

The Impact of Geopolitical Polarization on Trade Policies in Africa: A BRICS Perspective

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Abstract

On March 21, 2018, African nations ratified the African Continental Free Trade Agreement (AfCFTA) to unify the continent under a cohesive policy framework. Despite this initiative, Africa's trade remains heavily reliant on external partners. Geopolitical polarization complicates consensus on trade policies among African nations. This study examines the impact of U.S. policy towards BRICS, an informal group supported by various nations in Africa, Asia, Latin America, and Eastern Europe, by developing three scenarios considering a 100% tariff imposition and potential retaliatory measures and their implications for Africa. The GTAP model is employed to assess the overall economic impact.

The findings indicate that tariffs between BRICS and the USA led to a decline in GDP and welfare for both, but not for non-BRICS African countries in the retaliation scenario and the BRICS African economy in scenario three. Import prices rise for all products, especially in agriculture, light manufacturing, and processed food, while export prices decline for the USA and rise for BRICS for a similar scenario. The USA showed an increased domestic output in heavy manufacturing and mining, whereas BRICS experienced a decline in light manufacturing. Import volumes decrease for all products in BRICS and the USA, except for mining and extraction. Export quantities decrease across all product categories for the USA and in manufacturing for BRICS. Endowment prices decrease in the USA and BRICS but increase for the EU, non-BRICS African countries, and the rest of the world. The analysis reveals trade creation among BRICS countries and trade diversion from the USA.

In conclusion, geopolitical polarization induces trade distortion effects within the global economy. Although Africa's trade share in the global market is small, the impact remains significant. Even without direct tariffs on Africa, the measures indirectly affect the continent.

Keywords: Imposition of tariffs, BRICS, CGE, Africa.

1. Introduction

On March 21, 2018, African nations ratified the African Continental Free Trade Agreement (AfCFTA), intending to unify the continent under a cohesive policy framework aimed at enhancing regional value chains, bolstering global competitiveness, stimulating industrialization, and fostering sustainable economic growth at the continental level (AfCFTA Secretariat report, 2022). Despite this initiative, the continent's trade remains heavily reliant on external partners for both exports and imports. Geopolitical polarization is exacerbated by the challenges African nations face in reaching a consensus on trade policies. The formation of BRICS, the COVID-19 pandemic, the Russia-Ukraine conflict, and various international policies have exacerbated these difficulties. Notable among these are the United States' imposition of new tariffs on over 180 countries, special tariffs on steel and aluminum, and the Inflation Reduction Act; the European Union's regulations on deforestation and foreign direct investment screening; Japan's Economic Security Promotion Act; and India's de-risking strategies. These divisions, both directly and indirectly, influence the current and future trade policies of African nations.

In light of this geopolitical polarization, the study focuses on BRICS, an informal group initiated by Russia in 2006, originally comprising Brazil, China, India, and Russia, with South Africa joining in 2010. In 2023, Egypt, Ethiopia, Iran, and the United Arab Emirates joined the group. Subsequently, in October 2024, additional countries were invited to join BRICS, and by January 1, 2025, formally accepted as partner states were Algeria, Belarus, Bolivia, Cuba, Indonesia, Kazakhstan, Malaysia, Nigeria, Thailand, Türkiye, Uganda, Uzbekistan, and Vietnam, bringing the total membership to 22 countries (BRICS database, 2024).

The group garners support from various nations in Africa, Asia, Latin America, and Eastern Europe, positioning itself as a global south-led entity and an alternative economic institution. This institution aims to be more democratic and representative than existing international institutions. However, some critics argue that China dominates BRICS and that the member countries lack mutual economic interests. They also point out that the members have similar economic structures, compete in third markets, and possess diverse cultures and ideologies, which may hinder the achievement of the group's intended goals in various areas of cooperation.

The primary contribution of this study is to examine the influence of geopolitical polarization on the African economy, utilizing the BRICS nations as a benchmark point. Three main

factors substantiate the choice of BRICS for this analysis: first, the progressive expansion of BRICS membership over time; second, the increased likelihood of a trade conflict between the United States and BRICS nations; and third, the rising influence of major African economies within BRICS in shaping the continent's trade policies. Therefore, this study assesses the potential effects of geopolitical polarization on various economic performance indicators and analyzes the extent of changes in output, prices, welfare, and government revenue.

The research utilized the Computable General Equilibrium (CGE) model, leveraging the GTAP database, to analyze three distinct scenarios. This model integrates the impacts of all economic agents and the effects of all countries, a methodology frequently adopted by scholars for such analyses, including the examination of geopolitical polarization on a global scale.

The structure of this paper is delineated into four distinct sections. The initial section provides an overview of the BRICs countries. The subsequent section examines the trade performance of these nations. The third section examines the key findings of the study. Finally, the paper concludes with a synthesis of conclusions and recommendations.

