Africa Agriculture Trade Monitor

2019

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Acronyms

AATM	Africa Agriculture Trade Monitor
ADB	African Development Bank
AECF	Africa Enterprise Challenge Fund
AMIS	Agricultural Market Information System
AMU	Arab Maghreb Union
ATOR	Annual Trends and Outlook Report
AU	African Union
BACI	International Trade Database at the Product Level
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CAADP	Comprehensive Africa Agriculture Development Programme
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
CES	Constant Elasticity of Substitution
CET	Constant Elasticity of Transformation
CFAF	West African CFA francs
CIF	Cost, Insurance, and Freight
CMS	Constant Market Share
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Centre for Agricultural and Rural Cooperation
DFID	Department for International Development
EAC	East African Community
EBA	Everything but Arms
EC	European Commission
ECA	United Nations Economic Commission for Africa
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign direct investment
FRICH	Food Retail Industry Challenge Fund
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft fuer Internationale Zusammenarbeit
HIC	High-Income Countries
HS	Harmonized System

ICTs	Information and Communications Technologies
IFPRI	International Food Policy Research Institute
ITC	International Trade Center
KACE	Kenya Agricultural Commodity Exchange
KPMG	Klynveld Peat Marwick Goerdeler
LARES	Laboratoire d'Analyse Régionale et d'Expertise Sociale
NCC	National Cotton Council of America
NEPAD	New Partnership for Africa's Development
NES	Not Elsewhere Specified
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PAE	Public Agricultural Expenditure
RCA	Revealed Comparative Advantage
RECs	Regional Economic Communities
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
RTAs	Regional trade and investment agreements
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAFEX	South African Futures Exchange
SPS	Sanitary and Phytosanitary Measures
SSA	Africa south of the Sahara
STDF	Standards and Trade Development Facility
TBT	Technical Barriers to Trade
TEI	Trade Expansion Indicator
TOI	Trade Overlap Indicator
TSR	Trade Status Report
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WEF	World Economic Forum
WITS	World Integrated Trade Solution
WTO	World Trade Organization

Country Abbreviations

AGO	Angola		**LIB**	Liberia
BDI	Burundi		**MDG**	Madagascar
BEN	Benin		**MLI**	Mali
BFA	Burkina Faso		**MOZ**	Mozambique
CAF	Central African Republic		**MUS**	Mauritius
CIV	Côte d'Ivoire		**MWI**	Malawi
CMR	Cameroon		**NER**	Niger
COG	Republic of the Congo		**NGA**	Nigeria
COM	Comoros		**RWA**	Rwanda
CPV	Cape Verde		**SDN**	Sudan
DJI	Djibouti		**SEN**	Senegal
EGY	Egypt		**SLE**	Sierra Leone
ERI	Eritrea		**STP**	São Tomé and Príncipe
ETH	Ethiopia		**SYC**	Seychelles
GAB	Gabon		**TCD**	Chad
GHA	Ghana		**TGO**	Togo
GIN	Guinea		**UGA**	Uganda
GMB	Gambia		**COD**	Democratic Rep. of the Congo
GNB	Guinea-Bissau		**ZMB**	Zambia
GNQ	Equatorial Guinea		**ZWE**	Zimbabwe
KEN	Kenya			

Acknowledgements

Foreword

Trade is key to Africa's long-term sustainable economic growth and transformation. Boosting intra-African agricultural trade can help generate jobs for women and youth in agricultural value chains, raise incomes, and improve food security and nutrition. Recognizing the enormous potential benefits offered by trade, African leaders reaffirmed their commitment, through Agenda 2063 and the Malabo Declaration, to promoting greater intra-African trade. They have committed to raising the level of trade-related investments and to improving trade infrastructure, policies, institutions, and trade facilitation. Agenda 2063 calls for fast-tracking the establishment of a continental free trade area while the Malabo Declaration calls for tripling intra-African trade in agricultural commodities and services by 2025.

In a show of their strong commitment to advancing regional trade and economic integration on the continent, 44 African Heads of State and Government signed the African Continental Fee Trade Area (AfCFTA) agreement in March 2018. The agreement aims to eliminate tariff and non-tariff barriers on most goods, accelerate regional and continental integration, improve customs and trade facilitation, develop regional and continental value chains, foster industrialization, and eventually create a single market for goods and services with free movement of labor and capital. The agreement, which has now been signed by 54 out of 55 African Union member states and ratified by 27 member states as of July 2019, is a game changer that is expected to significantly boost intraregional trade within an African market of 1.2 billion people.

The rapidly growing demand for food in Africa fueled by rising population and faster economic growth presents greater market and trade opportunities for domestic agriculture. The value of Africa's food market is expected to more than triple to US$1 trillion by 2030 which would unlock enormous opportunities for farmers, food processors, and agribusinesses alike, particularly through domestic trade. In fact, as the 2018 *Africa Agriculture Trade Monitor* (AATM) shows, Africa's agricultural trade has increased significantly over time including intraregional agricultural trade, while African exporters gained competitiveness in intraregional markets. Although Africa's intraregional trade is still low compared to other regions of the world, it has great potential to expand, especially with investments in trade-related infrastructure and improvements in policy to facilitate greater private sector participation in regional markets.
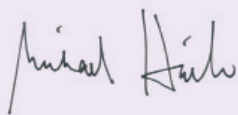
This second AATM takes a closer look at the effectiveness of efforts to increase regional trade integration and intra-African trade and evaluates the potential impact of broader integration on Africa's trade performance in light of emerging trade protectionism in the global economy. The 2019 AATM finds that while growth in Africa's agricultural imports has continued to outpace export growth, the agricultural trade deficit has been on the decline since 2012. Meanwhile, Africa has continued to play a minimal role in global agricultural trade—its share of world agricultural trade grew only marginally from 4.3 percent to 5.0 percent between 2005 and 2017. And despite the strengthening of the continent's comparative advantage in agricultural products in recent years, its advantage has largely been limited to unprocessed and semi-processed products. The report also finds non-tariff barriers to present the biggest impediment to Africa's trade performance, and to a lesser extent the lack of agricultural product diversification and high trading costs.

Implementation of the AfCFTA is expected to enhance agricultural product diversification toward more processed goods, particularly through investments in agro-industrialization. The 2019 AATM notes that greater regional integration envisioned under the AFCFTA could also strengthen Africa's ability to take advantage of new trade opportunities while protecting the continent from external trade shocks, including from the emerging protectionist tendencies seen in some major global economies.

With the recent launch of the operational phase of the AfCFTA during the African Union Summit held in Niger in July 2019, there is need for concerted effort to provide timely and relevant trade data and analysis to guide ongoing AfCFTA negotiations and implementation modalities, to examine the benefits and challenges of implementing the AfCFTA, and to track implementation progress and outcomes. The recently launched Trade and Regional Integration Expert group, as part of the African Growth and Development Policy (AGRODEP) Modeling Consortium, is a welcome initiative that will provide much needed analytical support to the AfCFTA.

The next issue of the AATM will present an in-depth ex ante analysis of the impacts of the implementation of the AfCFTA on the agriculture sector. This will be in addition to assessing emerging and long-term trends that explain Africa's agricultural trade performance in terms of global trade, intra-African trade, and intraregional trade.

In keeping with the objectives of the first AATM, the 2019 AATM aims to provide policymakers and development practitioners with access to accurate and reliable data and analysis on intra-African agricultural trade and to help advance their efforts to boost intra-Africa agricultural trade and transformation on the continent.

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Executive Summary

The 2019 *Africa Agriculture Trade Monitor* is being published at a critical moment for both international trade relations and African trade integration. At the global level, protectionist tensions are high and could have significant consequences for the world economy and for Africa in particular. Their impact is already evident in the current slowdown in the global economy. At the same time, African governments are multiplying initiatives in support of greater regional integration. The African Continental Free Trade Area is a particularly important initiative. Launched in Kigali, Rwanda, in March 2018, the agreement aims to create the largest free trade area in the world—with 1.2 billion people in 55 countries and a GDP of US$2,500 billion. In July 2019, 54 countries signed this agreement.

These historic developments give this report a special significance. There is a particular need today to mobilize the most detailed statistical knowledge and technically robust tools and methods to study Africa's trade integration and identify the most important barriers to further integration, to identify which African regional trade agreements have worked and which have failed, and to determine which sectors in Africa are most competitive and examine the characteristics of its specialization. It is also necessary to assess the possible consequences of a more protectionist global economy for Africa. Finally, clear policy recommendations are needed for current trade integration efforts on the continent. It is in this spirit that this report was designed.

The report comprises six chapters, with Chapter 1 providing a general overview of the report. Chapter 2 is devoted to Africa's trade performance in world markets, Chapter 3 focuses on measuring regional trade integration, and Chapter 4 looks at the competitiveness of African agricultural value chains. Chapter 5 focuses on the featured topic of the 2019 report, namely the potential effects on African economies of ongoing disruption to the global trading system, and Chapter 6 examines trade integration in the featured region of Eastern and Southern Africa.

The main obstacle to improving Africa's trade integration is non-tariff measures (NTMs), with an important role played by customs formalities.

Africa has a trade deficit in agriculture, but this has fallen since 2012 and Africa's share of global agricultural GDP has grown. High trading costs and lack of diversification are two important factors explaining Africa's relatively poor trade performance in world markets. While diversification of trade partners is satisfactory, product diversification is weak. Across African countries, the agricultural commodities most frequently identified as having the highest revealed comparative advantage are cocoa, cotton, fish and fish products, fruits, legumes, and tea. More generally, Africa as a whole has a revealed comparative advantage on global markets in unprocessed products. Weak trade performance is due less to tariff barriers than to the prevalence of NTMs, with an important role played by customs formalities. Demographic changes and economic growth are leading to rising demand in African markets, reinforcing the rationale for deepening economic integration across the continent, which is also important for the diversification of production and value addition in Africa.

Intraregional trade in Africa is low as a proportion of total trade, especially when compared to other regions: this is the result not only of poor integration, but also (and especially) of lower GDP levels in Africa.

There is a long history of Regional Trade Arrangements (RTAs) in Africa, dating back forty years. Recent efforts give priority to broader continental integration than offered by current Regional Economic Communities (RECs). Indeed, the overlapping country membership of these RECs makes the tasks of harmonizing and coordinating policies and regulations within the RECs more complex. Moreover, the costs of trading in Africa remain high, even within RECs. Three initiatives appear promising: the Tripartite Free Trade Area (TFTA); the initiative concerning ECOWAS and North Africa; and the continental free trade area. In all RECs, agricultural trade is more introverted than extraverted, that is, the level of regional trade as a share of total trade is relatively high. This might seem paradoxical because intraregional trade in Africa is low as a proportion of total trade when compared to other regions—in 2016, the share of intraregional trade of African countries in their total trade was about 13 percent, while it was over 60 percent in Asia and over 67 percent in Europe. However, this low share is mainly the result of lower GDP levels in Africa: trade depends on the levels of trade costs *and* on economic activity. Most RECs are diversified in geographical terms (trade partners), but less so in terms of sectors (traded products). To increase trade integration, it is important to address NTMs and trade facilitation, including increasing technical assistance and improving transparency: this will help firms to trade more easily across national borders.

Africa's comparative advantage in agriculture has strengthened in very recent years; however, Africa is competitive mainly in *unprocessed* and *semi-processed* products and not in *processed* products.

Africa has a comparative advantage in agriculture overall, but this primarily reflects the strong competitiveness of agriculture in certain RECs, such as the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC), and the Common Market for Eastern and Southern Africa (COMESA)—the Arab Maghreb Union (AMU) and the Economic Community of Central African States (ECCAS) exhibit much weaker performance. Although on global markets Africa is competitive mainly in unprocessed and semi-processed products, on intra-African markets the continent's processed products are also competitive. African exporters are adaptable, demonstrating an ability to shift their product mix and move to new markets. Finally, non-African demand for unprocessed and semi-processed products has been primarily responsible for driving growth in African agricultural exports since 2005–2007.

The current trade conflict between major global trading blocs may create an opportunity for African countries to increase their exports, particularly to the United States and China; but Africa will register a net loss in exports if the global trade wars intensify.

In the summer of 2019, the trade war between China and the United States is burgeoning. What will be its impact on Africa? On one hand, at the global level, world GDP will be negatively affected, leading to lower demand for raw materials, including those exported by Africa, and lower prices. As China is a major partner for Africa, the impact could be substantial. In addition, competition in third-country markets, particularly between US and African exporters, may increase. On the other hand, new opportunities may emerge for African countries as China makes new supply chain decisions. The overall impact on Africa of the global trade turmoil is, therefore, uncertain. The use of a global economic model shows that African countries could benefit from the bilateral tensions between the United States and China, especially if the continental free trade area is effective. However, African countries could be adversely affected if protectionist approaches to trade policy spill over and are adopted by a wider range of countries. If the trade turmoil affects business confidence—for example, through impacts on investment—the impact on Africa could be even worse.

Informal cross-border trade is an important part of total trade and plays a critical role in poverty alleviation, food security, and household livelihoods in Africa.

The first of Africa's RTAs was initiated in the Eastern and Southern Africa region at the end of the 1960s. Prior to 1994, the regional blocs often performed weakly as they were set up more for political than economic reasons. Country membership in multiple RECs has also hampered progress on economic integration. COMESA lags behind other African RECs both in terms of trade costs indicators (including tariffs and NTMs) and trade flow indicators of regional integration. There are interesting experiences of monitoring informal cross-border trade (ICBT), including intergovernmental initiatives (e.g., the Famine Early Warning Systems Network – FEWSNet) and national initiatives (e.g., the Uganda Bureau of Statistics – UBOS) in the COMESA region. These initiatives show that ICBT plays a critical role in poverty alleviation, food security, and household livelihoods in southern Africa. ICBT can be an important part of total trade: UBOS reports that ICBT flows are equal to between 25 percent and 40 percent of formal intraregional trade flows. Information on the scale and characteristics of informal trade remains scarce, but clearly ICBT deserves more attention.

Strengthening regional integration in Africa can bring considerable economic benefits, but will require ambitious reforms.

New regional integration initiatives, such as the continental free trade area, are interesting for several reasons.

First, multilateral trade liberalization (Doha Round) is at a standstill, and the gains for Africa from previous multilateral rounds are not obvious. The same applies to preferential regimes granted by rich countries to the African continent such as the Everything But Arms (EBA) agreement

and the African Growth Opportunity Act (AGOA). These forms of trade liberalization have not succeeded in transforming Africa's place in world trade: African countries remain specialized in raw and semi-processed products and for more than 10 years their share of world exports of goods has remained at about 3 percent (that of agricultural products has increased slightly).

Second, the creation of a large continental market could bring economic benefits: giving access to a larger market for competitive African producers, generating economies of scale and increasing the degree of product differentiation, expanding value-added chains to allow specialization in processed products, and diversifying exported products to reduce the impact of price volatility for the few commodities in which Africa is today specialized.

To achieve these objectives, however, the proposed regional integration initiatives must be successful. This would require not only eliminating tariffs on all continental trade, but also and above all tackling NTMs. Reforms in customs formalities (trade facilitation) are particularly important in this respect. Other necessary steps will improve transport and communications infrastructure, determine simple rules of origin, increase technical assistance, simplify sanitary and phytosanitary standards, and reduce technical barriers to trade. Strengthening regional integration in Africa can bring considerable economic benefits, but only if ambitious reforms are undertaken.

1

Overview

Introduction

This is the second annual *Africa Agriculture Trade Monitor* (AATM), a flagship publication that is part of a collaborative initiative between the International Food Policy Research Institute (IFPRI) and the Technical Centre for Agricultural and Rural Cooperation (CTA). The reports assess emerging and long-term trends and drivers behind Africa's trade in agricultural products—including global trade, intra-African trade, and trade within regional economic communities (RECs).

The first report, released in 2018, shed light on key advances and the untapped potential of agricultural trade among African countries. It revealed that Africa's agricultural trade has increased over time, with faster growth in imports contributing to the continent's growing trade deficit. The report also showed that intraregional trade is increasing but remains below its potential. African countries have lost competitiveness in global markets but gained in intraregional markets. More notably, the 2018 report predicted that expanded intraregional trade has potential to stabilize domestic food markets and increase resilience. Hence, the focus of this 2019 AATM on regional integration.

The push for deeper integration in Africa is gaining momentum at a time when the global trade system is facing new threats, such as the protectionist measures imposed by the United States and China in the context of escalating trade tensions. In July 2019, African Heads of State and Government met in Niamey, Niger, to launch the African Continental Free Trade Area (AfCFTA), which is due to be operational from July 2020, and which, the African Union estimates, will lead to a 52 percent increase in intra-African trade by 2022 (African Union 2016). This initiative builds on long-standing efforts to deepen regional integration on the continent, beginning with the creation of several Regional Trade Arrangements (RTAs), which political leaders have viewed as the building blocks for an African Economic Community that is due to take shape in 2028.

There are tangible reasons to promote continent-wide trade integration as a means of attaining higher economic development and shared prosperity among African countries. First, a collaborative report by the United Nations Economic Commission for Africa with the African Union Commission and the African Development Bank suggests that there is room for expanding intra-continental trade (UNECA 2010). The report indicates that extra-continental destinations account for as much as 80 percent of Africa's total exports, with EU and US destinations representing 50 percent of all exports outside the continent. The report emphasizes that over the past decades only about 10 to 12 percent of Africa's trade has been intra-continental, on average. A successful expansion of intra-continental trade share from 10 to 52 percent by 2022, as expected by the African Union Commission, promises significant growth, food security, and poverty alleviation benefits for individual African countries.

