These rising debt levels pose significant challenges for fiscal policies across the continent, as many countries grapple with elevated interest burdens and weak commodity export markets (*From Debt Resolution to Growth*, 2021).

Figure 2 Median Public debt to GDP ratio in SSA



Source 2 African Economic Outlook 2021 - AfDB report

This paper hypothesizes that increased debt can have an inverse relationship with intra-African import and export activities. As debt levels rise, countries often face higher interest payments, reducing the funds available for investment in trade infrastructure and development. In addition, the terms attached to foreign debt accessed by African countries, specifically Structural Adjustment Programs (SAPs), usually shifts the focus away from regional integration. This situation can lead to decreased trade efficiency and higher transaction costs, making it more difficult for African nations to engage in intra-continental trade. Additionally, high debt levels can lead to currency devaluation and exchange rate volatility, further discouraging trade by creating uncertainty in pricing and contract stability.

These factors collectively hinder the growth of intra-African trade, counteracting efforts to reduce dependency on external markets and undermining the goals of economic Pan-Africanism. These insights, which will be delved into deeper in 2. *Literature Review*, lay the fundamental questions for our investigation into how African nations will have to navigate the complexities of debt dynamics to promote intra-African trade and foster economic integration.

1.2 Problem Statement

In the pursuit of Pan-African economic integration³, African nations are confronted with the challenge of managing their debt-taking behaviour against their ambitious regional goals. This paper speculates, and expands from theoretical frameworks in *Chapter 2. Literature Review*, that there exists a negative correlation between foreign debt levels and intra-African trade; induced by the burden of debt-servicing requirements, diversion of funds and focus from regional integration, and economic instability.

The significance of analyzing African debt dynamics and its implications for Economic Pan-Africanism comes about from the relationship of fiscal responsibilities of individual African countries and their impacts on the goals for continental unity and cohesion. That is, the responsibilities that African countries face in meeting the

³ Measured by Trade integration between African countries.

obligations of their fiscal budgets and development projects, and how that impacts their regional integration aspirations if they opt for foreign debt to finance them.

It is essential to have a thorough understanding of how different debt levels and each country's debt-tolerance can affect intra-African trade. There are numerous studies that dive into the aspects that govern this relationship; however, these studies fall short in assessing the fundamental assumptions.

Geda & Seid (2015) explored and proved using empirical models that there exists a large potential for intra-African trade and the reality for this trade in advancing regional economic integration. It highlights several key challenges, including but not limited to, weak infrastructure, low productivity and trade facilitation issues, and recommends addressing export supply constraints to improve the country's capacity. However, this paper, along with many others in the field, fails to explicitly connect foreign debt as a key challenge to the broader vision of Economic Pan-Africanism.

Another gap that presents in studies, like Fosu (2010), is a lack of research directly examining how foreign debt impacts intra-African trade flows. While Fosu (2010) finds that constraints relating to debt servicing do impact spending specifically for social sectors and provides insights into public expenditure, the study does not specifically address its impact on trade and, more importantly, intra-African trade.

These two potential gaps in research, being the linking of debt and Economic Pan-Africanism, and the analysis of the direct impact of debt on intra-African trade, are the fundamental areas that this paper seeks to supplement. But more broadly, it also hopes to contribute to the following.

Firstly, detailed empirical studies that incorporates recent data on African trade and foreign debt are sparse. This paper seeks to supplement this by using data that covers the two large macro-economic disruptions; 2008 World Financial Crisis and the Covid-19 pandemic.

Secondly, while many studies, like Sunday et al. (2019), may look into the aspects related to the topic, they fail to look at it from the Pan-Africanism perspective or broadly from the African perspective. Sunday et al. (2019) does analyze the impact of external debt on economic growth in Nigeria, providing empirical insights into how

debt influences the Nigerian economy, but the study is country-specific (Nigeria) and does not address intra-African trade or economic Pan-Africanism broadly. Comparative analyses between different African regions or countries could shed light on how varying levels of debt and economic policies affect trade and integration efforts.

The lack of analysis and the gaps in research around the relationship in focus will make it more difficult to develop a policy framework that would seek to leverage the potential of economic cooperation between African countries to promote resilience and growth.

Hence, there exists an urgent need to dive into the complex relationship between African debt dynamics and Economic Pan-Africanism and establish the exact relationship between the two variables to aid policymakers in Africa, to tap into the missed benefits of regional integration highlighted in 1.1 Background.

1.3 Research Objectives

1. Quantify the proportion of intra-African trade in each country's total trade portfolio.
2. Assess the impact of significant debt accumulation on intra-African exports and imports.

1.4 Significance of the Research

This research will greatly service African leaders and policymakers in ascertaining any trends that may be identified between foreign debt accumulation and economic integration and, more importantly, may assist in the re-alignment of continent-wide policies to aid in achieving economic Pan-Africanism, and with it the optimized benefits of globalization and a more diversified and resilient economy.

Specifically, the findings will help policymakers understand how debt levels influence trade patterns, enabling targeted interventions to boost intra-African trade and reduce dependency on external financing. This, in turn, will support more sustainable economic integration and enhance Africa's economic resilience against global shocks.

2. Literature Review

2.1 Introduction

This review delves into scholarly insights, empirical evidence, and theoretical frameworks to expound on the intricate relationships between debt accumulation, currency stability, trade patterns, and economic growth across African countries.

2.2 Theoretical Framework

2.2.1 Harrod-Domar Model

The Harrod-Domar model highlights the relationship between savings, investment, and growth positing that economic growth depends on the level of savings and the efficiency of investment, i.e. an increase in savings leads to higher investment, which in turn fuels economic growth. According to the model, foreign debt can help bridge the savings-investment gap⁴ in developing countries (Domar, 1946).

However, if the debt service burden becomes too high, it can deplete the resources available for investment in productive capacities and infrastructure, leading to a BOP crisis. Despite the crisis ultimately leading to a reduction in overall trade, it further limits the capacity to engage in intra-African trade, with countries being forced to focus on stabilizing their economies rather than promoting regional trade initiatives.

To expound on that, the model implies that while foreign debt can temporarily bridge the savings-investment gap, its long-term sustainability is crucial. The model's reliance on efficient investment assumes that debt must be managed carefully to avoid long-term economic difficulties. If the debt burden becomes unsustainable, it can severely impact a country's ability to invest in necessary economic activities, including trade. For African countries, high external debt levels might reduce their capacity to engage in and benefit from intra-African trade, however, there are no substantive empirical studies with definite evidence supporting this. If that is the case, however, this could lead to a focus on short-term economic stabilization over long-term regional economic

⁴ Savings investment gap refers to the deficit between current aggregate savings and the level of savings required to provide funds for business investment.

integration to address the immediate consequences of high external debt levels (Sachs et al., 1995).

2.2.2 Structural Adjustment Programs (SAPs) and the Dependency Theory

Structural Adjustment Programs (SAPs) and the Dependency Theory provide a critical lens for understanding the impact of foreign debt on African economies and their integration efforts.

Khor (2000) explains how SAPs, often imposed by international financial institutions like the IMF and the World Bank, aim to stabilize economies through austerity measures, trade liberalization, and privatization. While SAPs can lead to short-term stabilization, they often result in long-term socio-economic challenges, including reduced public investment and increased poverty.

These programs can undermine regional integration efforts by prioritizing debt repayment over regional trade development. Forster et al., (2020) highlights this by finding that the austerity measures that SAPs advocate to service debt often result in economic disruptions that can affect regional economies by creating instability, reducing investments, and, more importantly, hindering cooperation between countries. This is exacerbated by the diverging of economic policies within the region as countries under SAPs may prioritize different policies leading to a policy misalignment and further challenges in harmonizing regional economic policies.

Additionally, Forster et al. (2020) also highlights how SAPs entail trade liberalization measures that can weaken domestic industries in favor of imported goods, potentially reducing the competitiveness of regional producers in favour of extra-African alternatives as some countries may struggle to compete in an open market. Terry (2019) cites an example of this in Ghana where SAPs had until recently been followed as a condition for receiving loans from the IMF. They find that the liberalization measures proposed in the SAPs have contributed to the deterioration of traditional sectors, particularly agricultural.

The Dependency Theory plays a crucial role in explaining how developing countries continue to be dominated by developed countries by using instruments like, for example, SAPs as conditions for loans. This theory argues that there exists an

economic dependency of developing countries on developed nations, which perpetuates a cycle of underdevelopment (Delgado et al., 2016). The theory further argues that the global economic system is structured and set up in a way that further perpetuates that cycle of dependency of developing countries on developed countries.

High levels of foreign debt exacerbate this dependency, as African countries are often subjected to the economic policies and interests of their creditors. This dependency can hinder intra-African trade by diverting resources and attention away from regional economic initiatives towards servicing foreign debt.

While these theories offer valuable insights, there are gaps in the theoretical literature concerning the direct relationship between SAPs, foreign debt, and intra-African trade. This gap suggests that there is a need for empirical studies to validate the theoretical implications. By examining African trade data and debt statistics, this paper aims to empirically confirm the impact of foreign debt and SAPs on regional trade dynamics and economic stability in African countries.

2.2.3 Summary

This study hopes to contribute to existing literature by utilizing the existing theories outlined above to investigate how foreign debt influences intra-African trade and economic integration. By examining these relationships, this paper hopes to contribute to filling in the existing gaps within the theories in the context of African trade and debt accumulation. The paper hopes to offer new insights into the challenges and opportunities for economic Pan-Africanism in the context of African debt dynamics.

