

Export-led Manufacturing Growth and GVC's across Africa: An Overview*

**Patricia AUGIER, Jaime DE MELO,
Jean-Marc SOLLEDER**



PATRICIA AUGIER, Aix-Marseille University (AMU) and Aix-Marseille School of Economics (AMSE)

Contact: patricia.augier@univ-amu.fr



JAIME DE MELO, University of Geneva, FERDI and CEPR

Contact: Jaime.DeMelo@unige.ch



JEAN-MARC SOLLEDER, University of Geneva

Contact: Jean-Marc.Solleder@unige.ch

Abstract

This paper documents African manufacturing exports along several dimensions. Manufacturing exports triply concentrated at 3 levels: countries that produce and export [half of exported manufactures come from 3 countries: South Africa (27%), Egypt (10%), and Morocco (10%)]; sectoral affiliation as 4 sectors account for 65% of exports [basic metals (33%), chemicals (13%), food sector (11%), motor vehicle sector (8%)] destination markets [37% to European markets and 29% to African markets]. Supply chain trade increased in all regions over the period 1995-2015. Africa's average Global Value Chain (GVC) share rose by 13% to reach 44% in 2022. Currently, the import content of gross exports is relatively low, around 15% while the share of exports undergoing further processing at destination before reaching the final consumer is higher throughout, in the 20-25% range. .../...

* This paper is part of a background study financed by and prepared for the Africa Export-Import Bank used in chapter 3 of the Bank's 2023 annual report <https://www.afreximbank.com/reports/afreximbank-annual-report-2023-3/>.

... / ... Overall trade costs (transport, communication, trade barriers) across Africa have fallen faster with the outside world than they were within Africa. Supply chain trade in Africa has been with partners outside Africa at the aggregate level and at the regional level except for the Southern African Development Community (SADC) which has developed regionally to the same extent as MERCOSUR. The dynamics of regional trade in intermediate products are strikingly different across Regional Trade Agreements (RTAs) among developing-countries. ASEAN, and to a lesser extent MERCOSUR, exhibited an increase in Regional Value Chain (RVC) trade following their integration. No such pattern holds for the African Regional Economic Communities (RECs). The African Continental Free Trade Area's (AfCFTA's) challenge is to promote greater value chain participation within Africa. The paper concludes with a list of promising continental and RVCs.

1. Introduction

To achieve their export potential, African countries must urgently accelerate the process of structural transformation and strengthen their manufacturing sector. It is therefore essential to promote investment, both domestic and foreign which will require institutional improvements across countries. In the more immediate future, the countries need to reduce obstacles, formal and informal that hamper trade.

Much hope is placed on the African Continental Free Trade Area (AfCFTA) which could provide a tremendous opportunity to catalyse the development of regional value chains (RVC) and the diversification of sources of growth in Africa. AfCFTA's ambitious programme is fully justified by the significant potential gains from full market access. The AfCFTA integration agenda is to help the structural transformation across African countries. The AfCFTA would then defragment Africa. These opportunities take place in a challenging global environment, where recent crises have led to growing protectionism, uncertainty and increasing geopolitical tensions, as well as trade and technology wars.

To discuss the opportunities, open to the African continent and before presenting a diagnosis of the main factors facing these countries, this paper we must first look at their situation in terms of manufactured goods exports and integration into value chains. This first chapter thus offers a twofold overview: the first highlights the main characteristics of African countries' exports, while the second details their level of integration into global and regional value chains (RVCs), putting the situation of the African continent into perspective with other developing regions.

1.1. Overview of the trade performance of all African countries

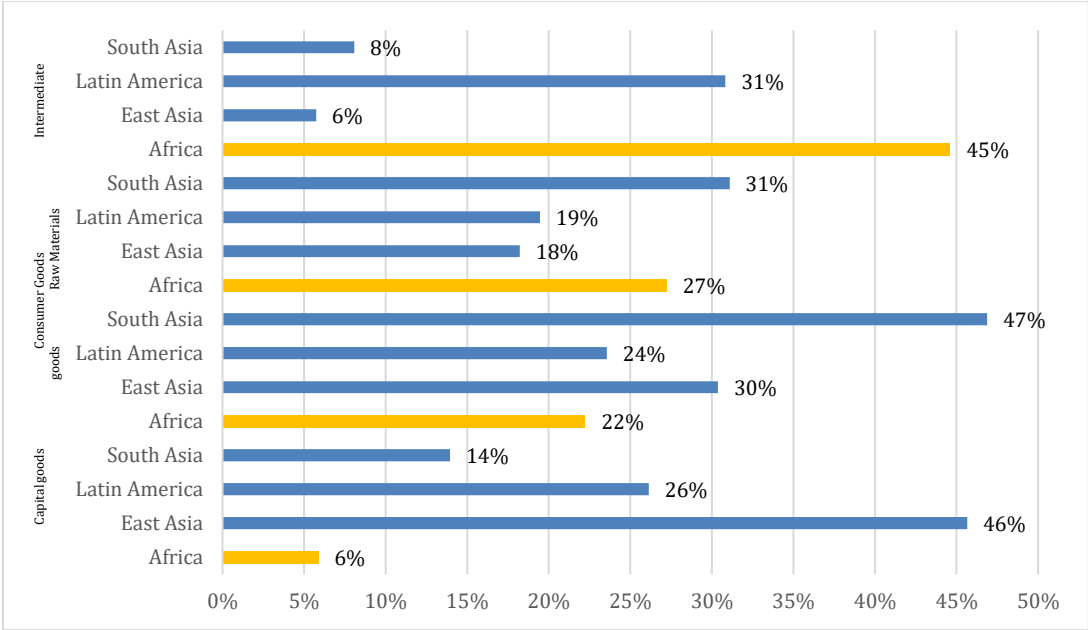
Africa¹ accounts for 1.8% of global trade (UN COMTRADE STAT), which is considered low when compared to other regions. The share of African trade drops to 0.8%² when manufactured goods only are considered. Looking at the manufacturing export potential for Africa, we start by providing an overview of the continent's performance in terms of its share of manufacturing exports in total African exports, their nature, origin and destinations.

¹ This concerns the 54 countries on the African continent.

² Calculations made by the authors using the UNSTAT COMTRADE database for 2021.

The striking fact when considering African exports by type of goods is the preponderance of primary goods. 45% of Africa's exports are raw materials, whereas in Latin America, South Asia and East Asia, raw materials account for 31%, 8% and 6% of total exports respectively. The rest of African exports consist of intermediate goods (27%), consumer goods (22%) and capital goods (6%) (Figure 1.1).

Figure 1.1. Export by type of goods for Africa and other developing regions (percent in total exports, average 2017-2018-2019)



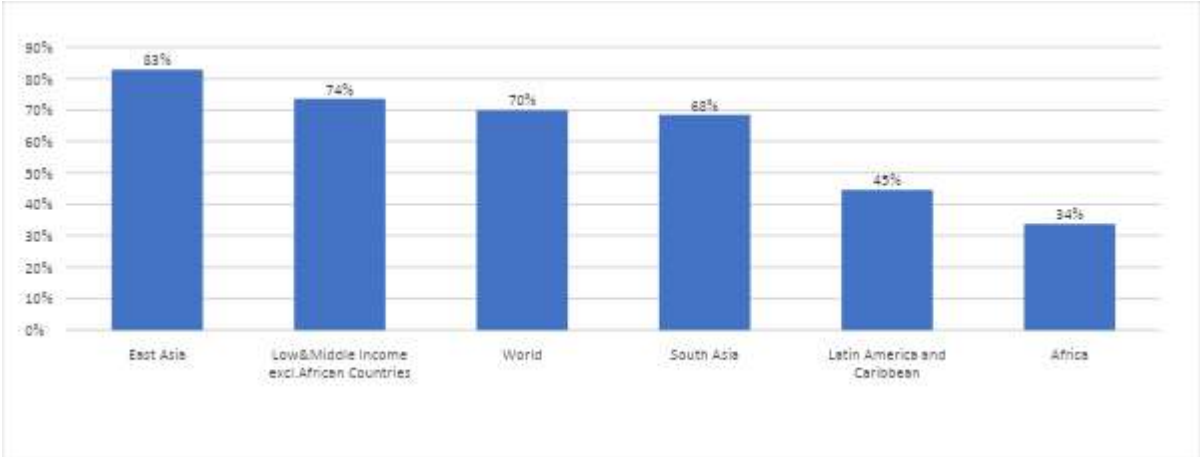
Source: COMTRADE (UNSTAT). Calculations by the authors.