Second, multilateral trade liberalization seems to be at a standstill while RTAs proliferate around the world as alternative trade negotiation systems. The gains for Africa from the Uruguay Round Agreement were weak if any, and lower tariffs have often been offset by rising non-tariff barriers. Trade preferences for Least Developed Countries, such as the Everything But Arms (EBA) agreement and the African Growth and Opportunity Act (AGOA), likewise have not delivered the anticipated gains.

Third, regional trade integration is viewed as a good development strategy. Regional trade can increase the size of markets that are accessible to competitive producers; reduce the price of imported goods, particularly essential goods, by increasing competition; and help producers climb the value chain ladder, reducing dependence on the production and export of primary goods.

This issue of the *Africa Agriculture Trade Monitor* aims to:

(1) examine the effectiveness of regional trade initiatives in boosting integration and intra-African trade; and

(2) assess the potential impact of broader integration on the continent's trade performance in the context of emerging protectionism.

This year's report also includes a special focus on Eastern and Southern Africa, with Chapter 6 focusing on the experience with economic integration in these regions.

Africa's agricultural trade in a changing policy environment

As Makochekanwa and Matchaya show in Chapter 6, Africa has been on a long journey toward regional integration that began in the 1960s. The authors trace the evolution of these efforts in Eastern and Southern Africa, and show how the United Nations Economic Commission for Africa (UNECA) historically championed the division of the continent into regions with a view to accelerating this process. Efforts to bring together countries within African regions were consolidated in the 1980 Lagos Plan of Action—although some blocs, such as the Southern Africa Customs Union (SACU), substantially predate these initiatives. While the journey has not always been smooth, Odjo, Traoré, and Zaki show in Chapter 3 that its direction is clear, with the entry into force of the AfCFTA in May of 2019 marking an important milestone in efforts to deepen economic integration across the continent as a whole.

Nonetheless, Bouët, Traoré, and Laborde remind readers in Chapter 5 that there is no room for complacency about Africa's future in today's global trade policy environment. They point in particular to the emergence of new protectionist tendencies in major economies, especially the rise of significant tensions between the United States and China, and examine what these phenomena mean for African countries. The authors sound a note of cautious optimism on the condition that current tensions remain confined to these major players, even suggesting that African countries could be poised to take advantage of the resulting changes in trade patterns in global agricultural markets. However, they warn that if protectionist tendencies become more widespread globally, with other countries similarly adopting new tariff barriers and imposing other trade-restrictive measures, African countries would stand to lose. In either case, deeper regional integration through the AfCFTA could help countries on the continent to better position themselves to take advantage of new trade opportunities or withstand external trade-related shocks.

Indeed, throughout the report, the authors find that closer economic integration would allow African countries to add value to products they already produce, create employment, and build on their competitive strengths. In Chapter 4, Dedehouanou, Dimaranan, and Laborde find that Africa's comparative advantages in agriculture have strengthened in recent years, although substantial differences exist among the RECs. African competitiveness is particularly strong in certain value chains, such as in sesame seeds and in legumes and pulses. For other products, such as coffee and grapes, competitiveness is declining. The new continental free trade agreement could help to diversify production and help producers to move up the value chain, the authors conclude.

Progress in regional integration also varies considerably across the continent's RECs. In Chapter 3, Odjo, Traoré, and Zaki nonetheless find that, across all RECs, agricultural trade is more introverted (that is, more heavily intraregional) than extraverted. The authors examine the methodologies used by different analysts to calculate the degree of regional economic integration, and argue in favor of an approach that benchmarks integration across all world trade, with a view to providing policy-makers with an accurate picture.

The same authors find that non-tariff measures (NTMs) are among the most significant remaining barriers to economic integration, along with other deficiencies such as weak infrastructure, a finding that reinforces the conclusions reached by Bouët, Cosnard, and Fall in Chapter 2, as well as those of Makochekanwa and Matchaya in Chapter 6. The report finds that NTMs currently require firms to expend considerable time and money for procedures at the border. Greater transparency, along with other measures to support trade facilitation, could help to overcome these obstacles—although the authors also highlight the importance of ensuring that these issues be properly addressed in the AfCFTA.

The report shows that agricultural trade in Africa continues to exhibit a number of other particular characteristics, including the prevalence of informal trade. Makochekanwa and Matchaya examine this issue in some depth, looking at efforts to date to understand and measure informal trade, as well as some of the difficulties in doing so effectively. They underscore the importance of collecting adequate and accurate data so that policy-makers can understand the phenomenon, and design appropriate responses to public policy challenges related to agricultural trade.

The report makes it clear that the AfCFTA is central to addressing many of the policy challenges associated with economic integration and agricultural trade that African countries face today. The authors argue consistently that the new agreement creates an important opportunity for African countries to design regulatory frameworks that will provide an adequate response to these challenges. To do so, however, policy-makers will require a clear picture of farm trade on the continent, as well as the trends and drivers shaping economic outcomes: this report seeks to make a concrete, timely, and policy-relevant contribution in this respect.

Issues concerning data and methodology

The authors of this report have worked intensively on developing appropriate statistics. Using an analytical database, developed with the support of the CGIAR Research Program on Policies, Institutions, and Markets, and based on the United Nations Commodity Trade Statistics Database (UN-COMTRADE), they conducted a series of data treatments to provide an accurate estimate of trade in Africa. They start with a first version of the database that includes only imports declarations. There is a broad consensus that imports declarations are of better quality than exports declarations.[1] For countries that do not declare imports for a given year, mirror data on exports from their partners is used to fill the gap. For consistency, the authors apply a cost insurance freight (CIF)/ free on board (FOB) correction to the exports' values reported by the partner to express all values on a CIF basis. The CIF/FOB ratio is obtained from a gravity equation that includes distance, contiguity, common official language, and colonial origin as explanatory variables. From the gravity equations, the authors derive HS2-level estimates of the ratio that are applied to export declarations.[2] The final product is a disaggregated (HS6-level) database providing information on bilateral trade for 195 countries or groups of countries from 2005 to 2017.

The quality of statistics is a fundamental issue for economic policy. It is obviously difficult, if not impossible, for economists and governments to make good economic policy recommendations without reliable and accurate statistics. This is particularly true for agricultural trade issues in Africa, where international statistics are reported to be of poor quality. For this reason, the establishment of a high-quality trade database was considered essential during the preparation of this report.

It also emerges from the report that the implementation of a monitoring system for informal cross-border trade flows is critical for a sound appraisal of the full potential of regional integration for boosting trade within Africa. Informal cross-border trade represents a significant share of intra-African trade, in particular for agricultural commodities. Many countries do not (fully) monitor their cross-border trade flows and data reported to UN-COMTRADE does not include informal trade flows. The prevalence of informal, unmonitored trade will persist if high trading costs along formal trade routes continue to justify recourse to informal trade corridors.

Another critical finding relates to the importance of using alternative indicators to inform the design of trade policies. Some indicators may be misleading, while others taken individually may be inconclusive. For example, the degree of trade integration of a regional trading bloc is often measured by the share of intraregional trade in total trade, and this share is compared between blocs, sometimes from various continents. This issue is discussed in greater depth in Chapter 2 of the report.

Overall, this report highlights the importance of the AfCFTA project and places it in a broader economic and policy context. By reducing *all* trading costs, the AfCFTA has the potential to spur growth through intraregional trade expansion, thus improving food security, diversifying the production base, and helping African producers to move up value chains.

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1 - For instance, due to customs duties collection, imports are monitored with care
2 - The authors use a procedure comparable to the treatment of the BACI database built by CEPII. The difference is that everything is expressed on a CIF basis, while in BACI everything is expressed on an FOB basis. For more details on the methodology, see Gaulier and Zignago (2010).

Recent protectionist trends have further underscored the value and significance of economic integration initiatives on the continent. This may be the most important policy message of this report.

For all these reasons, the findings in the chapters that follow come at a critical time for Africa and for the global trading system for food and agriculture. Our hope is that this report will provide policy actors with the tools they need to position Africa effectively in the context of emerging economic trends in agricultural trade, on the basis of the best available empirical evidence and a carefully considered approach to the analytical methodology. As such, IFPRI and CTA believe that it will provide a useful and timely input to the deliberations on Africa's future policy trajectory in this area.

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Africa in Global Agricultural Trade

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2 Introduction

It is commonly agreed that trade integration can contribute to the acceleration of economic growth and to poverty alleviation. This is one of the main reasons why African leaders committed at Malabo in 2014 to tripling intra-Africa trade in agricultural commodities and services by 2025. This trade commitment package includes the establishment of a continental free trade area and a continental common external tariff. Its objective is also "to increase and facilitate investment in markets and trade infrastructure" (AUC 2014, 5).

Agriculture is a key sector in African economies: it employs a major part of the labor force and could play a great role in global food markets, given Africa's rich natural resource endowments. The attractiveness of the African agricultural sector can be illustrated by two general trends: (1) in many African countries, foreign direct investment (FDI) is increasingly oriented to the emergence of large-scale farms to boost exports of agricultural commodities to developed countries (Bourgoin, Diop, Dia 2017, 2019); and (2) efforts to integrate digitalization in African agriculture are now significant (Box 2.1).

Box 2.1 Digitalization in Agriculture in Africa

Digitalization was a focus of the last Global Forum for Food and Agriculture held in Berlin in January 2019. During that important event, the agriculture ministers of 74 nations committed to use the potential of digitalization[1] to support environmentally sound and animal welfare-oriented production, increase the quality and safety of agricultural products, reduce production costs, improve the availability of information throughout the food system, and facilitate trade.

Efforts to integrate digitalization[2] into agriculture in Africa are quite recent, starting about 10 years ago. Initially the few attempts of digitalization observed there focused more on areas such as climate information, access to financial services, etc. Efforts with respect to trade in agricultural products were limited to platforms dedicated to price information systems. These have experienced substantial improvements in recent years with the rapid development of information and communication technology.

In Benin, the BenAgri[3] website and mobile platform aims to reduce this gap by providing systematic information on the local markets for agricultural products. The objective of this project is to promote local products and make them accessible to all. BenAgri has thus enabled certain actors in the Benin agricultural and agri-food value chain to trade more easily and to publicize their products all over the world.

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1 Digitalization for agriculture brings together digital technologies, digital innovations, information and communications technologies, and artificial intelligence.

2 http://www.benagri.com/fr/.

3 http://www.benagri.com

Despite its high potential, the participation of African agriculture in world trade remains low. In addition, since 2013, the African region has experienced an agricultural trade deficit with all other regions. The main objective of this chapter is to assess the performance of Africa in world agricultural trade.

The issue of the participation of Africa in world trade has been well debated in the literature, which focuses on two aspects of this topic. The first is the participation of African countries in global trade. For some authors Africa's participation in world trade is low. Sachs and Warner (1997) conclude that Africa has missed out on globalization. For the World Bank (2000), Africa's loss in world trade is significant and reflects a failure to diversify into new products as well as a falling market share for traditional goods. Subramanian and Tamirisa (2001) conclude that Africa has been disintegrating from the world economy and that this trend has been particularly strong in Francophone Africa.

However, a relatively well-developed literature argues that Africa has been trading in line with predicted trade, or even overtrading. Coe and Hoffmaister (1998), using a gravity equation of trade, conclude that in the early 1990s Africa actually overtraded compared with developing countries in other regions. Rodrik (1999) shows that African trade is in line with country size, income, and average distance from other world regions.

The second aspect discussed in the literature is the level of regional (within-Africa) trade. Points of view also differ here. Many international institutions agree about Africa's relatively low level of regional trade. The United Nations Economic Commission for Africa, the African Union Commission and the African Development Bank (UNECA, AUC, AfDB 2010) consider that, over past decades, only about 10 percent–12 percent of African trade takes place among other African nations. This statistic is about 40 percent for North American trade and 63 percent for Western European trade. This conclusion is confirmed by Brenton and Isik (2012) in a World Bank publication. In an African Development Bank publication, Barka (2012) confirms this conclusion, pointing out that, in 2009, "intra-African trade (that is, trade among African countries) accounted for about 10 percent of the continent's total trade…. This is far below the

levels of intraregional trade achieved in Latin America and Asia (22 percent and 50 percent, respectively)" (Barka 2012, 2).

However, the academic literature comes to a different conclusion. For example, Foroutan and Pritchett (1993) conclude that flows of trade within Africa South of Sahara (SSA) are not differentially low. Yang and Gupta (2007) conclude that, even if intraregional trade in Africa is lower than in other regions, trade intensity is substantially higher among African countries than between African countries and the rest of the world. Along the same lines, Iapadre and Luchetti (2010) support the conclusion that Africa's regional trade is relatively high.

We examine the long-term evolution of the African share in (agricultural) world trade in section 2 and conclude that performance has been relatively poor. In section 3 we explain the divergence in the conclusions reached in the literature with respect to the level of regional integration in Africa, with a specific focus on agricultural trade. In section 4 we identify where African comparative advantages in agriculture can be found. In the last two sections we identify two potential reasons for Africa's relatively poor performance: (1) the high level of trading costs; and (2) the lack of product diversification.

The Long-term participation of Africa in world agricultural trade

During 2005–2012, the volume of world trade had been growing continuously except during the 2008–2009 crisis. World trade then stagnated until 2014 before falling significantly until 2016.[4] African imports and exports developed in a similar way with a stronger amplitude, particularly on the export side (Figure2.1).

Figure 2.1 Value of trade index–African exports and imports (all products) and world trade 2005-2017
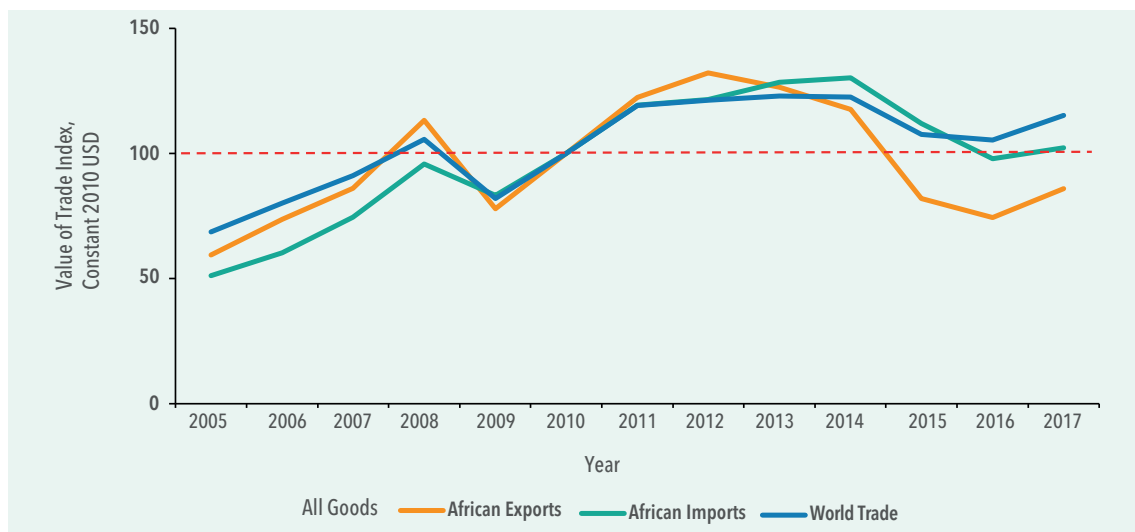
Source: COMTRADE (2019) and authors' calculations.
Note: 2010 = 100

4- This evolution has been largely documented: see for example Hoekman, 2015 or Ferrantino and Taglioni, 2014.

The value of African agricultural trade[5] between 2005 and 2017 is presented in Figure 2.2 It shows an upward trend for both imports and exports, with a more prominent increase for imports, while the agricultural trade deficit was stable between 2005 and 2009 (except for 2008). The African trade deficit in agriculture then grew until 2011. It stabilized from 2011 to 2014, then decreased significantly. Indeed, the value of agricultural exports stabilized from 2011 while the value of imports decreased from US$100 billion in 2011 to US$80 billion in 2017, reducing the trade deficit by half from roughly US$40 billion in 2011 to US$20 billion in 2017.

Globally, African agricultural imports increased by 102 percent between 2005 and 2017. This is a significant augmentation: it reflects the dynamism of the demography and of economic activity in Africa during this period. The domestic market is potentially large and should continue to increase in coming decades. This is an important element to keep in mind when considering the creation of the African continental free trade area (AfCFTA). This is all the more important as intra-African trade has increased less than extra-African trade over the 2005–2017 period (Figure 2.2).

