

The Role of AfCFTA in Export Diversification: A Causal Analysis of Trade Patterns in Africa



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Abstract

Aim: This study aimed to evaluate the causal impact of the African Continental Free Trade Area (AfCFTA) on export diversification across 36 African countries.

Methods: Using panel data from 2015 to 2023, the study applied the synthetic control method to compare trade patterns before and after AfCFTA implementation.

Results: The results show that, in the short term, AfCFTA reinforced existing trade relationships with established partners, leading to increased export concentration rather than immediate diversification (effect size = 1.24, $p < 0.01$). Robustness checks using standardized placebo tests confirm these findings ($p = 0.46$), suggesting that the observed outcomes are not due to random variation.

Conclusion: While AfCFTA holds promise for fostering intra-African trade, the findings underscore structural constraints that may delay short-term diversification.

Recommendation: The study recommends strengthening trade facilitation, infrastructure, and SME support to accelerate progress.

Keywords: *AfCFTA, export diversification, synthetic control method, Herfindahl-Hirschman Index (HHI), trade policy analysis, export concentration, Africa, economic integration, regional trade integration*

1.0 INTRODUCTION

Export diversification is a key aspect of the development process as it allows nations to diversify their export base instead of relying on constrained export products or markets, thus increasing the nations' adaptability to other export markets, resulting in steady, long-run economic growth. However, a vast majority of African nations continue to struggle with exporting a limited number of products, with most of their exports being comprised of commodities that are often subject to volatile price changes in the global markets (Annandale, 2022). In this regard, the African Continental Free Trade Area (AfCFTA), a multilateral agreement with overall objectives of liberalizing trade in goods and services, expanding market access, and promoting sustainable development among participating member countries, may help overcome these challenges.

AfCFTA holds potential in enhancing export diversification; however, institutional factors affect its effectiveness. Regulatory quality is another significant determinant in easing market access. It measures the ability of the government to formulate and implement policies within the context of a private business environment (Attia, 2021). The AfCFTA presents more benefits to countries with better regulatory regimes as they do not face challenges of logistics, bureaucracy, and legal impediments in cross-border trade. In the same manner, the quality of governance, which includes the government's integrity in the provision of public services, formulation of policies and governance structures, goes hand in hand with countries' capacity to adhere to the AfCFTA standards and promote favorable market conditions.

Despite the formation of the AfCFTA to enhance intra-African trade, African nations still experience chronic challenges in realizing viable export diversification. The low quality of the institutions, the regulatory inefficiencies, and the excessive reliance on primary commodity exports prevent the member states from making the most of the opportunities that the regional integration can possibly provide. Trade barriers are highly rooted in most instances and there are different degrees of institutionalization among different nations that cause some countries to have a better ability to execute the provisions of AfCFTA than others do. These institutional restraints restrict the competitiveness of Africa in international markets, as well as restrict its ability to undergo sustainable economic change. It is on this background that this paper discusses the impact of the AfCFTA on export destination diversification whilst holding institutional quality as a facilitator or inhibitor.

Export diversification thus remains a difficult hurdle for easy achievement among African nations that predominantly rely on a limited number of primary commodity exports and remain exposed to volatility in terms of export prices and shocks from the global environment. Some measures have been implemented to address this issue, but progress has been limited in diversifying export destinations and products. The AfCFTA, designed as an instrument for advancing intra-African trade liberalization and regional economic integration, has the capacity to overcome these structural deficiencies by creating new opportunities and dismantling barriers (Fofack & Mold, 2021). Nevertheless, the idea of AfCFTA's realization without further enhancement remains insufficient. They conclude that its success in driving export diversification relies on several external factors, of which institutional quality is the most pertinent.

According to the study by Ahmad *et al.* (2022), amongst these, regulatory quality and government effectiveness are two parameters that have been deemed crucial in the context of AfCFTA and many bilateral and multilateral trade agreements. Despite the above benefits of regional

integration, there may be cases where weak regulation and poor governance structures negatively affect the trade flow, establish barriers to the growth of the private sector and create bureaucratic hurdles. On the other hand, good institutions can help the African nations to optimally seize the opportunities of the AfCFTA and therefore, effectively diversify their export markets for sustainable development.

This study addresses the limited understanding of how institutional quality interacts with AfCFTA to influence export diversification. This study addresses the limited understanding of how institutional quality interacts with AfCFTA to influence export diversification. Since AfCFTA has only recently been operationalized, policymakers will find it particularly critical to discover which institutional enablers and impediments will make or break the deal, whether AfCFTA will indeed offer the promise of lowering export concentration. As explained by Obeng (2022) and Gogo (2021), Africa is increasingly vulnerable to the turbulence of the global market and global shocks, making it important to enhance this body of evidence to inform reforms that would transform AfCFTA into an efficient instrument of structural change and sustainable development. This study also offers an essential input to the ongoing debates on trade policy and regional integration, providing practical recommendations for policymakers. It emphasizes the need to implement structural reforms to unlock AfCFTA's development potential, drive sustainable economic progression, and reduce Africa's reliance on volatile commodity prices. Specifically, the study seeks to:

- i. Analyze how AfCFTA implementation influences export destination diversification in Africa.
- ii. Examine the role of institutional quality, particularly regulatory quality and government effectiveness, in facilitating or hindering this process.
- iii. Provide policy recommendations for enhancing the effectiveness of AfCFTA in achieving export diversification.

By providing empirical evidence on the trade effects of AfCFTA, this study contributes to the broader discourse on regional trade agreements and economic integration in Africa. The findings offer valuable insights for policymakers and trade experts seeking to optimize AfCFTA's impact on Africa's trade landscape. Ultimately, this study highlights the complexities of trade liberalization and the gradual nature of export diversification in African economies.