2.3 Empirical Review

As highlighted under 1.2 Problem Statement, there exists a significant gap in literature and empirical studies on the effects of foreign debt on intra-African trade. As such, this study focuses instead on the empirical findings surrounding the variables that are affected by debt and have significant impact on regional trade patterns.

2.3.1 Exchange Rate Stability and Trade Flows

Odera (2015) finds that real effective exchange rate (REER) volatility is closely linked to a country's debt levels, where high and unsustainable external public debt was

evidenced to lead to high REER volatility in Kenya after assessing quarterly data on the complete float regime from 1993 to 2013. When a country has substantial debt, maintaining low and stable interest rates becomes challenging, leading to increased exchange rate volatility. As foreign debt significantly affects exchange rate stability, countries that accumulate high levels tend to notice severe currency devaluation with respect to their local currencies (Eichengreen & Hausmann, 1999).

Furthermore, Akwabi (2016) specifically examines the effect of exchange rate volatility on Kenya's export trade. The study focuses on the period from 2011 to 2015, using monthly export earnings and exchange rate movements. The results demonstrate a strong Pearson correlation (73%) between exchange rate movements and export trade earnings, indicating that fluctuations in foreign exchange rates significantly impact Kenya's export sector. High exchange rate volatility can create uncertainty and increase the cost of trade transactions, thereby hindering trade flows.

Hale (2011) provides a real account on how the speculative attack on the Thai Baht and the subsequent devaluation was as a result of high levels of foreign debt and currency mismatches.

The need for external borrowing to service existing debt, as is common with sub-Saharan countries that find themselves trapped in a debt cycle, can also put downward pressure on the currency. The instability of local currencies and the subsequent volatility of their exchange rates create uncertainty. This uncertainty can hinder intra-African trade by increasing the cost and risk associated with trade transactions within the continent, thereby inhibiting the potential benefits of greater regional economic integration and cooperation.

While much attention has been paid to the impacts of currency fluctuations on trade in general, the specific dynamics within the African continent, especially in the context of high debt levels, require further exploration. This paper aims to fill this gap by analyzing how foreign debt-related instability impacts regional trade flows and economic integration across all African countries.

2.3.2 Balance of Payments (BOP) Constraints and Regional Trade Patterns

High levels of foreign debt can also lead to a chronic Balance of Payments (BOP) constraint, where countries need to prioritize debt servicing over other expenditures.

Reinhart & Rogoff's (2009) comprehensive analysis of financial crises throughout history provides empirical evidence and theoretical insights into how high levels of foreign debt can lead to chronic balance of payments constraints. They prove how debt servicing obligations can constrain a country's ability to finance imports and other expenditures, showing that debt servicing difficulties are a common precursor to balance of payments crises. This limitation can stifle intra-African trade by making it more difficult for businesses to procure necessary inputs from regional partners, thus reducing overall trade volumes within the continent.

Ersoy's (2016) study on Turkey's economic performance highlights how balance of payments (BOP) constraints impede growth. In Turkey's case, the quarterly average growth rate of exports was only 1.7%, well below the growth rate of capital inflows. This poor export performance reflected the economy's inability to generate sufficient revenue from exports to balance the trade deficit.

These insights are relevant to African countries, which face similar challenges with capital flows and debt repayments. High debt levels increase borrowing costs and destabilize interest and exchange rates, negatively impacting trade. However, and more critically, most efforts to improve the balance of payments through export promotion might focus on extra-African markets rather than regional trade. (Calderón et al., 2020)

This focus arises because extra-African markets may offer higher returns or more stable demand compared to the often volatile and underdeveloped intra-African markets. Consequently, resources that could have been used to strengthen regional trade are instead diverted to supporting exports outside the continent, further hindering the growth of intra-African trade.

Effective debt management is crucial for enhancing intra-African trade by stabilizing economic conditions. Improved debt management can reduce dependency on volatile international markets and support regional trade. Strengthening intra-African trade fosters economic diversification and resilience, making trade more predictable and less

costly. Thus, managing debt and promoting intra-African trade are essential for driving economic growth and stability in Africa.

2.3.3 Impact of Structural Adjustment Programs (SAPs) on Regional Trade

Taye's (2022) critical appraisal of SAPs and Poverty Reduction Strategy Papers (PRSPs) provides valuable insights into the effectiveness of these programs in alleviating poverty and promoting economic growth in Africa. Taye highlights that while SAPs were successful in achieving certain macroeconomic objectives, they often failed to address the structural issues that hinder sustainable development and regional trade.

One of the key components of SAPs was the liberalization of trade policies. This typically involved removal of import quotas, reducing import tariffs, dismantling of quantitative restrictions, and removal of exports taxes and subsidies (Shafaeddin, 2010). While these measures were intended to integrate African economies into the global market, they often undermined regional trade initiatives (Forster et al., 2020). Mbithe et al. (2017) studied the impact of SAPs on agriculture in Kenya and highlighted the negative effects of the removal of protective tariffs and subsidies as it made it difficult for local industries to compete with foreign products.

Logan (2020) also argued that the implementation of SAPs across African countries, particularly reduction of tariffs, liberalizing import and export regulations and privatizing state-owned enterprises, had mixed results. While some countries experienced initial economic stabilization, the long-term effects on development and regional trade were less favorable. The paper discusses how SAPs were implemented in Angola with a focus on liberalizing the economy, particularly in the oil sector. The SAPs did not sufficiently address Angola's pre-existing debt issues. While intended to alleviate debt burdens, the SAPs sometimes led to increased debt levels or did not significantly reduce them, leaving the country with a heavier debt load. These exposed domestic industries to international competition without adequate support for local businesses, which led to the decline of nascent industries and increased dependency on imports, which negatively impacted regional trade dynamics.

Taye (2022) further argued that the focus on global market integration overlooked the potential benefits of strengthening regional trade networks. The emphasis on external trade relationships diverted resources and policy attention away from developing intra-African trade. This was counterproductive to the goals of economic integration and regional cooperation, which are crucial for sustainable development in Africa.

Additionally, Taye (2022) explained that the austerity measures associated with SAPs reduced public investment in critical sectors such as infrastructure, education, and health, limiting the capacity for regional trade expansion. Reduced investment in infrastructure, for example, impeded the development of efficient transport and logistics networks essential for facilitating trade within the continent.

2.3.4 Dependency Dynamics presenting in Foreign Debt and Trade

This paper posits that dependency dynamics not only hinder economic growth and development but also perpetuates the cycle of underdevelopment of the Global South⁵. The dependency dynamics are often echoed in trade relationships and are further perpetuated through foreign debt instruments.

Aluko & Arowolo (2010) found that third world countries often relied on external loans from western financial institutions to fund their development aspirations. These loans would often entrap developing countries in a “debt trap”, perpetuating the dependence and leading to external control over domestic economic policies.

This is reinforced by Sylla (2023), where Sylla explored how debt was often used as a tool of dependency, functioning as a mechanism that perpetuates the economic dependency. The paper highlights that as much as the processes of colonialization have set up the current economic dependencies, the relationship is propped up by the use of modern tools like debt.

Maswana's (2015) study delves into the dependency dynamics in Africa's trade relations with China, highlighting the historical legacies of colonialism and their impact on contemporary trade patterns. Colonial powers established trade relationships that often prioritized the extraction of raw materials from Africa to fuel

⁵ the nations of the world which are regarded as having a relatively low level of economic and industrial development, and are typically located to the south of more industrialized nations

industrialization in Europe. This exploitative relationship created dependencies that persist to this day, shaping the nature of intra-African trade.

Similarly, Grönback's (2014) qualitative study explores factors affecting intra-African trade, including dependency dynamics, through case studies of Mali and Zimbabwe. The colonial legacy of resource extraction and economic dependence on external markets continues to influence trade dynamics within Africa. Dependency on former colonial powers and external markets has hindered the development of robust intra-African trade networks.

Grönback's (2014) research further highlights the impact of dependency dynamics on intra-African trade. Factors such as limited industrial diversification, infrastructure deficits, and trade barriers perpetuate dependency on external markets, stifling intra-African trade initiatives. Dependency on imports from outside the continent reduces the incentive for African countries to trade with one another, contributing to low levels of intra-African trade intensity.

2.3.5 Summary

The empirical findings reviewed highlight critical challenges in African debt dynamics and their implications for trade. While studies provide valuable insights into how debt affects variables like exchange rate stability, balance of payments, and structural adjustment impacts, there is a noticeable gap in research directly linking foreign debt to intra-African trade dynamics. This underscores the need for targeted empirical studies that explore how debt burdens influence regional economic integration efforts. By addressing these gaps, this research aims to contribute unique insights into the intersection of African debt management and economic Pan-Africanism, laying the groundwork for future studies in this area.

2.4 Conceptualization Framework

The conceptual framework of this study revolves around 6 main variables: trade data, debt statistics, political stability, government effectiveness, inflation and trade openness.

These variables serve as the foundational pillars for investigating the relationship between foreign debt dynamics and intra-African trade. Trade data, encompassing the

breakdown of imports and exports by countries of origin or arrival, provides essential insights into the patterns and trends of intra-African trade. By analyzing the composition and volume of trade flows between African countries, we can establish to what extent is regional trade integration influenced by foreign debt.