2. Brief overview of the BRICS countries

The conceptualization of the BRICs began in 2006 during a United Nations meeting at the Ministry of Foreign Affairs, initiated by Russia. Subsequently, in 2009, the heads of state and government convened in Ekaterinburg, Russia. The term 'BRICS' was coined by Jim O'Neill, a British economist, in his Global Economic paper series in 2001 while serving as the head of research at Goldman Sachs group. We recognize the founding members of BRIC, Brazil, Russia, India, and China, as emerging economies that have demonstrated significant growth in the 21st century (Lowe, 2016).

The BRICS nations primarily concentrate on addressing the interests of the Global South, with an emphasis on short-term political and financial objectives. In the long term, they aim to establish more robust economic alliances. Politically, these countries exhibit diverse governance structures, including democratic, totalitarian, authoritarian, and federal systems. Nonetheless, it is anticipated by various nations that this coalition will transform the global landscape from Western hegemony to a more equitable world order that prioritizes the interests of developing countries (Shameem et al., 2020).

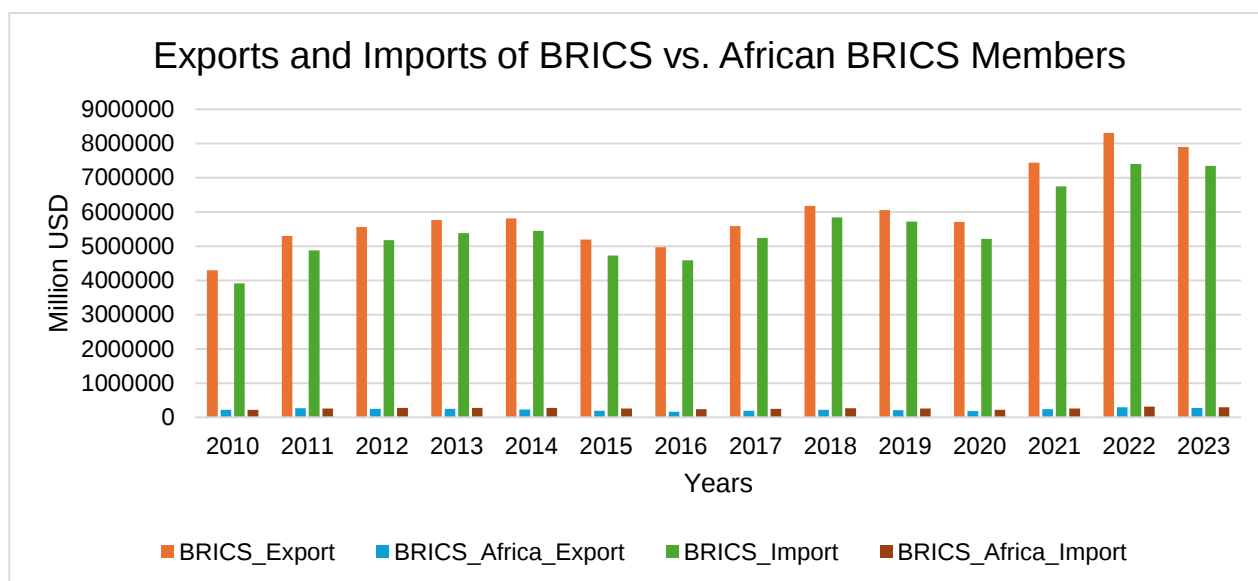
Currently, the BRICS countries have instituted several strategic initiatives, notably the New Development Bank (NDB), established in 2015 with a financial capacity of 32.8 billion USD. This institution prioritizes the provision of financial support for infrastructure and significant development projects. Furthermore, the Contingent Reserve Arrangements (CRA) aim to address balance of payment issues, while the Optimum Currency Area (OCA) seeks to foster monetary union among member states, thereby diminishing dependence on the US dollar. Moreover, the BRICS countries collaborate with the BRICS Business Council (BBC) and the BRICS Think Tank Council (BTTC) to integrate private sector interests and enhance policy coordination at the intellectual level (Nach et al., 2024).

On the other hand, the BRICS countries may encounter obstacles in competing with developed countries due to the pervasive poverty within their nations. These nations strive to succeed in third markets while simultaneously pursuing the dual objective of economic development. The group's emphasis on GDP growth rather than qualitative growth encompassing innovation further complicates their competitive stance. Meanwhile, issues such as high levels of corruption and social conflict within member states pose significant challenges (Radulescu, 2014). Furthermore, the dominance of China, Argentina's withdrawal from the group, Saudi Arabia's delayed decision to become a full member, and the current stance of the US government towards BRICS present additional hurdles for the coalition.

