

PARTICIPATION IN REGIONAL VALUE CHAINS (RVC) AND MACROECONOMIC OUTCOMES: INDUSTRIAL POLICY IMPLICATIONS OF NIGERIA'S ENGAGEMENT WITH SEVEN AFRICAN REGIONAL PARTNERS'

Chukwuyem, Obi Paul^{1,2}, Jonathan Oniore² and Michael Akpan²

¹ **Department of Economics, Bingham University, Nigeria.**

² **Research Associate, Centre for the Study of Economies of Africa**

Abstract—Regional Value Chains (RVCs) are becoming necessary for economic integration amongst countries as they serve as a strong driver for economic stabilisation and industrialisation. However, despite this perceived benefit, the impact of RVC on macroeconomic outcomes, especially how RVC participation by one country drives macroeconomic outcomes in one or more regional partners, has not been explored fully; instead, studies have focused on Global Value Chain (GVC) and macroeconomic outcomes. This paper empirically examines the effect of RVCs' participation between 1995 and 2023 on macroeconomic outcomes in selected African countries, focusing on the industrial policy implications of Nigeria's engagement with seven Regional Partners – Cameroon, Tunisia, Morocco, South Africa, and Côte d'Ivoire. The study estimates five panel econometric models using a fixed-effect approach with data drawn from the OECD TiVA database and other sources. It was found from the study that RVC linkages between Nigeria and partner countries lead to GDP growth, reduction in unemployment, an appreciation of their domestic currencies, and a decrease in general central government debt in the participating countries. The study recommended that to support industrial policy development, countries such as Nigeria engage in intermediate trade with regional Partners. Both Nigeria and its African partner countries should invest in export-oriented industries such as petrochemical, manufacturing, agribusiness, or agro-processing firms that can contribute to GDP Growth and strengthen regional supply chains. Given the positive relation between RVC participation and exchange rate resulting from Nigeria's cross-border trade with its regional partners, the African government should partner more with Nigeria, as this will favourably affect their domestic currency. One approach to this is for African governments is to design sector-based industrial policies that support regional forward and backward connection with Nigeria.

Keywords: RVC Participation, Trade, Fragmentation, Value Added, and TiVA

JEL Codes: B17, F12, D24, F14

1. Introduction

The growth in RVC remains the cornerstone of industrial development. RVCs can promote industrialisation by deepening economic integration and enabling economies in related regions to focus on a specific intermediate production, which may be value-added manufacturing or services. Given the growing concerns of GVC, especially the unequal trade it promotes in the multilateral trading system, trade in regional value chains “appears to have served as a better mechanism for promoting economic prosperity and industrialisation than direct integration into global markets”(Scholvin et al., 2022). Black et al. (2021) noted that RVCs are intermediate production linkages located in different regions, say, for instance, in Africa. It covers domestic and foreign direct investments and market linkages that are regionally domiciled. In this case, a regional economic hub performs a unique role of driving regional investment and promoting market access for regional lead firms and suppliers within the same region.

Today's RVC participation has come to be organised under transnational or multinational corporations that control a larger share of the supply chain markets. As Black *et al.* (2021) further noted, RVC can be understood from three perspectives: (1) a firm sources inputs from the regional market, assembles them, and sends the intermediate input or final products to other firms in a global market, (2) a firm sources inputs or final output regionally and sends their sourced items to a lead firm in an economic hub in the regional market. And (3) a regional firm, say in Nigeria, creates a subsidiary in another part of Africa, say in Ethiopia (or a small firm

simply relocates there) while accessing and supplying markets in a regional economic hub.

Recent discussions of the role RVCs play in industrialisation in Africa were put forward by Avom et al. (2021), where the researchers determine the impact of integrating into RVCs on the industrial development of countries in Sub-Saharan Africa. It was concluded from the study that countries that integrate into RVCs benefit in terms of industrialisation. Importantly, upstream RVC integration leads to better industrialisation than downstream integration, while trade with other partners contributes more to the industrialisation of the subregion than intra-regional trade. As a result, the study concluded that policymakers in Africa must think about promoting trade among African countries, especially intermediate trade in goods and services.

Researchers have considered the effect of GVCs' participation in attaining macroeconomic policy objectives, either at a country or regional level, especially in attaining the goals of economic growth, employment generation, and poverty reduction. For instance, the attainment of economic growth (GDP growth) indices of a country has remained a macroeconomic objective of participating in GVC and RVC trade. These intermediate trade in value-added are an important driver for economic growth and development, which can promote stronger economic integration. GVC participation by developing economies has been found to contribute more to growth than non-participating economies. As illustrated by the United Nations Conference on Trade and Development (UNCTAD) (2013) report of developing countries, it was noted that trade due to value addition contributes some 28% to the average Gross Domestic Product (GDP), which is 10% higher than that of developed countries. However, while the impact on GVC participation has been explored, the role of KVC has remained underexplored.

Following this succinct background, this study aims to examine the impact of RVC participation on macroeconomic outcomes in Africa, focusing on the industrial policy implications of Nigeria's RVC trade with regional partners. Given the possibility of cross-tabulating the available data in the OECD Trade in Value Added (TIVA) database to reflect the intermediate trading relations amongst countries, it is possible to learn about a country's trade with partner countries within a region, such as in Africa, characterised as RVC trade. Therefore, cross-tabulating the data to reflect Nigeria's RVC trade with seven regional partners, the study shows how this impacts key macroeconomic policy goals in partner countries. What is less explored in the literature is the industrial policy implications of Nigeria's RVCs' trade with its regional partners on their macroeconomic policy goals.

2. Literature Review

2.1 Conceptual Literature

Macroeconomic Policy Goals

Macroeconomic outcomes encompass a broad array of goals or objectives that aim for the overall stability of an economy. The typical goals are economic stabilisation, where low inflation and no severe recessions are to be achieved, so that a stable economic climate is created to facilitate growth. A second fundamental goal is full employment, wherein the economy will be operating at or near full capacity to generate employment for all workers willing and able to work. In addition, price stability is critical in order not to depreciate purchasing power and reduce uncertainty in economic choices. The macroeconomic policies also hope to achieve a balanced external sector, where a sustainable balance of payments and exchange rate stability are in place to promote international trade and foreign investment (Jones & Acocella, 2005; Nkoro & Uko, 2017).

Regional Value Chain

RVCs refer to geographically connected production that takes place across regional or subregional borders. This is integration that happens within a geographical region, say in Africa, where various countries cooperate to perform different production phases from extraction to manufacturing and distribution. RVCs are of particular significance to the developing world, such as Africa, since they boost intra-African trade, industrialisation, and economic diversification. Through RVC membership, African countries can specialise in specific production

activities, which facilitate technology transfer, skill upgrade, and employment generation. RVCs also help alleviate risks arising from supply chain shocks in global supply chains through increased economic integration and decreased transportation costs (Avom et al., 2021). Empirical studies establish that RVC participation fosters industrialisation and economic growth by allowing countries to move away from raw materials exports towards enhanced value-added activities (Afreximbank, 2024).