Looking at the manufacturing export potential for Africa, we start by providing an overview of the continent's performance in terms of its share of manufacturing exports in total exports, their nature, origin and destinations.

1.1.1. Africa exports very few manufactured goods

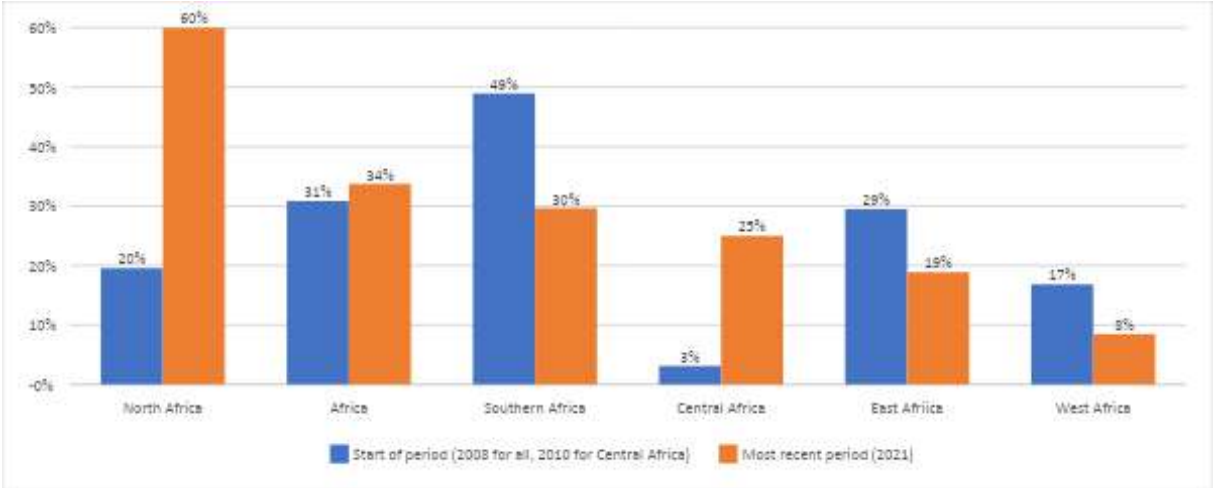
The share of manufactured goods in total exports is only 34% for African countries, which is relatively low compared to 83% for East Asia, 74% for low- and middle-income countries excluding African countries, 68% for South Asia, 45% for Latin America, and 70% for the world average (COMTRADE/UNSTAT, 2022, Figure 1.2). The share of manufactured goods in Africa's total exports has remained relatively stable over the past 10 years, but this average share of 34% masks strong sub-regional heterogeneity (Figure 1.3): three sub-regions have seen this share decrease (South Africa with -19%, East Africa with -10%, and West Africa with -9%), while in North Africa and Central Africa, this share has increased significantly (+40% in North Africa and +22% in Central Africa); moreover, these shares are very disparate (for the most recent period, 8% in West Africa, 19% in East Africa, 25% in Central Africa, 30% in South Africa, and 60% in North Africa).

Figure 1.2. Share of manufacturing products in total exports for Africa and main comparator groups in 2021



Source: COMTRADE (UNSTAT). Calculations by the authors.

Figure 1.3. Change in the share of manufactured products in total exports by African sub-regions



Source: COMTRADE (UNSTAT). Calculations by the authors.

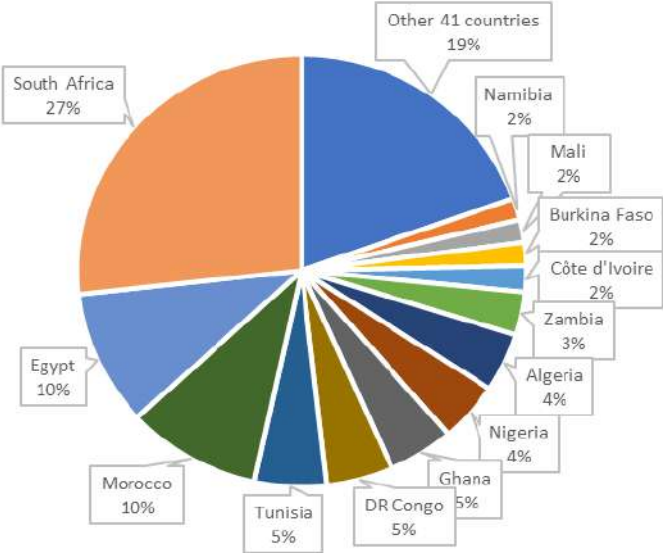
1.1.2. The manufactured goods exported by Africa are "triplly" concentrated

Manufactured products exported by Africa are highly concentrated at 3 levels: in terms of countries that produce and export, in terms of sectoral affiliation, and in terms of destination markets.

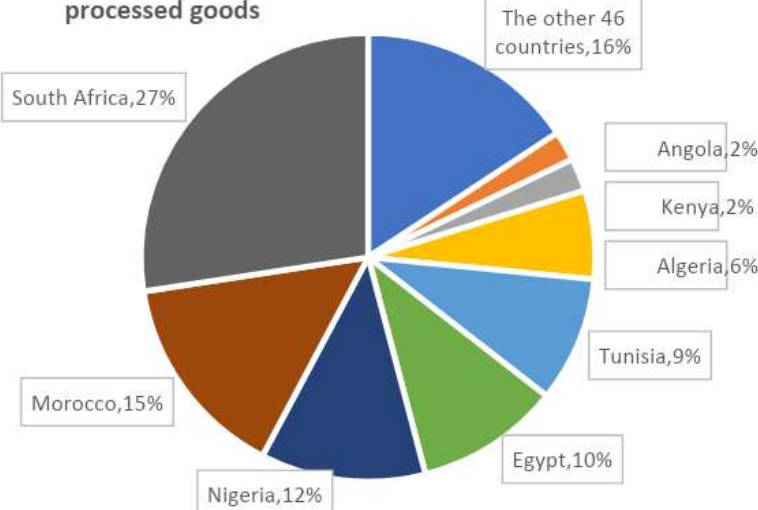
Regarding the countries that produce and export, if we include both fully transformed and semi-transformed goods in the manufactured products, we can see from Figure 1.4 (part 1) that **about half of the manufactured products exported by the continent come from only 3 countries**: South Africa (27%), Egypt (10%), and Morocco (10%). It is also shown that **13 countries out of 54 produce alone 81% of the manufactured exports**. This concentration of export countries is even more pronounced when considering only fully transformed goods. Figure 1.4 part 2 shows that 3 countries (South Africa (28%), Morocco (15%), and Nigeria (12%)) sell 55% of fully transformed product exports, and that 84% of these exports come from only 8 countries. In addition to South Africa, Morocco, and Nigeria, there are Egypt (10%), Tunisia (9%), Algeria (6%), Kenya (2%), and Angola (2%).

Figure 1.4. Country-level composition of African exports of manufactured goods

Part 1. Share of countries in Africa's exports of fully processed and semi-processed goods



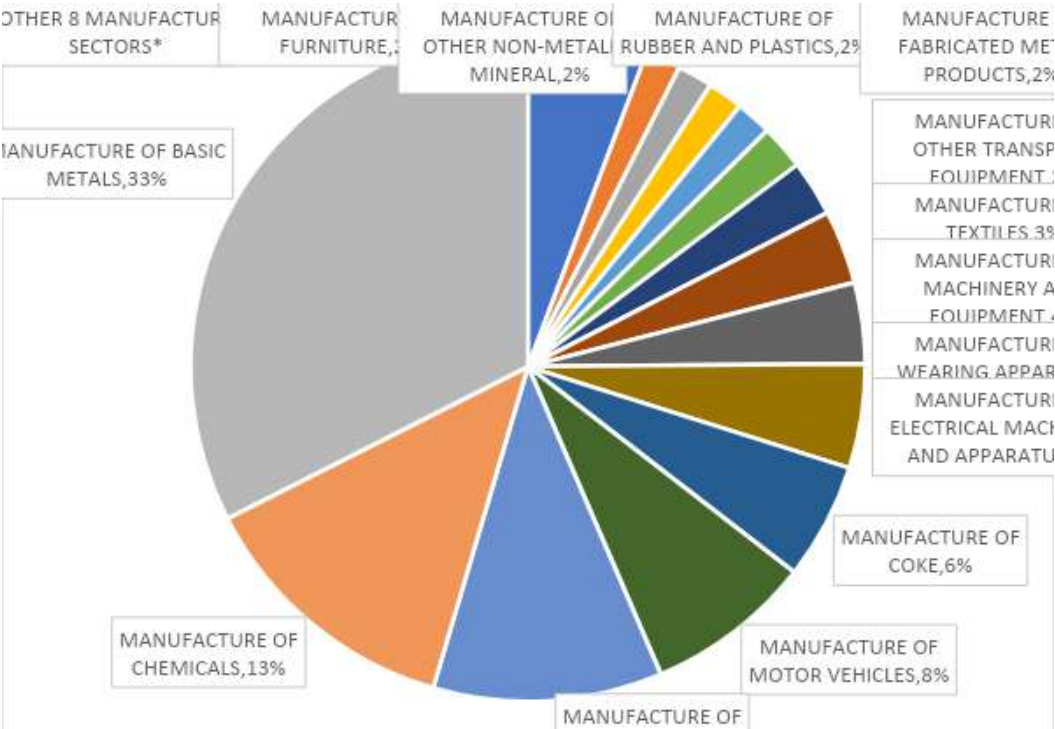
Part 2. Share of countries in Africa's exports of fully processed goods