3. Trade performance of BRICS countries

In 2023, the BRICS nations collectively accounted for 39% of the global Gross Domestic Product (GDP) and 24% of global trade, encompassing both exports and imports. Moreover, the population of BRICS countries represented 48.5% of the world's total population. According to the International Monetary Fund (IMF) report, all BRICS countries experienced positive economic growth in 2023 (BRICS database, 2024).

Figure 1: Comparative Trade Performance of African BRICS Countries vs. Total BRICS Nations

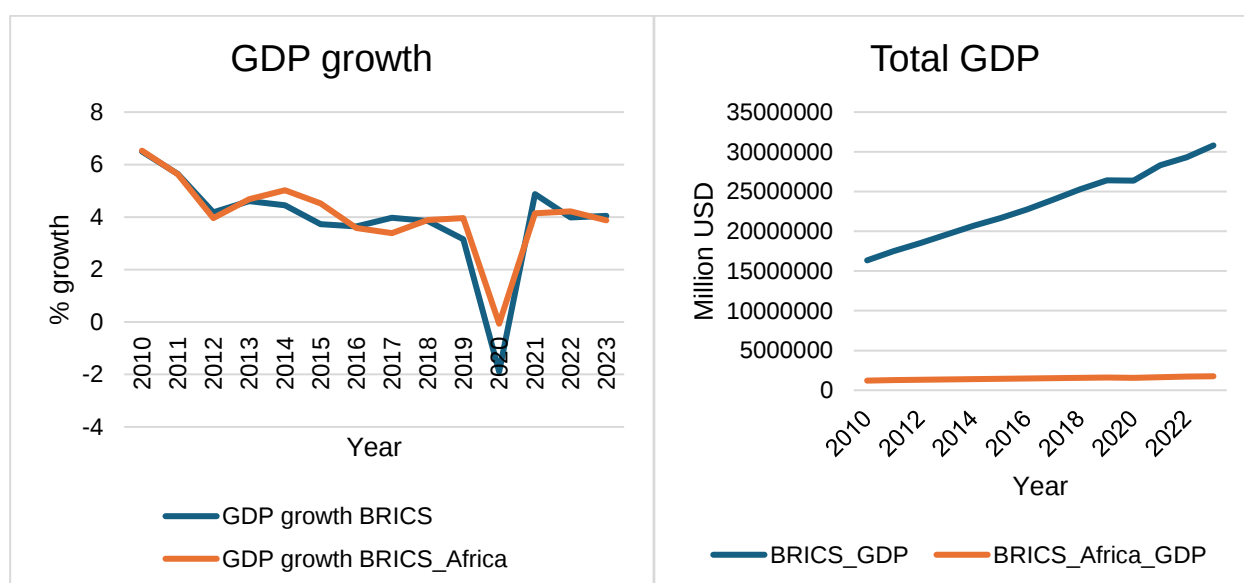


Source: Own calculations from the World Bank development indicator

As illustrated in Figure 1, African countries constitute a minor proportion of the total BRICS trade, with export and import shares of 3.8% and 4.7%, respectively, from 2010 to 2023 on average. While Africa's contribution to global trade remains below 3%, the potential benefits of BRICS membership in enhancing market access necessitate a detailed product-level analysis and an evaluation of comparative and competitive advantages.

From 2010 to 2023, the average economic growth (real GDP) of African countries was 4%, closely aligning with the BRICS countries' average of 3.9%.