Industrial Policy

Industrial policy has been described as deliberate government actions to promote the development and expansion of specific sectors or industries in an economy. Industrial policy aims to address market failures and structural problems that might not be effectively dealt with by the private sector, thereby leading to economic transformation and competitiveness. Industrial policy has traditionally sought to build strategic industries such as manufacturing, technology, and defence by implementing policies including subsidies, tariffs, and research and development support. This is done with the aim of raising the competencies of local firms, stimulating innovation, and bringing about structural economic reforms that result in diversification and productivity enhancement (Wikipedia, 2003; IMF, 2024).

1.1. Empirical literature

GVC involvement and, by extension, RVC participation and its effect on the macroeconomic outcome of participating economies have been studied by several researchers. On GDP growth, Asdiyanti (2023) examined the impact of GVC on economic growth in ten Association of South East Asian Nations (ASEAN) countries from 1999 to 2018. The researcher's model was estimated using System GMM and Panel Causality Test approach, with the result showing that in the ASEAN region, GVC participation significantly affects the GDP growth of countries in that region. The result indicated that a 0.01% increase in GDP in the ASEAN region is an outcome of a 1% increase in GVC. It was also found that a 1% change in forward participation shoots GDP by 0.0019%. However, introducing a reverse analysis using a heterogeneous panel non-causality model, it was found that the level of economic output does not affect the level of GVC involvement.

On the employment effect, Oladapo & Raifu (2022) conducted a study that found that backward GVC integration is more likely to generate employment compared to forward GVC involvement. The study examined the effect of GVC participation on employment in Nigeria; the role of GVCs in terms of forward and backward GVC linkages, and their role in sectoral employment. The researchers considered the impact on the agriculture, industrial, and services sectors. The gap their study attempted to cover was to examine GVC and the country-wise impact. To undertake this study, they introduce Dynamic Ordinary Least Squares, drawing data from EORA. They found that employment is greatest when countries participate in backward GVC integration. By Sectors, the industrial sector gains the most from total GVC participation, a combination of forward and backward GVCs. Agriculture sector employment, on the other hand, benefits from forward GVC participation.

On the exchange rate, Hagemeyer *et al.* (2022) studied the role of GVC development in reducing the exchange rate pass-through (ERPT) to import and producer prices. In contrast to the existing research, the researchers assumed that the decline in ERPT resulting from the enhanced participation in GVC may be non-linear concerning the country's position in the global value chain due to different firms' market power at various stages of vertical specialization. They, however, investigated a panel of 43 advanced and emerging market economies using a panel smooth transition regression model and World Input-Output Database (WIOD) data. The researchers found that the growing backward GVC participation of the suppliers of imported intermediate input results in a reduction of the ERPT to producer prices in the importing country, with a non-linear effect. The ERPT for countries whose suppliers are strongly involved in the production along the global value chains is significantly (four times) smaller than for economies with suppliers not participating in GVC. The researchers then noted that the decline in aggregate ERPT in recent years resulted mainly from changes occurring in ERPT for the EU member states due to increased backward GVC participation of their major trading partners, while the ERPT for other countries has, in fact, remained roughly unchanged throughout the analysed period.

Concerning inflation, there is increasing evidence that involvement in GVC increases inflation. Jithin *et al.* (2023) conducted a study that examined the impact of GVC participation on inflation for 29 economies in the OECD from 2000 to 2018. The researcher posed three research questions that are related to this study, which are: 1) whether inflation is influenced by GVC participation, 2) whether forward or backward participation

affects inflation differently, and 3) and then if it is so such variation is connected to the income levels of the country. To answer the questions raised, a balanced panel dataset for 29 OECD countries was developed. An econometric model to investigate the impact of GVC participation on inflation was specified and estimated using the Dynamic Common Correlated Estimation (DCCE), which accounts for multiple misspecifications inherent in panel data, including heterogeneity, cross-sectional dependence, parameter heterogeneity, and dynamic effects requiring the need to model lagged dependent variables.

Finally, for debt, there is a dearth of literature examining the impact of GVC trade on public or external debt. It has been noted that an attempt to analyze trade and debt appears less straightforward compared to other macroeconomic variables, which are more straightforward. Aladejare (2023) analysed the implications of trade, macroeconomic management, and economic integration for external debt. The novelty of this study's contribution to the literature hinges on identifying the significance of these factors in external debt accumulation for West African countries from 1981 to 2020. Methodologically, the study applied a pooled mean group analytical approach due to its significance in identifying short-term heterogeneous effects. Empirical deductions from the study indicated that trade and economic integration would trigger external debt accumulation in the short term, while the implications of macroeconomic management are neutral.

2.2 Theoretical Literature/Framework

Although a general theoretical framework explaining how RVC participation drives macroeconomic impact remains scarce in the literature, however, this research adopts the GVC framework elucidated in the studies of Michael Porter in 1958, the Unbundling Concept espoused by Baldwin (2008), and the Fragmentation (Segmentation) Theory by Jones and Kierzkowski (2005). The **GVC framework** presents a wider explanation of participating in international or regional production linkages or networks. The framework describes the interrelationship between countries and firms across border trading in intermediate and completed goods. However, the macroeconomic implications of trading in unfinished or intermediate products and services can be explained by integrating equations 1 to 5. Suppose there is a production function following the Cobb-Douglas type, the function integrates RVC as depicted in equation 3.1:

$$X_t = A_t(K_t^\alpha \cdot L_t^{1-\alpha} \cdot Z_t^\beta) \text{-----}1$$

Where X_t is GDP at a given time t , A_t is productivity or total factor productivity (TFP) created through a country's participation in RVC, K_t and L_t are the stock of capital and added labour, respectively, while Z_t is the amount of unfinished items imported or domestically produced but traded through an RVC. As observed from the literature, as a country participates in RVC, TFP is likely to increase, albeit this is most feasible if there are technology transfers coupled with an improved supply chain or logistics system. Thus, participating in RVC can be an economic growth propellant, especially if production is highly concentrated (with value addition), resulting from an increase in TFP and net export. In equation 3.2, growth (g_t) this can be represented as:

$$g_t = \emptyset \cdot \Delta \ln(A_t) + \vartheta \cdot NE_t \text{-----} 2$$

Where $\emptyset$ and ϑ are sensitivity parameters and $\Delta \ln(A_t)$ are TFP changes derivable from participating in RVC trade.