On the other hand, debt statistics offer a comprehensive overview of external debt levels across individual African countries. Understanding the magnitude and composition of external debt is crucial for assessing the financial health and sustainability of African economies, particularly in the context of promoting intra-African trade. High levels of external debt can exert significant pressure on countries' balance of payments, leading to currency instability, trade imbalances, and limited fiscal space for investment in trade-enhancing infrastructure and policies, as highlighted previously in this chapter.

In addition to the core variables of trade data and debt statistics, this study includes political stability, government effectiveness, inflation, and trade openness as control variables. These variables are critical in shaping the broader economic environment within which trade and debt interactions occur. Political stability is pivotal for maintaining consistent trade policies and economic relations, as unstable political conditions often lead to trade disruptions and investor hesitancy. Government effectiveness, reflecting the capacity of the government to implement sound policies, directly impacts the quality of trade infrastructure and economic reforms that facilitate regional trade. Inflation, on the other hand, affects the purchasing power of countries and the real value of debt, influencing both the capacity to trade and manage debt repayments. Lastly, trade openness reflects the extent to which a country is integrated into the global market, serving as an indicator of its willingness and ability to engage in trade, both regionally and globally.

These variables collectively ensure that the impact of foreign debt on intra-African trade is assessed in a nuanced context, accounting for broader economic and institutional factors that could influence the trade-debt relationship.

The theoretical underpinnings of this study draw from a variety of perspectives, including dependency theory, trade-led growth hypotheses, and structural adjustment

program critiques. These theories provide valuable insights into the complex dynamics of debt accumulation, trade patterns, and economic development within the African context.

By integrating these theoretical frameworks with empirical analysis of trade and debt data, this paper aims to explain the mechanisms through which foreign debt dynamics impact intra-African trade and explore potential policy implications for fostering regional economic integration and cooperation.



3. Methodology

3.1 Research Design

This paper seeks to utilize a Fixed Effects (FE) panel study to establish whether there exists a relationship between significant foreign debt accumulation and intra-African trade.

An FE study focuses on examining the impact of independent variables on a dependent variable while controlling for unobserved heterogeneity across entities (e.g., countries, firms, or individuals). The fixed effects model is particularly useful in panel data analysis, where data is collected over time for the same entities, allowing researchers to control for time-invariant characteristics that could bias the results.

There are four key assumptions for this type of model:

- **No Time-Varying Unobserved Factors:** Assumes unobserved variables affecting the outcome remain constant over time.
- **Strict Exogeneity:** Independent variables must not be correlated with the error term at any time period.
- **No Perfect Multicollinearity:** Independent variables cannot be perfectly correlated with each other.
- **Sufficient Within-Entity Variation:** Independent variables must vary over time within each entity for meaningful estimation.

Any violations of these assumptions can lead to biased, inconsistent, or inefficient estimates, hence, the models will be subjected to tests to ensure that the assumptions hold.

3.2 Population and sampling

Given the focus of this paper is to examine the effect of foreign debt accumulation on economic Pan-Africanism, the population in focus consists of all 54 countries on the African continent.

A sample was drawn from 33 countries, split across two panels (the ‘Balanced Panel’ and the ‘Unbalanced Panel’). The sample is substantial and encompasses all five

regions on the continent⁶, paving the way for a comprehensive and reliable analysis. The Balanced Panel consists of 19 countries with complete data for the sample period and will be the focus of the research. The Unbalanced Panel will incorporate 14 more countries and will be used as a robustness measure. The panels are broken down in **Appendix A**.

The sample spans across 18 years starting from 2005 and ending in 2022. The time series is very adequate as it covers multiple macroeconomic and global trends, spikes, and seasons, including the 2008 global financial crisis and the COVID-19 pandemic. This extensive period allows for a thorough examination of how these significant events have impacted foreign debt accumulation and economic Pan-Africanism, providing valuable insights into the long-term trends and effects.

The sample is made up of secondary data derived, collated, filtered and consolidated from data sets published by global institutions that are mandated to collect and investigate trade and debt statistics. A deeper examination of the variables can be found in *3.3 Data*.

3.3 Data

This paper identifies 9 variables for use in 4 econometric models. The variables are set out in Table 1.

Code	Variable	Description	Source
X_1	<i>External debt stocks</i>	Total amount of outstanding loans and credits that a country owes to foreign creditor	<i>International Debt Statistics – World Bank</i>
X_2	<i>Political Stability (PStab)</i>	Measures the likelihood of political unrest or instability that may disrupt governance and economic activity	<i>World Development Indicators – World Bank</i>

⁶ Five regions of the continent include: Northern Africa, Sub-Saharan Africa, Eastern Africa, Western Africa, and Southern Africa

X_3	<i>Government Effectiveness (GEffect)</i>	Assesses the quality of public services, policy formulation, and implementation, and the government's commitment to the policies	<i>World Development Indicators – World Bank</i>
X_4	<i>Inflation</i>	Rate at which the general level of prices for goods and services rises	<i>International Monetary Fund (IMF)</i>
X_5	<i>Trade Openness</i>	Extent to which a country engages in international trade	<i>World Bank</i>
Y_{11}	<i>Total intra-African exports per year</i>	Aggregate value of goods and services that African countries sell to other African countries	<i>UN Comtrade database</i>
Y_{12}	<i>Total intra-African imports per year</i>	Aggregate value of goods and services that African countries purchase from other African countries	<i>UN Comtrade database</i>
Y_{21}	<i>Proportion of intra-African exports</i>	Share of a country's total exports that are traded with other African countries	<i>UN Comtrade database</i>
Y_{22}	<i>Proportion of intra-African imports</i>	Share of a country's total imports that are traded with other African countries	<i>UN Comtrade database</i>

Table 1 List of Variables

The variable frequencies for all listed in Table 1 are on an annual basis from 2005 to 2022. The choice for the use of annual data is because it is more readily available and reliable compared to higher-frequency data, especially for long-term analyses involving multiple countries. All variables are also expressed in United States Dollar (US \$).

3.4 Data Analysis

3.4.1 Econometric Models

The following models will be tested in Chapter 4.

$$Y_{11,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (i)}$$

$$Y_{12,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (ii)}$$

$$Y_{21,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iii)}$$

$$Y_{22,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iv)}$$

Where,

- α_0 is the country-specific fixed effect for entity i
- $\beta_1, \beta_2, \beta_3, \beta_4$, and β_5 are the coefficients for the independent variables
- ϵ_{it} is the error term, capturing unobserved time-variant factors affecting the independent variables

3.4.2 Preliminary tests

3.4.2.1 Strength of Linearity – Correlation coefficient test

The correlation coefficient test is a statistical measure that evaluates the strength and direction of the linear relationship between two continuous variables.

The Pearson Correlation Coefficient, denoted as p , will be used for our models and is calculated as:

$$p = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 \cdot \sum (Y_i - \bar{Y})^2}} \quad \dots\dots\dots \text{Eq (v)}$$

Where:

- X_i and Y_i are the individual sample points indexed with i
- $\bar{X}$ and $\bar{Y}$ are the means of the X and Y variables

The following are its interpretations:

- $P = 1$; Perfect positive linear relationship
- $P = 0$; No linear relationship
- $P = -1$; Perfect negative linear relationship

3.4.2.2 Multicollinearity – Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) is a diagnostic tool used to detect and quantify multicollinearity in a regression model. Multicollinearity occurs when independent variables are highly correlated with each other, which can make it difficult to isolate the individual effect of each predictor on the dependent variable.

For each independent variable (X_j), the VIF is calculated as:

$$VIF_j = \frac{1}{1 - R_j^2}$$

Where R_j^2 is the R-squared value obtained by regressing X_j on all the other independent variables.

- $VIF = 1$; No multicollinearity
- $1 < VIF < 5$; Moderate correlation with other variables, generally acceptable.
- $VIF > 5$; High correlation, indicating potential multicollinearity issues.
- $VIF > 10$; Severe multicollinearity, which requires further investigation.

3.4.3 Diagnostic tests

To answer the questions set out in 1.3 Research Objectives, the following tests will need to be conducted to derive the answers and ensure its reliability, adequateness and robustness.

3.4.3.1 Significance – t-statistic test

The t-statistic test is used to test the significance of a coefficient, i.e. determine whether the estimated coefficient of an independent variable is significantly different from zero.

In our example, to test the significance of β_1 in Eq (i), the t-statistic is calculated as:

$$t = \frac{\widehat{\beta}_1}{SE(\widehat{\beta}_1)} \dots\dots\dots \text{Eq (vi)}$$

Once a t-statistic is calculated, it will be compared against the critical value from the t-distribution table based on the level of significance and the degrees of freedom.

If the absolute value of the calculated t-statistic is greater than the critical value, reject the null hypothesis. If the absolute value of the t-statistic is less than or equal to the critical value, fail to reject the null hypothesis.