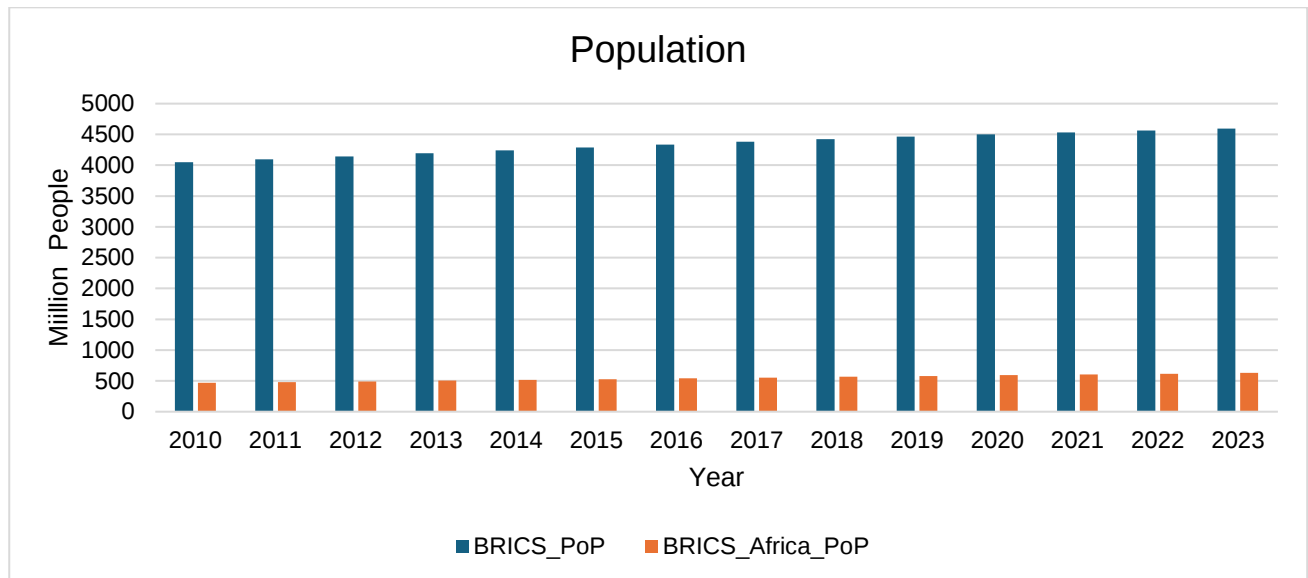
Figure 2: GDP growth and overall GDP



Source: Own calculations from the World Bank development indicator

Meanwhile, the population share is noteworthy, with Nigeria, Ethiopia, and Egypt ranking among the top three most populous nations within the BRICS.

Figure 3: Population Comparison Between Total BRICS and African BRICS Members



Source: Own calculations from the World Bank development indicator

As indicated in the preceding graphs, GDP growth remained positive throughout the years, except for 2020, when the COVID-19 pandemic adversely impacted the global economy. This sustained growth underscores the BRICS countries as emerging economies with the potential to significantly influence the global economic landscape. Regarding population, China and India together constitute 35% of the world's population, and Africa's most populous nations are also part of the BRICS group. The economic dynamics of these countries can have profound positive and negative effects on the global population. Consequently, any policy measures affecting BRICS countries carry substantial implications for the world population.

4. Methodology of the study

The study utilized the National Social Accounting Matrix from the GTAP database, encompassing 65 sectors across 160 regions. It also incorporated GTAP database version 10.1 and the latest iteration of the GTAP 7 model. The analysis was conducted using the GTAP 3.75 model and GEMPACK software for modification and condensation (Corong, Erwin et al., 2019). The model employs a variety of variables, mathematical indices, exogenous variables, and endogenous variables influenced by the model's solution at the

level, along with equations that delineate the relationships between variables and parameters. These equations form the set that must be solved to establish the model and its closures. Furthermore, to examine the impact of geopolitical polarization on global dimensions, this study segments the global database into the following categories: BRICS, BRICS African countries, the United States of America, non-BRICS African countries, the European Union, and the remaining countries as the rest of the world.

5. Results and discussion

In response to the cooperation agreement formulated by BRICS, the newly elected president of the United States has indicated that if BRICS countries undertake measures related to de-dollarization, a tariff of up to 100% on products imported from these member states may be imposed.

Considering this context, this paper explores three scenarios: the first scenario involves the unilateral imposition of a 100% tariff on all products imported into the United States. The second scenario envisions the United States and BRICS imposing a 100% tariff on each other's imports. The third scenario proposes that the United States and BRICS impose a 100% tariff on each other's imports, except for African countries.

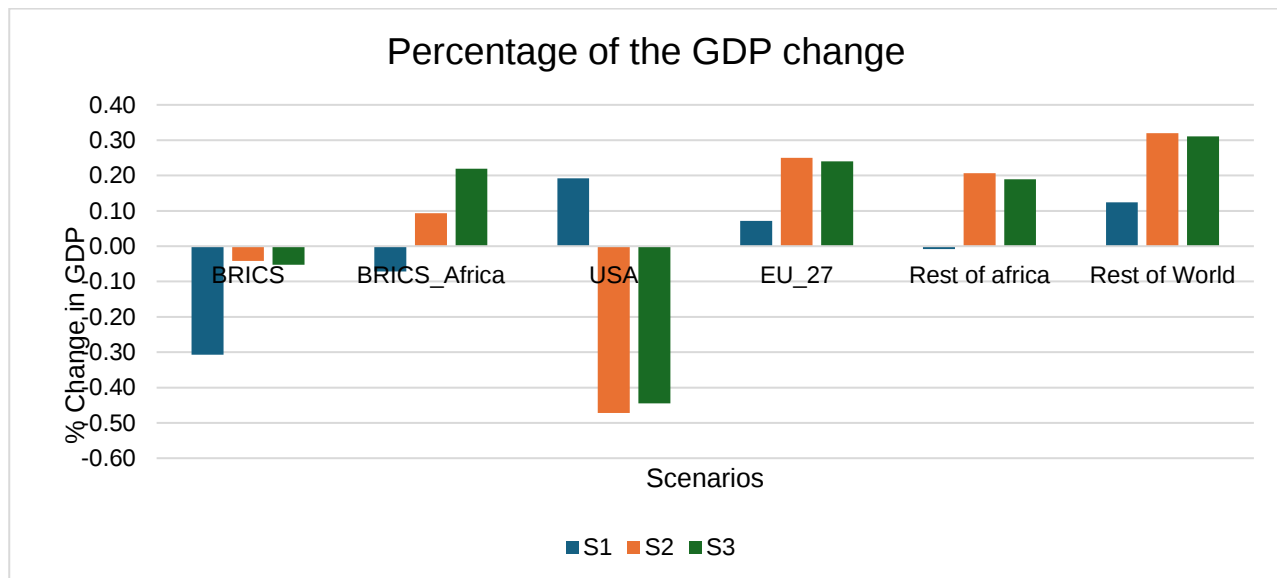
By utilizing the observed values for all independent variables and accounting for the imposition of tariffs, each potential outcome is incorporated into the simulation. The outcomes are determined by evaluating all pertinent dependent variables, thereby providing a counterfactual for other simulations. The impact of the policy shock is distinguished from the effects of alternative shocks and policy changes for each scenario considered within the respective categories.

