Impact of Geoeconomic Fragmentation on Macroeconomic Performance in West Africa: The Moderating Role of Governance

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Abstract

Many studies projected that the consequences of geoeconomic fragmentation would vary across regions and will be more severe in developing countries particularly those that are more dependent on commodity trade, it is therefore imperative to carry out a regional-specific study. Hence, this study investigates the partial effects of six fragmentation measures on economic performance in the West African Sub-region. The study further examines the total impact of fragmentation while accounting for the moderating influence of governance indicators. Panel data from fourteen West African countries from 1991 to 2022 were analysed using fixed effect within and random effect GLS estimators, while the preferred method was chosen using the Hausman specification test. The results show that all the forms of fragmentation in terms of trade restrictions are harmful to the economic performance of West African countries, with exchange and export restrictions having the largest consequences. However, improvement in governance reduces the negative effects of fragmentation. Particularly, improvement in control of corruption, government effectiveness, regulatory quality, and the rule of law can moderate the impact of fragmentation. It is recommended that efforts should be intensified to improve the quality of governance in West Africa countries to mitigate the negative consequences of the growing trend of fragmentation due to rising geopolitical tensions across the globe.

Keywords: Geoeconomic fragmentation; Macroeconomic performance; governance indicators; Trade restriction; West Africa

JEL Classification Codes: F12, F13, F14

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I. Introduction

For several decades now, the world has experienced accelerated levels of globalization. Economies across the globe become more integrated and interconnected. For instance, the ratio of global commerce to GDP, which is a common measure of globalization has more than doubled since 1970 (Antras, 2020). There has been a substantial increase in the volume of trade and trade diversity, Foreign Direct Investment (FDI) flows, and value chains. The world has also recorded significant transfer of technology and expertise across the globe. There is equally a rise in non-economic interactions and interdependency across countries, particularly in the areas of exchange of social-cultural and political ideologies, as well as international migrations (Cigna *et al*. 2022).

However, in recent times the trend of global interaction is dwindling due to rising protectionist policies by nations. In addition, the increase in geopolitical confrontations by major economies across the globe and the formation of regional and sub-regional trade bloc is leading to more Geoeconomic Fragmentation (GEF) across the globe. This new paradigm of rising geopolitical tensions, and uneven distribution of gains from globalization, has resulted in countries becoming skeptical about global interactions hence, countries are restricting trade using both tariff and non-tariff measures (Colantone & Stanig 2018; Autor *et al*. 2020; Pastor & Veronesi 2021 cited in Ahn *et al*. 2023). In addition, Alvarez *et al*. (2023) argue that this development is capable of disrupting long-established trade relationships and international cooperation among countries.

Several studies have investigated the effects of this new trend of fragmentations on global trade, FDI flows, and the global economy at large. For instance, Bolhuis *et al* (2023) show that as more countries shift to inward-looking, low-income countries that are heavily dependent on commodities trade will record the highest losses, while advanced countries will experience welfare loss of about 4 percent of Gross Domestic Product (GDP) and emerging economies will lose as much as 25 percent of GDP. They further examined the extreme scenario where trade is fragmented into two blocs such that all countries of the world have to choose between either the US-EU bloc or the China-Russia bloc with no trade between members of these two blocs. In such case, there will be about 2.3 percent of global GDP decline worldwide, while the advanced economies, the emerging markets, and the low-income countries will record a decline of 2 percent, 3 percent, and 4 percent of GDP respectively. They opine that the welfare loss attributed to geoeconomic fragmentation will be equivalent to the loss during COVID-19, but the loss from geoeconomic fragmentation will be permanent, unlike the COVID-19 pandemic loss.

Alvarez *et al.* (2023) also show that the potential consequences of geoeconomic fragmentation would range from 7 percent to 12 percent output losses in some regions. While, Ahn *et al*. (2023) show that geoeconomic fragmentation will slow down and alter the flow and the distribution of FDI. Emerging Markets and Developing Economies (EMDEs) are likely to face a high level of FDI relocation. Habokyan *et al*. (2023) study shows that geopolitical ties and increased trade costs due to geopolitical polarization generally result in lower trade and incomes. On the consequence of geoeconomic fragmentation on trade, Campos, *et al*. (2023) estimated that trade will probably reduce to between 22 percent to 57 percent as a result of fragmentation.

Thus, geoeconomic fragmentation, has the potential to disrupt long-established trade patterns and hinder international cooperation (IMF 2023). These developments also pose a significant threat to regions such as West Africa, which are deeply integrated into the global economy through trade

and Foreign Direct Investment (FDI). Moreso, West African economies are susceptible to geoeconomic fragmentation and disruptions in global trade flows due to their heavy dependence on the exports of primary commodities and imports of manufactured goods. Furthermore, with the growing geopolitical tensions in West Africa, particularly the recent withdrawal of Niger, Mali and Burkina Faso from the Economic Community of West African States (ECOWAS) trading bloc, there could be significant effects of geoeconomic fragmentation on the macroeconomic performance of the region.