In the DSGE model, Equation 3.3, on the other hand, incorporates employment or the changes in the labour market using a wage-oriented Phillips Curve. Thus,

$$w_t \frac{1}{p} = \tau \cdot (u_t - u^*) + \varphi_t + \epsilon_w \text{-----}3$$

$w_t \frac{1}{p}$ Nominal wages are deflated by the price, which equals real wages. u_t is the rate of unemployment, u^* is the natural rate of unemployment, φ_t is the rate of inflation and ϵ_w is a disturbance term or wage shock. The equation shows that actual unemployment. (u_t) may decline as RVC trade increases, with the effect felt in export-related firms, as these firms are likely to increase demand for labour. As technology transfer expands, human resources are further trained, hence moving labour to high-productivity sectors from low-productivity sectors.

The model further captures inflation through exchange rate dynamics. Equation 3.4 noted that exchange rate

perturbation explains inflation coupled with imported inflation. Hence, the equation that:

$$\pi_t = \gamma(e_t + \delta.\pi_t^* + v_t) \dots\dots\dots 4$$

Where π_t refers to inflation at home (domestic), e_t is the rate at which domestic currency is exchanged per unit of foreign currency (exchange rate), π_t^* is the foreign inflation rate and v_t is the price shock. The exchange rate remains a core variable in equation 3.4 because the effect of RVC on inflation depends on the prevailing exchange rate.

For public debt, equation 3.5 presents a succinct explanation of the relationship between tax revenue, say from trade and public debt. The equation notes that:

$$B_{t+1} = (1 + Int_t)B_t - T_t + G_t \dots\dots\dots 5$$

Where B_t refers to public debt, Int_t is the interest rate, T_t is the tax revenue and G_t is expenditure by the government. Equation 3.4 shows that involvement in RVC can impact revenue sources, especially from taxes – both domestic and trade taxes – generated through increased productivity (Y_t) plus trading surplus.

3. Methodology

This study uses historical data calibrated under an ex-post facto research design. This design illustrates the cause-and-effect relation that exists between two or more variables, in this case, the regressor and the regressant. A similar research design has been employed in several studies as cited in the literature review.

3.1. Model specification

This study's model specification follows the theoretical framework discussed in the preceding section and is in line with the model adopted by Avom and Nguekeng (2021), who considered RVCs and industrialisation of Sub-Saharan Africa. In their study, the researchers used a model with the following specification:

$$IND_{it} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln Y2_{it} + \beta_3 \ln Urb_{it} + \beta_4 \ln Scol_{it} + \beta_5 \ln GFCF_{it} + \beta_6 \ln Pop_{it} + \beta_7 \ln Dmg_{it} + \beta_8 \ln ComExt_{it} + \mu_i$$

The researcher measures

- *IND*: is the rate of industrialization, t time, i the country suing three indicators – the industrialization rate, a percentage of the value-added of industries to GDP; manufacturing value-added, which captures the ability to transform natural resources into final goods and the ratio of industrial employment to total employment, which explains how intermediate goods are processed, and describes the quality of the labour force needed;
- *GDP*: is the real gross domestic product per capita in level and squared,
- *Urb*: the level of urbanisation in the country, approximated by the proportion of the population living in urban areas;
- *Scol*: secondary school enrolment;
- *GFCF*: gross fixed capital formation as a percentage of GDP at constant prices.
- *Pop*: denotes the total population will make it possible to assess the influence of the local market on the rate of industrialisation.
- *Dmg*: refers to the average duration of the war in five years as an indicator of political instability.

ComExt: refers to trade between each country in sub-Saharan Africa and the rest of the countries in that subregion. Downstream and upstream integration were used to explain *ComExt*. The combination of upstream and downstream integration indicates the full participation of a sub-Saharan African country in sub-Saharan value chains. These streams are described by Avom and Nguekeng (2021) as:

- *Downstream integration* (measured by the share of raw materials in the exports of each country of sub-Saharan Africa to the others). Downstream integration is the share of a country's value-added exports that is reflected in the exports of other countries. We look at the point of view of

a country's exports around the world, in particular the products that go into the production of other countries' exports

- and *upstream integration* (captured by the share of intermediate products in the imports of each sub-Saharan African country from the others). Upstream integration is the share of foreign value-added in a country's exports. We look at a country's exports and study the importance of foreign factors of production in local production.

However, to measure the macro effect of RVC participation, the study assumed that macro development is a supporting factor for any industrialisation. Consequently, the study divided the Avom and Nguekeng (2021) model into five macro models: economic growth, employment, exchange rate, inflation, and debt. In each model, the *ComExt* was retained as RVC participation with a *single economy*, such as Nigeria, trading with its African partners. The controls also included variables describing intermediate trade between Nigeria and the sampled African partners. Consequently, a **Panel Fixed Effects model is specified in equation 11.**

$$Y_{it} = \alpha_i + \beta_1 RVC_{it} + \beta_2 \log(EXGR_INT_{it}) + \beta_3 \log(EXGR_DVA_{it}) + \beta_4 \log(IMGR_INT_{it}) + \beta_5 \log(IMGR_DVA_{it}) + \beta_6 \log(FFD_DVA_{it}) + \beta_7 \log(DFD_FVA_{it}) + \varepsilon_{it} \dots \dots \dots 11$$

Where:

- Y_{it} = dependent variable (one of: GDPGrowth, Unemp, EXCH, Inflation, Debt)
- α_i = country fixed effect (captures time-invariant unobserved heterogeneity)
- ε_{it} = error term
- i = country (Cameroon, Côte d'Ivoire, Egypt, Morocco, Senegal, Tunisia, South Africa)
- t = time (year)
- $\beta_1 - \beta_7$ = Slope coefficients, which are all assumed to be positive.
- The explanatory variables are logs of trade-related measures.

The dependent variables, which are estimated differently, are specified below:

- GDPGrowth = Real GDP growth rate (%)
- Unemp = Unemployment rate (%)
- EXCH = Exchange rate (local currency/USD)
- Inflation = Inflation rate (%)
- Debt = Central government debt (% of GDP)

The independent Variables are:

- RVC = Regional Value Chain participation index
- $\ln_EXGR_INT$ = Log of Gross Export of Intermediate Goods
- $\ln_EXGR_DVA$ = Log of Domestic Value-Added in Gross Exports
- $\ln_IMGR_INT$ = Log of Gross Import of Intermediate Goods
- $\ln_IMGR_DVA$ = Log of Domestic Value-Added in Gross Imports
- $\ln_FFD_DVA$ = Log of Foreign Final Demand of Domestic Value-Added
- $\ln_DFD_FVA$ = Log of Domestic Final Demand of Foreign Value-Added

3.2. Data and Variable Description with Sources

Table 1 presents the variables employed, the status of these variables, the variable description, and their source. As shown in the table, the main data sources for this study were drawn from the OECD Trade in Value Added (TiVA) and the Central Bank of Nigeria (CBN) statistical Bulletin. Only the FDI data was drawn from the World Development Indicators produced by the World Bank.