5.1 Gross Domestic Product (GDP) Effect

Gross Domestic Product (GDP) is a critical variable analyzed across various scenarios in this study. The findings reveal mixed outcomes for BRICS, BRICS_Africa, the USA, and the rest of the world. For the BRICS nations, GDP is projected to decline across all scenarios, suggesting a dependency on the USA market and the necessity for alternative markets. In BRICS African countries, the scenario involving tariffs imposed solely on the USA predicts a 0.7% decline in GDP. Conversely, in the other two scenarios, the reciprocal trade measures between the USA and BRICS could lead to a slight GDP increase of 0.09% in Scenario 2 and 0.22% in Scenario 3. This indicates that African countries exempt from the trade conflict

may experience relatively better GDP outcomes. This improvement could be attributed to the limited access of African countries to the US market and the similarity of their products, such as textiles, leather, and food items, to those of BRICS members.

Figure 4: Comparison of the GDP Change across the Six Categories



Source: Own calculation from the GTAP Output.

On the other hand, the EU_27, the rest of Africa, and other global regions exhibit positive outcomes across all scenarios. This suggests that the trade conflict between the USA and BRICS could potentially enhance market access for other nations. Consequently, consumers in the USA and BRICS countries are likely to increase their consumption of products from non-BRICS countries, driven by price competitiveness within both the USA and BRICS markets.

5.2 Welfare Effect

The welfare effect is the change in the utility of regional households that is expressed by the per capita variable that is derived from the Cobb-Douglas function on aggregate private households, government, and savings. The Equivalent Variation (EV) is used as a measurement of welfare that indicates the change in income required to ensure the same effect on utility as tariff or non-tariff barrier changes. Therefore, EV is a money metric term, the difference between utility and preference before and after changes at the given price.

The sum of allocative efficiency, terms of trade, technological advancements, endowment shifts, demographic shifts, and investment and saving patterns is the component of the

welfare impact. Decomposing the equivalent variation yields a description of the effect based on the constant difference elasticity demand function (Hertel et al., 2006).

Table 1: The Welfare Effect by each category (Millions, USD)

Countries	S1	S2	S3
BRICS	-13320.6	-11980.6	-12274.7
BRICS_Africa	-71.7	-660.11	212.94
USA	-150.07	-18968.8	-18156
EU_27	2292.24	5615.11	5397.34
Rest of Africa	-18.44	257.92	225.95
Rest of World	5637.5	13468.65	13102.34
Total	-5631.06	-12267.8	-11492.1

Source: Own calculation from the GTAP Output.

As demonstrated in the aforementioned table, global welfare experiences a decline across all scenarios, with the most significant decrease occurring in Scenario Two and the least in Scenario One. When examining each category, BRICS countries face the most severe welfare decline in Scenario One, with no retaliation, and a comparatively smaller welfare change in Scenario Two, which includes retaliation. For BRICS African countries, Scenario Two results in a higher negative welfare impact due to retaliation, whereas Scenario Three, which excludes BRICS Africa from the trade war, yields positive welfare outcomes. In the case of the USA, welfare effects are adverse in all scenarios, with a smaller magnitude in Scenario One (no retaliation) and a larger impact in the retaliation scenario. Furthermore, for the rest of the world, the EU_27, and the rest of Africa, positive welfare outcomes are observed in all scenarios except Scenario One for the rest of the world. The trade war among major economies such as the USA, China, and India has a detrimental effect on global welfare. This suggests that the trade conflict between the USA and BRICS countries may exacerbate negative outcomes for global economies and impose a burden on global consumers.