Figure 2.2 Value of African agricultural exports and imports (billion US$, nominal value) 2005-2017
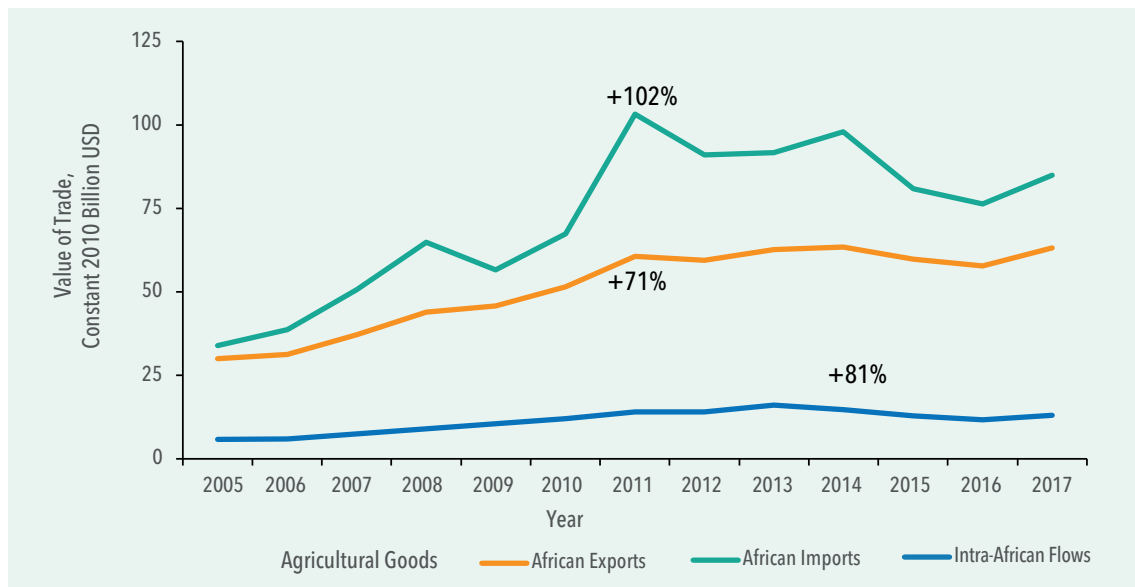
Source: COMTRADE (2019) and authors' calculations.

The share of Africa in world gross domestic product (GDP) increased slightly during the period 2005–2017 (Figure 2.3), from 2.6 percent to 3.0 percent. This positive evolution for Africa is remarkable in agriculture, where its share in world GDP increased from 10.0 percent in 2005 to 12.0 percent in 2017. However, Africa's participation in world trade increased only slightly during the period, from 2.3 percent to 2.7 percent, with its share in world agricultural trade also growing only marginally from 4.3 percent to 5.0 percent.

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5 - Agriculture is defined here according to the World Trade Organization (WTO) standard: it includes raw, semi-processed, and processed agricultural goods, and excludes fish, fish products, and forestry products.

Figure 2.3 Share of Africa in world trade and gross domestic product 2005-2017
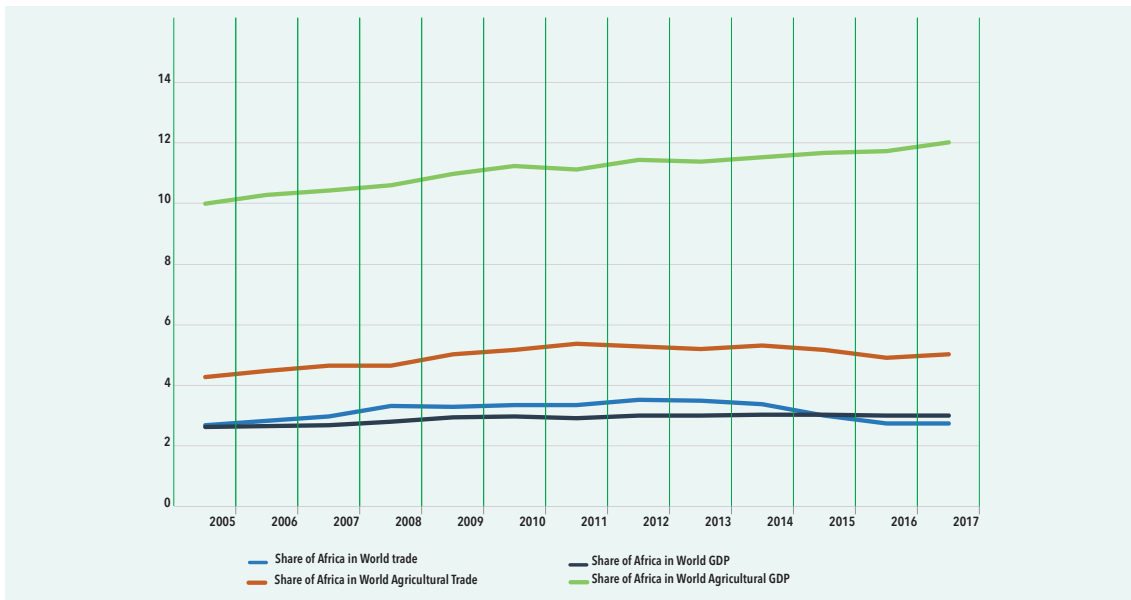
Since 2013 Africa has experienced an agricultural trade deficit with all other world regions (Figure 2.4). However, by 2017, the deficit with the rest of the world was reduced by 30 percent, while the bilateral deficit with Asia, Europe, and North America was also markedly reduced. As in 2013, the main contributor to Africa's trade deficit is Latin America. This reduction in the global deficit mainly results from a decline in the value of African agricultural imports observed from 2013 (Figure 2.4).

Figure 2.4 African agricultural net exports, selected years (billion US$) 2005-2017
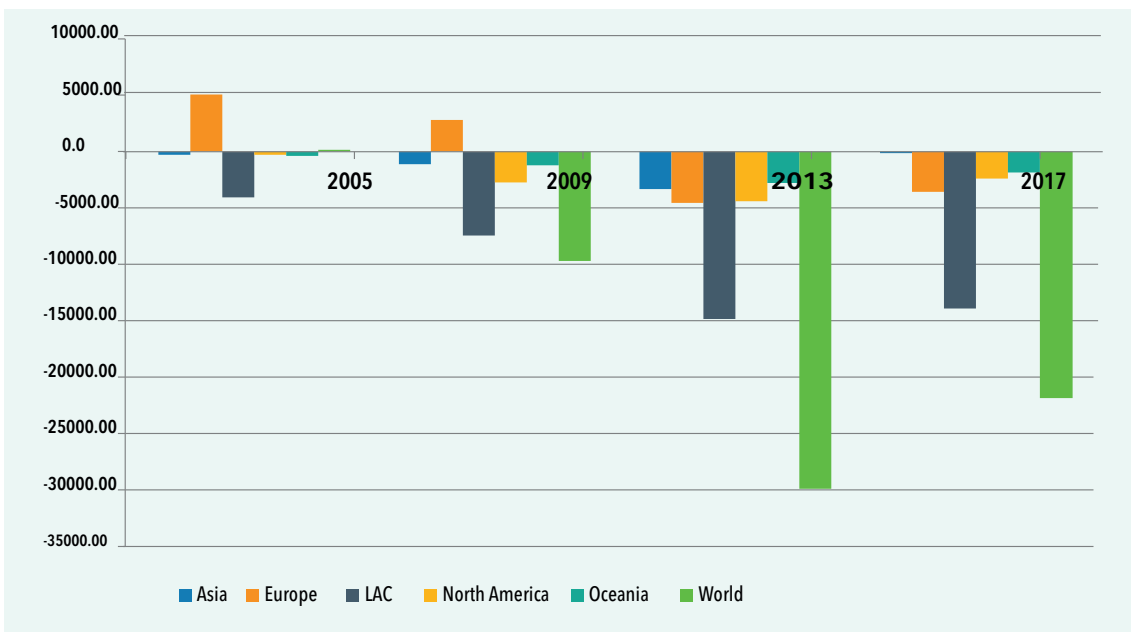
The level of African intraregional agricultural trade

Both UNECA, AUC, and AfDB (2010) and Barka (2012) conclude that, in Africa, regional integration is low, using the share of intraregional trade in the total trade of a country or of a group of countries as their indicator. Indeed, in 2016, the share of intraregional trade of African countries in their total trade was about 13 percent, while it was over 60 percent in Asia and over 67 percent in Europe. However, this indicator is flawed and a policy conclusion cannot be based on it. This is because this ratio is not benchmarked: the share of regional trade in total trade depends on trade barriers between countries, but also on other factors such as the GDP of trade partners and geography.

For example, consider the case of France and Germany on one side, and of Mali and Burkina Faso on the other. Whatever the level of integration between each pair of countries may be, the level of trade between the first pair of countries is relatively high because their GDPs are larger than those of Mali and Burkina Faso. We should remember that a comparision of shares of intraregional trade in total trade between two countries or two groups of countries at the same period of time will be flawed,[6] while the evolution over time of this indicator for a single country or a single group of countries can provide information.

This is why there is a large economic literature about the design of unflawed measurement of regional integration. There is no benchmark to evaluate if the share of regional trade in total trade is high or low: this is why, for example, Iapadre and Luchetti (2010) and Plummer, Cheong, and Hamanaka (2010) divide this share by the share in world trade. This defines a norm that allows to conclude if regional trade is high or low for a specific country or region without comparison to another country or region.

However, this last indicator has other flaws. Therefore, we use another indicator: the regional trade introversion index.[7] This indicator has many virtues: it is independent of the size of the region, and it increases only if intraregional trade grows more quickly than extraregional trade (Iapadre and Luchetti 2010; see also Chapter 3).

Figure 2.5 shows the evolution of the agricultural regional trade introversion index. We can see that Africa has a positive trade introversion in agriculture: Africa's trade appears to be relatively introverted, ranking third among the six continents in 2017 after Europe and Oceania.

6- The gravity equation is a useful and broadly recognized method for estimating trade between two countries. In its simplest form, the trade between countries i and j is the product of the GDPs of i and j divided by the distance between them. Let us suppose here a world without trade barriers and with only transportation costs; let us also suppose that all elasticities are unitary. Imagine that the world consists in only these four countries; that the GDPs of France and Germany are US$3,000 billion and those of Burkina Faso and Mali are US$20 billion; that the distance between France and Germany is 1,000 kilometers (as it is between Burkina Faso and Mali); and that the distance between either France or Germany, and either Burkina Faso or Mali, is 5,000 kilometers. Simple calculation gives a share of regional trade in total trade of 99.5 percent for Europe and 0.8 percent for Africa. So, these ratios differ considerably, whereas trade integration is as large in both continents.
7 - The idea is to start with the design of two indexes–the modified intra- and extraregional intensity indexes–for which intraregional and extraregional trade shares are compared with the region's share in trade with the rest of the world. We can then calculate a ratio of the difference in these two indexes over their sum.

Figure 2.5 Evolution of agricultural regional trade introversion index 2005-2017
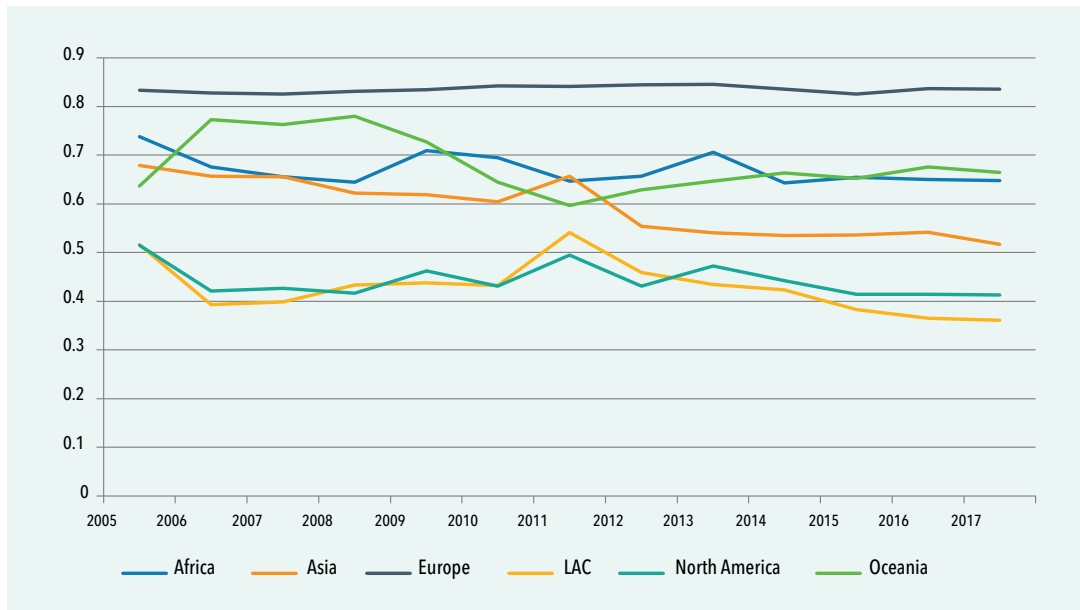
Source: COMTRADE (2019) and authors' calculations.
Note: LAC = Latin America and the Caribbean.

Can we conclude that the level of trade integration within the African continent is high? No, because—as we will demonstrate—there are many barriers to international trade between African countries, particularly in agricultural products. In fact, African participation in international trade (both intra- and extraregional) for all products is significantly low. We can also conclude that, while improving regional trade integration is the right objective for Africa, it is wrong to set a target in terms of the share of regional trade in total trade based on a comparison with another region of the world.

Unbiased indicators based on international merchandise flows, therefore, show that regional African trade is relatively introverted. To this must be added the issue of informal trade, which is not included in official statistics. Informal trade is important in Africa, either in the form of smuggling (i.e., goods avoiding official customs posts (Bensassi, Jarreau, Mitaritonna 2016a, b), in the form of trade passing through official customs posts but being undervalued or misclassified to pay fewer taxes (Fisman and Wei 2004; Jean and Mitaritonna 2010; Bouët and Roy 2012), or in the form of trade in small quantities, tolerated by customs authorities (Uganda Bureau of Statistics and Bank of Uganda 2014).

To our knowledge there is no systematic evaluation of the size of total informal trade, but numerous surveys carried out on the continent confirm its importance, and it is sometimes higher than official trade (Bouët, Pace, and Glauber 2018). All the above surveys also show that informal trade in agricultural commodities is large. This type of trade takes place between African countries, and reinforces the view that African regional trade in agriculture is relatively introverted.

Where in agriculture are Africa's comparative advantages?

This section focuses on Africa's comparative advantages in agriculture. Revealed comparative advantage (RCA) in 2017 has been calculated for 55 African countries.[8] The three top-ranking agricultural products for each country are indicated in , which identifies a total of 153 products. The Revealed comparative advantage indicator introduced by Balassa (1965) makes it possible to identify, based on recorded levels of trade flows, whether a product is a strength or a weakness in terms of a country's exports.[9]

Of the 153 products identified in Table 2.1, 78 percent can be grouped into eight categories of agricultural products: horticultural products (28), fish and related products (28), livestock products (18), cocoa and its derivatives (15), cotton and related products (8), sesame (8), tobacco (7), and legumes (7).

The horticultural products include fruits (15), vegetables (9), and floriculture (4). We should also note that all 55 countries have an Revealed comparative advantage in the eight main categories identified. The commodities most frequently identified are cocoa, cotton, fish and fish products, fruits, legumes, and tea.

Table 2.1 Top three agricultural products in terms of revealed comparative advantage by African country (2017)

Country	Top 3 Revealed comparative advantage products	Country	Top 3 Revealed comparative advantage products
Algeria	Dates (fresh or dried) Locust beans, locust seeds Refined sugar (in solid form, nes, pure sucrose)	Madagascar	Vanilla beans Cloves (whole fruit, cloves, and stems) Fruits and nuts, provisionally preserved nes
Angola	Sardines, brisling, sprats (frozen, whole) Fish oils except liver, not chemically modified Fish nes (frozen, whole)	Malawi	Tobacco refuse Tobacco (unmanufactured, stemmed, or stripped) Tea, black (fermented or partly) in packages > 3 kg)
Benin	Cotton-seed oil crude Cotton seed oil-cake and other solid residues Cotton-seed or fractions simply refined	Mali	Cotton (carded or combed) Bovine animals (live, for pure-bred breeding) Sheep (live)
Burkina Faso	Sesamum seeds Cotton (not carded or combed combed) Vegetable fats, oils nes (fractions, not chemically modified)	Mauritania	Salmonidae, nes (frozen, whole) Octopus (frozen, dried, salted, or in brine) Fish-liver oils (fractions, not chemically modified)

8 - That is, 50 countries and the South Africa Custom Union (SACU). The SACU is composed of five countries: Botswana, Eswatini (former Kingdom of Swaziland), Lesotho, Namibia, and South Africa.
9- The Revealed comparative advantage is calculated by dividing the share of a product's exports in a country's total exports by the share of exports of the same product in world exports or in a reference group's exports (here we use the world reference). If the Revealed comparative advantage is greater than (or less than) 1, it is concluded that this country has a comparative advantage (or disadvantage) in this product.