Table 1: Variable Description

S/N	Variable	Status	Variable Description	Source
1	GDPGrowth	Dependent Variable	Real GDP growth rate expressed in percentages (%) per <i>i</i>	World Development Indicator
2	Unemp	Dependent variable	Unemployment rate expressed in percentages (%) per <i>i</i>	World Development Indicator
3	EXCH	Dependent variable	Exchange rate expressed as a unit of US Dollar in local currency per <i>i</i> (local currency/USD)	World Development Indicator
4	Inflation	Dependent variable	Inflation rate expressed in percentages (%) per <i>i</i>	World Development Indicator
5	Debt	Dependent variable	Central government debt expressed as a share of GDP (% of GDP) per <i>i</i>	IMF Statistical Database
6	RVC	Independent variable	Regional Value Chain participation index, expressed as DEXFVAPSH: Backward participation in RVCs: Foreign value-added share of gross exports, by value added origin country plus FEXDVAPSH: Forward participation in GVCs: Domestic value added in foreign exports as a share of gross exports, by foreign exporting country per <i>i</i>	Trade-in Value Added (TIVA) database of the OECD
7	EXGR_INT	Independent variable	Gross Export of Intermediate Goods expressed in USD	Trade-in Value Added (TIVA) database of the OECD
8	EXGR_DVA	Independent variable	Domestic Value-Added in Gross Exports	Trade-in Value Added (TIVA) database of the OECD
9	IMGR_INT	Independent variable	Gross Import of Intermediate Goods	Trade-in Value Added (TIVA) database of the OECD
10	IMGR_DVA	Independent Variable	Domestic Value-Added in Gross Imports	Trade-in Value Added (TIVA) database of the OECD
11	FFD_DVA	Independent Variable	Foreign Final Demand of Domestic Value-Added	Trade-in Value Added (TIVA) database of the OECD
12	DFD_FVA	Independent Variable	Domestic Final Demand of Foreign Value-Added	Trade-in Value Added (TIVA) database of the OECD

Source: Author's Description from Several Sources

4. Result and Discussion

4.1. Result

This node shows intermediate trade or trade in value added between Nigeria and the remaining seven African countries, with Nigeria being the partner Country and the remaining seven countries being the reporting countries. The succeeding analysis explains the country's trading performance, drawing from a descriptive and inferential analysis.

4.2.1 Descriptive Statistics

This section provides the RVC participation data and selected macroeconomic policy indicators for the selected economies trading with Nigeria. The data presentation begins with a thorough demonstration of descriptive analysis of the 7 African countries participating in RVC trade with Nigeria. These countries include South Africa, Côte d'Ivoire, Senegal, Egypt, Morocco, Tunisia, and Cameroon. In terms of mean Domestic Value Added (DVA) content to either gross export or import, these countries' exports included more country-based content than domestic addition to their imports from Nigeria. Table 4.1 shows that, on average DVA content of gross exports by these countries altogether is estimated at \$130.7 million, compared to the content they added to their gross import from Nigeria, estimated to be less than a million USD. Tunisia's exports to Nigeria included more domestic content, followed by Egypt and Côte d'Ivoire. For imports, Tunisia also leads in local content addition to imports from Nigeria. Cameroon and South Africa have a lesser content addition while trading with Nigeria.

Table 2: Summary Descriptive Statistics of key variables (Values in USD million)- Nigeria-Seven African Countries Trading Relations

Country	Mean DVA Export	Median DVA Export	Std. DVA Export	Dev	Mean DVA Import	Median DVA Import	Std. Dev DVA Import
Partner Country: Nigeria	116.8	15.91345	66.8		0.1	0.00615	0.3
<i>Cameroon</i>	10.5	9.36125	8.7		0.02	0.0128	0.02
<i>Côte d'Ivoire</i>	38.3	24.2002	44.9		0.06	0.05355	0.04
<i>Egypt</i>	80.7	74.72355	61.8		0.03	0.00475	0.07
<i>Morocco</i>	28.7	13.7022	30.8		0.007	0.0039	0.009
<i>Senegal</i>	4.9	4.21465	4.0		0.002	0.0005	0.002
<i>Tunisia</i>	145.3	158.0838	96.1		0.7	0.6627	0.5
<i>South Africa</i>	15.6	7.02455	16.9		0.0008	0.00005	0.001

Sources: Authors' Calculation

When aggregated, Cameroon, Côte d'Ivoire, Egypt, Morocco, Senegal, Tunisia, and South Africa imported more from Nigeria than they exported, as further depicted in Table 4.2, with a low domestic value addition to their import from Nigeria and a high domestic value addition to exports. Mean aggregate gross export (EXGR) is estimated at \$167.6 million, with a median of \$56.0 million. The maximum estimated export value was \$1,238.6 million, and the minimum was \$0.8 million, with a standard deviation of \$260.7 million. In the area of domestic value-added content to gross export, jointly all countries added an estimated value of \$130.7 million, led by Tunisia and Egypt with a Maximum value-added content of \$938.2 million and Minimum value of \$ 0.7 million and a Std. Dev. Of \$202.4 million.

As per import, Table 4.2 shows that the estimated gross import of these seven countries from Nigeria was \$405 million, with a median value of \$63 million, a maximum value of \$4,058.2 million, and a minimum value of \$0.1million with a Std. Dev. Of \$758.9 million. However, the domestic value-added content of imports from

these seven countries flattens to less than a million USD, with a maximum estimated value of domestic content of \$1.9 million, with several countries contributing nothing to the imported goods from Nigeria, albeit with a standard deviation of \$0.3 million.

At the same time, in terms of domestic value added in foreign final demand (FFD_DVA) and foreign value added in domestic final demands (DFD_FVA), it is clear that these countries' domestic input included in Nigeria's final demand (foreign final demand) is less than Nigeria's input in their final demand or the countries' final demand. That is, the Estimated Mean FFD_DVA of \$139.9million is less than the mean DFD_FVA of \$249.4million.

In terms of RVC participation, measured by backward plus forward participation in RVC, on average, around 1.3% of gross trade represents RVC trade between Nigeria and the seven African countries.