5.3 Output Effects

5.3.1 Quantity of Import Effect

Regarding import quantities, all categories of countries involved in the trade war experience a reduction in the quantity of imports across nearly all goods. Exceptions include crops and livestock for the USA, mining and extraction for BRICS, and meat and livestock as well as mining and extraction for BRICS African countries in Scenario One. In Scenario Two, mining and extraction remain exceptions for both BRICS and BRICS African economies. In

Scenario Three, mining and extraction continue to be exceptions for BRICS, while BRICS African economies examine increments in all products except mining and extraction.

Table 2: Change in Quantity of Import

Products	S1			S2			S3		
	BRICS	BRICS_Africa	USA	BRICS	BRICS_Africa	USA	BRICS	BRICS_Africa	USA
Crops	-0.45	-0.13	0.03	-1.6	0.14	-1.98	-1.62	0.3	-1.9
Meat & Livestock	-0.87	0.1	0.08	-2.8	-0.3	-2.49	-2.82	0.29	-2.39
Mining & Extraction	0.09	0.11	-0.06	0.05	0.18	-0.36	0.06	-0.06	-0.35
Processed food	-0.41	-0.05	-0.66	-1.29	-3.38	-2.22	-1.3	0.15	-2.12
Light Manufacturing	-0.97	-0.1	-3.07	-2.69	-0.79	-5.05	-2.71	0.23	-4.92
Heavy Manufacturing	-0.56	-0.06	-0.51	-1.07	-0.47	-2.28	-1.08	0.17	-2.21

Source: Own calculation from the GTAP Output.

The table above demonstrates that manufacturing products are significantly impacted by the trade war, particularly within the light manufacturing sector. In contrast, the effect on African BRICS countries is minimal in both Scenario One and Scenario Two, attributable to their relatively low levels of purchasing power and import items compared to other BRICS nations and the USA. Nevertheless, retaliatory measures, excluding Africa, could potentially result in divergence in the manufacturing sector, especially in light manufacturing, where African exports to the USA market are concerned.

5.3.2 Quantity of Export Effect

In terms of the export quantities, the BRICS countries experience the impact of USA tariff impositions in the light manufacturing sector in Scenario One and across all manufacturing sectors in Scenarios Two and Three. Within the BRICS African economy, sectors such as mining and extraction, processed food, and light manufacturing are affected in all scenarios, except for Scenario Three in the light manufacturing sector. Conversely, for the USA, the trade war negatively influences exports across all scenarios and product categories.

Table 3: Change in Quantity of Export

Products	S1			S2			S3		
	BRICS	BRICS_Africa	USA	BRICS	BRICS_Africa	USA	BRICS	BRICS_Africa	USA
Crops	0.68	0.19	-0.44	0.4	0.19	-2.39	0.42	-0.08	-2.44
Meat & Livestock	1.59	0.11	-0.87	0.85	0.9	-2.96	0.84	0.55	-2.98
Mining & Extraction	0.18	-0.05	-0.44	0.08	-0.09	-0.08	0.08	-0.15	-0.13
Processed food	0.17	-0.11	-0.59	-0.02	-0.59	-3.36	-0.15	-0.02	-2.62
Light Manufacturing	-3.63	-2.11	-1.43	-4.17	-2.52	-5.29	-4.18	0.79	-5.17
Heavy Manufacturing	0.56	0.34	-1.05	-0.11	-0.01	-1.85	-0.1	-0.16	-1.8

Source: Own calculation from the GTAP Output.

The table above illustrates the impact on the export of manufacturing goods, particularly light manufacturing, which shows the most significant reduction in export volume. This result indicates that the trade war substantially affects nations exporting light manufacturing goods, such as textiles and leather, which are principal export items for many BRICS economies targeting the US market. The United States suffers adverse effects across all sectors, potentially due to a shortage of raw materials caused by high tariffs, leading to reduced manufacturing exports. Furthermore, agricultural products are vulnerable to trade wars, as countries frequently retaliate by imposing tariffs on them. However, agricultural exports remain unaffected for BRICS and African BRICS countries.