Most studies that investigated the potential effects of geoeconomic fragmentation pointed to the fact that the effects of fragmentation would vary across different regions. It is therefore imperative to carry out a specific regional study to identify the likely consequences of fragmentation on regions. Hence, this study focuses on the impact of geoeconomic fragmentation on economic performance in the West Africa Sub-region. The only study on geoeconomic fragmentation in West Africa is the study by Marafa (2024), which focuses on West Africa monetary zones and not economic performance. Thus, there is no specific study to the best of our knowledge that has examine the impact of geoeconomic fragmentation on macroeconomic performance in West Africa sub-region. Secondly, no previous study has looked at the role of governance in moderating the negative effects of geoeconomic fragmentation on West Africa economic performance. This study fills these identified gaps in the literature.

Therefore, this study investigates the impact of geoeconomic fragmentation on economic performance in West African countries. Specifically, the study examines (i) the direct effect of different measures of geoeconomic fragmentation on economic performance in West Africa; and (ii) the influence of governance on the effect of geoeconomic fragmentation on economic performance in West Africa. The second objective aims at unraveling the possibility of good governance mitigating the negative consequences of geoeconomic fragmentation in the West African sub-region. The main hypothesis is that improvement in governance quality will reduce the negative effect of geoeconomic fragmentation on the economy.

The rest of the paper is arranged into four sections; Section 2 reviews the existing literature, the model and method of analysis are discussed in Section 3, the result is presented and discussed in Section 4, and Section 5 concludes the paper and provides policy recommendations.

2 Literature Review

The growing geopolitical tensions resulting in more geoeconomic fragmentation across the globe have attracted the attention of researchers, policymakers, and other stakeholders, particularly in recent times. Existing studies show that geoeconomic fragmentation would result to loss of welfare in term of a reduction in GDP. For example, Bolhuis *et al* (2023) show that the global GDP will decline by between 0.3 percent and 2.3 percent under mild fragmentation, while the fall will be between 1.9 percent and 7.0 percent under severe fragmentation. However, they show that under mild fragmentation, low-income countries (LICs) will benefit but they will lose about 4.3 percent of GDP under severe fragmentation. They concluded that developing countries with heavy dependence on commodity exports will experience larger losses. In another study by Bolhuis *et al*. (2024), it was estimated that Sub-Saharan Africa (SSA) will suffer a long-run welfare loss of about 4 percent. Javorcik *et al.* (2022) also estimated the loss from mild fragmentation to range between 0.1 percent to 4.6 percent of GDP depending on the severity of fragmentation and country

peculiarity. Similarly, Bekkers and Goes (2022) estimated the loss from fragmentation to be between 0.4 percent under mild cases to 12 percent under severe cases of fragmentation.

Several studies also show the effect of fragmentation on global trade. For examples; the study by Hakobyan, Meleshchuk, and Zymek (2023) reveals that fragmentation influences international trade patterns over and above its effects on the propensity to enter economic agreement. They show that the effect of fragmentation on trade generally depends on the severity of fragmentation, and country-specific characteristics such as the market size, comparative advantage, and foreign policies. Analyzing the sectoral effects of fragmentation on trade, they show that the effects of will be largest in food and high-end manufacturing sectors. While, Campos *et al*. (2023) estimated the effects of fragmentation on trade in Europe. Their result shows that if Europe becomes fragmented into three trade blocs, trade will be reduced by between 22 percent to 57 percent depending on the severity of the fragmentation.

Some studies examined the effects of geoeconomic fragmentation on the volume and pattern of Foreign Direct Investment (FDI). Most of these studies concluded that fragmentation will negatively affect FDI flows, particularly to developing countries. Ahn *et al*. (2023) reveals that if geopolitical tension continues to increase along geopolitical fault lines, FDI would likely be concentrated within blocs of aligned countries. Their study also shows that FDI relocation would negatively affect emerging markets and developing economies.

Another strand of the literature focus on the impact of geoeconomic fragmentation on financial flows in the world. Norring (2024) opine that there would be large capital flows reversal due to geoeconomic fragmentation if increasing geopolitical tension frighten investor or if major partner countries impose restrictions on capital flows and cross-border investment. Bolhuis *et al*. (2023) concurred that SSA could lose up to $10 billion worth of FDI and Official Development Assistance (ODA) inflows within a year with increasing fragmentation while a related study by Bianchi and Sosa-Padilla (2023) on the macroeconomic consequences of international financial sanctions opine that heightened geopolitical tensions create more fragmented capital inflows and make a country to borrow less from its geopolitical rivals.