2.0 THEORETICAL FRAMEWORK

New Trade Theory (NTT) emerged as a significant advancement in the field of international trade analysis during the late 1970s and early 1980s. The classic trade theories of trade include the Ricardo trade theory and the Heckscher-Ohlin theory, both of which focus on comparative advantage and were based on either technological differences or differences in endowment (Evaggelos, 2024). However, these traditional models could not sufficiently explain the contemporary trade patterns, especially in the context of trade between developed nations. NTT brought new ideas into the business by stressing the relevance of scale factors, network externalities, and product differentiation.

The main contributors to NTT are Paul Krugman, who became the main theorist of this interpretation. The theory that underpins NTT can be traced back to a pair of papers published by Paul Krugman in 1979 and the early 1980s, most notably "Increasing Returns, Monopolistic

Competition, and International Trade”. Interestingly, Krugman was awarded the Nobel Prize in Economic Sciences in 2008 for his work that focuses on trade patterns and geographical distribution of business activities with the help of principles that are rooted in NTT (Siddiqui, 2023). Krugman introduced NTT in view of the fact that the observed trend is that trade is not undertaken between countries that are proportionally different but it is as seen in trade between US and Europe.

NTT challenges the classic trade theories that consider comparative advantage as the main factor that explains trade, and proposes the theory that economies of scale and product differentiation can also cause trade (Inikhov, 2024). This is especially applicable in the context of AfCFTA, where similar African nations in terms of factor endowment and technological level continue to trade at a great scale to enjoy economies of scale production and access to markets. For example, Ethiopia has invested early in textile production, which would give it a first-mover edge and dominate intra-African markets by taking advantage of the tariff cuts with the AfCFTA. Equally, the case of established automotive industry in South Africa demonstrates how contingencies in history and initial power of industries influence trade dominance. NTT further underscores the effect of political forces, including subsidies, liberalization of trade, and regionalization of trade like the AfCFTA, that either promote or hinder the effect of competitive advantages and affect trade patterns in Africa (Inikhov, 2024; Sare *et al.*, 2025).

The value of certain goods or services depends heavily on widespread adoption, making early entry crucial for securing long-term competitive advantage. For instance, in trade, firms or countries that get into certain industries in the first instance enjoy first mover advantages that create increasing returns to scale and it becomes almost impossible for other late entrants to penetrate the market. NTT acknowledges that consumers value variety. AfCFTA is relevant to NTT because it helps explain an important aspect of trade agreements, namely the export diversification effect. AfCFTA can help African countries unlock big markets, diversify according to specialization, and facilitate the development of strong and efficient intra-African markets (Sare *et al.*, 2025).

Secondly, as per the perspective of the Institutional Theory, institutional structures play a crucial function in determining the results of economic and trade policies and practices. Market and economic institutions, which refer to the structures of the set rules, regulations, and practices within society, play a central role in enhancing economic stability and growth. The theory asserts that the quality of the institutions can shape the operations of the markets, thus dictating the levels of success that the economic activities, such as international trade, achieve (Inikhov, 2024). All these play significant roles in minimizing uncertainty and enhancing economic transactions, which are the basis of instituting resource allocation.

The applicability of Institutional Theory is more fitting when it comes to analyzing the extent and ways in which trade arrangements such as the AfCFTA may affect export destination diversification (Mhonyera & Meyer, 2023). This approach argues that structures that support good trade relations are critical in complementing the positive impacts of trade liberalization. Good institutions reduce transaction costs, ensure conformity to contractual obligations and guarantee a stable policy framework for firms to venture into new markets.

The theory also recognizes the dynamic nature of institutions, given that they change with economic changes and social requirements. In the context of AfCFTA, the theory postulates that there needs to be some sort of reformation that will lead to a better interaction between national

policies and regional goals (Annandale, 2022). For instance, the enhancement of regulatory quality and governance structures will assist in standardizing the trade policies across African countries, hence fostering the formation of a single, larger market that enhances the diversification of the export markets.

When it comes to the relationship established in the study, Institutional Theory is in line with the proposition that institutional quality enhances export diversification due to AfCFTA. Thus, when transaction costs are low due to efficient institutions, the business people are enabled to find new markets, cater to different products, and compete globally. Sound policies and legal systems promote fair competition and safeguard the proprietary rights in products to spur innovation in the value-added exports. Government effectiveness, on the other hand, helps improve the execution of trade policies by offering the infrastructure and services for businesses to widen their market base.

Endogenous Growth Theory (EGT) was developed to fill the gaps in neoclassical growth models, including Solow's growth theory, where technology advancement, innovation, and other factors were considered as exogenous. In the early 1980s, Romer, Lucas and others advanced what is known as the external Growth Theory (EGT), which posited that growth occurred from within the system and was thus propelled by various factors like human capital, innovation, knowledge capital and so on (Acs & Sanders, 2021). Thus, in contrast to exogenous models, EGT introduces policy choices, institutional quality, and investments in R&D as the key direct determinants of long-term economic growth. EGT laid down some primary axioms, for example, institutional quality, which encompasses aspects such as regulatory quality, governance, and policy implementation, is a crucial determinant of growth. Rules that enhance information sharing, ensure contracts and minimize transaction costs, help foster investment in innovations and entrepreneurship. Regulatory quality guarantees proper operation of markets while governance effectiveness provides order and credibility vital for sustained economic development.

The Endogenous Growth Theory is also a strong theory to explain how AfCFTA can promote export diversification. AfCFTA promotes trade liberalization and unites the African economies, which results in the exchange of knowledge, the adoption of technology, and the access to markets (Akcigit and Ates, 2021). The success of these programs, however, is much dependent on the quality of other institutions in member states. Effective regulation can be used to ensure that they operate in accordance with trade agreements and minimize market barriers other than this, governance assists in enacting such policies that generate an environment of infrastructure improvement and business competitiveness.