5.4 Price Effects

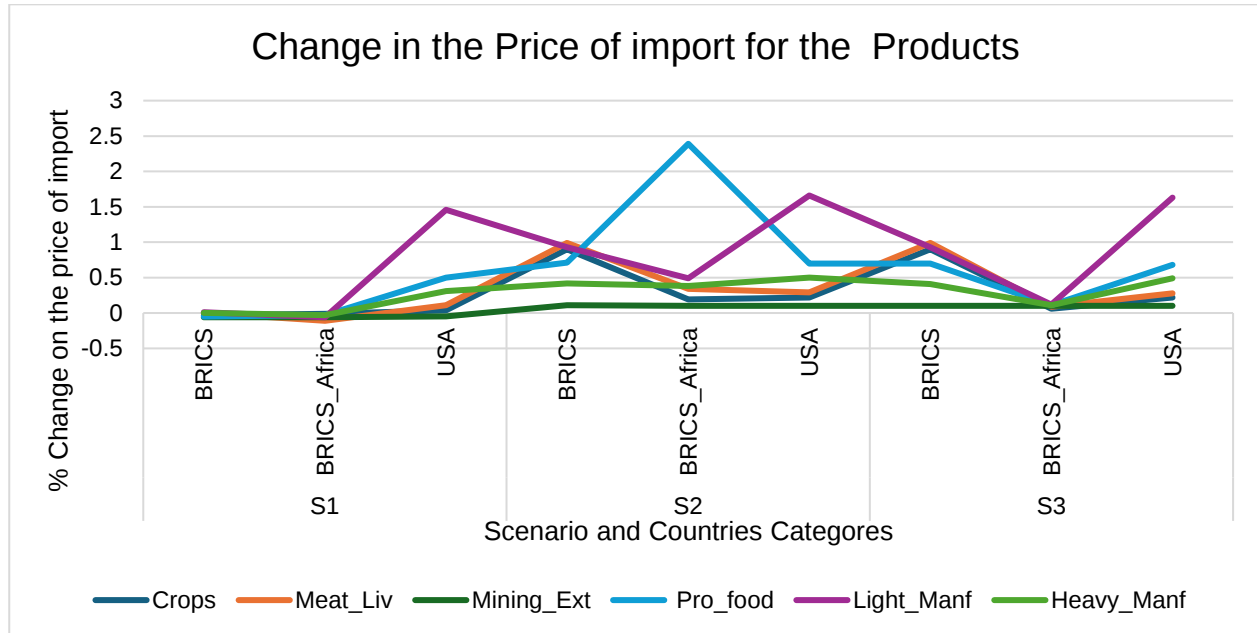
5.4.1 Price of Import Effect

The introduction of the new tariff, as a theoretical construct, results in an increase in product prices, rendering items more expensive. Consequently, consumer consumption decreases, contingent upon the nature of the product.

Regarding the price of imports in scenario one, where tariffs are imposed solely by the USA (without retaliation), imports from BRICS and BRICS African countries become cheaper within their respective markets, whereas the price of imported products rises in the USA markets. In scenarios two (mutual retaliation) and three (mutual retaliation excluding Africa),

the price of imported products escalates across all countries involved in the trade war, specifically all BRICS nations and the USA.

Figure 4: Comparison of Import Price Variations Across the Three Categories



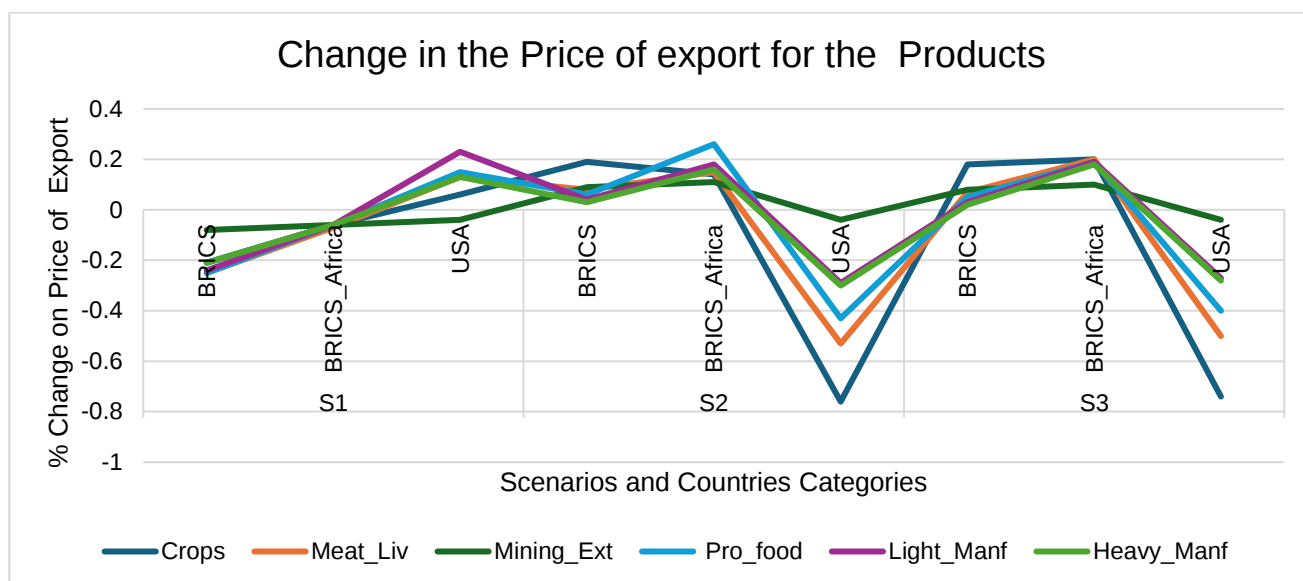
Source: Own calculation from the GTAP Output.