Table 3: Joint Summary Descriptive Statistics of Key Variables (Values in USD Billion)- Aggregate Trade between Seven African Countries with Nigeria Trading Relations

	Mean	Median	Maximum	Minimum	Std. Dev.
EXGR	167.6	56.0	1,238.6	0.8	260.7
EXGR_DVA	130.7	41.5	938.2	0.7	202.4
EXGR_DVAPSH	0.6	0.5	3.5	-	0.5
EXGR_FNL	115.2	35.4	935.2	0.3	191.2
EXGR_INT	52.4	17.4	323.5	0.2	72.4
IMGR	405.0	63.0	4,058.2	0.1	758.9
IMGR_DVA	0.1	-	1.9	-	0.3
IMGR_DVASH	-	-	0.2	-	-
IMGR_FNL	22.5	9.0	217.7	-	33.9
IMGR_INT	382.5	43.8	4,006.9	-	741.5
FFD_DVA	139.9	50.0	1,036.9	1.0	220.7
DFD_FVA	294.9	103.5	2,726.2	5.5	504.8
RVC	1.3	0.3	12.6	-	2.3

Source: Author's Calculation using EViews 10

4.2.2 Correlation Matrix

The correlation matrix presents the association between the variables from the dataset, depicting the intermediate trade between Nigeria and the seven countries. There is a weak relationship between the GDP Growth of these countries - Cameroon, Côte d'Ivoire, Egypt, Morocco, Senegal, Tunisia, and South Africa- and their different trade and value-added activities with Nigeria, as most displayed a negative association. For instance, the association between growth and gross export (EXGR) is -0.14. This implies that GDP may not even decrease as exports decline. This is also observed for exports of finished products (EXGR_FNL) and intermediate goods (EXGR_INT), with correlations of roughly -0.15 and -0.12, respectively. These figures indicate that neither the export of final nor intermediate goods is a strong driver of economic growth in this particular case. Speaking of domestic value added in exports (EXGR_DVA), we see a similar trend with a correlation of -0.14. This hints that the domestic contribution to exported goods isn't translating into clear gains in overall economic growth, possibly because of weak linkages within the domestic economy or low value retention from exports.

Looking at imports, the link between GDP growth and total imports (IMGR) is also negative, around -0.15, meaning that higher imports could be associated with slightly lower growth. When we focus on intermediate imports (IMGR_INT), the correlation is about -0.16, and for the domestic value added in imports (IMGR_DVA), it drops to roughly -0.18. This suggests that reliance on imported inputs might not be supporting domestic growth much. Interestingly, imports of finished goods (IMGR_FNL) show a very slight positive correlation with GDP, about 0.03, which could imply that consumption-driven imports have a neutral or mildly favourable relationship with economic growth. The degree to which domestic consumption depends on foreign inputs, measured by the foreign value added in domestic final demand (DFD_FVA), shows a negative correlation of -0.16. So, the more the economy depends on foreign contributions for its domestic consumption,

the less likely it is to see strong GDP growth.

Similarly, the indicator for domestic value added in foreign final demand (FFD_DVA) also correlates negatively, at approximately -0.15, indicating that participation in global supply chains doesn't seem to be strongly boosting the domestic economy. Regarding trade shares and global value chain involvement, the domestic value added in exports as a partner share (EXGR_DVAPSH) shows a tiny positive correlation with GDP (around 0.07), while the domestic value added share in imports (IMGR_DVASH) is slightly negative at -0.05. The overall index of global value chain participation (RVC) has a small positive correlation of about 0.08, hinting that integration might have some limited positive effect, but it's far from strong. This implies that their GDP growth may not be particularly driven by intermediate trade with Nigeria. The correlation result shows that since most trade and value-added relations of these countries with Nigeria are weak, the ability of these countries to support trade-led growth may be inconsequential.

Table 4: Correlation coefficients, using the observations 1:01 - 7:29
5% critical value (two-tailed) = 0.1378 for n = 203

GDPGrowth	EXGR	EXGR_FNL	EXGR_INT	EXGR_DVA	
1.0000	-0.1439	-0.1503	-0.1209	-0.1366	GDPGrowth
	1.0000	0.9957	0.9696	0.9955	EXGR
		1.0000	0.9427	0.9884	EXGR_FNL
			1.0000	0.9726	EXGR_INT
				1.0000	EXGR_DVA
IMGR	IMGR_FNL	IMGR_INT	IMGR_DVA	FFD_DVA	
-0.1531	0.0321	-0.1581	-0.1767	-0.1482	GDPGrowth
0.7761	0.3342	0.7790	0.8031	0.9940	EXGR
0.8000	0.3317	0.8035	0.8260	0.9883	EXGR_FNL
0.6806	0.3270	0.6816	0.7090	0.9677	EXGR_INT
0.7485	0.3109	0.7518	0.7855	0.9978	EXGR_DVA
1.0000	0.5279	0.9992	0.8558	0.7592	IMGR
	1.0000	0.4946	0.4460	0.3170	IMGR_FNL
		1.0000	0.8554	0.7625	IMGR_INT
			1.0000	0.7936	IMGR_DVA
				1.0000	FFD_DVA
	DFD_FVA	EXGR_DVA	IMGR_DVA	RVC	
		PSH	SH		
	-0.1596	0.0652	-0.0470	0.0819	GDPGrowth
	0.8321	0.4512	0.3295	-0.1430	EXGR
	0.8516	0.4206	0.3288	-0.1328	EXGR_FNL
	0.7459	0.5131	0.3176	-0.1641	EXGR_INT
	0.8086	0.4308	0.3485	-0.1546	EXGR_DVA
	0.9834	0.2843	0.1212	0.2156	IMGR
	0.5583	0.2332	0.0055	0.0655	IMGR_FNL
	0.9809	0.2803	0.1237	0.2176	IMGR_INT
	0.8844	0.1965	0.3706	-0.0534	IMGR_DVA
	0.8188	0.4150	0.3251	-0.1535	FFD_DVA
	1.0000	0.2743	0.1575	0.1050	DFD_FVA
		1.0000	0.0712	0.1447	EXGR_DVA
					PSH
			1.0000	-0.2183	IMGR_DVA
					SH
				1.0000	RVC

Source: Authors' calculation using GRETEL Software.

4.2.3 Pre-estimation Test- Unit Root Test

Table 5 presents the unit root test for the series employed in this study. The Null hypothesis is that the series contains a unit root. The table features the panel unit root test (Levin, Lin & Chu test) results, where the Augmented Dickey-Fuller tests check for the stationarity of all macroeconomic variables and GVC-related indicators. The null hypothesis assumes that each series contains a unit root, implying non-stationarity. The rejection of the null hypothesis suggests the variable is stationary.

The table shows that some variables become stationary at the level. GDP Growth has a highly statistically significant result, with a p-value of 0.000, confirming it is stationary; hence, it does not follow a unit root process. Inflation, RVC, the lags of EXGR_DVA, IMGR_INT, IMGR_DVA, and DFD_FVA are also stationary at the levels. However, the rest, such as Unemployment, Exchange Rate (EXCH), Debt, lags of EXGR_INT, and FFD_DVA, are not stationary at levels, meaning the presence of a unit root is suggested.

When a first differencing process is applied, all variables are stationary at a 5 per cent level. It means they are integrated to order one [I(1)], if not stationary at levels. For example, Unemployment, Exchange Rate, and Debt, which were non-stationary at levels, become stationary after differencing. Hence, these variables behaved stochastically with a rising trend over time but became mean-reverting after the first difference.