In another study, Bolhuis *et al*. (2024) reported that geoeconomic fragmentation can lead to increased volatility in the currency market, resulting in depreciating currencies for SSA and thus makes it more costly to service their debts. Furthermore, they posit that weaker currency can deter foreign investors for fear of currency losses on their investment, while the high cost of import under GEF would reduce the profits of domestic investors.

On a positive note, energy exporters in SSA are likely to show more resilience to the effects of GEF given their prevailing trade relations with global partners. However, their resilience to GEF can be affected by high volatility of commodity prices (Bolhuis *et al*., 2024).

The study by Marafa (2024), which adopted post-structural discourse to analyze the implications of geoeconomic fragmentation on regional economic integration using the dynamics of regional monetary cooperation in West Africa reveals how current economic and geopolitical situations complicate efforts toward establishing the second monetary union in the region. The study concluded that different economic performances among member countries and increased threats

of geoeconomic fragmentation necessitated a renewed commitment and framework actions to strengthen institutional resilience for vibrant monetary zones in West Africa region.

From the foregoing, the review of the existing literature does a number of things. First, it establishes that geoeconomic fragmentation is capable of disrupting long-established trade relationships and international cooperation among countries. Second, it shows that the impact of GEF varies across developed countries, emerging economies and the low-income countries. Global GDP will decline by between 0.3 percent and 2.3 percent under mild fragmentation, while the fall will be between 1.9 percent and 7.0 percent under severe fragmentation (Bolhuis *et al.* 2023). Also, the advanced economies, the emerging markets, and the low-income countries GDP will decline by 2 percent, 3 percent, and 4 percent respectively (Bolhuis *et al.* 2023) if trade is fragmented into two blocs such that all countries of the world have to choose between either the US-EU bloc or the China-Russia bloc with no trade between members of these two blocs. Third, the exiting literature reveals that low-income countries (Sub-Saharan African inclusive) would record the highest welfare losses of 25 percent of GDP due to their vulnerability as a result of their heavily dependent on commodities trade, while advanced countries will experience welfare loss of about 4 percent of GDP. Although, several studies have investigated different aspect of geoeconomic fragmentations ranging from its impact on global trade, financial flows, FDI flows, debts and the global economy at large, there are other perspectives of GEF that has not been explored. Thus far, no studies have looked at the direct effect of geoeconomic fragmentation on macroeconomic performance in West Africa. Also, studies are yet to investigate the role of governance in mitigating the negative effects of geoeconomic fragmentation in West Africa. This study fills these identified gaps in the literature.

3. The Model and Method

The theoretical basis for this study is endogenous growth theory and trade theory. These two economic theories offer valuable frameworks for achieving the objectives of the study. Endogenous growth theory emphasizes internal factors driving economic performance, such as investments in physical capital, human capital, and technology. Though there is no consensus in the empirical literature about the effect of trade on economic performance, the theoretical literature emphasizes the benefits of trade. Theoretically, trade does influence economic performance via several channels. International trade promotes cross-border competition among firms, hence incentivizing firms to adopt international best practices, invent more efficient production technology, and improve products as well as invent new products. Trade is also a veritable means of technological diffusion and transmission of ideas across borders. Production inputs such as machinery, capital goods, raw materials, and other essential materials for the production of goods and services are provided for through trade. Exchange of know-how, skills, managerial, and entrepreneurial talent is possible through trade. All of these influences' productivity, production of goods and services, employment, and general economic performance.

On the other hand, restriction of trade will limit the flow of production inputs, technological know-how, free competition, and other benefits of trade. Hence, trade restrictions would generally hurt productivity, employment, capital flows, firms' performance, and overall economic growth and development.

Therefore, the baseline model consists of the classical Solow variables, trade, trade restriction and other control variables. The model is given as:

$$MPI_{it} = a + \beta_1 CV_{it} + \beta_2 GEF_{it} + \beta_3 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

Where MPI is macroeconomic performance index, CV represents the classical variables which are capital and labour, GEF represents geoeconomic fragmentation indicators, X represent control variables, the control variables consider in this study are trade and natural resources, μ_i represents individual country specific effect, λ_t is time effect, and ε_{it} is Gauss Markov error term.

To examine the influence of governance on the effects of geoeconomic fragmentation, equation (1) is modified by introducing an interactive term as shown in equation (2).

$$MPI_{it} = a + \beta_1 CV_{it} + \beta_2 GEF_{it} + \beta_3 GEF * GI_{it} + \beta_4 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

Where $GEF * GI$ is the interaction term between geoeconomic fragmentation and governance indicators (GI). All other variables are as earlier defined.