The figure above illustrates that the outcomes for BRICS and BRICS_Africa in scenarios two and three are nearly identical, attributable to the minimal influence of African nations on global prices, thereby categorizing them as price takers. In the domains of light manufacturing and processed food products, there is a significant increase, which may incentivize countries to replace these imported goods with domestically produced alternatives. Across all scenarios, the cost of imported products remains elevated for all categories. Given that the United States is unable to substitute these imports with domestically produced goods, consumers may experience a diminution in their disposable income.

5.4.2 Price of Export Effect

The imposition of tariffs resulting from this trade war is anticipated to elevate the presence of exported products in partner markets. The findings indicate that in scenario one, the price of exports from the United States increases, whereas the price of exports for BRICS and African BRICS countries decreases. Conversely, in scenarios two and three, the price of exports from the United States declines, while the price of exports from BRICS and African BRICS countries rises.

Figure 5: Comparison of Export Price Variations Across the Three Categories



Source: Own calculation from the GTAP Output.

As illustrated by the aforementioned figures, the export prices for BRICS countries, including BRICS African nations, exhibit a downward trend in scenario one. The impact on African countries is minimal, attributable to their relatively low production levels, which exert limited influence on the global market. Conversely, the United States demonstrates an opposing trend in scenario one, with export prices experiencing an upward trajectory. This phenomenon may be attributed to the imposition of tariffs, resulting in increased costs for raw materials imported from BRICS countries, thereby elevating the prices of final goods. In scenarios two and three, the export prices for BRICS countries rise due to tariff impositions, whereas the export prices for the United States decrease across all product categories. This disparity may be explained by the United States' capacity for extensive production and its access to alternative markets in contrast to the BRICS countries.

6 Conclusion

The study investigates the imposition of tariffs between BRICS and the USA, indicating a decline in GDP and a reduction in welfare for both BRICS and the USA. However, this trend does not extend to non-BRICS African countries. The analysis also reveals an increase in import prices for all products in scenarios two and three, particularly in light manufacturing and processed food, across all countries. On the other hand, export prices have declined for the USA in scenarios two and three while rising for other countries, including BRICS. In the USA, the quantity of export and import has declined in all products, whereas BRICS has experienced a significant decline in light manufacturing. Meanwhile, the price of endowments is decreasing in the USA and BRICS while increasing for the EU, non-BRICS African countries, and the rest of the world. Furthermore, the analysis reveals trade creation among BRICS countries and trade diversion away from the USA.

In conclusion, geopolitical polarization induces trade distortion effects within the global economy. Although the trade share of African countries in the global market is relatively small, the impact remains significant. Even in the absence of direct tariff impositions on Africa, the measures indirectly affect the continent.

References

- Aguiar, A., Corong, E. L., Van der Mensbrugghe, D., Bekkers, E., Koopman, R. B., & Teh, R. (2019). The WTO Global Trade Model: Technical documentation (No. ERSD-2019-10). WTO Staff Working Paper.
- Atale, N. (2012). A Decade of BRICS: Prospects and Challenges for Next Decade. *Indian Journal of Management*, Forthcoming.
- AU Union, African (2022). Report of the Secretary General of the African Continental Free Trade Area (AFCFTA). Tech. rep. African Union.
- BRICS database (2024), Report on BRICS countries.
- Hertel, T., Hummels, D., Ivanic, M., & Keeney, R. (2007). How confident can we be of CGE-based assessments of Free Trade Agreements?. *Economic Modelling*, 24(4), 611-635.
- Lowe, P. (2016). The rise of the BRICS in the global economy. *Teaching geography*, 41(2), 50-53.
- Mostafa, G., & Mahmood, M. (2015). The rise of the BRICS and their challenge to the G7. *International Journal of Emerging Markets*, 10(1), 156-170.
- Nach, M., & Ncwadi, R. (2024). BRICS economic integration: Prospects and challenges. *South African Journal of International Affairs*, 31(2), 151-166.
- Pant, H. V. (2013). The BRICS fallacy. *The Washington Quarterly*, 36(3), 91-105.
- Radulescu, I. G., Panait, M., & Voica, C. (2014). BRICS countries challenge to the world economy new trends. *Procedia economics and finance*, 8, 605-613.
- Shameem, C. C., & Jayaprasad, K. (2020). The evolution of BRICS in international political economy. *American Review of Political Economy*, 15(1).
- Siva, N., & Rajendran, P. (2023). Retracted publications in BRICS countries: an analytical study. *Scientometrics*, 128(12), 6313-6333.
- Streltsov, E. S., Rozhin, A. A., Vosiev, S. S., & Kosnikov, S. N. (2021). The economic potential of the brics countries as a challenge to modern world realities. *Propósitos y representaciones*, 9(2), 14.
- World Bank, World Bank (2024). World Development Indicators. Tech. rep. World Bank.