Country	Top 3 Revealed comparative advantage products	Country	Top 3 Revealed comparative advantage products
Burundi	Bovine skins (whole, raw) Coffee substitutes containing coffee Tea, black (fermented or partly) in packages > 3 kg)	Mauritius	Tuna, skipjack, bonito (prepared/ preserved, not minced) True hemp fiber (not spun but otherwise processed) Fish, shellfish, and crustaceans (non-food)
Cabo Verde	Mackerel (prepared or preserved, not minced) Skipjack, stripe Skipjack, stripe-bellied bonito (frozen, whole) Tunas nes (frozen, whole)	Morocco	Anchovies (prepared or preserved, not minced) Sardine, brisling, sprat (prepared/ preserved, not minced) Beans (shelled or unshelled, fresh or chilled)
Cameroon	Cocoa paste (wholly or partly defatted) Cocoa beans (whole or broken, raw or roasted) Cocoa shells, husks, skins and waste	Mozambique	Leguminous vegetables (dried, shelled) Tobacco (unmanufactured, stemmed or stripped) Tobacco (refuse)
Central African Republic	Beeswax, other insect waxes, and spermaceti Carrots and turnips (fresh or chilled) Beans (shelled or unshelled, fresh or chilled)	Niger	Sesamum seeds Arrowroot, salep, etc. (fresh or dried), and sago pith Bovine hides (whole, fresh, or wet-salted)
Chad	Gum arabic Sesamum seeds Groundnut oil-cake and other solid residues	Nigeria	Raw hide/skins except bovine/equi-ne/sheep/goat/reptile Sesamum seeds Cocoa beans (whole or broken, raw or roasted)
Comoros	Cloves (whole fruit, cloves and stems) Vanilla beans Essential oils, nes	Rwanda	Bovine hides, raw, nes Bovine skins (whole, raw) Bran, sharps, and other residues of leguminous plants
Congo D R	Plants & plant parts, pharmacy, perfume, insecticide use ne Wheat bran, sharps, other residues Cocoa beans (whole or broken, raw or roasted)	Saint Helena, Ascension and Tristan da Cunha	Rock lobster and other sea crawfish (frozen) Fish nes (frozen, whole) Tuna (yellowfin) (frozen, whole)
Congo, Rep.	Flatfish, (fresh/chilled) not halibut/ plaice/sole, whol Cereal bran, sharps, residue except maize, wheat, ric rice Natural gum, resin, gum–resin, bal-sam, not gum arabic	Sao Tome and Prin-cipe	Cocoa beans, (whole or broken, raw or roasted) Coconuts (fresh or dried) Pepper of the genus Piper (who-le)

Country	Top 3 Revealed comparative advantage products	Country	Top 3 Revealed comparative advantage products
Côte d'Ivoire	Cocoa beans (whole or broken, raw or roasted) Cocoa paste (not defatted) Cocoa paste (wholly or partly de-fatted)	Senegal	Fish liver and roe (fresh or chilled) Groundnut oil (crude) Groundnut (in shell, not roasted or cooked)
Djibouti	Cane molasses Ornamental fish (live) Oil seeds and oleaginous fruits, nes	Seychelles	Tuna (yellowfin) (frozen, whole) Skipjack, stripe-bellied bonito (frozen, whole) Tuna nes (frozen, whole)
Egypt, Arab Rep.	Globe artichokes (fresh or chilled) Truffles (fresh or chilled) Olives (provisionally preserved)	Sierra Leone	Cocoa (shells, husks, skins, and waste) Sardine, brisling, sprat (frozen, whole) Coffee substitutes containing coffee
Equatorial Guinea	Cocoa beans (whole or broken, raw or roasted) Animal products and domestic animal carcass (non-food) Guavas, mangoes, and mango-steens (fresh or dried)	Somalia	Goats (live) Natural gum, resin, gum–resin, balsam, not gum arabic Sheep (live)
Eritrea	Pepper of the genus Piper (whole) Cloves (whole fruit, cloves, and stems) Kidney beans and white pea beans (dried, shelled)	South African Custom Union	Grapefruit (fresh or dried) Custom Union Sheep or lamb skins (pickled, without wool) Oranges (fresh or dried)
Ethiopia	Castor oil seeds Sesamum seeds Cuttings and slips, not rooted	South Sudan	Gum arabic Sesamum seeds Oats
Gabon	Cod dried (salted or not, but not smoked) Palm kernel or babassu oil (crude) Rattan (primarily for plaiting)	Sudan	Groundnut (oil-cake and other solid residues) Gum arabic Sheep (live)
Gambia, The	Cashew nuts (fresh or dried) Sole (frozen, whole) Guavas, mangoes, and mangosteens (fresh or dried)	Tanzania	Coffee substitutes containing coffee Onions (dried, not further prepared) Cashew nuts (fresh or dried)
Ghana	Cocoa paste (wholly or partly de-fatted) Cocoa beans (whole or broken, raw or roasted) Cocoa paste (not defatted)	Togo	Cotton seeds Sesamum seeds Milk and cream nes (sweetened or concentrated)
Guinea	Eggplant (fresh or chilled) Coffee substitutes containing coffee Peaches, nectarines (fresh)	Tunisia	Globe artichokes (fresh or chilled) Dates (fresh or dried) Hair, human (un worked, human hair waste)
Guinea-Bissau	Cashew nuts (fresh or dried) Salmonidae, nes (frozen, whole) Sardines, brisling, sprats (frozen, whole)	Uganda	Roses Beans (dried, shelled, nes) Cotton (carded or combed)

Country	Top 3 Revealed comparative advantage products	Country	Top 3 Revealed comparative advantage products
Kenya	Tea, black (fermented or partly, in packages > 3 kg) Cigars, cheroots, cigarettes, with tobacco substitute Legumes except peas & beans (fresh or chilled)	Zambia	Maize bran, sharps, other residues Reptile skins (raw) Cottonseed oil-cake and other solid residues
Liberia	Cocoa beans (whole or broken, raw or roasted) Cereal bran, sharps, residue except maize, wheat, rice Greasy wool (other than shorn, not carded or combed)	Zimbabwe	Reptile skins (raw) Tobacco (unmanufactured, stemmed, or stripped) Tobacco refuse
Libya	Sheep or lamb skins (pickled, without wool) Greasy wool (other than shorn; not carded or combed) Fish (live), except trout, eel, or carp		

Source: COMTRADE (2019) and authors' calculations, computed at the HS6 level of classification.

Note: RCA = revealed comparative advantage nes = not elsewhere specified.

Trading costs in agriculture

Table2.2 presents an overview of worldwide protection with the average import duty for six different regions of the world in 2016, for all products and for only agricultural products. It shows the average *ad valorem* equivalent of customs duties applied on imports (the two columns on the right) and the average *ad valorem* equivalent of customs duties faced by exports (the two columns on the left). "Average import duty" estimates the average level of protectionism that countries apply on their imports, while "Average duty on exports" estimates the average duty faced by countries on their exports worldwide.

We should note that: (1) agricultural products still face significantly higher tariff barriers than other types of products, and this is true for all origins and all destinations;[10] (2) Africa is the region that applies the highest levels of protection, globally and in the agricultural sector; and (3) Africa is the region that faces the lowest tariffs in the world on products it exports worldwide.

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10 This point is well documented in the literature. See Jean et al. 2019; Guimbard et al. 2009.

Table 2.2 Average ad valorem equivalent of import duties applied to imports, and duties faced on exports, for all products and for agricultural products, by region, 2016

Region	Average duty faced on exports		Average import duty	
	All	Agric.	All	Agric.
Africa	3.09%	9.07%	9.03%	18.01%
Asia	3.74%	9.16%	4.68%	13.34%
Europe	3.94%	11.19%	2.53%	7.74%
LAC	4.66%	11.87%	5.81%	12.23%
North America	3.74%	9.16%	4.68%	13.34%
Oceania	4.77%	14.08%	2.28%	2.36%

Source: Authors' calculations from MAcMapHS6, 2016 (CEPII 2011).

Note: Tariffs are weighted from the HS6 level according to the reference group method (see Bouët et al. 2008).

LAC = Latin American countries. Agric. = Agriculture

Table 2.3 provides an overview of the level of protection in agriculture and in all products for 57 African countries. Taxes faced by African exports are relatively low, on average, at around 3 percent. Several countries (Angola, Chad, Equatorial Guinea, Eritrea, Gabon, Libya, and the Republic of Congo) face an average tariff of less than 1 percent on their exports. Most of these countries are mainly exporters of natural resources such as oil, gas, gold, and copper. Of the 57 listed, only three countries (Guinea-Bissau, Kenya, and Malawi) are subject to relatively high tariffs on their exports. This is specifically owing to the concentration of their exports on products that are highly protected elsewhere in the world: Guinea-Bissau mainly exports cashew nuts, while Kenya and Malawi have an Revealed comparative advantage in tobacco and tobacco products.

Average tariffs faced on agricultural exports by African countries are around 9 percent, lower than the world average of around 11 percent. Nearly 33 percent of African countries are subject to average customs tariffs of 10 percent or more on their agricultural exports. For three countries it is above 16 percent: Guinea-Bissau (16.82 percent), Mozambique (18.19 percent), and Algeria (38.54 percent).

Table 2.3 Average ad valorem equivalent of import duties applied to imports and duties faced on exports, for all products and for agricultural products, by African country (percent) 2016

Country	Average duty faced on exports		Average import duty	
	All	Agriculture	All	Agriculture
Algeria	1.26	38.54	11	17.01
Angola	0.68	7.95	9	18.45
Benin	3.22	5.01	10.61	14.39
Botswana	7.85	11.91	7.43	8.7
Burkina Faso	1.34	3.74	10.6	14.39
Burundi	6.11	14.56	11.42	22.61
Cabo Verde	2.75	2.95	7.68	11.3

Country	Average duty faced on exports		Average import duty	
	All	Agriculture	All	Agriculture
Cameroon	2.49	3.72	15.4	23.09
Cent. Afr. Rep.	3.93	8.78	15.18	20.75
Chad	0.57	1.46	15.58	19.1
Comoros	4.13	4.91	14.75	8.58
Congo DR	2.12	6.23	10.39	12.02
Congo, Rep.	0.75	4.21	10.44	13.87
Côte d'Ivoire	4.36	4.57	8.76	14.81
Djibouti	3.01	3.83	20.44	12.61
Egypt	5.42	12.73	9.81	36.71
Equ. Guinea	0.89	4.47	14.52	19.79
Eritrea	0.92	5.03	6.78	9.38
Ethiopia	2.47	3.52	13.55	17.1
Gabon	0.89	8.78	14.26	18.81
Gambia	3.11	5.06	14.09	17.34
Ghana	2.89	5.1	8.79	15.37
Guinea	2.63	9.47	9.38	13.88
Guinea-Biss.	15.88	16.82	10.61	13.1
Kenya	11.63	15.25	12.23	26.37
Lesotho	7.53	11.12	7.43	8.7
Liberia	1.07	2.41	9.92	12.56
Libya	0.59	9.79	0	0
Madagascar	2.01	3.17	7.99	9.63
Malawi	13.38	15.62	9.85	14.01
Mali	1.68	4.22	10.61	14.4
Mauritania	3.3	7.85	9.43	10.58
Mauritius	5.48	7.85	0.85	2.83
Mayotte	8.85	12.56	6.94	6.16
Morocco	4.37	7.57	5.95	20.61
Mozambique	4.81	18.19	7.68	10.79
Namibia	7.88	11.96	7.43	8.7
Niger	3.25	10.09	10.61	14.38
Nigeria	1.27	7.79	10.93	14.16
Rwanda	6.27	12.76	9.78	18.61
Saint Helena	2.18	1.88	NA	NA
S. Tome & Pr.	3.16	1.97	10.43	10.66
Senegal	5.5	8.24	8.75	14.72

Country	Average duty faced on exports		Average import duty	
	All	Agriculture	All	Agriculture
Seychelles	4.18	4.18	2.64	5.96
Sierra Leone	2.12	7.26	13.64	16.45
Somalia	3.34	3.72	NA	NA
South Africa	3.93	12.75	5.68	8.8
South Sudan	8.08	11.33	NA	NA
Sudan	6.79	9.9	18.54	27.88
Swaziland	7.89	11.97	7.43	8.7
Tanzania	4.87	8.2	11.98	27.01
Togo	4.25	7.16	8.75	14.69
Tunisia	3.58	8.31	7.12	18.5
Uganda	5.82	7.47	10.06	21.78
West. Sahara	9.63	14.88	NA	NA
Zambia	2.22	13.01	11.13	15.81
Zimbabwe	7.19	15.97	12.32	18.74

Source: Authors' calculations from MAcMapHS6, 2016 (CEPII 2011).
Note: NA = data not available. Tariffs are weighted from the HS6 level according to the reference group method (see Bouët et al. 2008). Cent. Afr. Rep. = Central African Republic; Congo DR = Congo Democratic Republic; Congo, Rep. = Congo Republic; Equ. Guinea = Equatorial Guinea; Guinea-Biss. = Guinea-Bissau; S. Tome & Pr. = Sao Tome and Principe; West. Sahara = Western Sahara.

As far as imports are concerned, African countries have relatively high levels of protection compared to the world average (around 5 percent). Indeed, among the 53 countries for which data are available, only three (Libya, Mauritius, and Seychelles) apply an average customs tariff at less than 5 percent. On the other hand, only Djibouti taxes its imports at an average of more than 20 percent.

In terms of agricultural imports, the world average is around 12 percent. About 65 percent of African countries tax agricultural imports at more than 12 percent. In addition, eight countries (Burundi, Cameroon, Central African Republic, Kenya, Morocco, Sudan, Tanzania, and Uganda) protect their agriculture with an average applied duty on imports in the 20 percent–30 percent range. Egypt is the only country in Africa that protects its agriculture with an average applied duty on imports greater than 30 percent.

Figure 2.6 Time and cost to export and to import by region, 2018
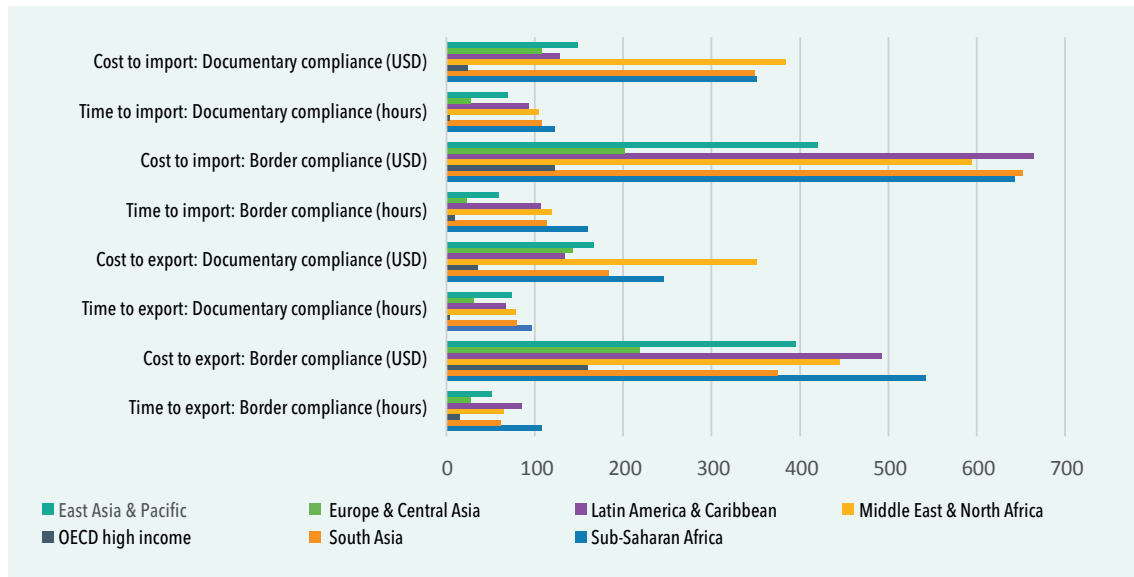
Source: Doing Business 2019 (World Bank 2019).
Note: OECD = Organisation for Economic Co-operation and Development; USD = US dollars.

Figure 2.6 provides information on the cost and time needed to export and import goods in different regions of the world in 2018. These two elements include, among others:

1. documentary compliance (obtaining, preparing, and submitting documents required for transport; administrative authorizations in both the country of origin and the country of destination);

2. customs compliance (inspections and obtaining authorizations from customs); and

3. domestic transport (transport time from the capital to the main port, road congestion, administrative harassment by police or gendarmerie, etc.).[11]

Figure 2.6 shows that costs related to border compliance remain higher than those related to documentary compliance, for both imports and exports. It also shows that border compliance costs are higher for imports than they are for exports in all regions, except for Europe and Central Asia, and in Organisation for Economic Co-operation and Development (OECD) high-income countries. Documentary compliance costs are higher in Africa for exporters than they are in East Asia and in the Pacific, Europe and Central Asia, Latin America, and Caribbean, and in OECD high-income countries. On the other hand, they are much higher for importers in Africa than they are for importers in East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, and OECD high income countries.

11 - Based on interviews of specialists in the area, Doing Business 2019 (World Bank 2019) constructs indicators to measure the cost in both time and money of exporting and importing a specific shipment of goods to and from the economy's main trading partner. This excludes tariffs and border taxes. For all countries, imports are shipments of containerized auto parts from that country's natural partner. For exports, a product that represents comparative advantage is identified and the country of destination is the largest purchaser of this product.