3.4.3.2 Goodness of fit – R-squared test

The R-squared test is a statistical measure that explains the proportion of the variance in the dependent variable that is predictable from the independent variable in a regression model, i.e. it indicated how well the model fits the data.

$$R^2 = 1 - \frac{SSR}{SST} \dots\dots\dots \text{Eq (vii)}$$

Where:

- SSR is the residual sum of squares, $SSR = \sum (Y_i - \widehat{Y})^2$
- SST is the total sum of squares, $SST = \sum (Y_i - \bar{Y})^2$

The following are its interpretations:

- $R^2 = 1$; Perfect fit
- $R^2 = 0$; Model does not explain any of the variability of the response data
- $0 < R^2 < 1$; Indicates the percentage of variance explained by the model

3.4.3.3 Independence – Durbin-Watson test

The Durbin-Watson test is a statistical test used to detect the presence of autocorrelation in the residuals of a regression analysis. Autocorrelation occurs when the residuals from one observation are correlated with the residuals from another observation, which can invalidate statistical tests of significance that assume independence of errors.

$$DW = \frac{\sum_{t=2}^n (e_t - e_{t-1})^2}{\sum_{t=1}^n (e_t^2)} \dots\dots\dots \text{Eq (viii)}$$

Where:

- e_t is the residual at time t
- n is the number of observations

The following are its interpretations:

- $DW \approx 2$; No autocorrelation
- $0 < DW < 2$; Positive autocorrelation
- $2 < DW < 4$; Negative autocorrelation

3.4.3.4 Homoscedasticity – Modified Wald Test

The Modified Wald test is a statistical test used to detect the presence of heteroskedasticity in a fixed effects regression model. Heteroskedasticity occurs when the variance of the residuals differs across entities (countries, firms, etc.), violating one of the key assumptions of panel data regression. This can lead to inefficient estimates and invalid hypothesis tests.

To conduct this test, we first estimate the fixed effects model and calculate the residuals for each entity. The Modified Wald test then examines whether the variances of these residuals are constant across all entities. Specifically, it tests the null hypothesis that the variance of the residuals is homoscedastic (i.e., constant) across all entities.

The test statistic for the Modified Wald test is based on the chi-squared distribution:

- If the test statistic is greater than the critical value from the chi-squared distribution, we reject the null hypothesis.

This indicates that heteroskedasticity is present in the model, suggesting that the variances of the residuals are not equal across entities.

4. Results

4.1 Descriptive Statistics

Appendix B provides descriptive statistics for the key variables used in both the Balanced Panel and the Unbalanced Panel. These statistics provide an overview of the data distribution and help to contextualize the analysis presented in the subsequent sections.

4.2 Preliminary tests

4.2.1 Correlation Matrix

The variables were subjected to a correlation investigation to identify the correlations between the variables.

The results are summarized in Table 2 for the Balanced Panel:

	Y_{11}	Y_{21}	Y_{12}	Y_{22}	X_1	X_2	X_3	X_4	X_5
Y_{11}	1.000								
Y_{21}	0.119	1.000							
Y_{12}	1.000	0.119	1.000						
Y_{22}	0.121	0.391	0.122	1.000					
X_1	-0.015	-0.194	-0.021	-0.387	1.000				
X_2	-0.038	-0.016	-0.038	0.227	-0.025	1.000			
X_3	-0.070	-0.282	-0.071	-0.156	0.267	0.726	1.000		
X_4	-0.126	0.177	-0.126	0.148	-0.020	-0.067	-0.135	1.000	
X_5	0.061	-0.230	0.061	0.092	0.017	-0.075	0.501	0.613	1.000

Table 2 Correlation Matrix: Balanced Panel

The results are summarized in Table 3 for the Unbalanced Panel:

	Y_{11}	Y_{21}	Y_{12}	Y_{22}	X_1	X_2	X_3	X_4	X_5
Y_{11}	1.000								
Y_{21}	0.078	1.000							
Y_{12}	1.000	0.078	1.000						
Y_{22}	0.091	0.524	0.092	1.000					
X_1	-0.010	-0.195	-0.016	-0.324	1.000				
X_2	-0.034	0.012	-0.033	0.164	-0.126	1.000			
X_3	-0.050	-0.063	-0.051	-0.052	0.208	0.606	1.000		
X_4	-0.123	0.117	-0.123	0.106	0.020	-0.074	-0.093	1.000	
X_5	0.035	-0.108	0.036	0.168	-0.079	0.497	0.391	-0.048	1.000

Table 3 Correlation Matrix: Unbalanced Panel

4.2.2 Multicollinearity – Variance Inflation Factor (VIF)

4.2.2.1 Balanced Panel

Variable	VIF	1/VIF
<i>GEffct</i>	3.25	0.308
<i>PStab</i>	2.38	0.420
<i>Trade Openness</i>	1.67	0.598
<i>External Debt Stock</i>	1.25	0.802
<i>Inflation</i>	1.03	0.975
Mean VIF	1.91	

Table 4 VIF Results: Balanced Panel

In this panel, the highest VIF is 3.25, associated with Government Effectiveness (GEffct) variable. This is well below the threshold of concern, indicating moderate multicollinearity. Similarly, Political Stability (PStab) has a VIF of 2.38, also falling within the acceptable range. Both variables are somewhat correlated with others, but not to a degree that would undermine the accuracy of their coefficients.

The VIFs for Trade Openness (1.67), External Debt Stock (1.25), and Inflation (1.03) are all low, suggesting minimal multicollinearity. These values show that these

variables are largely independent of the others in the model, ensuring reliable coefficient estimates.

The mean VIF for the panel is 1.91, indicating that overall multicollinearity is low. This suggests that the independent variables do not significantly overlap, and the model's estimates are unlikely to be distorted by interdependence.

In conclusion, the VIF results confirm that all variables show acceptable levels of correlation. Therefore, no corrective action is necessary, and the panel can be considered robust for further analysis.

4.2.2.2 Unbalanced Panel

<i>Variable</i>	<i>VIF</i>	<i>1/VIF</i>
<i>PStab</i>	1.97	0.507
<i>GEeffect</i>	1.86	0.537
<i>Trade Openness</i>	1.36	0.734
<i>External Debt Stock</i>	1.18	0.850
<i>Inflation</i>	1.01	0.990
<i>Mean VIF</i>	1.48	

Table 5 VIF Results: Balanced Panel

The Variance Inflation Factor (VIF) results from the unbalanced panel, which includes 14 additional countries, provide insight into potential multicollinearity within the expanded dataset.

In this unbalanced panel, the highest VIF is 1.97 for Political Stability (PStab), which is comfortably below the threshold of 5. This indicates a low to moderate level of multicollinearity. The same applies to Government Effectiveness (GEeffect), with a VIF of 1.86.

Trade Openness has a VIF of 1.36, and External Debt Stock has an even lower VIF of 1.18, indicating minimal multicollinearity. Inflation has the lowest VIF at 1.01, indicating almost no correlation with the other independent variables. These economic variables are largely independent of each other and of the other predictors in the model, ensuring that their estimated effects on the dependent variable are stable and unbiased.

The mean VIF of 1.48 across all variables demonstrates that overall, multicollinearity is not a concern in this unbalanced panel. This result indicates that, despite the inclusion of countries with incomplete observations, the expanded sample has not introduced problematic correlations among the independent variables. The low mean VIF further validates the robustness of this analysis, showing that the added complexity of the unbalanced panel has not compromised the model's integrity.

4.3 Fixed Effects Regression Analysis

4.3.1 Balanced Panel

4.3.1.1 Intra-African Exports

Under this section, the following equation was the focus:

$$Y_{11,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (i)}$$

The results of the regression are outlined in Table 6:

Panel Data Regression Results Table					
	Coefficient (Std. Err.)		t-value	p-value	
<i>External Debt Stock</i>	-0.121 (2.175)		-0.06	0.956	
<i>PStab</i>	-1.19×10^{11} (1.25 x10 ¹¹)		-0.95	0.342	
<i>GEffect</i>	1.53×10^{11} (2.30 x10 ¹¹)		0.67	0.505	
<i>Inflation</i>	-4.22×10^9 (1.01 x10 ⁹)		-4.16	0.000	
<i>Trade Openness</i>	4.94×10^9 (3.51 x10 ⁹)		1.41	0.161	
<i>_cons</i>	-1.92×10^{11} (2.35 x10 ¹¹)		-0.82	0.415	
R-squared:			No of Obs.:	342	
	Within:		0.0629	No of Groups:	19
	Between:		0.1667	F(5, 318):	4.27
	Overall:		0.0118	Prob > F:	0.0009

Table 6 Regression Summary: Balanced – Intra African Exports

4.3.1.2 Intra-African Imports

Under this section, the following equation was the focus:

$$Y_{12,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (ii)}$$

The results of the regression are outlined in Table 7:

Panel Data Regression Results Table				
Coefficient (Std. Err.)			t-value	p-value
External Debt Stock	-0.847 (10.265)		-0.08	0.934
PStab	-5.63 x10 ¹¹ (5.90 x10 ¹¹)		-0.95	0.341
GEffect	7.27 x10 ¹¹ (1.09 x10 ¹²)		0.67	0.503
Inflation	-1.99 x10 ¹⁰ (4.79 x10 ⁹)		-4.16	0.000
Trade Openness	2.32 x10 ¹⁰ (1.66 x10 ¹⁰)		1.40	0.162
_cons	-9.03 x10 ¹¹ (1.11 x10 ¹²)		-0.81	0.416
R-squared:			No of Obs.:	342
Within:	0.0629		No of Groups:	19
Between:	0.1695		F(5, 318):	4.27
Overall:	0.0118		Prob > F:	0.0009

Table 7 Regression Summary: Balanced – Intra African Imports

4.3.1.3 Proportion of Intra-African Exports

Under this section, the following equation was the focus:

$$Y_{21,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iii)}$$

The results of the regression are outlined in Table 8:

Panel Data Regression Results Table				
		Coefficient (Std. Err.)	t-value	p-value
External Debt Stock		4.03 x10 ⁻¹¹ (3.19 x10 ⁻¹¹)	1.26	0.207
PStab		3.529 (1.833)	1.93	0.055
GEffect		-8.477 (3.374)	-2.51	0.012
Inflation		-0.002 (0.015)	-0.14	0.892
Trade Openness		-0.110 (0.052)	-2.13	0.034
_cons		29.199 (3.449)	8.47	0.000
R-squared:			No of Obs.:	342
Within:	0.0443		No of Groups:	19
Between:	0.1342		F(5, 318):	2.95
Overall:	0.1122		Prob > F:	0.0129

Table 8 Regression Summary: Balanced – Proportion of Intra African Exports

4.3.1.4 Proportion of Intra-African Imports

Under this section, the following equation was the focus:

$$Y_{22,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iv)}$$

The results of the regression are outlined in Table 9:

Panel Data Regression Results Table				
		Coefficient (Std. Err.)	t-value	p-value
External Debt Stock		-1.43 x10 ⁻¹¹ (2.14 x10 ⁻¹¹)	-0.67	0.505
PStab		2.144 (1.230)	1.74	0.082
GEffect		-9.376 (2.265)	-4.14	0.000
Inflation		-0.006 (0.010)	-0.58	0.565
Trade Openness		0.027 (0.035)	0.78	0.437
_cons		18.767 (2.315)	8.11	0.000
R-squared:			No of Obs.:	342
Within:	0.0549		No of Groups:	19
Between:	0.1247		F(5, 318):	3.70
Overall:	0.1165		Prob > F:	0.0029

Table 9 Regression Summary: Balanced – Proportion of Intra African Imports

4.3.2 Unbalanced Panel

4.3.2.1 Intra-African Exports

Under this section, the following equation was the focus:

$$Y_{11,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (i)}$$

The results of the regression are outlined in Table 10:

Panel Data Regression Results Table				
Coefficient (Std. Err.)			t-value	p-value
External Debt Stock	-0.087 (1.473)		-0.06	0.953
PStab	-7.50 x10 ¹⁰ (7.62 x10 ¹⁰)		-0.98	0.326
GEffect	1.14 x10 ¹¹ (1.50 x10 ¹¹)		0.76	0.449
Inflation	-4.22 x10 ⁹ (7.80 x10 ⁸)		-5.41	0.000
Trade Openness	2.39 x10 ⁹ (1.91 x10 ⁹)		1.25	0.211
_cons	-5.65 x10 ¹⁰ (1.45 x10 ¹¹)		-0.39	0.697
R-squared:			No of Obs.:	572
Within:	0.0579		No of Groups:	33
Between:	0.2748		F(5, 318):	6.56
Overall:	0.0111		Prob > F:	0.0000

Table 10 Regression Summary: Unbalanced – Intra African Exports

4.3.2.2 Intra-African Imports

Under this section, the following equation was the focus:

$$Y_{12,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (ii)}$$

The results of the regression are outlined in Table 11:

Panel Data Regression Results Table				
		Coefficient (Std. Err.)	t-value	p-value
External Debt Stock		-0.604 (6.939)	-0.09	0.931
PStab		-3.43 x10 ¹¹ (3.55 x10 ¹¹)	-0.97	0.334
GEffect		5.26 x10 ¹¹ (7.05 x10 ¹¹)	0.75	0.456
Inflation		-1.99 x10 ¹⁰ (3.68 x10 ⁹)	-5.42	0.000
Trade Openness		1.12 x10 ¹⁰ (8.99 x10 ⁹)	1.25	0.213
_cons		-2.66 x10 ¹¹ (6.83 x10 ¹¹)	-0.39	0.697
R-squared:			No of Obs.:	574
Within:		0.0578	No of Groups:	33
Between:		0.2805	F(5, 318):	6.58
Overall:		0.0112	Prob > F:	0.0000

Table 11 Regression Summary: Unbalanced – Intra African Imports

4.3.2.3 Proportion of Intra-African Exports

Under this section, the following equation was the focus:

$$Y_{21,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iii)}$$

The results of the regression are outlined in Table 12:

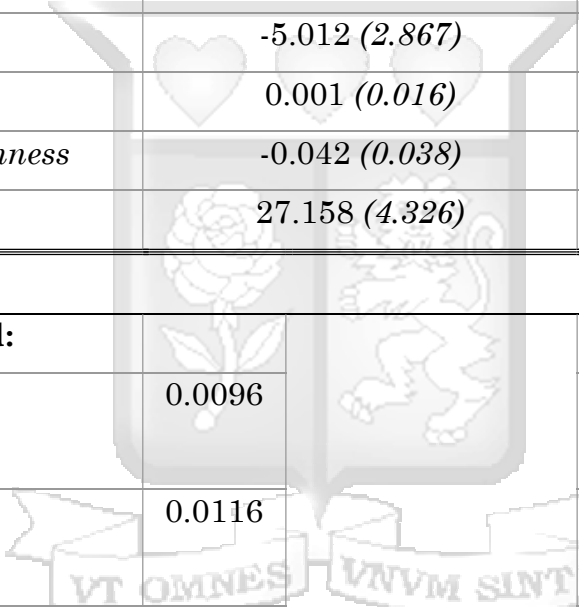
Panel Data Regression Results Table				
		Coefficient (Std. Err.)	t-value	p-value
External Debt Stock		3.67 x10 ⁻¹² (3.00 x10 ⁻¹¹)	0.12	0.903
PStab		2.490 (1.537)	1.62	0.105
GEffect		-5.012 (2.867)	-1.75	0.080
Inflation		0.001 (0.016)	0.08	0.940
Trade Openness		-0.042 (0.038)	-1.11	0.266
_cons		27.158 (4.326)	6.28	0.000
R-squared:				
Within:	0.0096		No of Obs.:	572
Between:	0.0116		No of Groups:	33
Overall:	0.0141			

Table 12 Regression Summary: Unbalanced – Proportion of Intra African Exports

4.3.2.4 Proportion of Intra-African Imports

Under this section, the following equation was the focus:

$$Y_{22,it} = \alpha_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + \epsilon_{it} \quad \dots\dots\dots \text{Eq (iv)}$$

The results of the regression are outlined in Table 13:

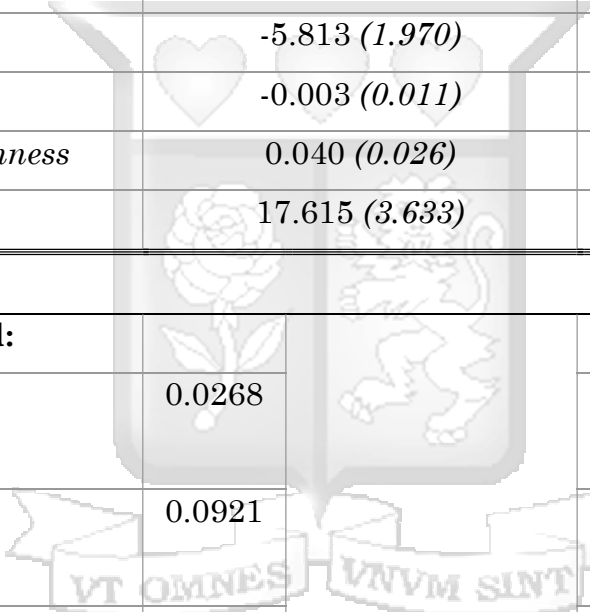
Panel Data Regression Results Table				
		Coefficient (Std. Err.)	t-value	p-value
External Debt Stock		-4.08 x10 ⁻¹¹ (2.00 x10 ⁻¹¹)	-2.04	0.042
PStab		1.838 (1.020)	1.80	0.072
GEffect		-5.813 (1.970)	-2.95	0.003
Inflation		-0.003 (0.011)	-0.26	0.794
Trade Openness		0.040 (0.026)	1.54	0.123
_cons		17.615 (3.633)	4.85	0.000
R-squared:				
Within:	0.0268		No of Obs.:	574
Between:	0.0921		No of Groups:	33
Overall:	0.0847			

Table 13 Regression Summary: Unbalanced – Proportion of Intra African Imports

4.4 Diagnostic Tests

4.4.1 Significance – t-statistic test

4.4.1.1 Balanced Panel

The t-test results across the four balanced panel models — Intra-African Exports, Intra-African Imports, Proportion of Intra-African Exports, and Proportion of Intra-African

Imports — reveal mixed significance among the variables. In both the exports and imports models, Inflation consistently emerges as a statistically significant variable, with a p-value of 0.000 in both cases (*See Table 6 & Table 7*), suggesting a strong negative effect on intra-African trade. This indicates that higher inflation reduces both exports and imports within Africa, likely due to its impact on competitiveness and economic stability.

Other key variables, such as External Debt Stock, Political Stability, and Trade Openness, did not show statistical significance in these models. The main variable in question, External Debt Stock, had p-values of 0.956 and 0.934 in the exports and imports models, respectively, indicating no significant impact on intra-African trade. Similarly, Political Stability and Trade Openness did not exhibit significant effects on trade volumes within Africa.

However, in the models analyzing the proportion of intra-African exports and imports, Government Effectiveness showed statistical significance, with p-values of 0.012 and 0.000, respectively. This suggests that more effective governance may be associated with a reduced reliance on intra-African trade, potentially as countries with better governance engage in more diversified global trade relationships. Trade Openness also showed significance in the exports proportion model ($p = 0.034$), indicating that increased openness could lead to a lower share of intra-African exports, as these countries may be more integrated into global trade. Political Stability exhibited borderline significance ($p = 0.055$ and 0.082) in the proportion models, though this was not strong enough to be considered definitive.