Following Ekren *et al*. (2017), we computed the Macroeconomic Performance Index (MPI), which better captures the overall state of the economy and the well-being of households. The index was computed using the weighted average of GDP growth, inflation, unemployment, exchange rate, and interest rate. The inverse of the variance of each variable was used as the weight. The value of the index ranges from - 0.25 to 0.25, the closer to 0.25, the better the performance of the economy.

GEF is a measure of trade restrictions developed by Estefania-Flores *et al*. (2022). Their measures of trade restriction consist of four components, which are exchange restriction, payment restriction, import restriction, and export restriction. Each of the four components was computed from sub-categories of restrictions. The exchange restriction consists of two sub-categories, payment restriction has five sub-categories, import restriction has six sub-categories, and export restriction consists of four sub-categories. The aggregate measure is the summation of all the sub-categories. Therefore, GEF represents a vector of six variables, which are MATR (Measure of Aggregate Trade Restriction), MATR_NTT (Measure of Aggregate Trade Restriction excluding Tariff and Tax restrictions), EXCHM (Exchange Restriction), RPMNT (Payment Restriction), IMPR (Import Restriction), and EXPR (Export Restriction). Each of the six measures of restrictions was introduced into the model sequentially.

We used Gross capital formation (% of GDP) to measure capital which is the first classical variable, and labour force participation rate was used to measure the second classical variable, which is labour. World Governance Indicator (WGI) comprises six indicators: Control of Corruption (COC), Government Effectiveness (GE), Political Stability and Absence of Violence (POS), Regulatory Quality (ROQ), Rule of Law (ROL), and Voice and Accountability (VOA) was used. Each of these indicators were interacted with each of the measures of restrictions.

Total trade measures as imports plus exports are used to capture the impact of trade on macroeconomic performance. The natural log of the variable was taken to normalize the value of total trade across the West African Sub-region. Since most countries in the Sub-region are resource

dependent, natural resource (NaturalR), which is measured as total natural resources as a percent of GDP was included.

Annual data over the period 1991 to 2022 covering 14 West African countries was used to gauge the model. The countries are Benin, Burkina Faso, Côte d'Ivoire (Ivory Coast), The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Except for geo-economic fragmentation, which was accessible from Measure of Aggregate Trade Restriction (MATR), other data for the variables were obtained from the World Development Indicators Database's online edition. The study employed a two-way error component model and two estimation methods, viz, fixed effect and random effect GLS (Generalized Least Squares) were considered for the estimation. The Hausman specification test was used to choose the preferred method between the two alternative methods.

4. Presentation and discussion of results

The regression results are presented in Tables 1 to 7, and the direct effects of six separate measures of trade restrictions are presented in Table 1. The influence of governance indicators on the effects of aggregate measure of trade restriction are presented in Table 2. The influence of governance on the effects of aggregate measure of trade restriction excluding tariff and tax are displayed in Table 3, while the influence of governance on the effects of exchange restriction, payment restrictions, import restrictions, and export restrictions are presented in Tables 4, 5, 6, and 7 respectively.
The evidence in Table 1 shows that all forms of trade restrictions have negative and significant effects on economic performance in West Africa. This implies that fragmentation is harmful to economic performance in the West African sub-region. However, the magnitude of impact varies across the different measures with exchange restriction and export restriction having the biggest effects. Economic performance will decline with more fragmentation in the sub-region. This finding conformed with the position of the literature that economic performance will decline with fragmentation particularly in countries that depend heavily on commodity trade (see for example, Alvarez *et al*. 2023, Bolhuis *et al*. 2023, Bolhuis *et al*. 2024).

Trade restriction affects the economy via several channels. For instance, import restrictions would increase input prices, and consequently, increase the cost of production. Therefore, reducing access to essential inputs, raw materials, and equipment. This will further limit the production of goods and services, hence, reducing the nation's output as measured by GDP. Shortage in the production of goods will on the other hand have upward pressure on prices, resulting in inflation. Consequently, inflation will reduce the purchasing power of consumers, thus limiting consumers' access to goods and services, particularly the low-income households. Import restriction not only affects production but also negatively affects business sales revenue, profitability as well as consumers welfare.

Similarly, export restrictions would negatively affect the export production industry. The production, output, and employment in this industry are likely to decline significantly. Through the multiplier effect, this will affect macroeconomic indicators such as unemployment, inflation, and GDP growth. Other channels through which fragmentation affect economic performance include: reduction in competitiveness while inefficient industries are overprotected; increase in transaction cost particularly via payment restriction; trade and investment diversions; disruption of global value chains; distortion of exchange rate market; and others.