Figure 2.7 Combination of all available export and import costs in ad valorem equivalents –agricultural products only
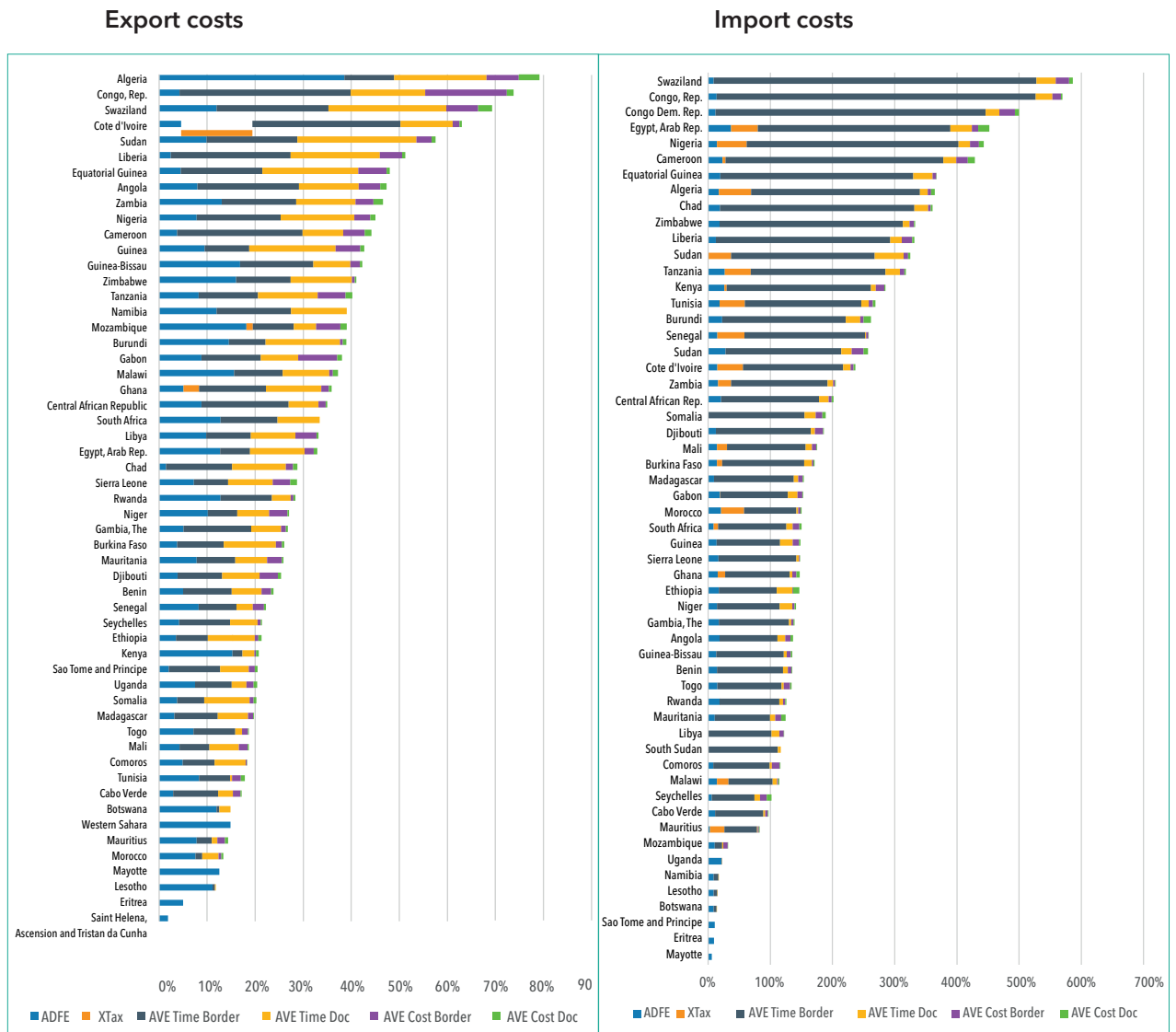
Source: Authors' calculations using data from BACI (Gaulier et Zignago 2010), Doing Business 2019 (World Bank 2019); MacMapHS6 (2016) ; Kee, Nicita, Olarreaga (2009); and Laborde, Estrades, Bouët (2013). Note: ADFE = Average duty faced on exports, XTax = Ad valorem average taxation on exports, AVE Time Border = Ad valorem equivalent of time for border compliance, AVE Time Doc = Ad valorem equivalent of time for documentation compliance, AVE Cost Border = Ad valorem equivalent of time for border cost, AVE Cost Doc = Ad valorem equivalent of time for documentation cost, ADAI = Average duty applied on imports, AVE_NTB = Ad valorem equivalent non-tariff barriers on imports.

Figure 2.7 gathers all available trading costs as *ad valorem* equivalents for the agricultural products of 55 African countries.[12]

12 - The methodology is presented in detail in Bouët, Cosnard, and Laborde (2017). The most difficult element to calculate is the conversion of the results from Doing Business 2016 (World Bank 2016) on the costs and time of border and documentary compliance into ad valorem equivalents. Because these costs for border and documentary compliance are computed for the equivalent of a 15-metric-ton container, we compute the total quantity of products exported and imported in a "container equivalent" unit, using the BACI (Base pour l'Analyse du Commerce International) database. We then multiply those quantities by the costs per container available in Doing Business 2016 (World Bank 2016) and divide the whole by the corresponding value for total exports and imports from BACI to get an ad valorem equivalent. To evaluate the costs associated with the time for border and documentary compliance, as given in Doing Business 2016 (World Bank 2016), we refer to Hummels and Schaur (2012), who evaluate the cost associated with the time a product spends in transit. Each day in transit is equivalent to an ad valorem tariff of between 0.6 percent and 2.1 percent, and this figure can go up to as much as 3.1 percent for agricultural products.

On the import side, these costs are the average applied duty on imports, the average cost to import (border compliance and documentary compliance), the cost associated with the time taken to import (border compliance and documentary compliance), and the *ad valorem* equivalent of non-tariff barriers on imports. On the export side, these costs are the average duty faced by exports, the average export tax, the average cost to export (border compliance and documentary compliance), and the cost associated with the time taken to export (border compliance and documentary compliance).

In general, import costs are much higher than export costs. Indeed, for more than 40 of the countries presented in Figure 2.7, we note a total import cost of more than 100 percent. This high cost of imports seems to be driven by the *ad valorem* equivalent of time for border compliance, which appears to be a major hindrance to the import of agricultural products.

The total cost of exports does not exceed 40 percent for at least 41 of the 55 countries presented. The decomposition of the cost structure indicates that the largest components are the average duty faced on exports (ADFE), the ad valorem equivalent of time for border compliance, and the ad valorem equivalent of time for documentation compliance. When comparing Figure 2.7 and Table 2.3, we can see that the gap between tariff barriers and non-tariff barriers is high. Some may argue that political effort should be spent in facilitating trade and reducing the impact of non-tariff barriers, as these appear to be an important explanation of the weak performance of Africa in agricultural trade.

A lack of product diversification

The quality of a country's trade integration depends on its degree of diversification. Indeed, having more diversification in the number of partners and in the number of products traded can mean better integration and greater resilience. The concentration of a country's exports on one or a few products has long been associated with a risk of volatility in export earnings and therefore in domestic activity. Such concentration is even associated with lower growth and per capita income. This relationship has been empirically verified: Imbs and Wacziarg (2003), Cadot et al. (2011), Carrère (2013), Funke and Ruhwedel (2001). The issue of product diversification of exports is, therefore, a fundamental issue.

In this section, we illustrate both dimensions of diversification—geographic and sectoral—for agricultural trade. For each dimension we calculate two indicators of diversification on the export side, considered as the best indicators in the academic literature (De Lombaerde and Iapadre, 2012): the number of equivalent markets and the global geographic diversification index (GGDI).[13]

The top graphic in Figure 2.8 is the world map of average number of equivalent markets; the bottom graphic is the world map of average GGDI between 2016 and 2017. The picture is contrasting between on one side, countries with a high (Egypt, South Africa) or a relatively high (Algeria, Ethiopia, Ghana, Kenya) diversification of their agricultural exports in terms of partners and on the other side, countries with a low diversification (Eritrea, Namibia, Niger, Somalia, South Sudan).

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13 - The number of equivalent markets is the inverse of the Herfindahl index (HH index). The HH index is the sum of the squares of the market shares and varies from close to 0 (an infinity of destinations or products, each in small quantity) to 1 (a unique destination or product). So, the number of equivalent markets computes the number of markets of the same size that would give the same degree of diversification as the one observed. However, one limitation with this indicator is that it compares the actual distribution of trade flows with a benchmark that does not account for the actual size of every potential partner. Thus, there is no difference between a situation in which a country trades intensively with a major trading country and one in which a country is closely linked to a small trading country. The GGDI indicator assesses the distance between the distribution of one country's trade and the distribution of trade in the rest of the world. In other words, the more different a country's geographic allocation of trade is from the worldwide distribution of trade, the smaller the index is.

Figure 2.8 Geographic diversification of agricultural exports: number of equivalent markets and global geographic diversification index, average 2016–2017
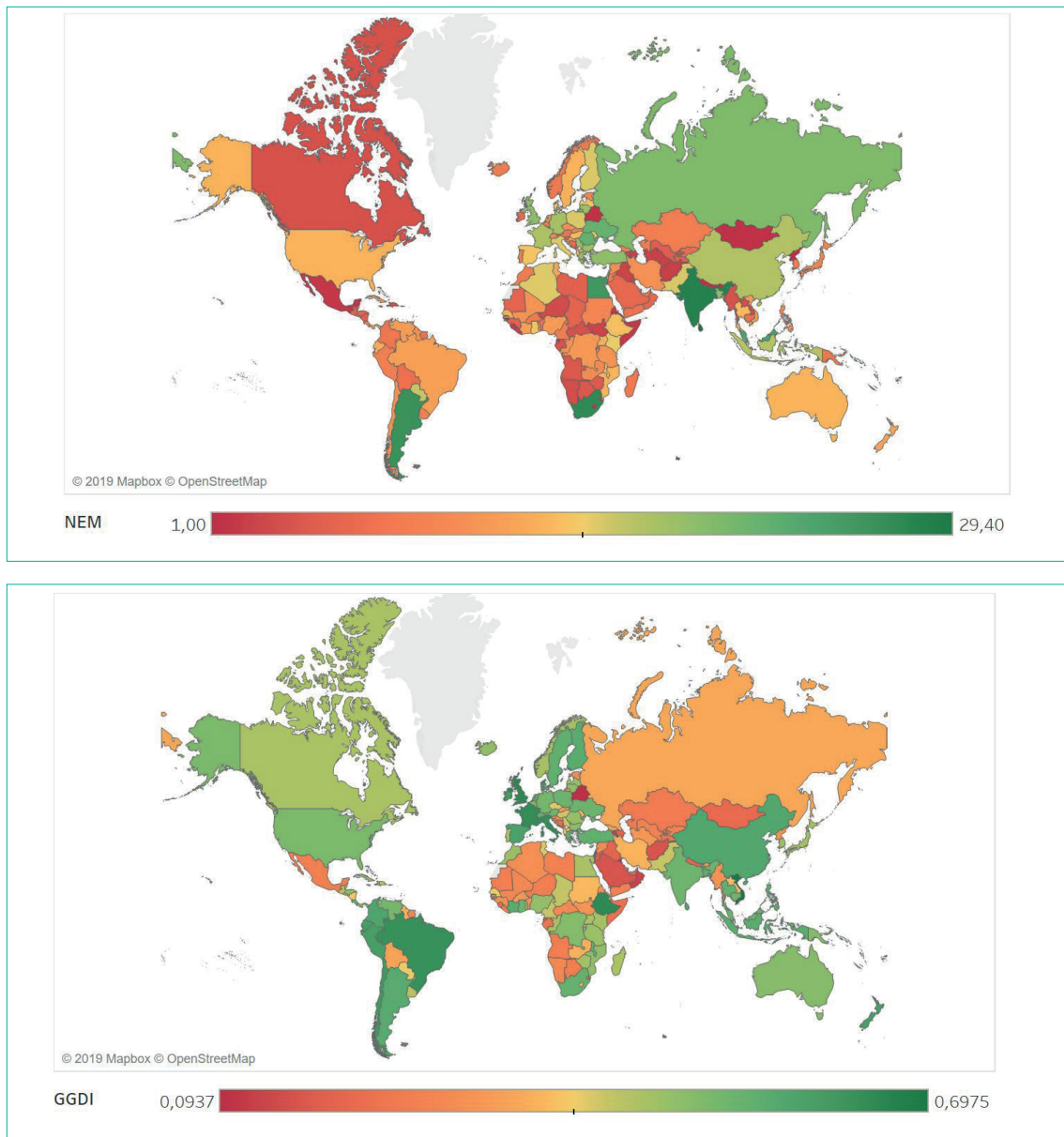
Source: COMTRADE (2019) and authors' calculations.
Note: NEM= Number of Equivalent Markets; GGDI = global geographic diversification index..

Table 2.4 shows the ranking and the share of the 10 most important trading partners for Africa. The 10 main importers of African agricultural products represent around 51 percent of total African agricultural exports, 7 of which are from the European Union (with 28 countries). The 3 others are China, the USA, and India. The 10 main exporters of agricultural products to Africa represent around 52 percent of total African agricultural imports: here, the significance of the European Union is less, since only France appears in the list.

Table 2.4 Top African agricultural imports and exports (2017)

Top importer of African agricultural products	Share of African agricultural exports (%)	Top agricultural exporter to Africa	Share of African agricultural imports (%)
Netherlands	8.58	Brazil	9.24
France	6.98	Russian Federation	7.04
Spain	5.66	Argentina	5.87
United States	5.28	France	5.77
Germany	4.65	India	4.77
China	4.49	United States	4.39
United Kingdom	4.38	Indonesia	4.19
India	3.96	China	3.73
Italy	3.52	Malaysia	3.44
Belgium	3.26	Ukraine	3.33

Source: COMTRADE (2019) and authors' calculations.

We present the same indicators with respect to sectoral diversification: on the export side, the indicator of number of equivalent sectoral markets measures the number of products of the same size that would give the same degree of diversification in products as the one actually observed. The global sectoral diversification index (GSDI) measures the distance between the sectoral distribution of a country's exports and the sectoral distribution of exports in the rest of the world.

The top graphic in Figure 2.9 displays the world map of average number of equivalent sectoral markets, and the bottom graphic displays the world map of average GSDI between 2016 and 2017. We can see the low level of diversification of agricultural exports in all African countries that are dependent on a small number of commodities. The low GSDI of African exports shows that most African countries export some commodities that are not exported much by the rest of the world.

Figure 2.9 Sectoral diversification of agricultural exports, number of equivalent markets and global sectoral diversification index, average 2016–2017
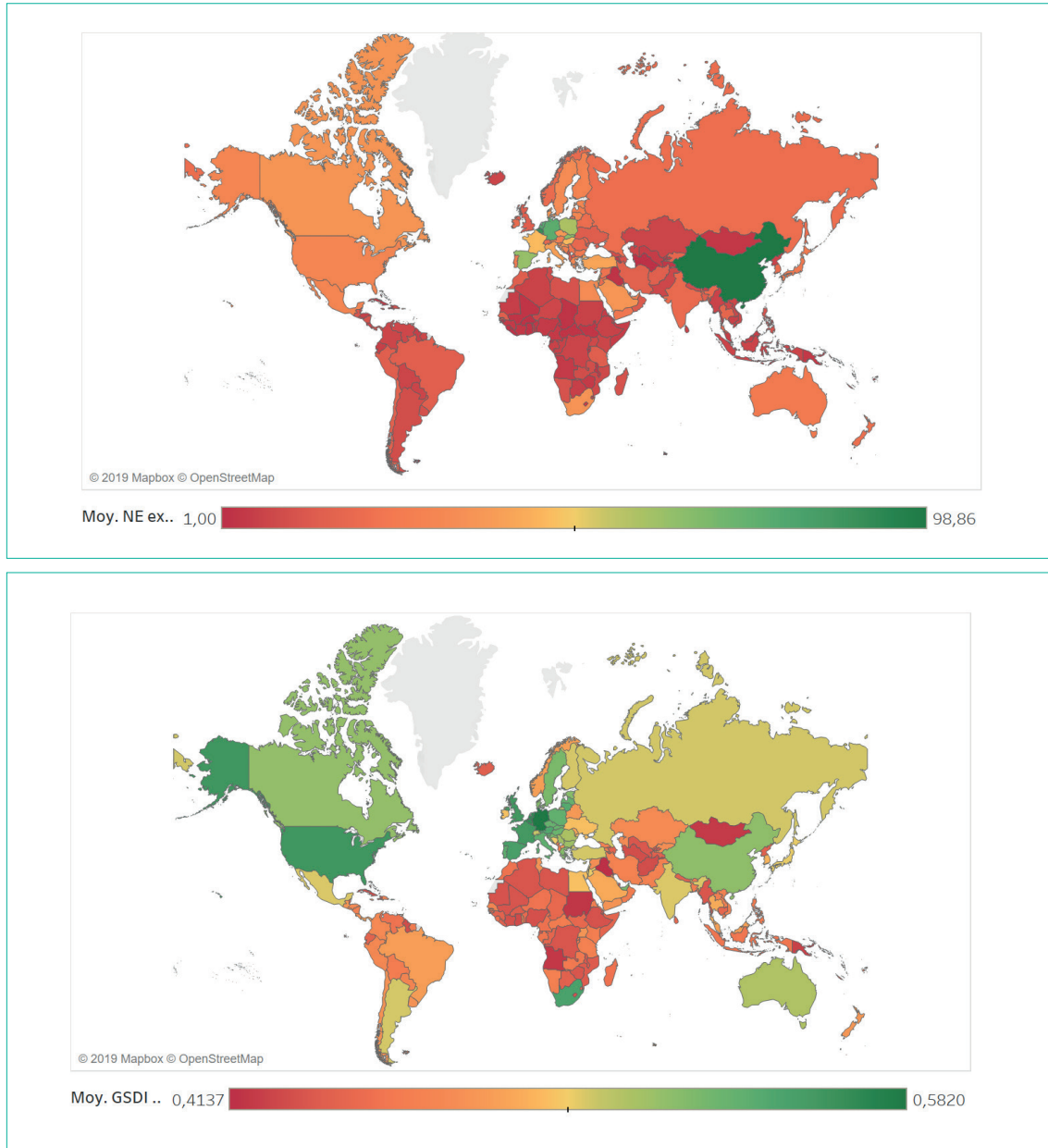
Source: COMTRADE (2019) and authors' calculations.
Note: Moy. NE ex. = number of equivalent markets; Moy. GSDI = global sectoral diversification index.