Source: AU/OECD (2022)

These manufactured product exports are concentrated in a few sectors. In fact, the following **4 sectors account for 65% of the total exports** (Figure 1.5): The manufacture of basic metals (33%), the manufacture of chemicals (13%), the food sector (11%), and the motor vehicle sector (8%). By adding only 3 sectors (manufacture of coke (6%), electrical machinery and equipment (5%), and manufacture of wearing apparel (4%)), 80% of products exported from Africa are covered.

Figure 1.5. Sectoral distributions of manufactured goods exports (3-year average, 2019-2020-2021)



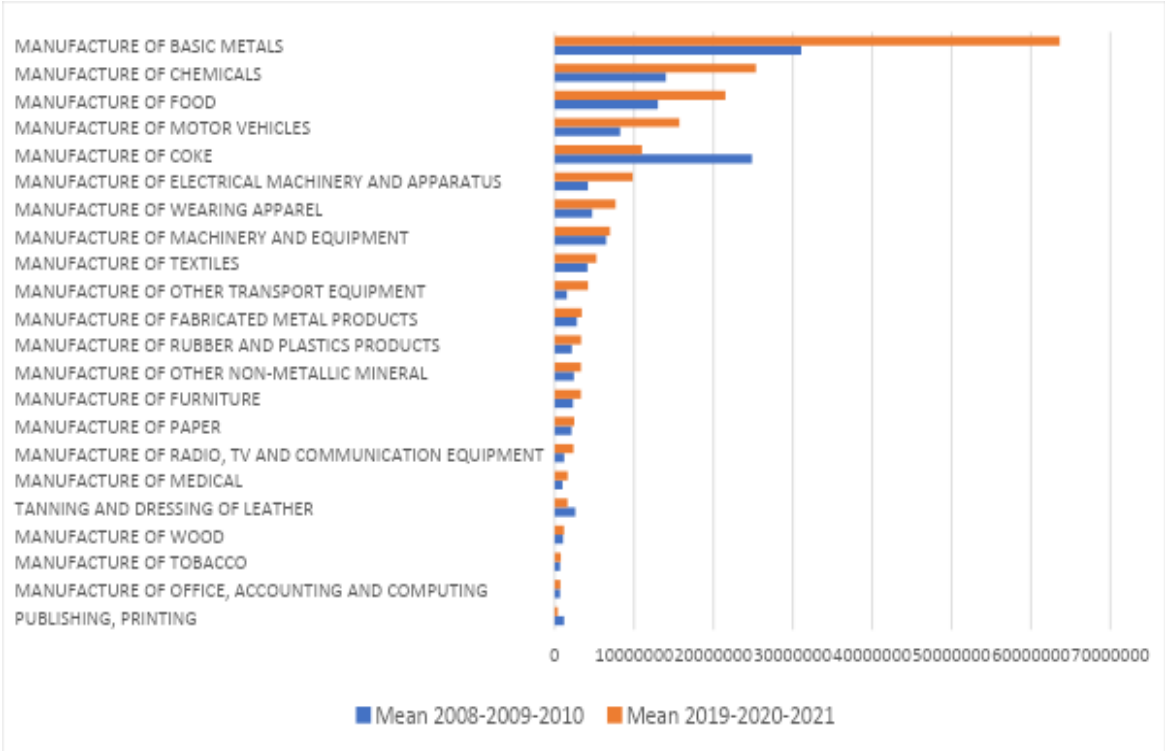
Source: COMTRADE (UNSTAT). Calculations by the authors.

Note: * Other 8 manufacturing sectors: For each of these 8 sectors, the share in total manufactured exports is less than or equal to 1%.

Over the last decade, the sectoral structure of manufactured product exports has slightly changed (Figure 1.6). There has been a strong increase in exports from the basic metals sector (+105%), chemicals (+81%), food products (+65%), motor vehicle sector (+90%), electrical machinery and equipment (+134%), wearing apparel (+62%), the other transport equipment sector (+172%), the manufacture of radios, televisions and communication equipment (+97%), and the manufacture of medical products (+66%). During the same period, three sectors have seen a decrease in the value of their exports: the printing and publishing sector (-67%), the manufacture of coke (-56%), and the tanning and leather sector (-37%).

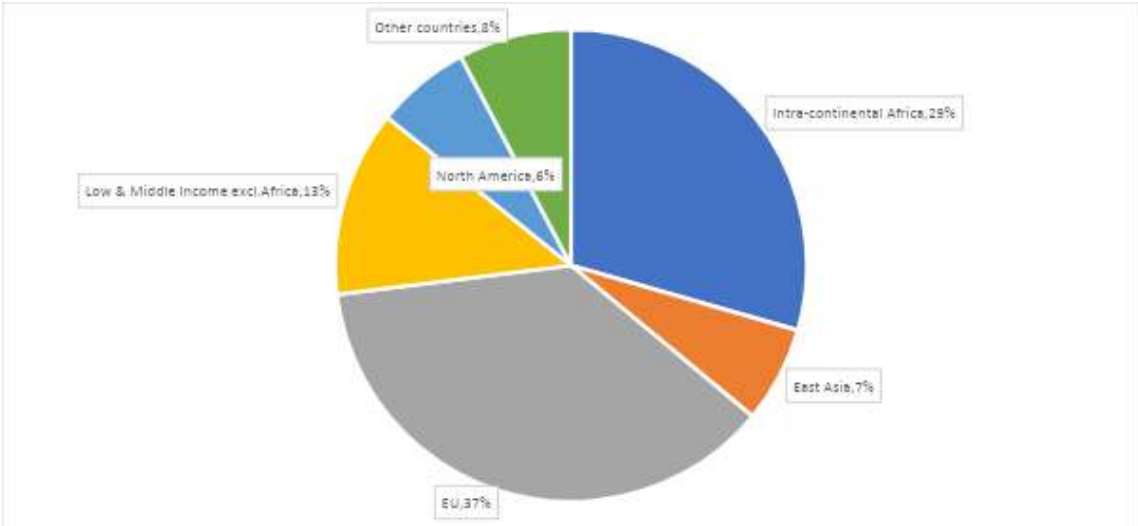
Finally, regarding the destination of manufactured products, two-thirds of exports are sold in the European and African markets (37% of the total for the former and 29% for the latter). The other destinations are low- and middle-income countries excluding African countries (13%), East Asian countries (7%), and North America (6%) (Figure 1.7).

Figure 1.6. Change in export manufacturing sectors in Africa over the last decade (in 1000 USD)



Source: COMTRADE (UNSTAT). Calculations by the authors.

Figure 1.7. Destination of African manufactured goods exports (average flows 2019-2020-2021)



Source: COMTRADE (UNSTAT). Calculations by the authors.

Overall, compared with other developing regions, Africa's exports of manufactured goods have not taken off: African exports are still largely dominated by raw materials. A striking fact, particularly in view of the implementation of the AfCFTA, is the strong disparity between African regions in terms of

manufactured goods exports, especially as this significant heterogeneity has become more pronounced over the last ten years. In what follows, we will examine whether the weak dynamic of manufactured goods exports has been accompanied by progress in the integration of African countries into regional and global value chains (GVCs).

1.2. Africa's weak participation in Supply chain trade: An overview³

This section evaluates African countries' participation in supply chain trade in comparison with other countries and regions. As shown here, in sharp contrast with Association of Southeast Asian Nations (ASEAN) and some other regions, particularly Europe & Central Asia, so far, African exports were not connected to supply chain trade within the continent.