This theory pays attention to the role that institutions may play in addressing trade and economic diversification limitations. As an example, the cost and challenges of conducting business across borders can be reduced by the quality of regulations, which enables companies to penetrate various markets. Good management of resources ensures that resources are well managed and invested to support infrastructure and education that are critical in ensuring long-term growth (Spear & Young, 2018). These institutional reforms would make the African countries effectively leverage on AfCFTA and transition out of their dependence on natural resources exports to the superior and more educated export diversification.

Endogenous Growth Theory in this situation has a strong implication in the interaction between the institutional quality, innovation and economic growth. These are also the concentration on

knowledge accumulation, increasing returns to scale, and institutions, which predispose AfCFTA to be one of the primary actors in the diversification of trade and regional integration (Fofack and Mold, 2021). In terms of governance and quality of the regulation, African countries may provide a good environment to develop, innovate and expand markets. The theory thus provides a robust platform through which the issue of the AfCFTA can be understood in terms of export diversification and sustainable development.

The New Trade Theory (NTT), the Institutional Theory and the Endogenous Growth Theory (EGT) collectively offer an integrated perspective of the AfCFTA, export diversification dynamics. NTT describes the trade pattern structures created by the economies of scale, product differentiation, and first-mover benefits in the African markets. Institutional Theory underscores the governance conditions, including regulatory quality and the effectiveness of the government, that facilitate or limit these trade opportunities. In its turn, EGT emphasizes the role of long-term diversification through knowledge accumulation, innovation, and human capital. Together, these theories influence this paper in its attempt to analyze the effects of AfCFTA in different institutional circumstances.

2.1 Empirical Literature Review

According to the study by Fusacchia, Balié & Salvatici (2022), the AfCFTA is one of the largest free trade areas ever established in Africa, with the primary objective of establishing a single market that would enhance economic cooperation among the African countries. AfCFTA, if properly implemented, can have wide impacts on alleviating structural economic issues and supporting the diversification of export markets by reducing trade barriers, aligning policies, and promoting cooperation among the African countries. However, its success depends on the interaction of the institutional framework, the quality of regulation and the effectiveness of the government, which determine the densities and the sustainability of the market expansion.

Export diversification is important in the development of the African economy. Over the years, a significant number of African economies have been shaped mainly by the exportation of raw materials and commodities, which makes them susceptible to global market forces. For instance, Nigeria and Angola have their major export products as oil, while countries like Zambia and the Democratic Republic of Congo rely on copper products (Mhonyera & Meyer, 2023). This is due to its focus on a finite set of export products that hampers the ability of these economies to adapt to shocks and grow in the long run. AfCFTA aims at addressing this challenge through enhancing intra-African trade, supporting industrialization and developing value-added products. This way, the agreement makes it possible for African nations to unleash their comparative advantages and access larger markets to expand their export baskets.

According to Gogo (2021), another essential factor that shapes the effectiveness of trade agreements such as AfCFTA is institutional quality. Regulatory quality makes trade policies transparent, ADA, and effectively imposed; this leads to low transaction costs and improved business conditions. For instance, smooth and standard procedures in customs regulation under AfCFTA offer efficiency in cross-border trade, which enables firms to venture into other markets. In addition, good governance promotes stability and credibility to encourage investments, which are crucial for developing effective competition. Hence, countries with strong institutional foundations are in a better position to enforce trade agreements, settle disputes and adopt measures that improve competitiveness (Mhonyera *et al.*, 2023). Lack of institutional support for AfCFTA

means that the positive effects may be enjoyed disproportionately by certain players, with the situation worsening existing asymmetry, thus not helping much in the quest for export diversification.

This is another aspect through which AfCFTA assists export diversification by cultivating economies of scale. As the trade barriers are lowered through the agreement, there is a wider market reach for the African producers, which in turn lowers their costs of production, making them produce competitively in the international markets (Obeng, 2022). This is especially relevant for SMEs, which are a cornerstone of many African economies' performance. SMEs are in a better position to expand their production facilities, enhance innovation, and expand exports within the larger regional market. For instance, a textile manufacturer in Ethiopia may use AfCFTA as the basis for exporting his/her manufactured products to the West African countries, which would entail lower overall transaction costs and standardized trade policies. This regional integration also stimulates competition, pushing firms into developing quality products that meet various markets across the region.

This is another significant dimension of AfCFTA's role in export diversification, particularly in industrialization and value addition. The continent has been plagued by an inability to maximize its benefits from trade because it has always depended on primary commodity exports. Omoju and Ikhide (2020) posit that a solution to this trend lies in AfCFTA, which helps to establish a value chain within the region and promotes industries that can be built on the raw commodities. To give an example, Ghana and Côte d'Ivoire can move beyond exporting raw cocoa beans and move into chocolate and cocoa butter production, which would keep more value in the country (Reda & Benlakehal, 2024). Equally, the horticulture sector of Kenya represents how effective trade facilitation within AfCFTA may help to increase regional and global market access, diversifying its exports to include high-value products such as cut flowers and fresh vegetables. The Ethiopian textile business also shows that positioning of countries with early industrial investment to access value-added opportunities in intra-African trade.

Nevertheless, the implementation of AfCFTA is faced with several challenges that can make it ineffective in promoting export diversification. This can be explained by the fact that weak institutional settings continue to be a significant hobgoblin in most African states. The value that the agreement aims to provide can be undermined by opportunistic behavior, red tape, and information asymmetry because of increasing transaction costs and creating business risks (Oiro, 2020). In addition, institutional quality can vary across member states, leading to unfair outcomes by which more developed parties have more to gain out of the agreement. As one example, South Africa is likely to gain more than other countries in the continent because it has a modern industrial base and relatively strong institutions as compared to many other countries in the continent, which are less developed and have relatively weak institutions.