In practice, several studies have estimated the "cost of Brexit", which includes slowdown of GDP growth, rising inflation, and inequalities (see Springford, 2018; Erken, *et al*. 2018; Fetzer & Wang, 2020; Fusacchia, *et al*. 2020; Springford, 2021). Springford (2018) estimated that as at the second quarter of 2018, United Kingdom's economy was 2.5 percent smaller due to the decision to leave the European Union. Furthermore, Springford, (2021) estimated that the exit of UK from EU would result in 11 percent decline in UK's trade by March 2021. Thus, the implications of these findings for our study show that geoeconomic fragmentation would lead to a decline in West Africa trade and economies.

Similarly, studies have estimated the economic cost of India's agriculture export restriction on India's domestic economy and the global food market. The cost included a decline in farmers' income, general agricultural output, an increase in the population that is food insecure, as well as an economic slowdown (Baylis, *et al*. 2016; Akter, 2022). The retaliation from trading partners limited the importation into India further aggravating the economic cost.

The aggregate measure of trade restriction interacted with the six governance indicators separately. This allows us to estimate the total effects of aggregate trade restrictions on economic performance in West Africa. All the interactive terms have positive signs except one, interaction with political stability and absence of violence. However, three out of the six are significant while the remaining three are not significant. The interactive terms with control of corruption, government effectiveness, and regulatory quality are statistically significant, while interaction with political stability, rule of law voice, and accountability are not significant. This means that improvement in control of corruption, government effectiveness, and regulatory quality is capable of reducing the negative effect of fragmentation in West Africa. Though the interactive terms are positive, the total effects are still negative. The positive gain from governance is not enough to completely overwrite the negative effect of fragmentation. However, the negative consequences of fragmentation are minimized with improvement in governance in West Africa economies.

Similar to the result on the impact of an aggregate measure of trade restriction, aggregate restrictions minus tariff and tax also hurts economic performance. However, the interaction with governance indicators is positive and statistically significant, except in the case of political stability, voice and accountability, which are also positive but not significant. The positive coefficient is not as large as the negative coefficient. Thus, the total effects of restrictions excluding tariff and tax conditioned on quality of governance remains negative but the magnitude is lesser when governance is not considered.

Unlike the aggregate measure of restriction, the interaction between governance indicators and exchange restriction is not statistically significant except for control of corruption, which is significant at 10 percent. Though, the coefficients are positive indicating that quality of governance can reduce the loss from exchange restriction. Since the coefficients are not significant, there is no strong evidence to say that quality of governance is capable of mitigating the negative consequences of exchange restriction. The available weak evidence in the result suggests that improvement in the control of corruption will minimize the loss from exchange restriction. This means that irrespective of the quality of governance, countries in the West African sub-region will experience decline in economic performance with more exchange restrictions.

The result on payment restriction is contrary to expectation, there is no evidence that payment restriction harms economic performance after introducing quality of governance. The direct effect is generally positive though not statistically significant except in one case. The interactive terms are all positive and significant except political stability and voice and accountability, which are also positive but not significant. This implies that with better governance, payment restrictions would not have a negative effect on the economy. Payment restriction is related to regulations on payment arrangements, controls on exports and imports banknotes, payment arrears, and administration of the controls. If there is significant improvement in governance quality, all the restrictions related to payment will have minimal harmful effects on the economies of West Africa.

The total effects of import restriction when quality of governance is accounted for are presented in Table 6. All the interaction terms have a positive and significant influence on economic performance in West Africa. The evidence from the results in the Table 6 shows that all the six components of governance are capable of moderating the negative effects of import restriction in the West African sub-region. Substantial progress in good governance particularly improvement in control of corruption, government effectiveness, and regulatory quality may overturn the loss from import restriction to some gains. This finding may be due to the fact that most manufacturing firms in West African countries are still at infancy stage, hence there is need for some protection for these firms to grow. However, protection without good governance that will support industrial growth and development will rather hurt the economies.

The partial effect of export restriction is negative and statistically significant. Meaning that restrictions on export financing, documentation, licenses, and repatriations will hurt economic performance in West African countries. However, the interactive terms with all the six governance indicators have positive and significant influence on economic performance. Hence, the total effects of export restrictions are not as grievous as the direct or partial effect when governance quality is not considered. Implying that the negative effects of export restrictions moderated by good governance. In other words, improvement in the quality of governance will reduce the negative consequences of export restriction in the West African sub-region.