Most participation in value chains over the period 1995-2022 was downstream, that is African exports undergoing further processing in destination countries before reaching the final consumer (i.e. forward participation). The import content of African exports over the period was low (i.e. backward participation). Regional participation in value chains for the African Regional Economic Communities (RECs) is low when compared to some Regional Trade Agreements (RTAs) like ASEAN and the Southern Common Market (MERCOSUR).

As a rough aspirational level, the GVC participation measures presented here show that among Asia and Pacific countries (excluding high-income countries), integration within the region in 2022 was almost 6 times the integration across Africa.

The challenge of the AfCFTA is to raise the share of intra-African trade in intermediate products, that is to increase its participation in supply chains.

1.2.1. Measuring GVC participation

GVC trade is trade that crosses borders at least twice. The GVC participation rate (GVC_s) is the share of a country (or region) exports that either makes use of value-added imported from another country (or region) (GVC_{bs}) or is exported to another country (or region) for further processing (GVC_{fs}). This rate is expressed as a share of gross exports. The participation rate is the sum of the backward and the forward (GVC_{fs}) participation rates. For Regional Value Chains (RVCs), exports are defined as exports that cross borders at least twice within the same defined region. In this setting, backward participation measures the regional import content of exports from a member of region A and forward participation measures the value-added in A directly exported to a member of region A then re-exported (see Box 1.1 for further explanations).

³ Unless otherwise noted, figures in this section are inspired from Melo and Solleder (2022a).

Box 1.1. Measuring GVCs

In Inter-Country Input-Output (ICIO) linkages constructed from Multi-regional Input Output (MRIO) tables, IO-based measures are the most comprehensive because they capture all the sectors producing goods and services. Below are the 3 measures of participation that break down activities along the supply chain: the beginning (backward); the end (forward); and an intermediate (two-sided) component. These measures introduced by Borin, Mancini and Taglioni (2022) provide a set of comprehensive indicators that measure engagement in supply chain trade by countries and sectors. These measures have the desirable property that backward and forward participation balance out at the global level.

- **GVC participation rate (GVC_s):** measures the share of a country's exports that either makes use of value-add imported from another country or is exported to another country for further processing. A subset of this is RVC participation where exports are defined as exports that cross at least 2 borders within the same region.
- **Pure backward GVC participation (GVC_{pbs})** measures the share of a country's exports that include value added previously imported from abroad that are not further re-exported by the partner (e.g. if Egypt imports textiles from Ethiopia to produce apparel, that is not further re-exported by Egypt).
- **Pure Forward GVC participation (GVC_{pfs})** measures value-added that has been generated entirely within the domestic chains to partners which, in turn, re-export it to other markets. In the example of apparel, Ethiopia is engaging in pure forward GVC participation because its exports are entirely produced in Ethiopia and used as intermediates by Egypt for re-export of its apparel.
- **Two-sided participation (GVC_{tss}):** Imported intermediates used to produce exports that are further re-exported. This would correspond to a sector in a more central position in the supply chain. The sum of pure backward and two-sided participation equals the backward participation measure in Borin and Mancini (2019), World Bank (2020) and Melo and Twum (2021).

The share of value-added in gross exports, GVC_s , decomposes into pure backward (GVC_{pbs}), pure forward GVC (GVC_{pfs}) and two-sided (GVC_{tss}) participation shares:

$$GVC_s = GVC_{pbs} + GVC_{pfs} + GVC_{tss}$$

The same decomposition applies for RVCs. All measures reported here are from the EORA26 data set that includes 46 African countries over 1990-2022, covering 26 sectors (3 commodities, 8 manufacturing, 15 Services). Mancini et al. (2023) use the same measures on the EORA26 data set.

Note:

^{1/} **Backward RVC participation:** Intermediate goods and services sourced directly from a country member of the region by A, and used to produce A's exports to any country (regional import content of exports).

^{1/} **Forward RVC participation:** Value added originated in A, exported directly to a member of the region, then re-exported to any country

Miroudot et al. (2013) estimate that the European Union (EU) pays an average tariff of 3.7% on imported products from India with only 51.5% being paid at the EU border. Because the cumulative effect of tariffs (and other border costs) is bound, if intermediate goods of domestic origin along the supply chain are substitutable, to some extent at least, complex GVCs cannot develop when tariffs are above a certain threshold. The same applies to RVCs where tariffs are zero, but other border trade costs are important.

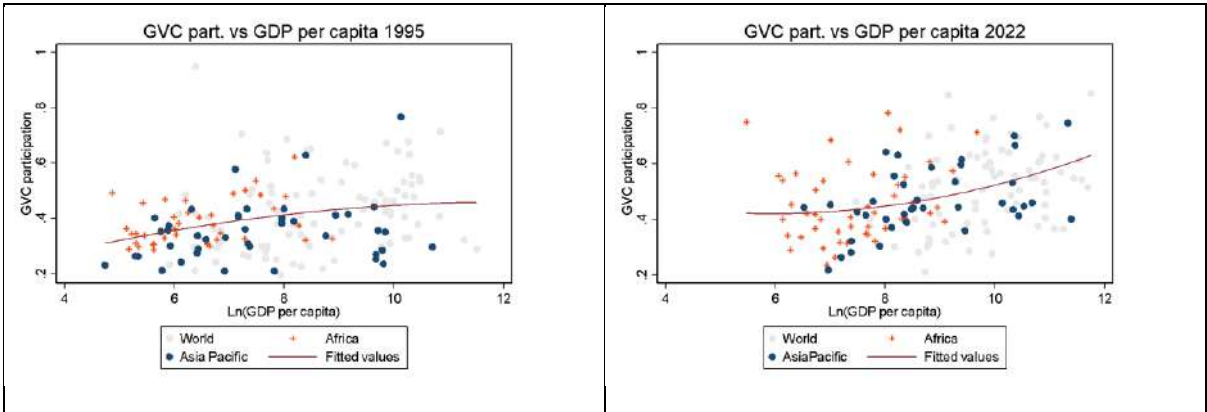
Cross-border activities along a production chain are limited. 4 factors influence the length and geography of production networks. First, for transaction costs, a task perspective operates like compound interest, with transaction costs increasing more than proportionally with the number of stages. Second, the effect of a marginal variation in trade costs along the chain is much larger when there is more than one international transaction. Third, a small decrease in tariffs (or more generally border-related transaction costs) can induce a tipping point at which vertical specialization (i.e. cross-border trade in tasks) kicks in (Yi, 2003). Fourth, rules of origin (also part of trade costs) are often time-consuming and costly to satisfy for developing countries. Felbelmayr *et al.* (2019) show that transport costs across most countries, especially in Africa, are sufficiently high to prevent trade deflection between free trade agreement (FTA) countries, an indication of sufficiently high trade costs at crossing borders and hence a brake on multiple border crossings in GVCs. These potential stumbling blocks will be analyzed in the following chapters.

1.2.2. The change in Africa’s participation in Supply chain trade 1995-2022

Figure 1.8 displays broad trends in GVC participation obtained from EORA26 data for Africa in Figure 1.8 (a) and for Sub-Saharan Africa (SSA) in Figure 1.8 (b). The figures use the GVC_s measure presented in Box 1⁴. In both years, higher-income countries are more involved in supply chains. There is a greater dispersion around the fitted value in 2022 than in 1995. The highlighted GVC participation rates for Africa and Asia-Pacific are indicated in the figures. One can note convergence in per capita incomes among Asia-Pacific countries over the period. Participation rates for African countries remain widespread in 2022.

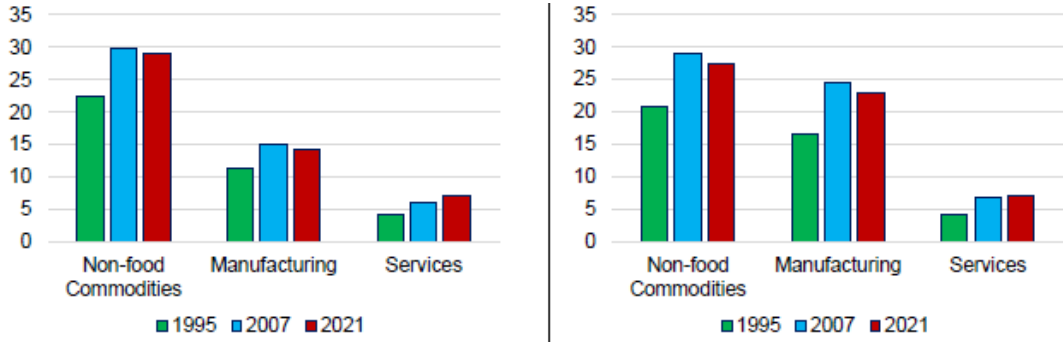
Figure 1.8. GVC Participation rates: Africa and SSA

1.8 a) GVC participation: Africa and Asia



⁴ The EORA data used here is available starting in 1990. Due to concerns about data reliability, we use data starting from 1995.