Reda *et al.* (2024) argue that regulatory quality also serves as another factor to look at in terms of its role in removing the non-tariff barriers that have been observed to persistently be a barrier to trade in Africa. Measures such as complicated customs procedures, lack of standardized measurements, and stringent license regimes erase any gains from AfCFTA attained tariff cuts. Exemptions from these regulations and the implementation of harmonized standards for member states are measures that make trading easier. For instance, the creation of a digital customs platform under AfCFTA may help to minimize trade disruptions and enhance the efficient flow of goods.

AfCFTA's implementation affects export diversification by availing bigger regional markets to African states. Through the removal of tariffs for up to 90% of products and the standardization of import and export measures, AfCFTA lowers trade barriers, giving companies incentives to expand market reach within the African continent. The increased market access leads producers to expand product differentiation; they no longer limit themselves to exporting basic goods like minerals and crops, but export upgraded goods and services (Vogel, 2024). For example, AfCFTA promotes regional value additions of products where countries can engage in different levels of Processing. A car manufacturer based in South Africa could obtain some of the input from various African nations, thus creating a supply chain within the continent. This approach not only diversifies trade but also offers protection against shocks in the global supply chain.

The third potential causal pathway is that the agreement directs focus on NRBs, including complex customs procedures and inconsistency, which may negatively influence export flows. Thus, by harmonizing these regulations and applying the generally acceptable standards, AfCFTA helps enhance cross-border trade. This predictability makes it easy for industries to participate in the export of their products across different countries on the continent. For example, a textile company in Ethiopia can sell its products to other countries in West Africa with less effort, which opens up new markets and reduces the dependence on one country's market.

Songwe (2019) demonstrates that AfCFTA's ability to foster export diversification is determined significantly by aspects of institutional quality. Good regulation reduces bureaucracy and uncertainties in the implementation of trade policies under the agreement. Business-friendly, stable, and certain laws and policies foster an environment that minimizes transaction costs and establishes credibility between the players. For instance, standardization of regulation reduces the time involved in customs formalities and thus helps exporters in establishing their business in new markets.

Thus, government effectiveness, which is one of the indicators of institutional quality, is one of the key factors that determine the effectiveness of AfCFTA. Promoting governance plays an important role in planning and implementing infrastructure investment, including transport networks and e-commerce. They are important in ensuring that producers, especially farmers and processors, have reliable access to new markets and means of getting their products to the consumer. Furthermore, good governance aids in reducing the menace of corruption and bureaucracy hitches, which are major impediments to trade within many African nations.

However, there are the following challenges that are associated with the implementation of AfCFTA and that are connected with institutional quality: Inter-country differences in institutional capacity in many African nations lead to varying levels of competition. These disparities can be met with capacity-building measures like training of customs officials and enhancing the relevant policies and legislation (Mhonyera & Meyer, 2023). Furthermore, there is a need for regional cooperation so that the matter of setting standards and solving trade problems could be consistent as well as efficient.

The chances that come with AfCFTA are infinite, and several of these include the following: In this way, the agreement can help unleash the potential of African businesses for export diversification and sustainable development (Fusacchia *et al.*, 2022). Measures aimed at building institutions, including anti-corruption initiatives and improvements in transparency, may help bolster these advantages and make the benefits of trade more inclusive.

3.0 METHODOLOGY

3.1 Data

This study employs panel data spanning from 2015 to 2023, covering 36 African countries. The period was chosen to capture both the pre- and post-AfCFTA implementation years, with most countries adopting the agreement around 2020. A relatively short pre-treatment window (2015–2019) was therefore appropriate to establish a credible baseline while allowing sufficient post-treatment years to observe emerging effects. The dataset combines macroeconomic, trade, and institutional quality indicators from the following sources: the World Integrated Trade Solution (WITS) for trade flows and export destination data, the World Bank Group for macroeconomic indicators and institutional quality metrics, and the World Development Indicators (WDI) database for socioeconomic and development-related variables. These data sources provide comprehensive coverage for evaluating the role of the African Continental Free Trade Area (AfCFTA) in export diversification.

The selected countries are divided into treatment and control groups to assess the causal impact of AfCFTA on export diversification. The treatment group includes countries that had ratified and operationalized AfCFTA by 2020, namely Algeria, Angola, Burkina Faso, Burundi, Cameroon, Central African, Congo Rep of, Djibouti, Egypt, Equatorial Guinea, Ethiopia, Gabon, Gambia, Lesotho, Malawi, Mauritania, Mauritius, Namibia, Nigeria, Sao Tome, Senegal, Seychelles, Sierra Leone, South Africa, Tanzania, Togo, and Tunisia. The control countries had either delayed ratification or not ratified AfCFTA during the study period, specifically Benin, Eritrea, Liberia, Libya, Madagascar, Somalia, South Sudan, Sudan, and Swaziland.

3.2 Variables

The primary outcome variable in this study is export diversification, measured using the Herfindahl-Hirschman Index (HHI), where lower values indicate greater diversification. The key independent variable is AfCFTA implementation status, coded as a binary indicator (1 = AfCFTA member, 0 = non-member). To enhance the robustness of the analysis, the model incorporates several control variables that may influence export diversification. These include macroeconomic controls, specifically the log of GDP (current US\$), to account for differences in economic size across countries. Additionally, the study considers institutional quality indicators, including regulatory quality and government effectiveness, sourced from the World Bank, to control for governance-related factors that may affect trade patterns.