Table 2.5 highlights the ranking and the share of the 10 most important traded African agricultural products. The 10 most imported agricultural products account for around 42 percent of total agricultural imports, with a concentration in cereals (23.75 percent), vegetable oil and related products (8.33 percent), sugar (7.83 percent), and milk and dairy products (2.03 percent). The 10 most exported products represent around 21 percent of all exports, with a more diversified content: processed food, cereals, fruits, milk and dairy products, vegetable oils and related products, sugar, tobacco, livestock products, and fish and related products.

Table 2.5 Top African agricultural imports and exports (2017)

Top 10 agricultural products imported	Share of agricultural imports (%)	Top 10 agricultural products exported	Share of agricultural exports (%)
Wheat except durum wheat and meslin	10.1	Food preparations nec	3.61
Durum wheat	5.2	Maize except seed corn	2.66
Palm oil or fractions (simply refined)	4.78	Bananas, including plantains, fresh or dried	2.39
Maize except seed corn	4.4	Cheese except fresh, grated, processed, or blue-veined	2.1
Raw sugar, cane	4.07	Soybean oil-cake and other solid residues	2.03
Rice, semi-milled or wholly milled	4.05	Raw sugar, cane	1.76
Refined sugar (in solid form, nec), pure sucrose	3.76	Cigarettes containing tobacco	1.65
Milk and cream powder un-sweetened < 1.5% fat	2.03	Fowl cuts & offal, domestic, except livers (frozen)	1.62
Soybean oil crude, whether or not degummed	1.82	Fowl, duck, goose, offal, pre-pared (preserved not live)	1.5
Soybean oil-cake and other solid residues	1.73	Shrimps and prawns (frozen)	1.44

Source: COMTRADE (2019) and authors' calculations
Note: nec = not elsewhere classified.

Conclusion

This chapter has attempted to characterize Africa's place in world agricultural trade. Despite natural resources that are particularly favorable to agriculture, Africa has a trade deficit in this sector. This deficit has, however, been significantly reduced since 2012, and Africa's share of global agricultural GDP has been steadily increasing since 1995.

This deficit has to be linked to the demographic and economic situation: Africa's population is growing faster than that of the rest of the world and economic growth is steadily higher on that continent. It is, therefore, not surprising that African imports of agricultural goods are increasing rapidly. The prospect of creating a free trade area throughout the continent and tripling intraregional agricultural trade makes sense when we are aware of the dynamism of the local market.

On the export side Africa has comparative advantages in traditional agricultural products, but these are generally raw or unprocessed: cocoa, coffee, cotton, fish and fish products, fruits, legumes, and tea. Many African countries also have a comparative advantage in energy and mining commodities.

So, a striking feature of African trade is a high concentration of exports in a relatively small number of products, which are often raw or semi-processed. This may imply volatility in export revenues; and the early stages of value chains, in which African countries appear to be specialized, are often low-value-added stages. By creating a large domestic market, characterized by low barriers to international trade, AfCFTA could remedy these weaknesses by diversifying production bases (involving a rise along value chains) and stabilizing export earnings.

We also showed that the level of intra-African trade appears relatively high: this is a conclusion identical to that reached in several academic studies (Iapadre, 2006; Bouët, Cosnard, Laborde, 2017), but contrary to those of institutional publications (UNECA, AUC, and AfDB, 2010; Barka, 2012; Brenton and Isik, 2012). This is essentially due to the benchmark used in each study. The second group of studies compares the share of intraregional trade in total trade of different continents, while the first group of studies defines a benchmark that considers all world trade. We demonstrate that the share of intraregional trade in total trade depends not only on trade barriers, but also on geography, economic activity, and so on. This is why a benchmark is required, and confirms that African trade is more introverted than extraverted.

This does not mean that trade is well integrated within Africa. Africa performs poorly in terms of participation in world trade, whether intra- or extraregional. This poor performance is related to the multiplication of barriers to trade. The main obstacle to improving Africa's trade integration is non-tariff barriers, with an important role played by administrative barriers: the time and cost spent on customs formalities is clearly excessive for African importers and exporters. In comparison, tariff barriers are relatively low. This means that the AfCFTA will be successful only if it addresses the issue of these non-tariff barriers. If these are addressed, then Africa will be able to participate fully in world trade, in a way that reflects the richness of its natural resources.

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3

Intra-African Trade Integration

Sunday Odjo, Fousseini Traoré, and Chahir Zaki

3. Introduction

Regional integration arrangements have proliferated across Africa over the last 40 years. The most clearly stated objective of this quest for integration is to expand intraregional trade, as it is believed that the harmonization of regulations and policies will help reduce trade costs and facilitate economies of scale. This trend is now being accelerated as African policy makers are pushing for broader integration to realize the long-held desire for pan-African unity in the form of a continental free trade area. This chapter explores how effective regional trade arrangements (RTAs) have been in promoting intraregional trade in Africa. To do this we examine several indicators, since one single indicator cannot capture the multiple dimensions and determinants of trade integration (Bouët, Cosnard, and Laborde 2017).

Section 2 of this chapter reviews Africa's regional integration initiatives and focuses on new developments brought recently to the efforts toward creating broader integration. Section 3 presents the cost of trading in Africa and analyzes to what extent trading blocs are integrated. Section 4 examines the diversification of African regional economic communities (RECs) at geographical and sectoral levels, as well as in its intra-industry trade. We conclude with our findings in Section 5.

Regional integration initiatives in Africa: Where do we stand?

Africa encompasses several RTAs, which are also known as regional economic communities (RECs). The membership of these RECs overlaps, making the tasks of harmonizing and coordinating policies and regulations within the RECs more complex. Table 3A.1 lists the member countries of the main RECs. In West Africa, the membership of the Economic Community of West African States (ECOWAS) overlaps with that of the West African Economic and Monetary Union (WAEMU), where 8 of 15 ECOWAS member states form WAEMU. In Central Africa the Economic Community of Central African States (ECCAS) has 11 members, of which 6 are also members of the Central African Economic and Monetary Community (CEMAC). Similarly, the Common Market for Eastern and Southern Africa (COMESA) comprises 20 members including 3 ECCAS members, 8 of the 15 members of the Southern Africa Development Community (SADC), 1 of the 5 members of the Southern Africa Customs Union (SACU), and 1 of the 5 members of the Arab Maghreb Union (AMU). Further, all 5 members of SACU are part of SADC, and all members of the East African Community (EAC)—except for Tanzania—are part of COMESA.

According to the Abuja Treaty signed by African Heads of State in 1991 and which entered into force in 1994, the different RECs should have completed a gradual removal of tariff and non-tariff barriers affecting intra-community trade by 2007; and free trade areas and customs unions should be established in the RECs by 2017. These measures were intended to enable the coordination and harmonization of tariff and non-tariff systems among RECs with a view to creating a continental customs union by 2019, a common market by 2023, and an African economic community by 2028. However, only EAC has reached the stage of having a common market. ECOWAS has a customs union. COMESA, SADC, and ECCAS have only established free trade areas; and AMU has yet to form a free trade area (ECA 2016).

There are critical issues associated with the overlapping memberships of COMESA, SADC, and EAC, given that COMESA and SADC aim to form a customs union and that some of their member countries will have to choose one of these two RECs. This section reviews new developments in regional integration that may help overcome the dilemma of overlapping memberships across RECs.

There have been significant changes in the regional integration landscape recently. Many initiatives have emerged, shaping a new panorama, and we focus here on the three main ones.

The Tripartite Free Trade Area (TFTA)

The TFTA is a free trade agreement among three RECs: COMESA, SADC, and EAC. It covers 27 countries belonging to the three RECs.[1] However, only 22 of the 27 members have signed the agreement, and of these only Egypt, Kenya, South Africa, and Uganda have both signed and ratified. The TFTA, if fully implemented, will represent the second largest free trade area in Africa,[2] comprising almost half of African countries with a population of 683 million people and a total gross domestic product (GDP) of US\$1.2 trillion (Mold and Mukwaya 2017). It is expected that the TFTA will constitute a strong basis for the African continental free trade area (AfCFTA).

The TFTA negotiations have two phases. Phase I negotiations concerned tariff concessions, trade remedies, and rules of origin. During Phase II, trade in services and trade-related areas (such as competition, cross-border investment, and intellectual property rights) will be covered. This phase, which should have started in June 2016, has been delayed because of ongoing discussions on tariff offers under Phase I negotiations (TRALAC 2019).

ECOWAS and North Africa

Two events occurred recently in the West Africa region, launching a new era for ECOWAS extension: the signing of an association agreement with Mauritania and the will expressed by Morocco to join the community.

Despite being a founding member of ECOWAS in 1975, Mauritania left the community in 2000 before coming back in 2017. The economic partnership agreements (EPAs) negotiated between Mauritania and ECOWAS, and the European Union, were completed in 2014 and the final agreement was signed by Mauritania in September 2018. Mauritania signed an association agreement with ECOWAS in 2017. In doing so, Mauritania accepted the ECOWAS trade liberalization scheme and committed to apply the common external tariff (CET). The agreement, which also provides for free movement of people and investment, was authorized for ratification in December 2018.

Meanwhile, during the 51st Summit of Heads of State and Government, in June 2017, Morocco officially requested to join ECOWAS after a series of talks. ECOWAS accepted Morocco's request in principle, and a set of studies has since been initiated to examine all implications (political, economic, etc.) of this request before endorsing it.

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1 - Angola, Botswana, Burundi, Comoros, Djibouti, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Lesotho, Libya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.
2 - Just behind the African continental free trade area.

Since Morocco's request is being challenged by the private sector in some countries (such as Nigeria) the ECOWAS commission is still performing in-depth studies to assess the impact of the membership bid.

A committee of heads of states from Côte d'Ivoire, Ghana, Guinea, Nigeria, and Togo has been put in place to supervise the studies and to guide the decision on whether to approve the accession request by consensus, by unanimity, or by a qualified quorum of member states. In addition to the reluctance of the private sector in some ECOWAS countries, the fact that Morocco has signed a significant number of trade agreements with other regions and countries is also a matter of concern. Finally, ECOWAS plans to have a common currency, starting in 2020. Whether or not Morocco is willing to join this project is also a matter of discussion.

It is worth noting that, as AMU is not working as expected, Tunisia and Algeria have also expressed their willingness to participate more actively in ECOWAS. Tunisia has been an observer since November 2017.

The Continental Free Trade Area

AfCFTA is a very ambitious initiative and was launched in Kigali, Rwanda, in March 2018. It aims to create one of the largest free trade areas in the world, involving 1.2 billion people covering 55 countries, with US$2.5 trillion in terms of GDP. Initially signed by 44 countries at the Kigali summit, 5 additional countries endorsed the agreement during the 31st Ordinary Session of the African Union Assembly held in Mauritania in July 2018, bringing the total number of signatories to 49. To date 54 countries[3] have signed the agreement and 27 have deposited their instrument of ratification with the Chairperson of the African Union Commission (AUC). The agreement entered into force in May 30, 2019.[4]

AfCFTA is a milestone in the African integration process as specified in the 1991 Abuja Treaty, which targets a customs union and a single currency as the ultimate goal. The process involves two phases. During Phase I, three protocols will be negotiated: trade in goods, trade in services, and dispute settlement. The first protocol, on goods, is currently being negotiated and covers market access, non-tariff barriers (such as technical barriers to trade, and sanitary and phytosanitary measures), rules of origin, and trade facilitation. During Phase I negotiations it was decided that 90 percent of trade will be liberalized, while some "sensitive" products will be liberalized at a later stage of the process, and other "excluded" products will remain protected. The modalities regarding the selection of these products were clarified at the Cairo summit in December 2018 and are now known as the "Cairo Package." Negotiators agreed that products that could be excluded from liberalization shall not represent no more than 3 percent of tariff lines and account for no more than 10 percent of the value of imports from other African countries.[5] Phase II negotiations will cover three additional protocols: competition policy, investment, and intellectual property.

AfCFTA is important to the continent for three reasons: (1) although not yet a customs union, it allows Africa to be a significant partner in global trade negotiations (e.g., with China and the European Union) instead of being a collection of small regions.

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3 - Representatives of Nigeria and Benin added their signatures at the 12th Extraordinary Summit of Heads of State and Government of the African Union in Niamey on July 7–8, 2019. Eritrea is the only country that has not yet signed the agreement.
4 - The agreement was set to enter into force 30 days after the 22nd country deposited its instrument of ratification. This happened on April 29, 2019.
5 - The value of these imports is to be determined by either the 2014–2016 average or the 2015–2017 average.

It is, therefore, a response to mega-regional agreements such as the Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (TTIP), which are being negotiated by major economies; (2) it addresses the so-called "spaghetti-bowl effect" of overlapping trade agreements with different rules of origins, which increases trade costs for operators; and (3) many countries and regions are still negotiating trade agreements with partners outside of the continent.

The EPAs between RECs and the European Union are a good illustration of this phenomenon. Better integration in Africa before these agreements enter into force is likely to reduce trade diversion effects. This is one of the main reasons why governments accelerated efforts to set up the ECOWAS customs union: to dampen the negative impacts of the EPAs between West Africa and the European Union.

Measuring regional integration

Trade Costs Indicators

Anderson and van Wincoop (2004) argue that "trade costs are large, even aside from trade policy barriers and even between apparently highly integrated economies" (2004, 691). Such trade costs may be divided into four categories: (1) transaction costs related to transport (including distance) and insurance of traded goods; (2) costs induced by trade policies associated with tariff and non-tariff barriers (such as quotas, Sanitary and Phyto-Sanitary (SPS), and Technical Barriers to Trade (TBT)); (3) local distribution costs from foreign producer to final user in the domestic country; and (4) costs due to administrative barriers or red tape costs (i.e., those associated with trade facilitation and customs inefficiency). The costs of moving goods between countries are generally higher in developing countries than in developed ones, and this is particularly true in Africa. In fact, high costs increase the prices of a country's imports and make its exports less competitive in both regional and international markets. This is why this section disentangles the different costs that affect African trade and especially agricultural products.

Table 3.1 presents Africa's regional integration index constructed by the United Nations Economic Commission for Africa (UNECA). While this index tries to take into consideration several dimensions for each REC in a comprehensive way, it does not satisfy three conditions usually required from a trade integration indicator. Indeed, it does not have a theoretical foundation, has no benchmark, and its interpretation remains ambiguous.

Two remarks are worth making about the aggregate index: (1) while EAC and ECOWAS are the most integrated, COMESA is the least integrated; and (2) the subcomponents show that most of the region has reached relatively higher levels of trade integration compared to productive integration (i.e., has a regional value chain), financial and macroeconomic integration, and regional infrastructure. A closer look at the integration dimensions by REC (Table 3.1) shows that trade integration by EAC, COMESA, and AMU is the highest compared to other dimensions (referring to the so-called shallow integration) within each REC.[6]

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6 - Despite a low level of intraregional trade in AMU, its trade integration index is high thanks to very low customs duties on intraregional imports.

By contrast, other RECs display deeper integration, since ECCAS and ECOWAS are deeply integrated at the financial and macroeconomic levels, and EAC and SADC have a high index for the free movement of people.

Hence, one can expect that these countries have low tariff levels thanks to the implementation of different free trade agreements but are still lagging in terms of infrastructure integration or reduction of non-tariff measures, as will be shown later.

Table 3.1 Africa Regional Integration Index 2015

Index	COMESA	ECCAS	SADC	AMU	ECOWAS	EAC	Average
Trade integration[7]	0.57	0.53	0.51	0.63	0.44	0.78	0.58
Regional infrastructure[8]	0.44	0.45	0.5	0.49	0.43	0.5	0.47
Productive integration[9]	0.45	0.29	0.35	0.48	0.27	0.55	0.40
Free movement of people[10]	0.27	0.4	0.53	0.49	0.8	0.72	0.54
Financial & macro integration[11]	0.34	0.6	0.4	0.2	0.61	0.16	0.39
Average	0.41	0.45	0.46	0.46	0.51	0.54	

Source: Constructed by the authors using the Africa Regional Integration Index.
Note: The index is constructed as follows: each of the indicators is given equal weight in the calculation of dimension scores using the sum of the average of the indicators in a dimension. The index uses the standard minmax method of scaling results from 0 (least) to 1 (best). That includes a standardization of the results to get the same unity of measurement to aggregate the data.

Low Levels of Tariffs

We observe that most RECs in Africa do not have high tariff levels on their intraregional imports. Figure 3.1 confirms this, comparing the weighted average of applied tariffs versus tariffs on intraregional imports. In general, the latter are very low, ranging from 1.6 percent for ECCAS to 5.6 percent in ECOWAS. These continue to impose sizable protection on intra-REC trade, chiefly on industrial products. This, however, may be due to the fact that updated data on preferential tariffs may not be fully captured. Such liberalization should, de jure, boost trade at the intraregional level; however, de facto, these countries suffer from other implicit barriers owing to deficient infrastructure and behind-the-borders barriers.

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7 - Trade integration includes the following indicators: level of customs duties on imports, share of intraregional goods exports (% GDP), share of intraregional goods imports (% GDP), and share of total intraregional goods trade.
8 - Regional infrastructure includes the infrastructure development index (transport; electricity; information and communications technology; water and sanitation); proportion of intraregional flights; total regional electricity trade (net) per capita; and average cost of roaming.
9 - Productive integration includes the share of intraregional intermediate goods exports (% total intraregional exports goods); share of intraregional intermediate goods imports (% total intraregional imports goods); and merchandise trade complementarity index (total absolute value of the difference between share of imports and share of exports of a member state in an REC).
10 - Free movement of people includes ratification (or not) of the REC protocol on free movement of persons; proportion of REC member countries whose nationals do not require a visa for entry; and proportion of REC member countries whose nationals are issued with a visa on arrival.
11 - Financial and macroeconomic integration includes regional convertibility of national currencies and inflation rate differential (based on the harmonized consumer price index).