1.8 b) GVC-related output for SSA by sector

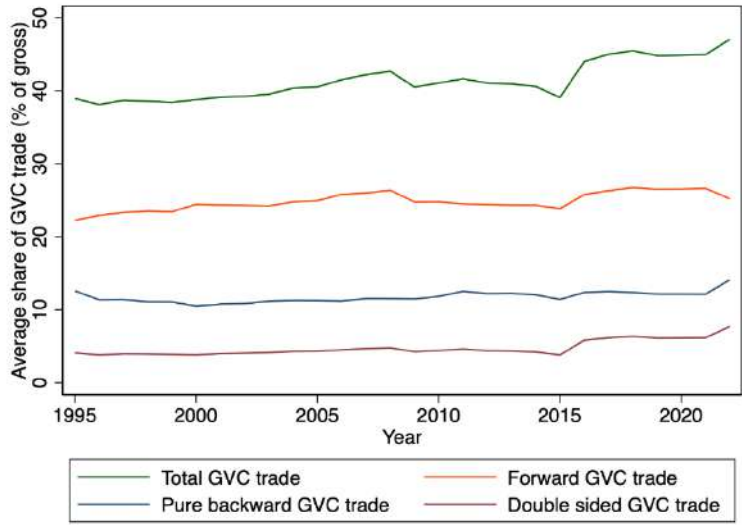


Note: The sample includes only 44 Asia Pacific and 48 African. Participation measures the share of a country’s exports that either makes use of value-added imported from another country or is exported to another country for further processing. It is the share of trade over its total gross exports.

Figure 1.8 (b) shows comparable levels of integration with the Rest-of-the World (ROW) for the Commodities and Services sectors for SSA. For manufacturing, integration in GVCs remains about 10% lower than in the ROW. Source: Figure 1.8 (a): Authors’ estimates from EORA26 data; Figure 1.8 (b): Mancini et al., 2023

Figure 1.9 breaks down Africa’s participation into the four components presented in Box 1.1. Africa’s GVC participation grew slowly from 1995 to 2022. Currently, the import content of gross exports is relatively low, around 15% while the share of exports undergoing further processing at destination before reaching the final consumer is higher throughout, in the 20-25% range. However, between 2009 and 2015, following the financial crisis of 2008, growth in overall trade was weak and GVC trade contracted until picked up again in 2016. The 2008 crisis was followed by a sharp fall in the prices of primary products starting in 2011. Since GVC measures are calculated at current prices, with backward linkages falling due to the price effect, overall GVC measures like those displayed in Figure 1.9 will fall. The fall of the euro relative to the dollar reduces the weight of the EU in the supply chains could be another factor at play in the fall shown after 2010 in Figure 1.9. In addition to these factors, the growth of robotics, the continued growth of economies like China and India where the stages of production are increasingly carried in the domestic economy has contributed to a slowdown in GVC activity.

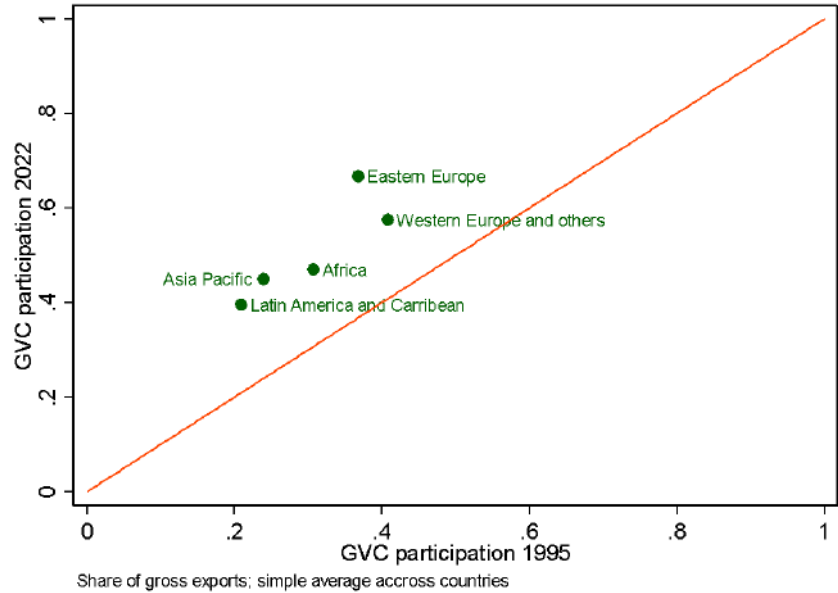
Figure 1.9. Africa's Global GVC participation from 1995 to 2022



Source: Authors' estimates from EORA26 data

Figure 1.10 plots the change in GVC participation by major geographic regions between 1995 and 2022 according to the UN regional classification. All points are above the 45° line confirming that the increased fragmentation of production was worldwide. Eastern Europe increased the most, a reflection of the move towards a market economy while in Western Europe that was already heavily involved in supply chains, continued to increase its participation in the fragmentation of production notably following the creation of the Single Market in 1999. For Western Europe, the share of GVC trade increased by about 10% over the 25-year period. Africa also increased its participation by about 13% to reach 44%, the increase coming mostly from forward participation, i.e., the further processing of raw materials processed in destination countries.

Figure 1.10. GVC participation by major geographic regions (UN classification)



Source: Author's estimates from EORA26 data

Table 1.1 displays GVC participation rates at 10-year intervals (and 7 years for the last period) for each region and for a selection of African countries. At the regional level, growth was strongest in Eastern Europe followed by Asia and Pacific as countries joined respectively “factory Asia” and “factory Europe”. At the country level, Rwanda increased its participation strongly while Mauritius, which had already shifted to an outward-looking strategy, maintained its high participation share. Nigeria has the lowest backward participation share, an indication that imports were largely used for domestic destinations. South Africa also has a low import share in its export basket.

Table 1.1. Trends in Backward and forward participation rates (by region and by selected African countries)

Share GVC:	Backward				Forward				Mixed				Total			
Year:	1	2	2	2	1	2	2	2	1	2	2	2	1	2	2	2
	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
	9	0	1	2	9	0	1	2	9	0	1	2	9	0	1	2
	5	5	5	2	5	5	5	2	5	5	5	2	5	5	5	2
By region*																
World	.17	.16	.16	.2	.18	.21	.2	.21	.05	.06	.06	.09	.4	.43	.42	.50
Africa	.13	.11	.11	.14	.22	.25	.24	.25	.04	.04	.04	.08	.39	.41	.39	.47
Asia Pacific	.14	.14	.13	.17	.17	.2	.2	.22	.04	.04	.04	.06	.35	.38	.37	.45
East. Europe	.25	.25	.24	.32	.17	.2	.2	.2	.10	.12	.11	.15	.53	.57	.55	.67
LAC	.15	.14	.14	.16	.13	.15	.15	.18	.03	.03	.03	.05	.31	.33	.32	.40
W. Eur. & oth.	.21	.21	.22	.25	.19	.2	.19	.19	.08	.09	.10	.13	.47	.51	.51	.58
By country																
Chad	.06	.04	.04	.06	.21	.26	.24	.32	.02	.02	.01	.04	.30	.33	.29	.42
Ghana	.05	.06	.05	.07	.29	.31	.3	.34	.02	.03	.02	.03	.36	.39	.38	.45
Kenya	.12	.14	.14	.07	.18	.2	.19	.26	.03	.03	.03	.02	.33	.37	.36	.35
Mauritius	.48	.29	.31	.33	.04	.13	.12	.15	.1	.05	.05	.09	.62	.47	.48	.57
Morocco	.08	.08	.11	.14	.21	.27	.26	.26	.03	.04	.06	.09	.33	.39	.42	.48
Nigeria	.08	.06	.04	.02	.25	.26	.29	.31	.03	.02	.02	.01	.36	.34	.35	.34
Rwanda	.16	.10	.18	.08	.23	.31	.23	.39	.06	.05	.07	.06	.46	.46	.48	.54
Senegal	.10	.09	.08	.09	.19	.2	.23	.25	.02	.03	.02	.03	.31	.32	.33	.37
South Africa	.11	.12	.12	.12	.22	.25	.25	.25	.04	.05	.05	.05	.37	.41	.42	.42

Source: Authors’ estimates from EORA26 data
 Note: *Simple average of country GVC participation. Total is the sum of backward, forward, and mixed.