Overall, Inflation and Government Effectiveness stand out as the most influential factors, while External Debt Stock and Political Stability appear to have weaker or no significant direct impact on intra-African trade within the current data framework.

4.4.1.2 Unbalanced Panel

The results from the unbalanced panel largely reinforce the findings from the balanced panel, particularly regarding the significance of Inflation and Government Effectiveness. In both panels, Inflation consistently emerges as a significant variable ($p = 0.000$), indicating its strong negative impact on intra-African trade (*See Table 10*

& Table 11). This consistency across models strengthens the conclusion that inflation erodes trade competitiveness within Africa, regardless of panel structure.

Similarly, Government Effectiveness is significant in both panels' proportion models, suggesting that countries with more effective governance tend to engage less in intra-African trade, likely due to stronger global trade ties. This consistency in the results across both panels underscores the role of governance quality in shaping trade patterns.

The insignificance of External Debt Stock, Political Stability, and Trade Openness in both the balanced and unbalanced panels (e.g., External Debt Stock $p = 0.865$ in the unbalanced exports model) further supports the finding that these factors have no direct influence on intra-African trade. A slight divergence occurs with Political Stability, which shows borderline significance in the unbalanced panel ($p = 0.072$) but remains insignificant in the balanced panel. However, this weak effect does not alter the overall conclusion that political stability plays a limited role in intra-African trade.

Overall, the unbalanced panel results validate and reinforce the key findings from the balanced panel, highlighting the crucial roles of Inflation and Government Effectiveness, while confirming the limited impact of External Debt Stock and Political Stability.

4.4.2 Goodness of fit – R-squared test

4.4.2.1 Balanced Panel

The R-squared values for all four models demonstrate a generally low explanatory power, indicating that the independent variables have limited ability to explain variations in intra-African trade. For the models examining intra-African exports and imports, the overall R-squared is 0.0118, meaning that only about 1.18% of the variability in trade is explained by these models. The "within" R-squared values of 0.0629 suggest that only a small portion of the variance is explained by time-varying factors within countries. The "between" R-squared values, approximately 0.17, indicate a slightly better fit when explaining differences between countries, though the explanatory power remains weak overall.

In contrast, the models focusing on the proportion of intra-African exports and imports perform somewhat better, with overall R-squared values of 0.1122 for exports and

0.1165 for imports. These figures suggest that around 11% of the variation in the proportion of intra-African trade is explained by the models. However, the "within" R-squared values remain modest, with 0.0443 for exports and 0.0549 for imports, further emphasizing the limited explanatory power of the models in accounting for the observed trade dynamics. Overall, the results suggest that other factors may be influencing intra-African trade, and additional variables could improve the model's fit.

4.4.2.2 Unbalanced Panel

The R-squared values for the models under the unbalanced panel show similar trends of low explanatory power. In the case of intra-African exports and imports, the overall R-squared values are 0.0111 for exports and 0.0112 for imports, indicating that the models explain only about 1.1% of the variation in total intra-African trade. The "within" R-squared values are 0.0579 and 0.0578 for exports and imports, respectively, highlighting that only a small portion of the variance is explained by time-varying factors within countries. The "between" R-squared values, approximately 0.27 for exports and 0.28 for imports, suggest a slightly stronger fit when explaining differences between countries, though the models still exhibit limited explanatory power.

For the models examining the proportion of intra-African exports and imports, the overall R-squared values are again slightly higher, with 0.0141 for exports and 0.0847 for imports. This suggests that the models explain roughly 1.4% and 8.5% of the variance in the proportion of intra-African trade, respectively. However, the "within" R-squared values remain low, with 0.0096 for exports and 0.0268 for imports, indicating minimal explanatory power in terms of the time-varying factors within countries. While the "between" R-squared values are also higher for the unbalanced panel, they still suggest that much of the variation in intra-African trade remains unexplained.

These results highlight the need for additional variables or factors to improve the models' ability to account for the dynamics of intra-African trade.

4.4.3 Independence – Durbin-Watson test

4.4.3.1 *Balanced Panel*

Below is the summary of the Durbin-Watson test across the four models using the Balanced panel.

Model	Durbin-Watson Statistic
Intra-African Exports	2.0681113
Intra-African Imports	2.0681828
Proportion of Intra-African Exports	0.8195046
Proportion of Intra-African Imports	0.5902856

Table 14 Durbin Watson Test Statistic - Balanced Panel

The Durbin-Watson statistics for Intra-African Exports and Imports are approximately 2.07, indicating no significant autocorrelation in these models. However, the statistics for the Proportion of Intra-African Exports (0.82) and Proportion of Intra-African Imports (0.59) indicate moderate to strong positive autocorrelation, suggesting the presence of serial correlation in these models.

4.4.3.2 *Unbalanced Panel*

Below is the summary of the Durbin-Watson test across the four models using the Unbalanced panel.

Model	Durbin-Watson Statistic
Intra-African Exports	2.0482326
Intra-African Imports	2.0482737
Proportion of Intra-African Exports	0.6446604
Proportion of Intra-African Imports	0.7643776

Table 15 Durbin Watson Test Statistic - Unbalanced Panel

The Durbin-Watson statistics for Intra-African Exports and Imports are approximately 2.05, indicating no significant autocorrelation in these models. However, the statistics for Proportion of Intra-African Exports (0.64) and Proportion of Intra-African Imports (0.76) indicate strong positive autocorrelation, suggesting serial correlation in these models that may require correction.

4.4.4 Homoscedasticity – Modified Wald Test

4.4.4.1 Balanced Panel

The following table summarizes the findings from the Modified Wald Test groupwise heteroskedasticity.

Model	Chi-squared statistic	P-value
Intra-African Exports	8.4 x10 ⁶	0.000
Intra-African Imports	8.5 x10 ⁶	0.000
Proportion of Intra-African Exports	14020.74	0.000
Proportion of Intra-African Imports	17629.40	0.000

Table 16 Modified Wald Test - Balanced Panel

The Modified Wald tests for groupwise heteroskedasticity show very large Chi-squared statistics and p-values of 0.000 across all four models, indicating strong evidence of heteroskedasticity. This suggests that the variance of the residuals is not constant across the groups (countries), and heteroskedasticity is present in the models for Intra-African Exports, Imports, and their proportions.

4.4.4.2 Unbalanced Panel

The following table summarizes the findings from the Modified Wald Test groupwise heteroskedasticity.

Model	Chi-squared statistic	P-value
Intra-African Exports	5.2 x10 ⁷	0.000
Intra-African Imports	5.6 x10 ⁷	0.000
Proportion of Intra-African Exports	1.0 x10 ⁵	0.000
Proportion of Intra-African Imports	78630.58	0.000

Table 17 Modified Wald Test - Unbalanced Panel

The Modified Wald tests for groupwise heteroskedasticity indicate very large Chi-squared statistics and p-values of 0.000 for all four models. This provides strong evidence of heteroskedasticity in the models for Intra-African Exports, Intra-African Imports, and their proportions, meaning the variance of the residuals varies significantly across groups (countries).

4.5 Remedies

4.5.1 Clustered Standard Errors

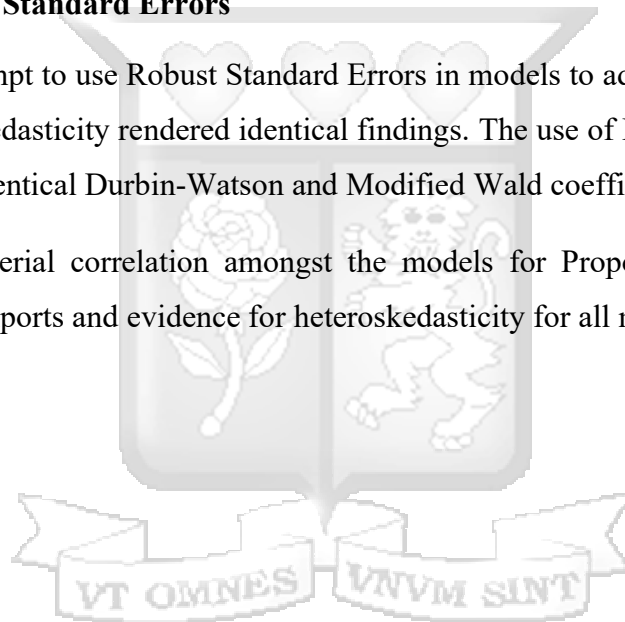
To address serial correlation in models for Eq (iii) and Eq (iv) as well as the presence of heteroskedasticity in models across all equations, the use of clustered standard errors was tested.

The use of clustered standard errors resulted in identical findings for the Durbin-Watson tests and the Modified Wald tests, finding serial correlation amongst the models for Proportion of Intra-African Exports & Imports and evidence for heteroskedasticity for all models.

4.5.2 Robust Standard Errors

Another attempt to use Robust Standard Errors in models to address serial correlation and heteroskedasticity rendered identical findings. The use of Robust Standard Errors resulted in identical Durbin-Watson and Modified Wald coefficients.

This found serial correlation amongst the models for Proportion of Intra-African Exports & Imports and evidence for heteroskedasticity for all models.