Table 1: Variable Description and Descriptive Statistics

Variable	Measurement	Source	Mean	SD
Export diversification	Herfindahl-Hirschman Index (HHI)	WITS	0.14	0.15
Regulatory quality	World Bank governance indicator	World Bank Group	-0.77	0.64
Government effectiveness	World Bank governance indicator	World Bank Group	-0.85	0.65
GDP	Log of GDP (current US\$)	WDI	23.46	1.43

Note: AfCFTA status was coded as a binary variable (0 = non-member, 1 = member). On average, 38% of country–year observations fall under membership status, corresponding to 131 instances of participation versus 210(62%) non-participation observations during the study period.

From Table 1 above which highlights the descriptive statistics and variables description it is evident that on average Herfindahl-Hirschman Index (HHI) is 0.14 (SD = 0.15) indicates moderate diversification of export destinations, with variability among countries. Institutional quality, measured by regulatory quality and government effectiveness, shows negative mean values (-0.77 and -0.85, respectively), reflecting generally weak institutions, though with some variation. The average log of GDP is 23.46 (SD = 1.43), indicating differences in economic size across countries, which may influence export diversification. Regarding AfCFTA membership, 38.42% of countries are members, while 61.58% are not, suggesting potential differences in export patterns and institutional factors between members and non-members.

3.3 Econometric Approach

To estimate the causal impact of AfCFTA implementation on export diversification, the study employs the Synthetic Control Method (SCM).

3.3.1 Synthetic Control Method

Hainmueller (2009) introduced the Synthetic Control Method as an innovative approach for comparative case studies, focusing on estimating the causal effects of policy interventions. In the study titled Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program, Hainmueller demonstrated how a synthetic control, constructed as a weighted combination of untreated units, can serve as a robust counterfactual to evaluate the impact of California's tobacco control policy. The method is demonstrated below:

“Suppose Y_{it}^N is the outcome that represents the observed for region i at time t in the absence of the intervention, for units $i=1, \dots, J+1$, and time periods $t=1, \dots, T$.

Let T_0 be the number of pre-intervention periods, with $1 \leq T_0 < T$. Let Y_{it}^1 be the outcome that would be observed for unit i at time t if unit i is exposed to intervention in periods T_0+1 to T ”

Given that

$\alpha_{it} = Y_{it}^1 - Y_{it}^N$ is the effect of the intervention for unit i at time t ,

D_{it} : An indicator with 1 if unit i is exposed to the intervention at time t , and 0 value otherwise.

The observed outcome for unit i at time t is $Y_{it} = Y_{it}^N + \alpha_{it} D_{it}$

For unit i at time t , the outcome without treatment is given as: $Y_{it}^N = \delta_t + \theta_t Z_j + \lambda_t \mu_j + \epsilon_{jt}$

Where:

δ_t : Time-specific intercept

Z_j : Observed covariates unaffected by treatment

θ_t : Coefficients for covariates Z_j

λ_t : Time-varying unobserved factors

μ_j : Unit-specific unobserved factors

ϵ_{jt} : Error term

The Synthetic Control Method (SCM) is particularly suitable for policy evaluation as it constructs a counterfactual by combining untreated countries to approximate the trajectory of treated units in the absence of AfCFTA implementation. This approach enables a more precise estimation of policy impact compared to methods that rely on a single control group. SCM was chosen over Difference-in-Differences (DID) because many countries implemented AfCFTA at different times, assuming a common treatment period is unrealistic. Moreover, unlike DID, SCM does not require parallel trends between treatment and control units but instead minimizes bias by assigning optimal weights to control countries that closely match the pre-AfCFTA characteristics of treated countries. Similarly, SCM was preferred to Propensity Score Matching (PSM), as PSM only balances observed covariates without explicitly accounting for differences in outcome trajectories over time. By leveraging both cross-sectional and temporal variation, SCM provides a more robust framework for evaluating AfCFTA's causal impact under staggered adoption.

4.0 RESULTS

The empirical analysis, conducted using a synthetic control method (SCM) with panel data from 36 African countries between 2015 and 2023, provides causal evidence of how AfCFTA implementation affects export diversification, measured through the Herfindahl-Hirschman Index (HHI).

Table 2: Post-treatment Results (Effects, P-Values, Standardized P-Values)

Variable	Estimate	95% CI	p-value	Std. p-value	Pre-treatment mean (HHI)	Post-treatment mean (HHI)
AfCFTA Effect (c1)	1.24	[0.85, 1.62]	0.00	0.46	0.13	0.25

The estimated post-treatment effect of 1.24 ($p = 0.00$) indicates a statistically significant increase in export concentration following AfCFTA implementation. Specifically, an effect size of 1.24 implies that the Herfindahl-Hirschman Index (HHI) increased by 124 percentage points relative to the counterfactual scenario, meaning that exports became more concentrated in fewer destinations. This finding suggests that, rather than fostering immediate diversification, AfCFTA initially reinforced existing trade relationships with established partners. Such concentration may reflect regional trade preferences, logistical constraints, and entrenched market linkages, which tend to strengthen before broader diversification effects can materialize.

The causal inference is further supported by standardized placebo tests, with a p-value of 0.46, confirming that the observed effects are not due to random chance. The SCM methodology ensures that the counterfactual scenario, what would have happened in the absence of AfCFTA, is rigorously constructed, allowing attribution of the observed shift in export concentration directly to AfCFTA implementation.

These results highlight the complex trade dynamics introduced by AfCFTA. While the agreement is designed to enhance intra-African trade, its short-term effects appear to reinforce existing trade relationships rather than immediately fostering diversification. Future research should explore

whether long-term policy adjustments, such as trade facilitation measures and industrial diversification strategies, could unlock the full potential of AfCFTA in expanding African export markets.