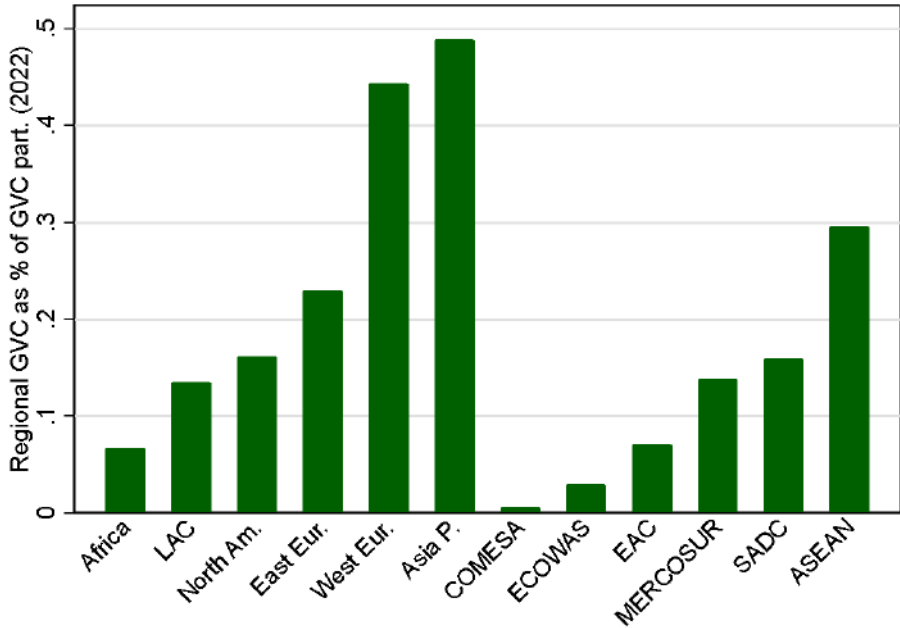
African producers remain marginal actors in global supply chain trade. Figure 1.11 shows that RVCs only account for 2.7% of Africa’s GVC participation in 2019 compared to 26.4% for Latin America and the Caribbean and 42.9% in developing Asia. Among the 5 African Union (AU) regions, the participation rate is lowest in North Africa and highest in East African Countries (EAC), at around 5%. This justifies why the AfCFTA has declared the development of RVCs a priority objective.

1.2.3. African supply Chains have developed with partners outside the region

Due to the transaction costs associated with border crossings, GVCs often develop along geographically proximate production chains, especially when abutting countries are engaged in RTAs, in most cases Free Trade Areas (FTAs). African integration that started in earnest around 1980 has taken place along 8 RECs recognized by the AU. So far, since the announcements to reduce intra-REC policy-imposed barriers to trade, intra-REC trade has not increased much⁵. This is indirect evidence that overall trade costs (transport, communication, trade barriers) were falling faster with the outside world than they were within Africa. More rapidly falling trade costs with the outside world could reflect more rapidly falling transport costs (e.g. increased containerization of trade) and/or communication costs. This sluggish growth in intra-REC trade could also reflect little reduction in policy-imposed barriers to intra-REC trade. In any case, implementing the AfCFTA is intended to lead to greater geographic concentration of trade within Africa.

Figure 1.11 confirms this supply chain trade in Africa has been with partners outside Africa. This holds true at the aggregate level and also at the regional level except for the Southern African Development Community (SADC) which has developed regionally to the same extent as MERCOSUR.

Figure 1.11. Share of participation in RVCs as a percentage of participation in GVCs (by region and by selected Regional Trade Arrangements (2022))

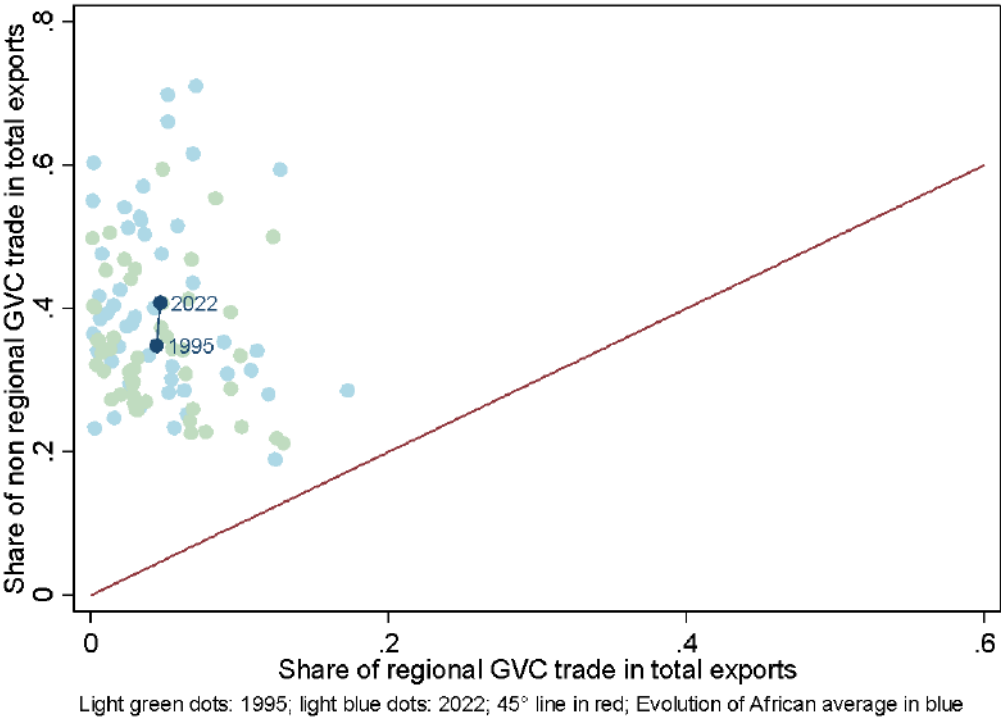


Source: Authors’ calculations from EORA data

⁵ Melo et al. 2018. Figure 1 compares for each REC the level of intra-REC trade 2 years before the beginning of implementation with the levels 5 years and 10 years after the start. In most cases, the share of intra-bloc trade in GDP remained low, with SADC registering the highest increase at 6%.

Figure 1.12 explores this pattern at the country level for 1995 and 2022 by plotting for each African country the share of non-regional RVC trade on the vertical axis and regional RVC trade on the horizontal axis. Two patterns stand out. First, all points are above the 45°line, meaning a larger participation in global than in RVCs⁶. For African countries, there are no exceptions: production chains have not developed geographically within the continent. Second, over the 1995-2022 period, production chains have developed entirely with the outside world reflected in the vertical movement of the continental averages for 1995 and 2022.

Figure 1.12. African supply chain trade: regional vs. non-regional trade: 1995 vs. 2022



Source: Authors’ calculations from EORA data

The broad pattern is clear: in Africa, so far, supply chain trade has developed with partners outside Africa (non-regional, i.e., GVC and not RVC) whereas in other regions the pattern (not shown here) involves both an increase in RVC and non-RVC trade. At least 3 factors have contributed to this distinctive pattern. First, Africa’s inhospitable geography hampers intra-continental trade: artificial borders, partitioned ethnicities and the highest share of countries per area across continents⁷. Second, the thickness of borders is related both to the geography (many borders) and to high trade costs as