Table 1: The Direct Effects of Six Measures of Fragmentation on Economic Performance

VARIABLES	Estimation Methods					
	RE	RE	RE	FE	RE	FE
Trade	0.0035	0.0057	-0.0034	-0.0057	0.0081	0.0508**
	(0.0076)	(0.0077)	(0.0069)	(0.0198)	(0.0079)	(0.0231)
Capital	0.0015	0.0016	0.0023**	0.0030***	0.0018	0.0019*
	(0.0010)	(0.0010)	(0.0010)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0041***	-0.0042***	-0.0041***	-0.0035***	-0.0048***	-0.0051***
	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0013)
Labour	0.0764***	0.0771***	0.0748***	-0.119*	0.0618***	-0.119**
	(0.0203)	(0.0194)	(0.0203)	(0.0645)	(0.0204)	(0.0588)
MATR	-0.0134***					
	(0.0049)					
MATR_NTT		-0.0124***				
		(0.0046)				
EXCHM			-0.0499***			
			(0.0126)			
RPMNT				-0.0313*		
				(0.0185)		
IMPR					-0.0298**	
					(0.0131)	
EXPR						-0.0499**
						(0.0208)
Constant	-1.054***	-1.139***	-1.017***	2.008**	-1.058***	0.486
	(0.284)	(0.279)	(0.284)	(0.931)	(0.285)	(0.757)
Observations	314	314	303	294	301	301
R-squared	0.7579	0.7580	0.7543	0.1070	0.7363	0.7098
Hausman	0.3790	0.2348	0.2616	0.0489	0.1353	0.0089

Sources: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 2: The Influence of Governance on the Effect of Measure of Aggregate Trade Restriction

VARIABLES	Estimation Methods					
	RE	FE	FE	RE	RE	RE
Trade	0.0081	-0.0303	-0.0149	0.0032	0.0062	0.0060
	(0.0090)	(0.0209)	(0.0212)	(0.0091)	(0.0090)	(0.0090)
Capital	0.0016	0.0025**	0.0034***	0.0022**	0.0024**	0.0025**
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0019	-0.0011	-0.0027**	-0.0022*	-0.0024*	-0.0028**
	(0.0012)	(0.0013)	(0.0013)	(0.0012)	(0.0013)	(0.0013)
Labour	0.0502**	-0.0206	-0.0378	0.0616**	0.0674***	0.0723***
	(0.0255)	(0.0755)	(0.0792)	(0.0250)	(0.0249)	(0.0248)
MATR	-0.0094	-0.0177**	-0.0295***	-0.0102	-0.0151**	-0.0179***
	(0.0065)	(0.0077)	(0.0080)	(0.0070)	(0.0064)	(0.0061)
MATR*COC	0.0067***					
	(0.0019)					
MATR*GE		0.0067***				
		(0.0018)				
MATR*POS			-0.0005			
			(0.0007)			
MATR*REQ				0.0056**		
				(0.0022)		
MATR*ROL					0.0028	
					(0.0017)	
MATR*VAA						0.0011
						(0.0013)
Constant	-0.822**	1.369	1.290	-0.872**	-0.990***	-1.038***
	(0.352)	(1.007)	(1.056)	(0.354)	(0.347)	(0.346)
Observations	254	254	254	254	254	254
Hausman	0.2668	0.0647	0.0013	0.3388	0.1716	0.1328
R-squared	0.6333	0.168	0.121	0.6571	0.6472	0.6668

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 3: The Influence of Governance on the Effect of Aggregate Restriction Minus Tariff &Tax

VARIABLES	Estimation Methods					
	FE	FE	RE	FE	FE	FE
Trade	-0.0132	-0.0313	0.0078	-0.0236	-0.0230	-0.0216
	(0.0205)	(0.0206)	(0.0078)	(0.0211)	(0.0209)	(0.0212)
Capital	0.0020*	0.0023**	0.0024**	0.0028**	0.0026**	0.0029**
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0012	-0.0009	-0.0034***	-0.0015	-0.0014	-0.0019
	(0.0013)	(0.0013)	(0.0012)	(0.0013)	(0.0013)	(0.0013)
Labour	-0.0335	-0.0110	0.0819***	0.0027	0.0167	-0.0195
	(0.0752)	(0.0744)	(0.0182)	(0.0772)	(0.0777)	(0.0765)
MATR_NTT	-0.0214**	-0.0229***	-0.0140***	-0.0291***	-0.0252***	-0.0307***
	(0.0083)	(0.0079)	(0.0051)	(0.0080)	(0.0084)	(0.0079)
MATR_NTT*COC	0.0066***					
	(0.0020)					
MATR_NTT*GE		0.0068***				
		(0.0017)				
MATR_NTT*POS			0.0006			
			(0.0006)			
MATR_NTT*ROL				0.0031*		
				(0.0018)		
MATR_NTT*REQ					0.0051**	
					(0.0024)	
MATR_NTT*VAA						0.0016
						(0.0014)
Constant	1.138	1.323	-1.282***	0.944	0.687	1.225
	(0.999)	(0.992)	(0.269)	(1.020)	(1.032)	(1.024)
Observations	254	254	254	254	254	254
Hausman	0.0529	0.0081		0.0280	0.0770	0.0217
R-squared	0.172	0.186	0.7309	0.144	0.150	0.139