Figures 1 and 2 illustrate the impact of AfCFTA on export destination concentration, measured using the Herfindahl-Hirschman Index (HHI). The key observation from both figures is that export concentration increased post-AfCFTA implementation, indicating a decline in export diversification. This contradicts the expected outcome of expanded trade networks under AfCFTA.

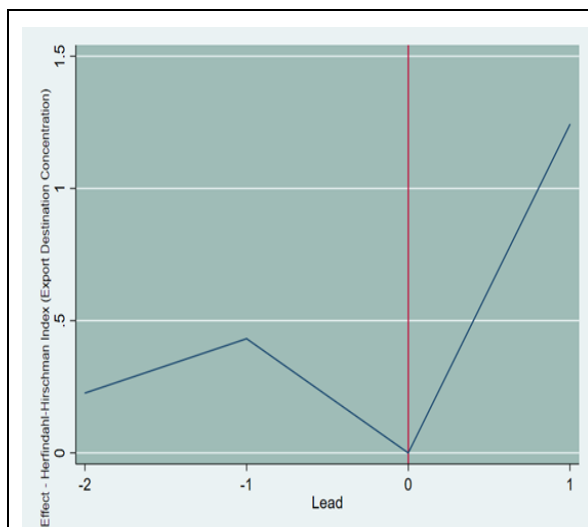


Figure 1: Effects of AfCFTA Implementation on Herfindahl-Hirschman Index

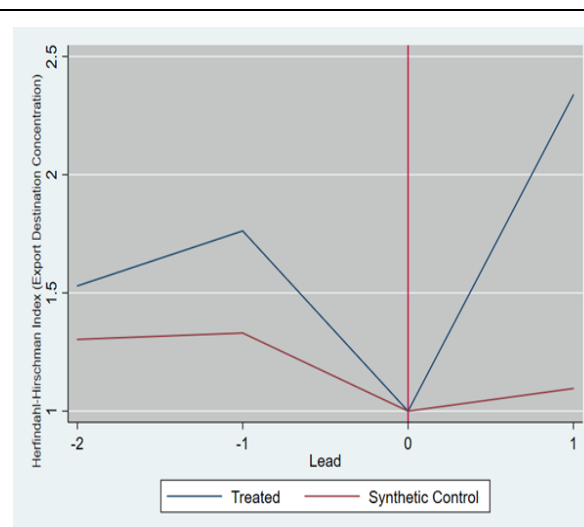


Figure 2: Comparison of Treated and Synthetic Control groups on Herfindahl-Hirschman Index

As shown in Figure 1, the trajectory of export destination concentration, measured by the Herfindahl–Hirschman Index (HHI), remains relatively stable before AfCFTA implementation (vertical red line at time 0). After implementation, however, HHI rises sharply, indicating that exports became more concentrated in fewer destinations. Contrary to expectations of broader market access and diversification, AfCFTA appears to have initially reinforced existing trade linkages. This outcome may reflect transitional frictions, regional trade preferences, or adjustment costs that delayed diversification benefits.

Figure 2 provides a comparative perspective by contrasting AfCFTA member countries (treated group) with their synthetic control counterparts. Prior to AfCFTA, both groups follow nearly identical trends, confirming the validity of the synthetic control as a benchmark. Post-implementation, however, a clear divergence emerges: while the synthetic control group maintains a stable HHI, the treated group experiences a marked increase in concentration. This divergence strongly suggests that AfCFTA implementation, rather than random variation, is driving the observed shift in trade patterns.

The synthetic control method (SCM) strengthens this causal interpretation by constructing a counterfactual scenario that closely mirrors pre-AfCFTA characteristics of member states. The

parallel pre-treatment trends and significant post-treatment divergence support the claim that AfCFTA influenced export concentration in the short term.

That said, these figures do not fully reveal the mechanisms behind the observed outcome. The increase in concentration may be explained by the early stage of implementation, favoring established trade routes, firms targeting markets with lower entry barriers, or structural challenges such as weak infrastructure and regulatory misalignments across member states. Moreover, while the estimated effect is statistically significant, the standardized p-value of 0.46 indicates the importance of robustness checks to assess whether this trend persists over time.

5.0 DISCUSSIONS

The findings from the synthetic control method (SCM) provide causal evidence that the implementation of AfCFTA has led to an increase in export concentration rather than a diversification of export destinations. The estimated post-treatment effect of 1.24 ($p = 0.00$) suggests that, in the immediate aftermath of AfCFTA's adoption, trade patterns have become more concentrated among a limited number of established partners rather than expanding into a broader set of markets. This result challenges conventional expectations that regional trade agreements, such as AfCFTA, would automatically enhance export diversification (Fofack & Mold, 2021; Songwe, 2019). Although the raw p-value (0.00) indicates statistical significance, the standardized p-value of 0.46 suggests weaker evidence of robustness across alternative specifications. This implies that while the short-term increase in export concentration appears to be associated with AfCFTA implementation, the effect should be interpreted as indicative rather than conclusive. Over the longer term, as implementation deepens and structural constraints are addressed, more definitive diversification patterns may emerge (Hainmueller, 2009).

A key implication of these findings is that AfCFTA's early-stage impact may reflect a transition period where trade relationships are reinforced before they expand. Several factors could explain this outcome. First, African trade has historically been highly concentrated, with many countries relying on a few dominant trading partners, such as regional economic hubs like South Africa, Nigeria, and Kenya (Annandale, 2022; Mhonyera & Meyer, 2023). The initial phase of AfCFTA implementation may have reinforced these existing trade patterns before firms and industries could fully exploit new market opportunities. Additionally, firms often prefer familiar and well-established markets where they already have logistical and regulatory experience, leading to short-term concentration rather than diversification (Fusacchia, Balié, & Salvatici, 2022).