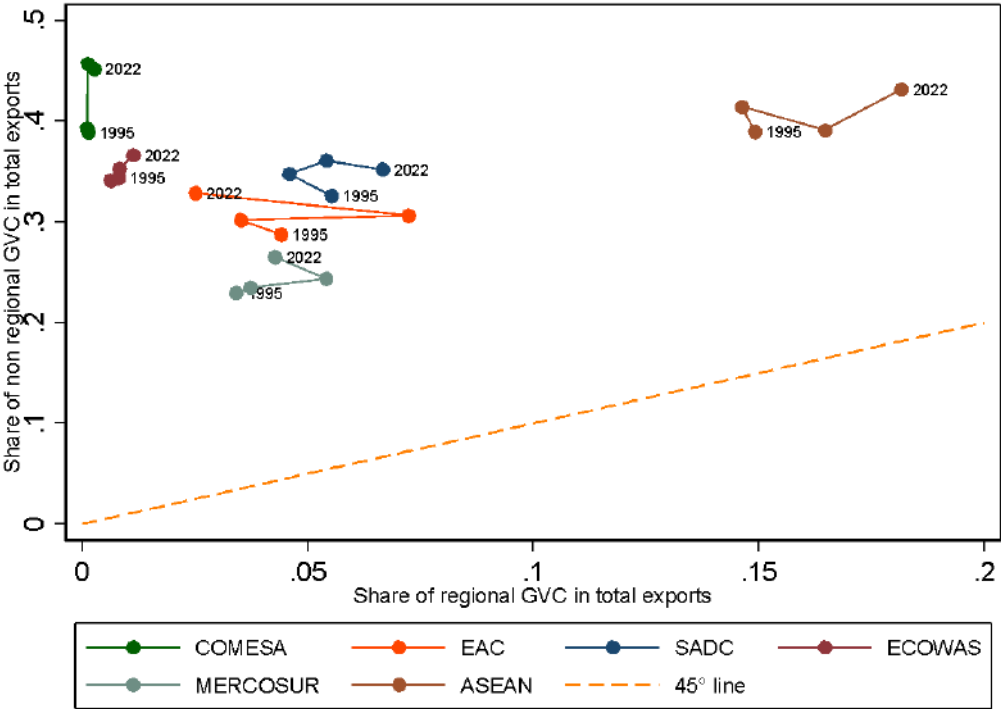
⁶ When calculating backward shares in the non-regional RVC breakdown, only imports from outside Africa are included in the backward (upstream) share. See Box 1.1.

⁷ The share of straight-line (artificial) borders is about 80% across Africa, the highest across continents. Ethnic partitioning across Africa is also the strongest. The mean of the share of an average African country’s population that comes from partitioned ethnicities is 47% while, for non-African countries, it is 18%. See Alesina et al., 2011.

captured by trade facilitation indicators (see section 5.6 in chapter 5) and logistics indicators⁸. Third, there is the importance of the quality of institutions. Dollar and Kidder (2017) show in a cross-section that much of the uneven participation in GVCs across regions and countries within regions is related to indicators of the quality of institutions at the national level⁹.

Figure 1.13 traces the participation in supply chain trade across RTAs. In the absence of external shocks (e.g., the East Asian crisis of 1997), a progressive deepening of regional ties through regional policies (e.g., expansion of networks, removal of barriers to trade) should be accompanied by a steady increase in regional participation.

Figure 1.13. Regional vs non-regional participation African RECs and comparators



Note: For each RTA, the figure plots the share of RVC trade in the horizontal axis against the share of non-RVC trade in the vertical axis. Points are at 10-year intervals between 1995 and 2015 (and 7 years between 2015 and 2022). Regional and non-regional GVC participation measures are computed as weighted averages over the countries in each group. The weights are the share of each country in the corresponding region's total trade. Points above the 45° indicate that GVC participation is mostly with partners outside the region.

Source: Authors' calculations from EORA data

⁸ Intra-African trade costs fell from 2005 to 2012, but, by 2019, were back to the levels in 2005. See AU/OECD (2022) Figure 1.12. Logistics costs are heterogeneous across African regions. Plane (2021) estimates the costs to process a container to its destination within a Central African country are up to 2.5 times higher than those in North Africa.

⁹ Dollar and Kidder (2017) and World Bank (2020) also report evidence from firm-level data. Patterns of revealed comparative advantage in manufacturing for contract-intensive activities have also been shown to be closely related to the quality of domestic institutions.

Several patterns stand out. First, extra-regional trade dominates for all RTAs, a reflection of the traditional comparative advantage determinants of trade at work (endowments and technologies are typically similar across RTA members). Second, ASEAN stands out. Regional supply chain trade is about 3 times the levels observed in the countries that have developed some regional trade (at least 5%) in intermediate products (MERCOSUR, EAC and SADC). Also, the extension of regional supply chains has been greatest for ASEAN during that period. Third, regional supply chains have remained insignificant for the Common Market for Eastern and Southern Africa (COMESA) and the Economic Community of West African States (ECOWAS). Both groups have large memberships of very heterogeneous countries¹⁰.

In sum, the dynamics of regional trade in intermediate products are strikingly different across this group of developing-country RTAs. ASEAN, and to a lesser extent MERCOSUR, exhibited an increase in RVC trade following their integration. No such pattern holds for the African RECs. AfCFTA's challenge is to promote greater value chain participation within Africa ¹¹.

Consider ASEAN growth from 1995 to 2022, an example for Africa. Development mostly focused on RVCs. This pattern – dubbed the 'Asia factory' by Baldwin (2006) – reflected several forces at work. First are strong agglomeration economies (external economies and the development of specific skills in the workforce, development of robotics). Second were widespread trade facilitation policies. Other trade facilitation measures included simple and transparent rules of origin to facilitate cross-border trade in the region. Third was the importance of institutions that have high indicator values for the Asia and Pacific region.

In the factory pattern, economies are both makers and buyers of components and parts. For this to be possible, intra-regional trade must not be interrupted along the production chain. By contrast, in the downstream pattern corresponding to the African experiences, exports are intermediates destined for further processing outside the region, thereby obviating having to rely on a smooth coordination across regional partners.

SSA's GVC patterns have shifted towards China. Taking into account indirect exports, the US is still the largest, with China now a close second to the US. However, China has overtaken the US as the most important source of value-added in consumption (Mancini et al. 2023, Figure 7). China has now overtaken other relevant partners in Europe (Germany, France and the United Kingdom). As to the countries and regions as source of SSA's export production, the Europe & Central Asia region is still the most important regional source although, since 2007, the region's supply of inputs into SSA exports has fallen from 48% to 35% in 2021 while intra-SSA share has risen from 10% to 16%, a change in the direction hoped-for with the AfCFTA. At the country level, since 2007, China's share has overtaken Germany with a share rising to first place with a rise in share from 11% to 17% while Germany's share fell from move from moved to first place with 17% while Germany's fell from 11% to 5% (Mancini et al. 2023, Figure 8).

¹⁰ A similar, but more differentiated, pattern holds when adopting the World Bank's definition of regions. For the period 1995-2021, Mancini et al (2023, Figure 6) show larger shares of RVCs than for non-RVCs for East Asia and Pacific as well as Europe and Central Asia.

¹¹ This pattern is also apparent when comparisons are at the regional rather than the REC level (Mancini et al., 2023, Figure 6).

1.2.4. Policies for promoting sectors for supply chains across Africa

African countries and institutions have carried out many programmes to develop RVCs. The AU/OECD (2022) report on RVCs for a sustainable recovery reviews the many strategies and programmes at the regional and continental levels, draws lessons, and proposes policies to support the development of RVCs. The report concludes with a list of promising value chains for each one of the 5 regions in the AU reproduced in Table 1.2 below.

Table 1.2. A list of promising continental and RVCs in Africa

VALUE CHAIN	Continental	Central Africa	East Africa	North Africa	Southern Africa	West Africa
Agro industry	X					
Pharmaceutical	X					
Automotive	X					
Coltan		X				
Wood		X				
Copper		X				
Coffee			X			
Tourism			X			
Floriculture			X			
Date Palm				X		
Energy production				X		
Phosphate				X		
Textiles					X	
Edible salt					X	
Aquaculture					X	
Construction					X	
Poultry					X	
Cashew nuts					X	

Source: AU/OECD (2022, Table 2 A1.1)

So far, most initiatives were based on a top-down approach. These have fallen short of expectations illustrating the shortcomings of the top-down approach and the lack of engagement with the private sector by the institutions. A first broad recommendation is to adopt an adaptive and problem-driven approach to deepen cooperation between the public and private sectors. This implies adopting a bottom-up process driven by the private sector helps sustain the needed political momentum while better identifying priorities (Byiers et al. (2021) outline a 6-step process).

A second recommendation is to work towards better supra-national coordination. Governments should also help scale up solutions in trade-related services, logistics and trade finance (for example, scaling up integrated regional payments systems). African countries also need to respect AfCFTA's protocol on e-commerce to accelerate regulatory convergence at the continental level.

Table 1.2 provides a list of promising regional value chains. Each has strengths, weaknesses, and in some cases, threats (deforestation for wood, or protectionist pressures for the automotive value chain) described in the report. Some identified threats like imports of second-hand clothing or second-hand cars, indicate that selecting value chains that go beyond processing natural resources will likely confront protectionist pressures at the national and continental levels.