Since the variables are stationary after first difference, in line with the modelling schema presented in the preceding chapter, a suitable econometric modelling technique employed is the fixed effect model.

Table 5: Unit Root Test (test with constant) using Augmented Dickey Fuller (ADF)

Variable	Level (ADF)	p-value (ADF)	Status	1 st Diff. (ADF)	p-value (ADF)	Status
GDPGrowth	-9.95835	0.000	S	-7.57177	0.0000	S
Unemp	-0.55249	0.2903	NS	-7.66840	0.0000	S
EXCH	3.45656	0.9997	NS	-6.70781	0.0000	S
Inflation	-1.66267	0.0482	S	-12.9060	0.0000	S
Debt	3.11683	0.9991	NS	-3.88756	0.0001	S
RVC	-2.60139	0.0046	S	-11.2732	0.0000	S
l_EXGR_INT	0.40673	0.6579	NS	-5.76268	0.0000	S
l_EXGR_DVA	-1.95014	0.0256	S	-4.95265	0.0000	S
l_IMGR_INT	-2.52520	0.0058	S	-5.20241	0.0000	S
l_IMGR_DVA	-6.52008	0.0000	S	-7.34930	0.0000	S
l_FFD_DVA	-0.72962	0.2328	NS	-16.4913	0.0000	S
l_DFD_FVA	-2.43649	0.0074	S	-11.7932	0.0000	S

Key: NS – Non-Stationary; S – Stationary, S @I(1) – Stationary at order One. The author's calculation using EVIEWS Software.

4.2.4 Estimation

The Fixed-effects estimation results examine the effect of the regional value chain (RVC) between Nigeria and the remaining seven African countries on their macroeconomic indicators, which are: *GDP growth, unemployment, exchange rate, inflation, and public debt*. Each model includes a constant term, and the number of observations across models is 188–190. For GDP growth, none of the explanatory variables are statistically significant since all *p-values* are well above conventional thresholds. This suggests that exports and imports of value-added content, as well as RVC linkages between Nigeria and these countries, do not explain considerable variation in GDP growth across countries over time in this model.

For the unemployment model, some variables pass the significance test. Importantly, the result shows that trade linkage (RVC) between these countries – Cameroon, Côte d'Ivoire, Egypt, Morocco, Senegal, South Africa,

and Tunisia, with Nigeria – has a negative effect on unemployment, albeit the result is not significant. However, gross import of intermediate products from Nigeria has a negative effect on unemployment (coefficient = 1.398, $p = 0.0003$) in these countries; that is, an increase in gross imports of intermediates from Nigeria decreases unemployment by 1.3% in these seven countries. In the case of the proportion of domestic value added content of gross imports (IMGR_DVA) from Nigeria, this is found to have a negative effect on unemployment, with a coefficient of -1.069 and $p = 0.0005$. This implies that a percentage increase in IMGR_DVA with Nigeria will reduce unemployment by 1.0% which is significant at 1% alpha level and agrees with the a priori expectation. Gross imports of intermediate products (IMGR_INT) were also found to be negative, related to unemployment, similar to the result of IMGR_DVA. This means that a one per cent increase in the gross import of intermediate products from Nigeria leads to a 1.3% decrease in unemployment, significant at 1% alpha level. This shows the value of transforming intermediate goods and services for promoting job creation in the local economy.

In addition, domestic value added embodied in foreign final demand (FFD_DVA), in this case Nigeria's final demand from these countries, is negatively correlated with unemployment in these countries. The results show that a percentage increase in FFD_DVA leads to a 3.6% decrease in unemployment, which is significant at 5% significance level, agreeing with a priori expectation. This means that when these countries add value to the goods exported by them to Nigeria, either consumed or used as intermediate inputs to goods exported by Nigeria to a third-party country, it has the potential to promote domestic employment in their economies. However, the result shows that an increase in domestic value addition of gross export (EXGR_DVA) does not necessarily translate into job creation in the economy. As depicted in Table 6, a per cent increase in EXGR_DVA leads to a 3.4% increase in unemployment, which is significant at 5% alpha level, failing the a priori expectation. The difference between the FFD_DVA and EXGR_DVA is that while the former reduces unemployment, the latter increases it. The former focuses on all value addition to exports, ultimately absorbed as final demand abroad for commodities or directly consumed abroad, and the latter focuses on all goods with value added meant for export, whether exported or not.

In the exchange rate equation, participation in RVC between Nigeria and the seven countries - Cameroon, Cote 'd'Ivoire, Egypt, Morocco, Senegal, South Africa and Tunisia- leads to an increase in the exchange rate, that is, an appreciation of their domestic currencies since the exchange rate and RVC between the countries with Nigeria are positively related. However, if the countries choose to add value to their gross exports (EXGR_DVA) to Nigeria, the result shows that this will negatively affect (coefficient = -87.60, $p = 0.0515$) their exchange rates, which is significant at the 10% level. This suggests a depreciation of their currencies, exporting goods with domestic value added to Nigeria. Although not significant, the regression result shows that gross import of intermediate products from Nigeria decreases (depreciates) the exchange rate by 4.3% while domestic value added to gross imports from Nigeria increases the exchange rate. For the domestic value added of these countries embodied in the final demand by Nigeria (FFD_DVA), the result reveals that a percentage increase in FFD_DVA leads to a 68.2% decrease in the exchange rate or depreciation of their currencies. For the inflation model, RVC integration with Cameroon, Côte d'Ivoire, Egypt, Morocco, Senegal, South Africa, and Tunisia, with Nigeria, increases inflation, although not significantly. Gross export of intermediate goods from these countries to Nigeria, on the other hand, increases inflation by 2.4% since there is a positive and significant relationship between them (coefficient = 2.422, $p = 0.0307$), implying that as higher intermediates are produced, this increases prices, perhaps via rising production costs or pressures from foreign sources. However, if the countries choose to add domestic content to their exports to Nigeria, this will reduce inflation by 5.9% which is significant at 5%. This implies that adding domestic content and exporting this will increase forex inflow and indirectly reduce pressure on the local currency, thereby reducing inflation. The remaining variables are not statistically significant at conventional levels.

In the debt model, several variables are statistically significant. The RVC variable that describes trade linkages between Cameroon, Côte 'd'Ivoire, Egypt, Morocco, Senegal, South Africa, and Tunisia with Nigeria reveals that increasing RVC between these countries and Nigeria decreases general central government debt by 3.1% which is significant at 1%. This shows that regional integration has the likelihood of reducing government debt, given the role that trade has on revenue generation. Both EXGR_INT and EXGR_DVA have significant positive effects on debt (coefficients = 41.28 and -88.12, both significant at 1%), reflecting the complex fiscal impact of trade structure. Domestic value added in foreign final demand (FFD_DVA) in the case also has a significant positive impact on debt (coefficient = 46.54, $p = 0.0086$), indicating that, while Nigeria's market integration

with these countries might enhance fiscal revenue potential, it may also come hand in hand with greater demands for borrowing. Overall, the R-squared values show varying explanatory power: very high for exchange rate (0.97) and unemployment (0.94), modest for inflation and debt, and very low for GDP growth. This would suggest that GVC-related variables, and specifically those linked to domestic and foreign value added in trade, account for variation in macroeconomic outcomes—unemployment and exchange rate movements in particular—more than GDP growth.