Second, logistical and infrastructure constraints may have contributed to this outcome. Despite AfCFTA's policy framework, physical and institutional barriers still limit firms' ability to expand into new markets. Weak transport infrastructure, border inefficiencies, and customs delays could discourage firms from exploring new trade destinations immediately after AfCFTA's implementation (Omoju & Ikhide, 2020). Additionally, non-tariff barriers (NTBs), such as restrictive regulations and compliance costs, might have favored concentrated trade networks over diversification (Attia, 2021). Without improvements in trade facilitation and regulatory harmonization, firms may struggle to expand beyond their existing networks (Oiro, 2020).

Third, trade costs and business networks play a crucial role in shaping early trade dynamics. Exporters tend to minimize risks by focusing on markets where they have established trade agreements, supplier relationships, and logistical efficiencies. The high cost of market entry into

new destinations due to differences in regulations, business environments, or consumer preferences could be a deterrent (Reda & Benlakehal, 2024). Given that AfCFTA is still in its early stages, firms may require additional time to adapt their business strategies before trade networks broaden. Moreover, firms that have already developed strong trade links within existing regional economic communities (RECs), such as ECOWAS or SADC, may initially prioritize deepening these ties rather than venturing into new markets (Gogo, 2021).

While the short-term effect of AfCFTA appears to have increased export concentration, this does not necessarily imply that diversification will not occur in the long run. Many trade agreements exhibit a “J-curve effect,” where initial adjustments may lead to trade concentration before firms and industries gradually expand into new markets (Lewis, Cardy, & Huang, 2019). Over time, as businesses adjust to AfCFTA’s new trade environment, we may witness a progressive shift towards greater export diversification. Future research should investigate whether policy interventions, trade facilitation efforts, and sector-specific support programs could accelerate diversification under AfCFTA (Evangelos, 2024).

Given that AfCFTA’s immediate impact has resulted in greater trade concentration, policymakers should consider strategies to mitigate these effects and promote broader market participation. First, strengthening trade facilitation measures is crucial. Governments should focus on reducing non-tariff barriers (NTBs) and improving customs efficiency to enable firms to explore new markets within the AfCFTA framework (Attia, 2021). Investments in regional trade infrastructure, such as improved roads, ports, and logistics networks, will help firms overcome geographical and logistical constraints (Omoju & Ikhide, 2020).

Additionally, supporting small and medium enterprises (SMEs) is essential to ensuring inclusive trade benefits. SMEs often face higher barriers when trying to export beyond their traditional markets. Financial incentives, technical assistance, and export promotion programs could encourage smaller firms to engage in new trade relationships (Fofack & Mold, 2021). Policymakers should also enhance regional trade intelligence by providing businesses with market data, trade analytics, and sectoral insights to identify new export destinations and untapped opportunities within AfCFTA (Vogel, 2024). This could include resources on compliance, standards, and market entry strategies to help firms navigate trade barriers more effectively (Siddiqui, 2023).

Another critical area for policy intervention is the development of regional value chains. To facilitate diversification, countries should develop integrated value chains that enable firms to participate in new industries and export markets. By moving beyond raw material exports and focusing on processed and value-added goods, African economies can reduce their reliance on a small number of trade partners and create sustainable export diversification (Acs & Sanders, 2021). Encouraging intra-African investment and production linkages could foster a more balanced and resilient trade structure (Ahmad *et al.*, 2022).

This study contributes to the existing literature on regional trade agreements (RTAs) and export diversification by providing empirical evidence on AfCFTA’s early-stage trade effects. Unlike previous studies that assumed immediate diversification effects, these findings reveal that the initial phase of AfCFTA implementation has reinforced existing trade patterns rather than expanding trade networks (Obeng, 2022). The study also highlights the importance of considering

logistical, economic, and institutional constraints when assessing the impact of trade agreements on export diversification (Spear & Young, 2018).

While this study provides causal evidence of AfCFTA's impact on export concentration, future research should explore several key areas. First, long-term trade dynamics should be investigated to determine whether export concentration persists or declines as AfCFTA matures (Sare, Amoah, & Bawuah, 2025). A longer time horizon (e.g., 2025–2035) could capture whether firms gradually adjust their trade strategies to explore new markets. Second, a sectoral and product-level analysis could provide insights into whether certain industries benefit more from AfCFTA than others (Inikhov, 2024). Third, research should examine how complementary policies, such as industrial policies, investment incentives, and digital trade facilitation, influence diversification under AfCFTA (Hainmueller, 2009).

6.0 CONCLUSION

This study aimed to evaluate whether the early implementation of the African Continental Free Trade Area (AfCFTA) contributed to greater export diversification across 36 African countries during 2015–2023. Instead, the analysis found a significant rise in export concentration, suggesting that AfCFTA initially reinforced existing trade linkages rather than broadening market access. These findings challenge the assumption that regional trade agreements automatically foster diversification and highlight the importance of structural, logistical, and market-related factors in shaping early trade outcomes. Nevertheless, the concentration effect may be temporary, as longer-term adjustments could still yield a more diversified African export landscape. Policymakers should therefore prioritize trade facilitation, SME support, and infrastructure development to accelerate diversification and ensure that AfCFTA delivers inclusive and sustainable trade growth across the continent.

6.1 Limitations

The study has several limitations. The analysis covers a relatively short timeframe (2015–2023), capturing only the early years of AfCFTA implementation. In addition, data constraints limited the scope of variables, with the Herfindahl–Hirschman Index (HHI) serving as the primary measure of export diversification. While informative, reliance on a single index may not fully capture the multidimensional nature of diversification. These limitations suggest that the findings should be interpreted as indicative rather than conclusive.