5. Conclusion

5.1 Summary of findings

This study set out to explore the relationship between foreign debt and intra-African trade, addressing the critical question of whether debt accumulation impacts trade integration among African nations. Specifically, it investigated the effects of external debt stocks on four main trade variables: total intra-African exports, total intra-African imports, and their respective proportions in each country's total trade portfolio. The motivation behind this analysis stems from the growing debt burdens faced by African countries and the consequent economic pressures that may hinder regional economic cooperation and trade.

The analysis was conducted using balanced and unbalanced panel data from 19 and 33 African countries, respectively, across the years 2005 to 2022.

The findings reveal that external debt stocks had no significant effect on total intra-African exports or imports. In the balanced panel, external debt coefficients were -0.121 ($p = 0.956$) for exports and -0.847 ($p = 0.934$) for imports, while similar insignificance was observed in the unbalanced panel, with coefficients of -0.087 ($p = 0.953$) for exports and -0.604 ($p = 0.931$) for imports. This suggests that foreign debt does not directly influence the volume of intra-African trade.

Regarding the proportions of intra-African trade, external debt remained largely insignificant, however, the unbalanced panel showed a small negative impact on the proportion of intra-African imports (-4.08×10^{-11} , $p=0.042$). This empirically proves that for each additional unit increase in external debt (expressed in dollars), the proportion of a country's imports coming from within Africa decreases by a very small fraction. Although the coefficient is very small, this statistically significant finding indicates that higher levels of external debt slightly reduce the percentage of total imports that are sourced from other African countries.

In contrast, inflation consistently showed a significant negative effect on trade in both panels. For the balanced panel, inflation reduced exports (-4.22×10^9 , $p=0.000$) and imports (-1.99×10^{10} , $p=0.000$). This indicates that higher inflation weakens trade

competitiveness, reducing intra-African trade activities, as supported by existing literature like Adu-Gyamfi et al. (2019).

Government Effectiveness had a consistent negative effect on both the proportions of intra-African exports (-8.477 , $p=0.012$) and imports (-9.376 , $p=0.000$) in the balanced panel. This suggests that countries with better governance tend to focus more on global trade rather than regional trade, as they may have more diversified trade strategies, which supports the findings in Forster et al. (2020).

Political stability showed a marginal positive effect on the proportions of intra-African exports and imports, particularly in the balanced panel (3.529 , $p=0.055$) for exports and (2.144 , $p=0.082$) for imports. This implies that more politically stable environments might support higher shares of intra-African trade, though the significance was not strong enough to be definitive.

Finally, diagnostic tests highlighted some concerns. The Durbin-Watson test indicated no significant autocorrelation in total exports and imports but did reveal positive autocorrelation in the proportion models, suggesting serial correlation in these variables. Additionally, the Modified Wald test confirmed the presence of heteroskedasticity across all models, indicating that the variance of residuals differs significantly across countries, which may affect the robustness of the estimates. The use of Clustered and Robust standard errors did not have an impact on this.

5.2 Conclusions

The findings of this study provide significant insights into the complex relationship between foreign debt and intra-African trade. It becomes clear that external debt, despite being a major economic burden for many African nations, does not directly influence the overall volume of intra-African exports and imports. While the results do suggest that foreign debt, in isolation, may not fully explain the dynamics inhibiting regional trade integration across the continent, the analysis may have been constrained by limitations in data availability, particularly for some countries and time periods. This is evidenced by only 19 out of 54 countries (approx. 35%) having complete data.

These gaps may have influenced the robustness of the results and could obscure deeper relationships between foreign debt and intra-African trade. Future studies with more comprehensive datasets may yield further insights.

However, other economic variables, such as inflation, emerge as critical determinants, as they significantly impact the ability of countries to participate in and benefit from intra-African trade. This paper finds that Inflation has a negative and significant effect on Intra-African exports and imports. As Mweni et al. (2016) found, external debt has a positive and significant effect on inflation; in other words, a prominent determinant for inflation. Through this relationship, it can be inferred that external debt indirectly impacts Intra-African Trade through its effects on Inflation.

Moreover, the study highlights the role of governance in shaping trade patterns. Countries with better governance often trade more globally, but the results do not clearly show that this reduces their focus on regional trade within Africa. Instead, it seems that governance could shape trade choices in complex ways, which need further research to understand fully. Future studies to unpack the intricate effects of better governance on policy making may be warranted.

The study also hints at the role of political stability, which, while not definitive, suggests that stable political environments could support a higher share of intra-African trade. However, the significance of this factor appears to be less pronounced when compared to governance and inflation.

Finally, diagnostic tests reveal challenges related to autocorrelation and heteroskedasticity in the data, despite remedies being employed. These issues may arise as a result of lack of complete data for key indicators for African countries. While the models still provide valuable insights, future research should explore the collection and addition of other key variables or modeling approaches to address these issues.

Overall, the study concludes that while foreign debt may not directly hinder intra-African trade, it does have an indirect impact through its influence on factors like inflation. Broader economic and governance factors also play a crucial role in shaping trade outcomes, highlighting the need to consider these interconnected dynamics.

5.3 Recommendations

Based on the findings and conclusions of this study, several targeted recommendations are made to enhance Economic Pan-Africanism while addressing the challenges posed by foreign debt and economic governance:

- 1. Strengthen Data Collection and Sharing Mechanisms**

To address limitations in data availability and quality that may have impacted the study's findings, African countries should prioritize the establishment of centralized, accessible trade and economic data repositories. Regional organizations like the African Union and the African Development Bank (AfDB) can lead efforts to standardize data collection practices and encourage transparent reporting.

- 2. Control Inflation**

African governments should implement strict policies to control inflation, as it has a significant negative impact on intra-African trade competitiveness. Central Banks and Ministries of Finance should focus on monetary and fiscal policies that stabilize prices, ensuring a more conducive environment for regional trade growth.

- 3. Enhance Regional Trade and Infrastructure Development**

The study highlights that governance and infrastructure are critical factors influencing intra-African trade. Governments should integrate regional trade into national trade policies and partner with international development organizations to improve trade-related infrastructure, such as transport and customs systems. National Trade Ministries, in collaboration with the African Union's Department of Trade and Industry and the African Development Bank (AfDB), should prioritize investments and initiatives that strengthen regional trade governance and facilitate more efficient intra-African trade integration.

- 4. Promote Political Stability**

Political stability is crucial for fostering intra-African trade. Governments should collaborate with regional bodies, such as the African Union's Peace and Security Council, to implement peace-building programs and democratic reforms that ensure stable environments, which are vital for sustaining trade growth within the continent.

Appendix A

Panels: Breakdown of Countries and Data Availability by Year

The Balanced Panel consists of the 19 countries:

Country	Data Availability
Benin	2005-2022
Botswana	
Burkina Faso	
Burundi	
Central African Rep.	
Côte d'Ivoire	
Egypt	
Ethiopia	
Malawi	
Mauritius	
Morocco	
Niger	
Rwanda	
Sao Tome and Principe	
Senegal	
South Africa	
United Rep. of Tanzania	
Tunisia	
Zimbabwe	

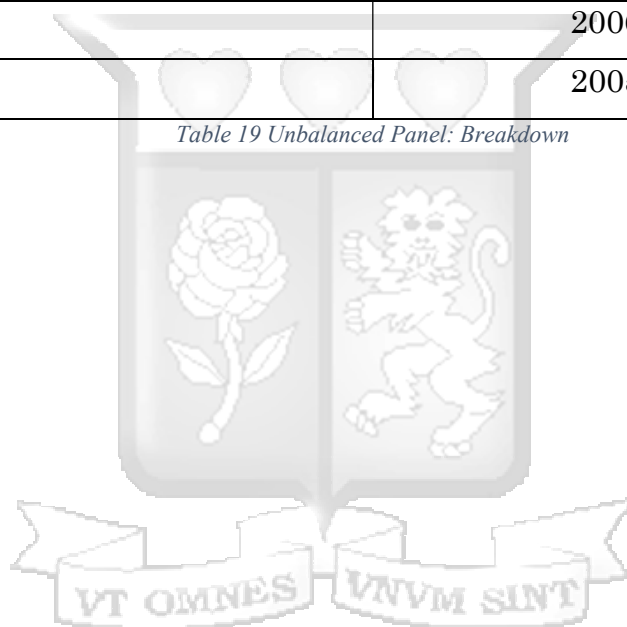
Table 18 Balanced Panel: Breakdown

The Unbalanced Panel consists of all 19 countries in the Balanced Panel in addition to the following 14 countries:

Country	Data Availability
Angola	2007, 2009-2022
Cabo Verde	2005-2007, 2009-2022

Cameroon	2005-2021
Comoros	
Congo	2007-2021
Eswatini	2005-2021
Gabon	
Gambia	
Ghana	2005-2019, 2021-2022
Kenya	2005-2010, 2013, 2015-2022
Mauritania	2005, 2007-2022
Mozambique	2005-2016, 2019-2021
Nigeria	2006-2022
Uganda	2005-2021