Table 6: Fixed-effects estimates of Nigeria RVC Trade with the Other Seven Countries

Independent Variables	Dependent variable				
	GDPGrowth	Unemp	EXCH	Inflation	Debt
const	3.196	1.021	361.5***	-1.147	82.12***
	(3.783)	(2.481)	(64.26)	(4.700)	(28.95)
	[0.3994]	[0.6812]	[0.0000]	[0.8075]	[0.0051]
RVC	0.03167	-0.1316	1.639	0.1735	-3.113***
	(0.1425)	(0.09341)	(2.420)	(0.1770)	(1.096)
	[0.8243]	[0.1605]	[0.4991]	[0.3282]	[0.0051]
l_EXGR_INT	-0.6531	-0.07385	18.79	2.422**	41.28***
	(0.8948)	(0.5867)	(15.20)	(1.112)	(7.096)
	[0.4664]	[0.9000]	[0.2180]	[0.0307]	[0.0000]
l_EXGR_DVA	0.3105	3.443**	-87.60*	-5.908*	-88.12***
	(2.630)	(1.725)	(44.68)	(3.268)	(20.65)
	[0.9062]	[0.0475]	[0.0515]	[0.0723]	[0.0000]
l_IMGR_INT	-0.1904	1.398***	-4.371	0.8036	0.6785
	(0.5772)	(0.3784)	(9.803)	(0.7170)	(4.423)
	[0.7419]	[0.0003]	[0.6562]	[0.2639]	[0.8783]
l_IMGR_DVA	1.578e-05	-1.069***	6.995	-0.7766	-2.673
	(0.4623)	(0.3031)	(7.852)	(0.5743)	(3.557)
	[1.0000]	[0.0005]	[0.3743]	[0.1780]	[0.4534]
l_FFD_DVA	0.07304	-3.628**	68.20*	4.339	46.54***
	(2.264)	(1.485)	(38.46)	(2.813)	(17.52)
	[0.9743]	[0.0155]	[0.0779]	[0.1247]	[0.0086]
l_DFD_FVA	0.3488	-0.06918	-8.155	-0.7072	0.3842
	(0.5527)	(0.3624)	(9.389)	(0.6866)	(4.215)
	[0.5288]	[0.8488]	[0.3862]	[0.3044]	[0.9275]
n	190	190	190	190	188
R ²	0.1017	0.9421	0.9717	0.4059	0.5231
lnL	-462.5	-382.3	-1001	-503.7	-839.5

Standard errors in parentheses, p-values in brackets, * significant at the 10 per cent level, ** significant at the 5 per cent level, *** significant at the 1 per cent level

4.2. Discussion of Finding

This study identifies some key findings. *First*, it was found from the study that trade in value-added content, in other words, RVC linkages between Nigeria and partner countries, leads to GDP growth across partner countries, although this is insignificant. This finding agrees with studies in the literature that participation in GVC trade and, by extension, RVC trade leads to improved GDP growth. For instance, Asdiyanti (2023) examined the impact of GVC on economic growth in ten Association of South East Asian Nations (ASEAN) countries and found that a 1% change in forward participation increases GDP by 0.0019%.

Second, the study found that if the selected African economies add domestic value to their gross imports, while at the same time importing intermediate products (from Nigeria), this will lead to a reduction in unemployment in their economies. This finding highlights the importance of contributing to the production of imports by adding local content to imported items, since it affects the labour market. Countries that cannot add value can participate

in the regional market by importing intermediate inputs transformable in the local economy. Even within Africa, if countries increase their value addition in their imported items, this can suppress unemployment compared to direct imports from other African countries without adding value. This finding is in tandem with the findings from a sectoral study by Asogwa & Onyegbulam (2021). Asogwa & Onyegbulam's study found that the increase in agricultural value-added production has been proven to reduce levels of unemployment in Africa. Importantly, it was confirmed that agricultural value addition and unemployment have an inverse correlation, which means that initiatives for promoting local processing and value addition can help contain high rates of unemployment in Africa. Moreover, the study also noted that regional integration, which promotes intra-African trade and value chain expansion, enhances these favourable employment effects by creating further opportunities for national firms and employees.

Third, similar to the preceding findings, this study finds that although not significant, RVC participation leads to a reduction in unemployment. However, what is significant is that it is the domestic valued added embodied in foreign final demand (not by merely adding domestic value to gross export), whether for final or intermediate consumption, that reduces unemployment in the participating countries. This finding shows that as long as countries add to *final consumption in another country and the income received reaches the exporting country*, unemployment will decrease in the exporting country. This is because production is driven not only by the domestic market but by foreign consumers, in this case, demand from Nigeria.

This finding aligns with what Koopman, Wang, and Wei (2014) found. Based on their study of global value chains (GVCs) and in extension RVC, emphasis is laid on the fact that when countries partake in value chains through supplying intermediate goods or services that get consumed abroad, the activity is more likely to generate jobs and income at home. This shows that the value added that is included in foreign final demand leads to greater production activities and jobs in the country of supply, since firms respond to foreign demand by expanding output and employment. Koopman et al. (2014) argue that participation in GVCs allows countries to specialise in production phases in which they have comparative advantages, and with rising foreign final demand, domestic industries offering inputs experience higher rates of employment. This channel reduces the level of unemployment by linking domestic production to foreign markets through value-added trade. Similarly, Johnson and Noguera (2012) concluded that foreign final demand incorporated in exports is one factor responsible for employment in the exporting country, as it spurs local production.

Fourth, the study found that although not significant, RVC between Nigeria and the seven countries leads to an increase in exchange rate, that is, an appreciation of their domestic currencies, since RVC between the other countries with Nigeria is positively related to their exchange rates. This result demonstrates that more intra-regional trade and investments lead to better-performing domestic currencies. For example, evidence shows that widened and stable trade networks can spur foreign exchange receipts, boost investor sentiment, and spur demand for domestic currency, hence currency appreciation (Afreximbank, 2024; Gyasi et al., 2024). Increased value chain production and exports result in increased export revenues, promoting currency appreciation against trading partners. This concurs with a demonstration of exchange rate stability and appreciation based on good regional industrial cooperation (Afreximbank, 2024).