7.0 RECOMMENDATIONS

7.1 Future Research

Future studies should extend the analysis to cover a longer period in order to capture medium- and long-term effects of AfCFTA. Employing multiple measures of diversification and incorporating sectoral or firm-level trade data would provide richer insights into how integration affects different parts of the economy. Further research could also explore the role of complementary policies such as infrastructure investment, regulatory harmonization, and digital trade facilitation in shaping AfCFTA's long-run trade outcomes.

7.2 Policy Recommendations

1. The study found that AfCFTA's initial effects reinforced existing trade linkages, suggesting that weak institutions may limit the ability of firms to explore new markets. Improving regulatory quality and government effectiveness can enhance transparency, reduce uncertainty, and create an enabling environment that supports export diversification.
2. The observed concentration effect may reflect logistical and market access constraints that encourage exporters to continue trading with established partners. Expanding transport networks, modernizing logistics systems, and upgrading digital trade platforms would lower transaction costs and open access to new regional and global markets.
3. Since early AfCFTA outcomes show stronger reliance on familiar partners, high trade costs from customs delays and regulatory misalignments may be discouraging firms from diversifying. Streamlining border processes and harmonizing trade rules across member states would help reduce these costs and facilitate entry into new markets.
4. Smaller firms are often the most constrained in accessing distant or unfamiliar markets, which may partly explain the short-term concentration trend. Providing SMEs with financial incentives, export credit, and capacity-building programs can empower them to explore non-traditional destinations and broaden their export base.
5. The study's finding of increased concentration points to persistent reliance on primary commodities. Promoting value-added production, for example, processing cocoa into chocolate in West Africa or cotton into textiles in East Africa and can reduce dependence on raw exports and expand product variety, directly countering the concentration effect identified.

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Conflict of Interest

The author declares no conflict of interest.

REFERENCES

- Acs, Z., & Sanders, M. (2021). *Endogenous growth theory and regional extensions* (pp. 615-634). Springer Berlin Heidelberg.
- Ahmad, M., Ahmed, Z., Yang, X., Hussain, N., & Sinha, A. (2022). Financial development and environmental degradation: do human capital and institutional quality make a difference? *Gondwana Research*, 105, 299-310.
- Akcigit, U., & Ates, S. T. (2021). Ten facts on declining business dynamism and lessons from endogenous growth theory. *American Economic Journal: Macroeconomics*, 13(1), 257-298.

- Annandale, D. L. (2022). *The African Continental Free Trade Area (AfCFTA): Opportunity or pipedream for South Africa's Agricultural Exports* (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Attia, S. (2021). The Role of Trade Facilitation and Other Policy Strategies in the Successful Implementation of AfCFTA. *Global Trade and Customs Journal*, 16(11/12).
- Evangelos, P. (2024). New Trade Theory and Economic Integration: A Comprehensive Analysis. *Икономика и управление*, 21(1), 1-6.
- Fofack, H., & Mold, A. (2021). The AfCFTA and African trade—an introduction to the special issue. *Journal of African Trade*, 8(Suppl 2), 1-11.
- Fusacchia, I., Balié, J., & Salvatici, L. (2022). The AfCFTA impact on agricultural and food trade: a value-added perspective. *European Review of Agricultural Economics*, 49(1), 237-284.
- Gogo, I. L. (2021). *Examining the Prospects of the African Continental Free Trade Area (AfCFTA) in Facilitating Free Trade in Africa: A Case Study of Kenya* (Doctoral dissertation, University of Nairobi).
- Hainmueller–MIT, J. (2009). Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program.
- Inikhov, S. (2024). A Comparative Study of Cryptocurrency and Traditional Payment Systems in International Trade: A New Trade Theory Perspective.
- Lewis, A. C., Cardy, R. L., & Huang, L. S. (2019). Institutional theory and HRM: A new look. *Human resource management review*, 29(3), 316-335.
- Mhonyera, G., & Meyer, D. F. (2023). The impact of AfCFTA on welfare and trade: Nigeria and South Africa in light of core export competencies. *Sustainability*, 15(6), 5090.
- Obeng, C. K. (2022). Export efficiency and diversification in Ghana.
- Oiro, M. O. (2020, June). Estimating COMESA's trade potential in Africa: optimizing export opportunities in the AfCFTA. In *A Paper Prepared for the 7 th COMESA Annual Research forum* (p. 1).
- Omoju, O. E., & Ikhide, E. E. (2020). Harnessing the AfCFTA for economic diversification in Nigeria: The role of trade logistics and infrastructure. *Strategic Policy Options for Bracing Nigeria for the Future of Trade*, 159-171.
- Reda, Z., & Benlakehal, M. (2024). African Continental Free Trade Area (AfCFTA) as an export destination. *International Journal of Economic Performance*
- Sare, Y. A., Amoah, J. O., & Bawuah, B. (2025). Assessing the impact of international trade and FDI in driving economic development in West Africa: the role of urbanization. *SN Business & Economics*, 5(1), 1-30.
- Siddiqui, K. (2023). International Trade Theories. *World*, 2024.

- Songwe, V. (2019). Intra-African trade: A path to economic diversification and inclusion. *Coulibaly, Brahim S.: Foresight Africa: Top Priorities for the Continent in 97*, 116.
- Spear, S. E., & Young, W. (2018). Macroeconomic dynamics survey: endogenous growth theory and models: the “first wave,” 1952–1973. *Macroeconomic Dynamics*, 22(6), 1695-1720.
- Vogel, T. (2024). Combining the pieces: identifying key determinants of export diversification in Africa amidst model uncertainty. *Review of World Economics*, 1-51.

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