Figure 3.1 Level of customs duties on intraregional imports and on all imports 2015
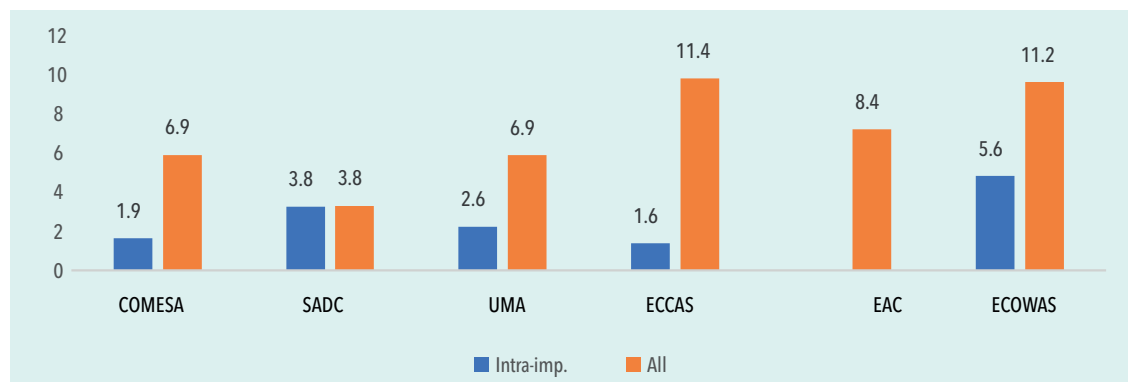
Source: Authors' elaboration using COMTRADE (2019).
Note: Intra-imp represents the intra-regional imports and All is total imports. COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States.
This figure illustrates the level of average tariffs on intra-REC trade in Africa in 2015. Since that date, there has been a change in these customs duties. For example, there are no longer any customs duties on trade in goods within ECOWAS.

Deficient Infrastructure

In general, transport costs represent a higher trade barrier than import tariffs or other trade restrictions. Since infrastructure is deficient, transport in Africa is often unpredictable, leading to a significantly higher cost of transport and thus higher prices. Indeed, Rizet and Gwet (1998) proved that the unit costs of road transport are 40 percent–100 percent higher in Africa than in Southeast Asia. A well-developed infrastructure matters, particularly for small or landlocked countries. MacKellar, Wörgötter, and Wörz (2002) suggest that the costs are three to four times higher in landlocked countries than in other, non-landlocked countries.

Regarding the effect on trade, Limao and Venables (2001) estimate that a 10 percent decrease in transport costs will increase trade by 25 percent. Moreover, Freund and Rocha (2010) argue that a 1-day reduction in inland travel times leads to a 7 percent increase in exports (similar to a cut of 1.5 percentage points on all importing-country tariffs). Lack of good infrastructure also keeps most of Africa out of manufacturing value chains and inhibits diversification (Storeygard, 2016). These empirical results are confirmed in Figure 3.2, which shows the low level of the infrastructure development index (developed by the African Development Bank and including transport, electricity, ICT, and water and sanitation) and Figure 3.3, which compares the indices of the logistics performance index (LPI) and the World Economic Forum (WEF), showing that most of the RECs are suffering from below-the-world-average infrastructure.

Figure 3.2 Infrastructure development index 2015
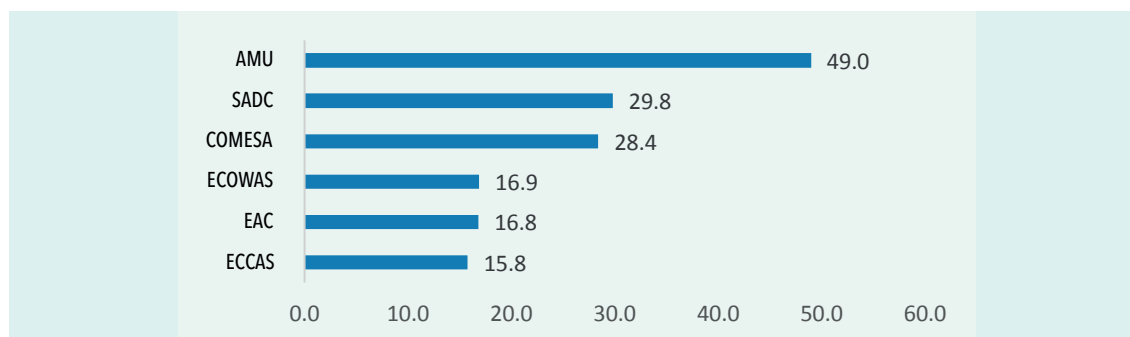
Source: Constructed by the authors using the African Development Bank Infrastructure Index.
Note: This index ranges from 0 (least) to 100 (best). COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States

Figure 3.3 Quality of infrastructure 2018
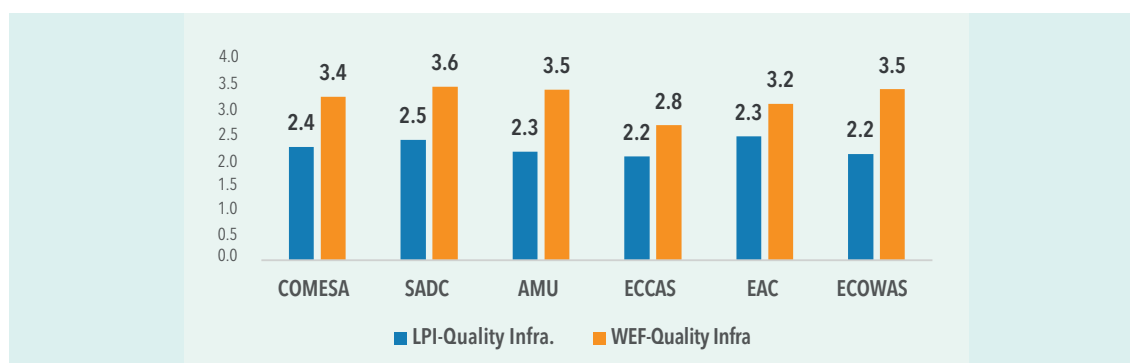
Source: Constructed by the authors using Logistics Performance Indicators (2019) and World Economic Forum (2019).
Note: (i) Logistics performance index: Quality of trade and transport-related infrastructure (1 = low to 5 = high;) (ii) Quality of port infrastructure, WEF (1 = extremely underdeveloped to 7 = well developed and efficient by international standards). COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States

Costly Non-tariff Measures (NTMs)

Numerous non-tariff measures are faced by exporters in most African countries. The literature on the cost of non-tariff measures shows that their cost—and especially that of sanitary and phytosanitary measures and technical barriers to trade—is much higher than that of tariffs (Gillson and Charalambides 2012), and inhibits regional trade. Figure 3.4 is based on a survey by the International Trade Center (between 2010 and 2011) and reports the share of trade and NTMs faced by firms in different destinations. Several firms report that they face more NTMs in countries belonging to the same REC. For instance, firms in Guinea report that 65.9 percent of NTMs are imposed by ECOWAS countries, while only 18.3 percent are imposed by Organization for Economic Cooperation and Development (OECD) countries and 15.9 percent are imposed by other developing countries. This may explain why the shares of trade with these three regions are: 10.5 percent for ECOWAS, 84.5 percent for OECD, and 5 percent for developing countries.

Figure 3.4 NTMs faced by selected African countries

In general, the share of NTMs faced by African exporters and imposed by countries that are members of the same REC is relatively high. For instance, 24 percent of the NTMs faced by Kenyan exporters and 31 percent by Tanzanian exporters are imposed by EAC members. Côte d'Ivoire and Guinea face more NTMs imposed by ECOWAS members (36 percent and 66 percent of total NTMs, respectively). The same conclusion holds for COMESA, but to a lesser extent, for both Madagascar and Mauritius.

From a policy perspective, this is particularly important since most RECs failed to tackle NTMs that are likely to affect trade, particularly that in agriculture. Indeed, Cadot and Gourdon (2014) prove that, owing to non-compliance, sanitary and phytosanitary measures increase the price of African foodstuffs (especially rice and other cereals, some types of meat, and edible oils) by 14 percent. This exerts a negative effect on poor households whose cost of living increases by 9 percent.

Border-related Measures

The last type of barriers that affects trade in African countries is border-related measures; these are lengthy, time consuming, and extremely costly for perishable products (such as agricultural products). The cost of these barriers accounts for 2 percent–15 percent of the value of traded goods (OECD 2002). The most serious problem induced by such complexity is the risk of error that can be repeated and multiplied from one stage to another.

Table 3.2 presents the time to clear exports through customs and time to export (both for border and documentation compliance). An exporter in ECCAS has to bear 234 hours between borders and documentary compliance. If exported products are perishable or have a seasonal nature, losses will be more important since such products will not be sold at an appropriate time to allow consumption. Additional costs are due to the fact that these products could be exported to other markets, with faster clearance. This is slightly lower for ECOWAS and SADC. All African RECs, however, have longer export timescales than their Asian counterparts. This is why the World Bank Enterprise Surveys (Figure 3.5) indicate that, on average, 26 percent of the surveyed firms identify that customs and trade regulations are a major constraint to trade (whereas at the world level only 17 percent do). A large variance can be observed, ranging from 51 percent in Mali, 45 percent in Côte d'Ivoire, 20 percent in Egypt, and 2 percent in South Africa and Eritrea. It is, however, important to note that such perception-based indices are also affected by the fact that some countries (such as Eritrea) do not trade a great deal, and hence their exporters and importers do not report customs regulations as an obstacle to trade.

Table 3.2 Border-related measures (by region) 2018

Region	Time clear exp.	LPI shipments	Time exp. bord.	Time exp. doc.	Time imp. bord.	Time. Imp. doc.
COMESA	6.3	2.9	71.7	69.1	115.7	90.0
SADC	4.7	3.0	81.8	64.4	94.7	58.0
AMU	n.a.	2.9	57.2	60.6	127.1	85.2
ECCAS	6.7	2.7	145.3	89.1	197.8	142.7
EAC	n.a.	3.3	68.0	65.0	204.6	133.5
ECOWAS	12.8	2.8	100.6	76.0	120.7	108.8

Source: Constructed by the author using the Doing Business (2019) and Logistics Performance Indicators (2019). Note: Time clear exp. stands for average time to clear exports through customs and is measured in days; LPI shipments stands for Logistics performance index and is the frequency with which shipments reach consignee within scheduled or expected time (1 = low to 5 = high); Time exp. bord. stands for Time to export, border compliance and is measured in hours; Time exp. doc. stands for Time to export, documentary compliance (hours); Time imp. bord. stands for Time to import, border compliance (hours); Time imp. doc. stands for Time to import, documentary compliance (hours) ; n.a. stands for not available. COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States

Figure 3.5 Percentage of firms identifying customs and trade regulations as a major constraint

Country	Value
South Africa	1.9
Eritrea	2.0
Namibia	5.7
Zambia	8.6
Tunisia	9.3
Mozambique	10.2
Eswatini	11.3
Senegal	13.1
Madagascar	13.4
Ethiopia	13.5
Nigeria	14.1
Botswana	15.8
All Countries	17.1
Kenya	17.4
Mauritius	17.6
Niger	17.7
Rwanda	18.1
Uganda	19.3
Gambia, The	19.4
Egypt, Arab Rep.	20.1
Cameroon	20.5
Middle East & North Africa	21.1
Djibouti	21.8
Zimbabwe	21.9
Morocco	25.0
Ghana	25.1
Congo, Dem. Rep.	25.3
Guinea-Bissau	25.6
Sub-Saharan Africa	25.6
Malawi	26.8
Cabo Verde	27.2
Chad	27.4
Sierra Leone	27.6
Lesotho	27.9
Liberia	29.3
Benin	30.9
Central African Republic	31.9
Gabon	35.1
Burundi	35.6
Togo	35.8
Angola	35.8
Mauritania	37.0
Tanzania	38.8
South Sudan	39.6
Sudan	42.1
Guinea	42.2
Burkina Faso	42.6
Côte d'Ivoire	45.4
Congo, Rep.	45.9
Mali	50.8

Source: Constructed by the authors using the World Bank Enterprise Surveys (2019).
Note: Surveys have been conducted at different years; they are listed in Appendix A3.3.

In a nutshell, despite significant liberalization, African countries are suffering from deficient infrastructure, many NTMs imposed at the intraregional level, and costly border measures.

Trade flows indicators

Measuring Trade Integration: Challenges and Pitfalls

The indicators we use to track progress toward regional trade integration are often presented without a thorough discussion of their underlying properties and limitations. Many authors (e.g., Iapadre and Luchetti 2009; Bouët, Cosnard, and Laborde 2017) have highlighted that a regional integration indicator must fulfill a series of conditions to unambiguously measure progress toward more integration. It must first have a thorough theoretical foundation. Second, there should be a benchmark to compare with; and, third, it should measure trade integration without ambiguity. Yet, analysts have long relied on intraregional trade shares. This indicator, which is defined as the ratio of intraregional trade flows over total trade flows, is easy to compute and interpret. For a particular region (a REC for instance), it measures the share of the region's trade that takes place between its member states. For region R, the share of intraregional trade (SIT_R) is given by Eqn 3.1:

$$SIT_R = \frac{\sum_{s \epsilon R} \sum_{s\prime \in R}(X^{\cdot}_{s,s\prime} + X^{\cdot}_{s\prime,s})}{\sum_{r \in R}(X^{\cdot}_{r,\cdot} + X^{\cdot}_{\cdot,r})} \qquad (3.1)$$

where r,s is countries; R is region R (mainly RECs); $X^{\cdot}(r,\cdot)$ is total exports of country r; and $X^{\cdot}(\cdot,r)$ is total imports of country r.

Figures 3.6 and 3.7 show the intraregional trade shares for the main RECs in Africa for total trade and agricultural trade over the period 2005–2017. The intraregional trade shares for the main RECs range from 1 percent (ECCAS in 2005) to 18 percent (SADC in 2017). This is particularly low compared to other regions, where trade shares range from 30 percent in North America to 50 percent for the European Union (Bouët, Cosnard, and Laborde 2017) and from 40 percent in the Americas to 75 percent in the European Union for agricultural products (Goundan and Fall 2018).

SADC, ECOWAS, and COMESA appear to be the regions with the highest intraregional trade shares for both total trade and agricultural trade. AMU and ECCAS have the lowest levels over the entire period. For all RECs, we observe more integration for agricultural trade compared to total trade. This is particularly the case with SADC and COMESA. The level of agricultural trade integration is stable for the period under consideration, except for COMESA, in which we observe an increasing trend. ECOWAS is the most volatile region from year to year.