The growth of domestic markets, fuelled by population growth and urbanization with increasing numbers of consumers, offer new opportunities to develop RVCs, including the three continental level value chains in Table 2. Other enablers of regional supply chain trade, such as the digital economy, are discussed in Chapter 3.

Reduction in policy-imposed trade barriers along with the ICT revolution have lowered the costs of fragmenting production both between firms nationally and across borders. This fragmentation of tasks is reflected in the growth of value chains both at the global level (GVCs) and at the regional level (RVCs) over the last 25 years. Typically, the more complex value chains (e.g., electrical and optical equipment or information and communication industry) have strong regional linkages. By reducing barriers to intra-African trade, the AfCFTA is to promote participation in RVCs. Increased participation in GVCs and RVCs would provide opportunities for African countries to enter a new line of business without having to produce a complete product. Countries would increase their participation in global trade, and diversify their exports. For manufacturing, participation in the supply chain train avoids having to develop an entire vertical supply chain.

Table 1.3 summarizes policy recommendations of the AU/OECD report to develop the selected value chains listed in Table 1.2.

Table 1.3. Policy recommendations to develop selected value chains in African regions

Region	Value chain	Policy recommendations
Southern Africa	Automotive	<ul style="list-style-type: none"> • Improve the business environment and encourage investment from global lead firms • Actively support firms to maintain production and financial liquidity during the pandemic • Adopt accommodative trade policies by removing tariffs and other trade barriers
Central Africa	Wood	<ul style="list-style-type: none"> • Improve the business environment through stable macroeconomics, harmonise business laws and liberalise import markets • Invest in transport and logistical infrastructure • Work with local communities and the private sector to develop processing capacity
East Africa	Agri-food	<ul style="list-style-type: none"> • Review the Common External Tariff of the East African Community (EAC) and remove non-tariff barriers • Co-ordinate national industrial strategies and promote interactions between industrial clusters across countries in the region • Expand the One Network Area roaming initiative to other countries beyond the East African Economic Community (EAC)
North Africa	Energy	<ul style="list-style-type: none"> • Improve the business environment and target industrial clusters to attract global lead firms • Establish training and research centers to build the relevant skills in the workforce • Facilitate intra-regional trade in raw materials and intermediate goods for the sector • Invest in transport links, and develop plans for intra-regional energy connections
West Africa	Agri-food	<ul style="list-style-type: none"> • Improve access to finance, and provide technical and financial assistance to co-operatives • Facilitate digitalisation and climate-smart practices by smallholders and informal producers • Enhance implementation of Economic Community of West African States (ECOWAS) agreements on trade facilitation and quality standards • Target cross-border special economic zones to attract investment and increase competitiveness

Source: AU/OECD (2022, Table 1)

Countries can be classified along a ladder of supply (or value) chains according to the production and characteristics of their exports. One such classification situates a country at a point in time into one of the 4 groups: commodities, limited manufacturing, advanced manufacturing, innovative activities. Countries change groups over time, usually up the ladder in absence of external shocks or conflicts. Cumulated 20-year growth has been shown to pick up as countries move up through the stages of GVC engagement. The largest increase in cumulative growth is for the move from commodities, to limited manufacturing, followed by limited manufacturing to advanced manufacturing and services and then to innovative activities (World Bank, 2020, Figure 0.2). Thus, participation in supply chain trade, especially if participation is accompanied by progression up the supply chain ladder, is a means of increasing productivity and growth¹².

The new world order created by geopolitical tensions, increased uncertainty and rising protectionism offers an added opportunity to accelerate the development of RVCs across the continent. Following this strategy, one must also consider the challenge posed by increasing concentration of production in niches along supply chains. Covid-19 has put durability and resilience of global supply chains in limelight, exacerbated by the war in Ukraine and global tensions, and what McKinsey (White et al., 2023) calls the complication of concentration in global trade. This occurs when economies rely on a concentrated set of trading relationships which has been observed for the largest economies in the past 5 years. This concentration also applies to African countries that have not diversified the origins of imports. As pointed out by the McKinsey report, decision makers can develop a portfolio of actions to de risk growth by a combination of: (i) *double down* (continue with concentrated relationships); (ii) *diversify* (reconfigure trade relationships, e.g. by redesigning products or processes to shift away from concentrated inputs) (White et al., 2023).

References

- Alesina A., Easterly W., Matuzeski J. (2011) "Artificial States", *Journal of the European Economic Association*, vol. 9 (issue 2), pp. 246-77.
- African Union (AU)/OECD (2022) *Africa's Development Dynamics 2022: Regional Value Chains for a sustainable recovery*, AUC, Addis Ababa, OECD Publishing.
- Baldwin R. (2006) *Globalisation: the great unbundling(s)*, Graduate Institute of International Studies, Geneva.
- Borin A., Mancini M. (2019) "Measuring What Matters in Global Value Chains and Value-Added Trade", *Policy Research Working Paper 8804*, World Bank, Washington, DC.
- Borin A., Mancini M., Taglioni D. (2022) "Measuring Exposure to Risk in Global Value Chains", *Policy Research Working Paper 9785*, World Bank, Washington, DC.

¹² For the 39 SSA countries in the EORA26 database used to construct GVC participation measures, 5 countries changed classification between 1995 and 2015 (up from Commodities to Limited Manufacturing for Kenya and Tanzania, and down to Commodities for Botswana, Senegal and Swaziland, the downgrading following a major commodity boom). Only a few countries managed to break into limited manufacturing activities.

Byiers B., Cazals A., Mednila A., Melo J. de (2021) “African Regional Integration: A Problem-driven approach to delivering regional public goods”, FERDI *Working Paper* P290.

Dollar D., Kidder M. (2017) “Institutional Quality and participation in global value chains”, chapter 7 in *Global Value Chain Development Report*.

Felbemayr G., Teti F., Yalcin E. (2019) “Rules of Origin and the Profitability of Trade Deflection”, *Journal of International Economics*, vol. 121.

Mancini M., Mattoo A., Taglioni D., Winkler D. (2023) “Sub-Saharan Africa’s Participation in Global Value Chains: 1995-2021”, *The World Economy*, vol. 46 (issue 11), pp. 3192-3207.

Melo J. de, Nouar M., Solleder J.-M. (2018) *Integration Along the Abuja Road Map: A Progress Report* in R. Newfarmer, J. Page and F. Tarp eds. *Industries without Smokestacks: Industrialization in Africa Reconsidered*, New York, *Oxford University Press*.

Melo J. de, Solleder J.-M. (2022a) “Structural Transformation in MENA and SSA: the Role of Digitalization”, *ERF Working Paper* No. 1547.

Melo J. de, Twum A. (2021) “Prospects and Challenges for Supply Chain Trade under the African Continental Free Trade Area”, *Journal of African Trade*, vol 8 (issue 2), pp. 49-61.

Melo J. de, Olarreaga M. (2023) “Introduction to Symposium: supply chain trade in Africa: Retrospect and Prospect”, *The World Economy*, vol. 46 (issue 11).

Miroudot, D. , D. Rouzet, Spinelli F. (2013) “Trade Policy Implications of Global Value Chains”, *OECD Trade Policy Papers*, No. 161, OECD Publishing, Paris, <https://doi.org/10.1787/5k3tpt2t0zs1-en>.

Plane P. (2021) “What Factors Drive Transport and Logistics Costs in Africa?”, *Journal of African Economies*, vol. 30 (issue 4), pp. 370-388.

United Nations Statistics Division, UN COMTRADE. “International Merchandise Trade Statistics”. Available online at <http://comtrade.un.org/>.

White O., Woetzel J., Smit S., Seong J., Devesa T. (2023) “The complication of concentration in global trade”, McKinsey Global Institute article, January.

World Bank (2020) *World Development Report 2020: Trading for Development in the Age of Global Value Chains*, World Bank Publications, number 32437.

Yi K. M. (2003) “Can Vertical Specialization Explain the Growth of World Trade”, *Journal of Political Economy*, vol. 111 (issue 1), pp. 52-102.

“Sur quoi la fondera-t-il l'économie du monde qu'il veut gouverner ? Sera-ce sur le caprice de chaque particulier ? Quelle confusion ! Sera-ce sur la justice ? Il l'ignore.”

Pascal

FERDi

Créée en 2003, la **Fondation pour les études et recherches sur le développement international** vise à favoriser la compréhension du développement économique international et des politiques qui l'influencent.



Contact

www.ferdi.fr

contact@ferdi.fr

+33 (0)4 43 97 64 60