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4: The Influence of Governance on the Effect of Exchange Restriction

VARIABLES	Estimation Methods					
	RE	RE	RE	RE	RE	RE
Trade	-0.0022	-0.0034	-0.0031	-0.0033	-0.0028	-0.0033
	(0.0083)	(0.0083)	(0.0075)	(0.0081)	(0.0080)	(0.0081)
Capital	0.0024**	0.0026**	0.0029***	0.0029***	0.0028**	0.0029**
	(0.0012)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0029**	-0.0029**	-0.0036***	-0.0034***	-0.0033***	-0.0033***
	(0.0012)	(0.0013)	(0.0012)	(0.0012)	(0.0012)	(0.0012)
Labour	0.0689***	0.0709***	0.0769***	0.0749***	0.0737***	0.0744***
	(0.0241)	(0.0242)	(0.0214)	(0.0235)	(0.0233)	(0.0235)
EXCHM	-0.0261	-0.0262	-0.0625***	-0.0561**	-0.0515**	-0.0583***
	(0.0255)	(0.0283)	(0.0154)	(0.0257)	(0.0232)	(0.0167)
EXCHM_COC	0.0448*					
	(0.0260)					
EXCHM_GE		0.0368				
		(0.0246)				
EXCHM_POS			0.0006			
			(0.0093)			
EXCHM_REQ				0.0089		
				(0.0275)		
EXCHM_ROL					0.0134	
					(0.0215)	
EXCHM_VAA						0.0084
						(0.0163)
Constant	-0.989***	-0.989***	-1.086***	-1.050***	-1.046***	-1.044***
	(0.337)	(0.342)	(0.303)	(0.331)	(0.326)	(0.331)
Observations	254	254	254	254	254	254
Hausman	0.4577	0.5801	0.2406	0.5447	0.3492	0.4743
R squared	0.7029	0.7214	0.7290	0.7222	0.7180	0.7225

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5: The Influence of Governance on the Effect of Payment Restriction

VARIABLES	Estimation Methods					
	RE	RE	RE	RE	RE	RE
Trade	0.0016	-0.0076	-0.0047	-0.0043	-0.0066	-0.0044
	(0.0085)	(0.0083)	(0.0073)	(0.0082)	(0.0083)	(0.0082)
Capital	0.0014	0.0018*	0.0025**	0.0023**	0.0021*	0.0025**
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0020	-0.0023*	-0.0035***	-0.0027**	-0.0025**	-0.0032**
	(0.0012)	(0.0012)	(0.0013)	(0.0013)	(0.0013)	(0.0013)
Labour	0.0356	0.0444*	0.0759***	0.0540**	0.0493**	0.0593**
	(0.0249)	(0.0243)	(0.0204)	(0.0243)	(0.0244)	(0.0244)
RPMNT	0.0241	0.0361**	-0.0012	0.0199	0.0271	0.0076
	(0.0161)	(0.0176)	(0.0147)	(0.0184)	(0.0177)	(0.0170)
RPMNT_COC	0.0294***					
	(0.0067)					
RPMNT_GE		0.0259***				
		(0.0061)				
RPMNT_POS			0.0031			
			(0.0023)			
RPMNT_ROL				0.0141**		
				(0.0063)		
RPMNT_REQ					0.0243***	
					(0.0074)	
RPMNT_VAA						0.0074
						(0.0049)
Constant	-0.642*	-0.568*	-1.040***	-0.783**	-0.657*	-0.834**
	(0.338)	(0.339)	(0.287)	(0.330)	(0.339)	(0.330)
Observations	253	253	253	253	253	253
Hausman	0.4886	0.3163	0.1073	0.9909	0.2892	0.1528
R squared	0.7211	0.7781	0.8073	0.7761	0.7627	0.7927

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 6: The Influence of Governance on the Effect of Import Restriction