Fifth, while RVC participation generally boosts forex inflow, thus improving the exchange rate, on the contrary, two related findings were made: a) for African countries that choose to add value to their gross exports (EXGR_DVA) to Nigeria, this will negatively affect their exchange rates, suggesting a depreciation of their currencies. b) adding domestic value to export embodied as final demand from these countries to Nigeria (FFD_DVA) also results in depreciation of their currencies. One reason for this could be the cost structure of intermediate imports, which may be due to increased production costs, import of intermediate goods, or shifts in trade balances that put downward pressure on their currencies. This supports the findings that gross import of intermediate products from Nigeria decreases (depreciates) the exchange rate.

When countries increase the value added domestically to their exports (EXGR_DVA) or exports embodied in final demand (FFD_DVA), they pay higher costs of production because some intermediate goods that will be used for processing or assembling are imported. This reliance on imported inputs raises the foreign exchange requirement, increasing external payment obligation and exerting downward pressure on their exchange rates, thus depreciation may occur (Bahmani-Oskooee, 1985; Kemoe et al., 2024; African Development Bank Group,

2024). Besides, the import intensity of value-added production can lead to a deterioration of the trade balance. As noted in the literature, currency depreciation is often coupled with decaying trade balances when export growth is based primarily on imported intermediates, which can dampen the usual positive effects of devaluation on competitiveness (Sambo & Farouq, 2021). This conduct creates a situation in which increasing value addition, although increasing gross exports, enhances import demand in terms of intermediate inputs, causing net currency pressures and depreciation.

Sixth, the study found that RVC participation between Nigeria and the seven countries increases inflation. Importantly, it was also found that gross export of intermediate goods from these countries to Nigeria will increase inflation, except if domestic value is added to such export, which will cushion inflation. This aligns with the literature that shows that inflation results from trade imbalance, exchange rate volatility and higher dependence on intermediate inputs. There is evidence that proves that inflation dynamics can be traced to highly expensive imported capital and intermediate goods, and if not well processed within, they stand a high chance of increasing the cost of production, which is passed on to the consumer as increased prices. This effect is also amplified if the imports endure exchange rate depreciation and supply chain disruptions, which are common in Nigerian trade under infrastructural and policy constraints (Ekpeyong, 2023). To curb inflationary pressure, there is a need to add domestic value to exported goods, as this can reduce inflation through production linkages, increase productivity and decrease reliance on price volatility of imports. For instance, enhancing local processing of intermediate imports allows companies to improve their capacity to absorb exchange rate shocks and reduce pass-through inflation.

Finally, the study found that RVC participation between Nigeria with seven countries has the potential to decrease general central government debt in the participating countries. Further, gross export of intermediate products can lead to a decline in central government debt, including adding domestic content to gross export. This finding agrees with the literature that shows that export diversification with value-added content leads to fiscal benefits and enhances debt sustainability. For instance, Saleh (2025) noted that if countries diversify their export by including domestic content, income (revenue) will increase, leading to a decline in over-dependence on debt, which is beneficial for debt servicing. In other words, this can increase foreign exchange earnings, raise domestic taxes and lower public debt levels.

5. Conclusion and Industrial Policy Recommendation

The study has examined how Regional Value Chains (RVC) as an Industrial Policy Instrument affect macroeconomic outcomes within African countries by focusing on Nigeria's engagement with Seven Regional Partners. The study noted that RVC remains the cornerstone of industrial development in developing countries. Consequently, based on the findings from the study, the following recommendations are proffered to support industrial policy making as countries such as Nigeria engage in trade with regional Partners.

1. Given that Nigeria's participation in regional trade contributes to the improvement in the GDP growth of regional partners, both Nigeria and its African partner countries should invest in *export-oriented industries* such as petrochemical, manufacturing, agribusiness, or agro-processing firms that can contribute to GDP Growth and strengthen regional supply chains. *This can be done by implementing various tax expenditures, infrastructure support, and cheaper and lower credit financing.*
2. To improve regional trade and therefore increase GDP size, beneficial to all, Nigeria and its African partners should develop industrial policies that incentivise businesses that promote local production containing domestic content in both export and imports. *The countries can do this by supporting technology innovation and upgrade, strengthening quality production, and making local firms meet regional service standards and certifications.*
3. African countries should ensure they support the promotion of domestic value addition in imports and deliberately participate in RVCs to create jobs for the continent's teeming young population, which will spur industrial growth. *This can be done by developing industrial policies that entice local firms to add domestic value to imported raw or semi-processed inputs, especially sourced from across Africa. This includes providing tax relief, concessional lending to firms that invest in import substitution and value*

addition and reviewing current local content laws to make them supportive of the AfCFTA rules of origin principle.

4. African countries should target foreign final demand by participating in RVC trade, not merely adding domestic value to gross output, as this generates employment. Since the bulk of the goods traded within Africa are manufactured on the continent, African countries should target producing those goods or parts or components of goods, consumed by other African countries, imported from outside the region. *To do this African government should support capacity building for business firms to meet international standards and market specifications, especially in high RVC-potential industries. Establish regional trade facilitation desks to help local businesses identify and gain access to regional market demand opportunities.*
5. Given the positive relation between RVC participation and the exchange rate resulting from Nigeria's cross-border trade with its regional partners, the African government should partner more with Nigeria, as this will favourably affect their domestic currency. An approach to this, is for African governments is to design sector-based industrial policies that support regional forward and backward connection with Nigeria.
6. Since it has been found that value addition to exports to Nigeria might undermine the domestic currency of partner countries, African governments should develop a resilient exchange rate management system by increasing foreign reserves and diversifying exports across the continent. It is also necessary that country industry policies in the region focus on adding value in sectors with the greatest gain in productivity and higher technological spillovers to cover for future currency depreciation.
7. To promote industrialisation and exchange rate stability, African countries should be more in RVC trade and must diversify their exports under the AfCFTA. Strengthen SMEs and youth participation in RVCs through certification harmonisation and industrial cluster development. This can be done by ensuring harmonisation in certification, eliminating technical barriers to trade and building economic zones that integrate into regional markets such as Nigerian markets.
8. Since the RVC trade will generally increase inflation, especially when intermediate goods imports are not processed or re-manufactured at home before final consumption or re-export, African governments should establish local processing facilities for intermediate inputs, as this will provide the capacity and strength to withstand price shocks either from engaging in RVC trade with another third-party country in Africa or from abroad. At the same time, mandate firms to obey local content laws to reduce frequent imports of intermediate inputs in priority sectors while improving domestic infrastructure, such as port terminals, transport corridors, and power grids, as well as trade logistics to serve as shock absorbers for inflationary pressures.
9. Since higher RVC participation between Nigeria and the seven partners results in lower government debt, policy should concentrate on industrial upgrading. African governments should include RVC-driven export strategies or policies in debt management strategies by clearly connecting export expansion targets with debt servicing forecasts in national budget planning.

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