Table 19 Unbalanced Panel: Breakdown



Appendix B

Descriptive Statistics Tables

Table 20 Descriptive Statistics Table: Balanced Panel

Variable	Observations (N)	Mean	Std. Dev.	Min	25%	50%	75%	Max
<i>Total Intra-African Exports</i>	342	35.71B	625.94B	84.36K	179.30M	501.37M	1.79B	11,577.33B
<i>Proportion of Intra-African Exports (%)</i>	342	26	18.03	0.33	10.85	22.44	37.83	81.61
<i>Total Intra-African Imports</i>	342	161.29B	2,953.65B	6.83M	411.35M	891.63M	1.90B	54,624.13B
<i>Proportion of Intra-African Imports (%)</i>	342	23.51	18.64	1.66	9.98	19.58	30.02	88.19
<i>External Debt</i>	342	19.32B	34.56B	131.73M	1.60B	6.79B	20.72B	190.74B
<i>Inflation (%)</i>	342	9.46	35.33	-72.73	1.91	4.94	8.91	557.2
<i>Political Stability (Index)</i>	342	-0.51	0.84	-2.7	-1.16	-0.41	0.03	1.1
<i>Government Effectiveness (Index)</i>	342	-0.49	0.62	-1.88	-0.8	-0.57	-0.14	1.15
<i>Trade Openness (%)</i>	342	57.57	23.58	18.93	39.67	52.9	65.07	127.06

Table 21 Descriptive Statistics Table: Unbalanced Panel

Variable	Observations (N)	Mean	Std. Dev.	Min	25%	50%	75%	Max
<i>Total Intra-African Exports</i>	572	21.98B	484.01B	32.88K	173.09M	602.49M	1.82B	11577.33B
<i>Proportion of Intra-African Exports (%)</i>	572	26.51	21.01	0.16	9.8	21.31	38.04	93.45
<i>Total Intra-African Imports</i>	574	96.49B	2279.91B	4.26M	308.21M	897.16M	1.63B	54624.13B
<i>Proportion of Intra-African Imports (%)</i>	574	22.02	19.75	1.38	8.35	16.33	28.73	93.03
<i>External Debt</i>	594	17.17B	29.16B	125.60M	1.55B	6.14B	20.31B	190.74B
<i>Inflation (%)</i>	594	8.35	27.09	-72.73	2.34	5.05	9.21	557.2
<i>Political Stability (Index)</i>	594	-0.49	0.79	-2.7	-1.06	-0.39	0.02	1.1
<i>Government Effectiveness (Index)</i>	594	-0.61	0.56	-1.88	-0.94	-0.66	-0.31	1.15
<i>Trade Openness (%)</i>	593	62.21	27.02	8.48	40.64	56.08	83.5	148.59

References

- Adu-Gyamfi, G., Nketiah, E., Obuobi, B., & Adjei, M. (2019). Trade Openness, Inflation and GDP Growth: Panel Data Evidence from Nine (9) West Africa Countries. *Open Journal of Business and Management*, 8(1), Article 1. <https://doi.org/10.4236/ojbm.2020.81019>
- Akwabi, P. R. (2016). *The Effect of Foreign Exchange Rate Volatility on Kenyan Export Trade*.
- Aluko, F., & Arowolo, D. (2010). *Foreign aid, the Third World's debt crisis and the implication for economic development: The Nigerian experience*.
- Baharumshah, A. Z., & Rashid, S. (1999). Exports, Imports and Economic Growth in Malaysia: Empirical Evidence Based on Multivariate Time Series. *Asian Economic Journal*, 13(4), 389–406. <https://doi.org/10.1111/1467-8381.00092>
- Calderón, C., Cantu, C., & Zeufack, A. (2020). *Trade Integration, Export Patterns, and Growth in Sub-Saharan Africa*.
- Delgado, A., Hürlimann, P., Marquardt, G., Rufer, N., & Schleier, R. (2016). The dependency theory: A case of brazilian development strategy. *The Evolution of Development Thinking*, 39.
- Domar, E. D. (1946). Capital Expansion, Rate of Growth, and Employment. *Econometrica*, 14(2), 137–147. JSTOR. <https://doi.org/10.2307/1905364>
- Eichengreen, B., & Hausmann, R. (1999). *Exchange Rates and Financial Fragility* (w7418; p. w7418). National Bureau of Economic Research. <https://doi.org/10.3386/w7418>

- Ersoy, E. (2016). The Chronic Balance of Payments Constraint on Economic Growth in Turkey. *Review of Social Studies*, 3(1), 93–112.
<https://doi.org/10.21586/ross0000030>
- Esfahani, H. S. (1991). Exports, imports, and economic growth in semi-industrialized countries. *Journal of Development Economics*, 35(1), 93–116.
[https://doi.org/10.1016/0304-3878\(91\)90068-7](https://doi.org/10.1016/0304-3878(91)90068-7)
- Forster, T., Kentikelenis, A. E., Stubbs, T. H., & King, L. P. (2020). Globalization and health equity: The impact of structural adjustment programs on developing countries. *Social Science & Medicine*, 267, 112496.
<https://doi.org/10.1016/j.socscimed.2019.112496>
- Fosu, A. K. (2010). The External Debt-Servicing Constraint and Public-Expenditure Composition in Sub-Saharan Africa. *African Development Review*, 22(3), 378–393. <https://doi.org/10.1111/j.1467-8268.2010.00252.x>
- From debt resolution to growth: The road ahead for Africa.* (2021). African Development Bank Group.
- Geda, A., & Seid, E. H. (2015). The potential for internal trade and regional integration in Africa. *Journal of African Trade*, 2(1–2), 19.
<https://doi.org/10.1016/j.joat.2015.04.001>
- Grönbäck, J. (2014). *Why do not African countries trade with one another? A qualitative study of factors affecting the intra-African trade.*
<https://api.semanticscholar.org/CorpusID:96429860>
- Hale, G. (2011). Could We Have Learned from the Asian Financial Crisis of 1997–98? *FRBSF Economic Letter*.
- Khor, M. (2000). *GLOBALIZATION AND THE SOUTH: SOME CRITICAL ISSUES.*

- Logan, F. D. (2020). *Did Structural Adjustment Programmes Assist African Development?* <https://api.semanticscholar.org/CorpusID:214636356>
- Mahadevan, R. (2007). New Evidence on the Export-led Growth Nexus: A Case Study of Malaysia. *The World Economy*, 30(7), 1069–1083.
<https://doi.org/10.1111/j.1467-9701.2007.01030.x>
- Maswana, J.-C. (2015). *Colonial Patterns in the Growing Africa and China Interaction: Dependency and Trade Intensity Perspectives.*
- Mbithe, P., Mwabu, G., & Awiti. (2017). IMPACT OF STRUCTURAL ADJUSTMENT PROGRAMS ON AGRICULTURAL SECTOR GROWTH IN KENYA. *Journal of Agricultural Policy*, 2(1), 33.
- McKinnon, R. I. (1964). Foreign Exchange Constraints in Economic Development and Efficient Aid Allocation. *The Economic Journal*, 74(294), 388–409.
<https://doi.org/10.2307/2228486>
- Medina-Smith, E. J. (with UNCTAD). (2001). *Is the export-led growth hypothesis valid for developing countries? A case study of Costa Rica.* United Nations.
- Mweni, F. T., Njuguna, A., & Oketch, T. (2016). The Effect of External Debt on Inflation Rate in Kenya, 1972-2012. *International Journal of Financial Research*, 7(4), p198. <https://doi.org/10.5430/ijfr.v7n4p198>
- Ndung, N. S., Shimeles, A., & Manda, D. K. (2021). *Growing with Debt in African Economies: Options, Challenges and Pitfalls.*
<https://api.semanticscholar.org/CorpusID:252011511>
- Odera, Q. A. (2015). *An Analysis On The Effect Of External Public Debt On Exchange Rate Volatility In Kenya.*

- Peritz, L., Weldzius, R., Rogowski, R., & Flaherty, T. (2022). Enduring the great recession: Economic integration in the European Union. *The Review of International Organizations*, 17(1), 175–203. <https://doi.org/10.1007/s11558-020-09410-0>
- Reinhart, C. M., & Rogoff, K. S. (2009). This time is different: Eight centuries of financial folly. *This Time Is Different: Eight Centuries of Financial Folly.*, xxxvii, 463–xxxvii, 463.
- Sachs, J. D., Warner, A., Aslund, A., & Fischer, S. (1995). Economic Reform and the Process of Global Integration. *Brookings Papers on Economic Activity*, 1995(1), 1. <https://doi.org/10.2307/2534573>
- Shafaeddin, M. (2010). TRADE LIBERALIZATION, INDUSTRIALIZATION AND DEVELOPMENT; EXPERIENCE OF RECENT DECADES. *Munich Personal RePEc Archive, Paper No. 26355*.
- Sunday, K., Omolade, A., & Oguntuase, A. (2019). External debt and economic growth in Nigeria. *Journal of African Union Studies*, 8, 157–171. <https://doi.org/10.31920/2050-4306/2019/8n3a8>
- Sylla, N. S. (2023). Imperialism and Global South's Debt: Insights From Modern Monetary Theory, Ecological Economics, and Dependency Theory. In N. S. Sylla (Ed.), *Imperialism and the Political Economy of Global South's Debt* (Vol. 38, pp. 193–222). Emerald Publishing Limited. <https://doi.org/10.1108/S0161-723020230000038008>
- Taye, T. A. (2022). A critical appraisal of the World Bank's structural adjustment programs and poverty reduction strategy papers in Africa. *International*

Journal of Critical Accounting.

<https://api.semanticscholar.org/CorpusID:250204807>

Terry, S. (2019). *International Monetary Fund Structural Adjustment Policy and Loan Conditionality in Ghana: Economic, Cultural, and Political Impacts.*

World Bank in Mozambique. (2024, October). [Text/HTML]. World Bank.

<https://www.worldbank.org/en/country/mozambique/overview>