VARIABLES	Estimation Methods					
	RE	RE	RE	RE	RE	RE
Trade	0.0099	0.0081	0.0084	0.0105	0.0116	0.0096
	(0.0091)	(0.0090)	(0.0080)	(0.0091)	(0.0091)	(0.0090)
Capital	0.0016	0.0016	0.0023**	0.0021*	0.0019*	0.0022*
	(0.0012)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
NaturalR	-0.0028**	-0.0025**	-0.0037***	-0.0026**	-0.0027**	-0.0034***
	(0.0013)	(0.0012)	(0.0012)	(0.0013)	(0.0013)	(0.0013)
Labour	0.0406	0.0417*	0.0676***	0.0390	0.0451*	0.0507**
	(0.0251)	(0.0243)	(0.0207)	(0.0246)	(0.0246)	(0.0245)
IMPR	-0.0117	-0.0081	-0.0303**	-0.0014	-0.0213	-0.0325**
	(0.0164)	(0.0154)	(0.0141)	(0.0161)	(0.0151)	(0.0142)
IMPR_COC	0.0220***					
	(0.0074)					
IMPR_GE		0.0265***				
		(0.0065)				
IMPR_POS			0.0049*			
			(0.0028)			
IMPR_REQ				0.0352***		
				(0.0085)		
IMPR_ROL					0.0183***	
					(0.0068)	
IMPR_VAA						0.0086*
						(0.0051)
Constant	-0.835**	-0.797**	-1.181***	-0.850**	-0.934***	-0.949***
	(0.349)	(0.343)	(0.297)	(0.343)	(0.341)	(0.339)
Observations	249	249	249	249	249	249
Hausman	0.1706	0.4367	0.2270	0.7354	0.5715	0.1727
R squared	0.6899	0.7205	0.7499	0.6811	0.6987	0.7343

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 7: The Influence of Governance on the Effect of Export Restriction

VARIABLES	Estimation Methods					
	RE	FE	RE	FE	RE	RE
Trade	0.0119	0.0258	0.0121	0.0428*	0.0160*	0.0155*
	(0.0092)	(0.0233)	(0.0087)	(0.0232)	(0.0093)	(0.0093)
Capital	0.0015	0.0017	0.0026*	0.0014	0.0018	0.0021*
	(0.0011)	(0.0011)	(0.0012)	(0.0012)	(0.0011)	(0.0011)
NaturalR	-0.0028**	-0.00228*	-0.0037***	-0.0019	-0.0026*	-0.0032**
	(0.0013)	(0.0013)	(0.0013)	(0.0013)	(0.0013)	(0.0012)
Labour	0.0415*	-0.0990	0.0702***	-0.0059	0.0441*	0.0460*
	(0.0248)	(0.0713)	(0.0224)	(0.0749)	(0.0246)	(0.0246)
EXPR	-0.0299	-0.0541**	-0.0569**	-0.0631**	-0.0505**	-0.0650***
	(0.0247)	(0.0274)	(0.0223)	(0.0271)	(0.0230)	(0.0227)
EXPR_COC	0.0373***					
	(0.0103)					
EXPR_GE		0.0491***				
		(0.0096)				
EXPR_POS			0.0108***			
			(0.0041)			
EXPR_REQ				0.0691***		
				(0.0137)		
EXPR_ROL					0.0362***	
					(0.00957)	
EXPR_VAA						0.0244***
						(0.0079)
Constant	-0.844**	0.944	-1.269***	-0.869	-0.955***	-0.968***
	(0.347)	(0.999)	(0.324)	(1.060)	(0.343)	(0.341)
Observations	249	249	249	249	249	249
Hausman	0.1611	0.0090	0.1606	0.0158	0.9996	0.2199
R-squared	0.6508	0.205	0.7402	0.203	0.6084	0.6800

Source: Authors' computation, Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

5. Conclusion and Policy recommendations

This study empirically investigates the impact of six different measures of trade restriction on macroeconomic performance using a sample of fourteen West African countries over the period 1991 to 2022. These measures of trade restriction developed by Estefania-Flores, *et al*. (2022), includes; exchange restriction, payment restriction, import restriction, export restriction, aggregate restriction minus tariff and tax, as well as measure of aggregate trade restriction. The partial effects of each of the six measures were analysed. The total effects were also examined accounting for changes in the quality of governance. To achieve this the six governance indicators were interacted with each of the six measures of restriction separately. The study employed a two-way error component model and two estimation methods, viz, fixed effect and random effect GLS (Generalized Least Squares) to gauge the models. While the most prefer method was chosen using Hausman specification test. The key conclusions from the findings are that: (i) trade restriction is harmful to the economic performance of West African countries; (ii) the effects vary by the forms of restriction with exchange and export restrictions having the largest effects; and (iii) improvement in quality of governance is capable of reducing the negative consequences of fragmentation.

Given the increasing trend of fragmentation across the globe, it is recommended that policymakers in West Africa should undertake necessary reforms to improve the quality of governance to moderate the consequences of geoeconomic fragmentation. Specifically, efforts should be intensified in the areas of control of corruption, government effectiveness, and the rule of law. The efforts should be directed at reducing all forms of corruption including bribery, extortion, embezzlement, kickbacks, and the use of public office for private gains. Reforms should also target improving the quality of policy formulation and implementation as well as the quality of public service delivery. It is further recommended that policymakers undertake judicial system reforms that will make justice broadly accessible, affordable and equitable to ensure quick, fair, effective, efficient and impartial delivery of justice to all.

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