Figure 3.6 Share of intraregional trade for all products 2005-2017
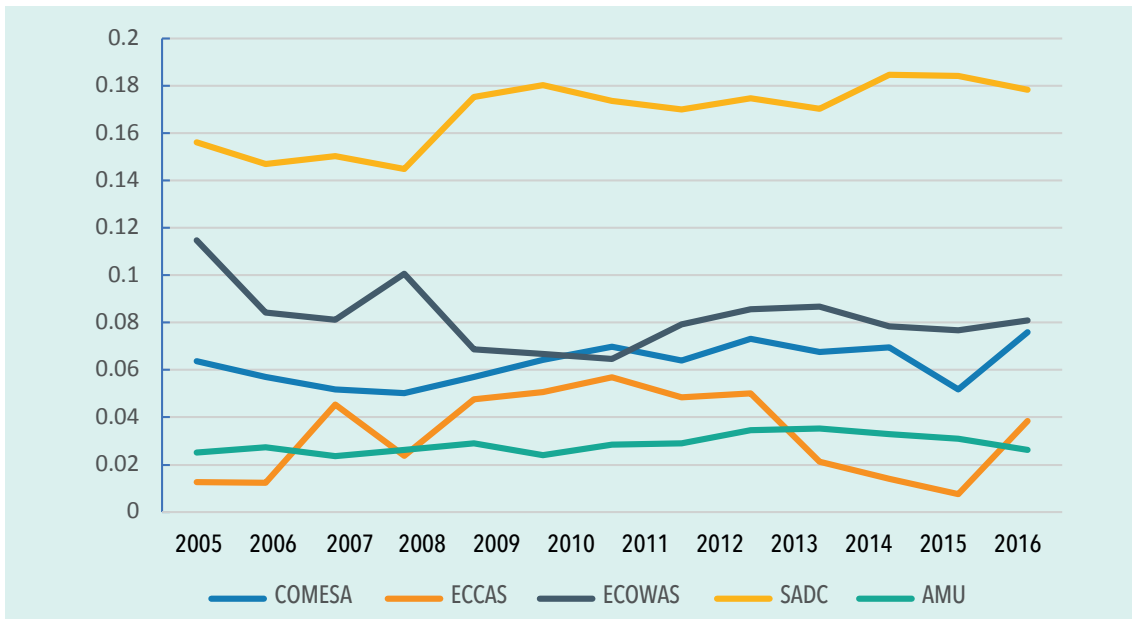
Figure 3.7 Share of intraregional trade for agricultural products 2005-2017
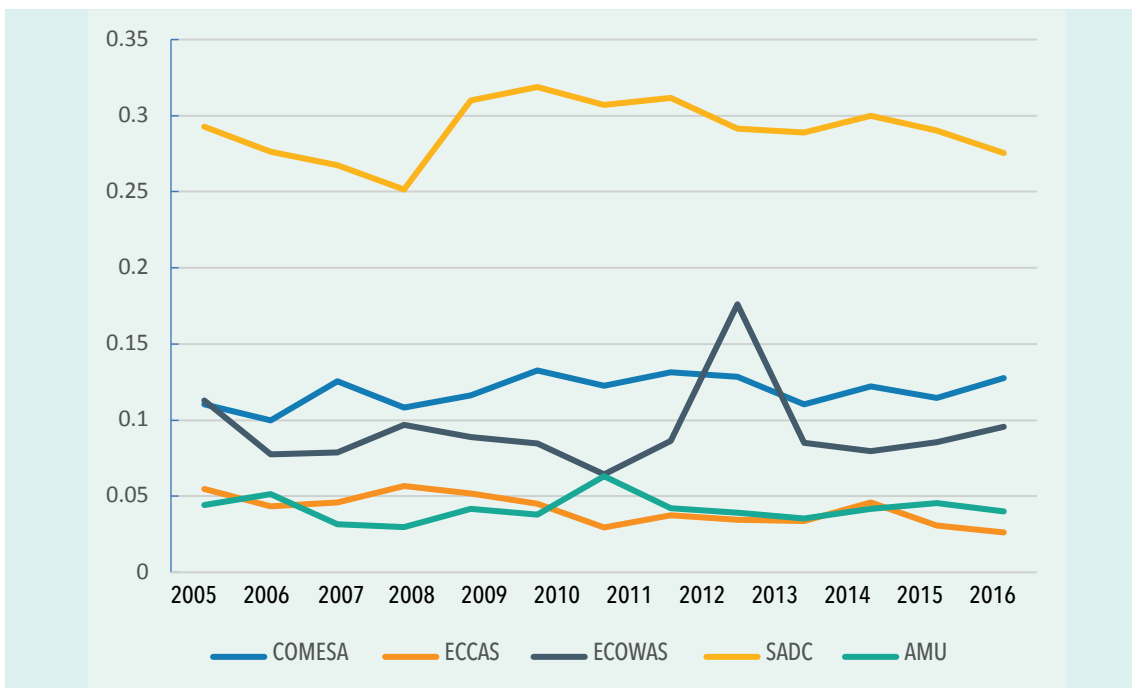
One should, however, be cautious with these figures as the intraregional trade shares suffer from a series of shortcomings, and these can bias analysis when comparing different RECs. The indicator indeed fails to comply with the three conditions mentioned in the beginning of subsection 3.4.1. For instance, there is no benchmark for comparison. In addition, higher intraregional trade shares do not necessarily mean there is more regional integration: indeed, they may be a sign of loss of competitiveness in external markets (Walkenhorst 2013). One final shortcoming of intraregional trade shares is the sensitivity of this measure to the number and size of countries under consideration, particularly when comparing different RECs (Anderson and Norheim 1993; Frankel 1997; Iapadre and Luchetti 2009). Indeed, the measure would lead one to find more integration in an REC with many small countries compared to another with the same GDP size but with fewer countries. The share of intraregional trade in total trade is, therefore, better suited for monitoring one single REC through time.

New Way of Measuring Regional Integration with Consistent Indicators

To overcome the shortcomings related to the share of intraregional trade, Iapadre and Luchetti (2009) propose some refinements to create a proper benchmark (the share of the region in world trade). This new indicator, the intraregional trade intensity index (IRTI$_R$) is given in Eqn 3.2:

$$IRTI_R = \frac{\sum_{s\epsilon R}\sum_{s'\in R}(X_{s,s'} + X_{s',s})/(\sum_{r\in R}(X_{r,.} + X_{.,r}))}{\sum_{r\in R}(X_{r,.} + X_{.,r})/(2.X_{.,.})} = \frac{SIT_R}{\alpha_R} \qquad (3.2)$$

However, this indicator also suffers from two shortcomings: its maximum value is a decreasing function of the region's total trade, and it is not symmetric around 1.[12] The regional trade introversion index they propose fixes these issues. It is based on a modified version of the intraregional intensity index (MIRTI$_R$) and the extraregional intensity index (MERTI$_R$). This indicator is given by Eqn 3.3:

$$RTI_R = \frac{MIRTI_R - MERTI_R}{MIRTI_R + MERTI_R} \qquad (3.3)$$

where:

$$MIRTI_R = \frac{\sum_{s\epsilon R}\sum_{s'\in R}(X_{s,s'} + X_{s',s})/(\sum_{r\in R}(X_{r,.} + X_{.,r}))}{\sum_{s\epsilon R}\sum_{s'\notin R}(X_{s,s'} + X_{s',s})/(\sum_{r\notin R}(X_{r,.} + X_{.,r}))} = \frac{SIT_R}{\beta_R} \qquad (3.4)$$

$$MERTI_R = \frac{(1 - SIT_R)}{(1 - \beta_R)} \qquad (3.5)$$

12 - It ranges from 0 to 1 (1 being geographic neutrality) and from 1 to infinity.

Since both $MIRTI_R$ and $MERTI_R$ are positive, RTI_R necessarily falls between −1 and +1. Values between −1 and 0 reflect the fact that the region is more extraverted than introverted, and values between 0 and +1 indicate that the region is more introverted than extraverted.

Figures 3.8 and 3.9 present the evolution of the regional trade introversion index for the five RECs studied in Figures 3.6 and 3.7 for both total trade and agricultural products over the period 2005–2017. One interesting feature is that all five RECs are more introverted than extraverted, with quite a stable pattern, except for AMU. In addition, the difference between total trade and agricultural trade is less pronounced. When restricted to total trade flows, the differences observed with the shares of intraregional trade (SITs) are now limited, although SADC, ECOWAS, and COMESA still appear as the most introverted RECs and AMU the least introverted. The degree of introversion of ECCAS has increased, particularly in the period 2006–2013, driven mainly by non-agricultural products. Indeed, for this latter group of products, the pattern is quite stable over the entire period. For agricultural products, SADC remains the most introverted region, while ECCAS now appears more introverted than ECOWAS and COMESA, in contrast to what the SIT suggests. Despite the correction of the potential bias of SIT, AMU represents a region with a low level of trade introversion. Indeed, since its creation in 1989, this organization has faced difficulties in realizing its objectives, mainly because of political divergences among its member states.

Figure 3.8 Regional trade introversion index for all products 2005-2017
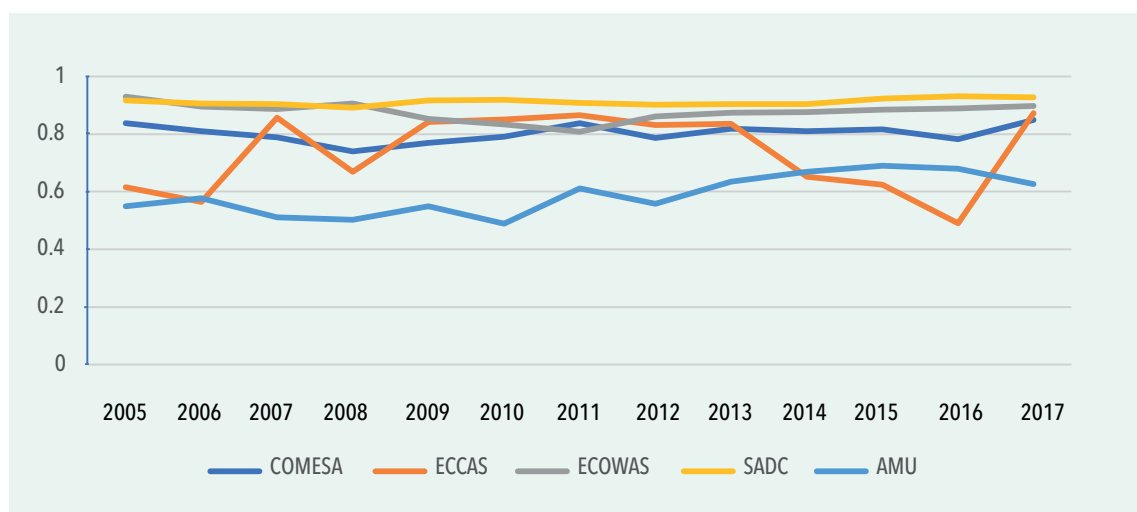
Source: Authors' elaboration using COMTRADE (2019) .
Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, ECOWAS for Economic Community of West African States

Figure 3.9 Regional Trade Introversion Index for all products for agricultural products 2005-2017
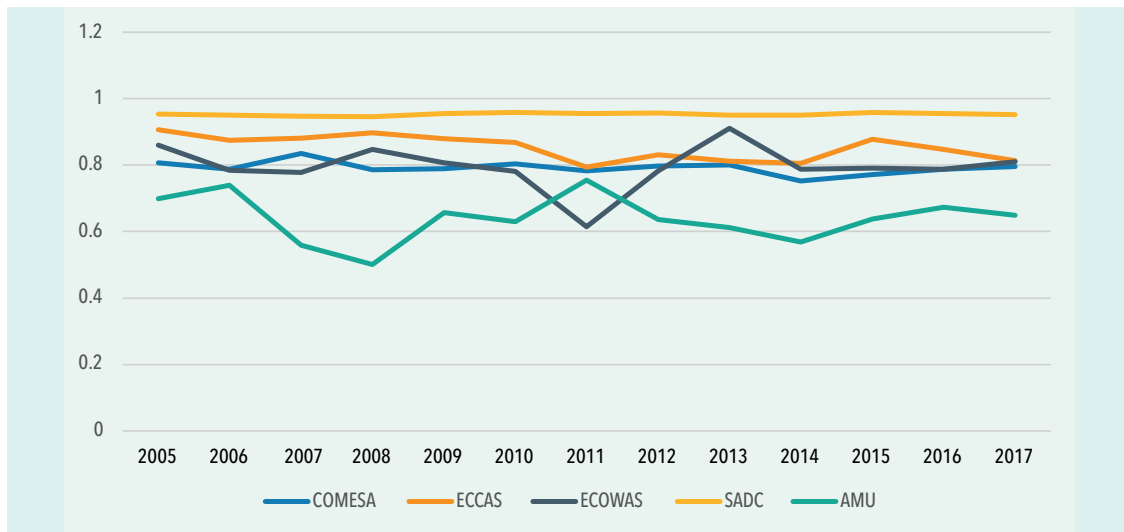
Source: Authors' elaboration using COMTRADE (2019) .
Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, ECOWAS for Economic Community of West African States

Whatever the regional trade integration indicator selected for the analysis, the official data used here may underestimate actual trade flows to a large extent. This is particularly the case for agricultural products in Africa. Indeed, databases are based almost exclusively on data provided by national statistical institutes, which in turn are based on data provided by customs administrations. For agricultural products, informal trade flows going through unofficial routes (particularly trade in small quantities, but not exclusively) between neighbors have for a long time constituted a large part of transactions in Africa (Egg and Herrera 1998) and tend to dominate transactions that go through customs but remain unrecorded (Traoré and Mitaritonna 2017). The actual indicators would improve if these non-recorded flows were considered.

Structure of Intra-Africa Agricultural Trade

Trade Diversification

Geographical diversification

To determine to what extent African RECs are diversified at the geographical level, we rely first on a Herfindhal–Hirshman (HH) index (Figure 3.10). The higher the index, the more concentrated the exports of each REC will be. Since there is very limited variability over time, we focus on the average values over the period 2005–2017.

Figure 3.10 Herfindhal–Hirshman index–geographical diversification average 2005-2017
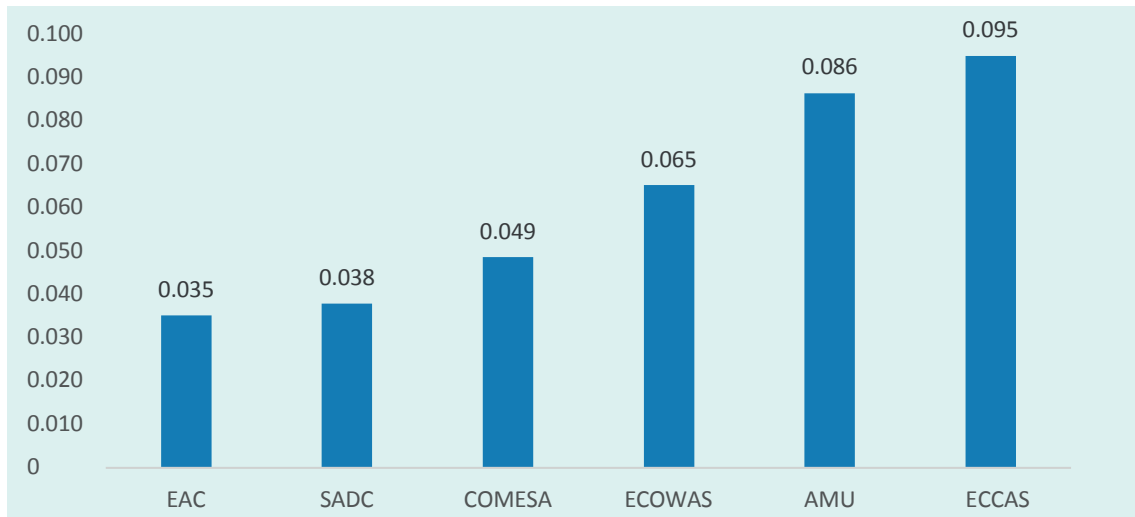
Source: Authors' elaboration using COMTRADE (2019).
Note: Figures are calculated as an average over the period 2005–2017. COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States

While all RECs are relatively diversified in terms of their destination (the HH index is on average 0.06), some are more concentrated than others. ECOWAS, ECCAS, and AMU belong to the first group with 15.4 percent, 30.2 percent, and 58 percent of their total exports going to India, China, and the European Union, respectively.

Yet, most trade indices (including the HH index) do not take into consideration the actual size of every potential partner, since they do not distinguish between a situation where a country depends heavily on a major partner or on a small one. This is why De Lombaerde et al. (2012) and Bouët, Cosnard and Laborde (2017) used the global geographic diversification index (GGDI), which is based on the weight of each commercial partner in world trade using the Finger–Kreinin index of similarity. This index evaluates the distance between the distribution of one country's trade and the distribution of trade in the rest of the world (Eqn 3.6):

$$GGDI(r) = 1 - \frac{\sum_{s \neq r} \left| \frac{X^\cdot_{r,s} + X^\cdot_{s,r}}{X^\cdot_{r,\cdot} + X^\cdot_{\cdot,r}} - \frac{X_{s,\cdot} + X^\cdot_{\cdot,s} - (X^\cdot_{r,s} + X^\cdot_{s,r})}{2X^\cdot_{\cdot,\cdot} - (X^\cdot_{r,\cdot} + X^\cdot_{\cdot,r})} \right|}{2} \qquad (3.6)$$

with the same notation system. If a country *r* has exactly the same geographic allocation of its trade as the worldwide distribution of trade, each term in absolute value is equal to 0 and the index is equal to 1. The more the country's geographic allocation of trade differs from the worldwide distribution of trade, the smaller the index.

Figure 3.11 presents the GGDI by REC. At the geographical level most regions are moderately diversified since, on average, the GGDI for agricultural products is around 0.5. AMU is the most diversified, and SADC is the least diversified.

Figure 3.11 Global Geographical Diversification Index average 2005-2017
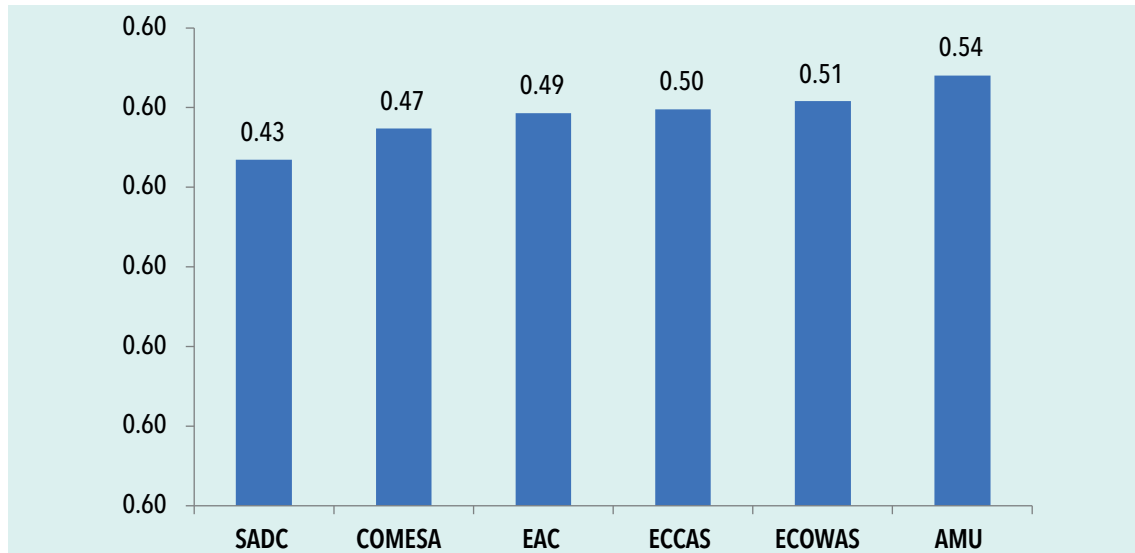
Source: Authors' elaboration using COMTRADE (2019) .
Note: Figures are calculated as an average over the period 2005–2017. COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States

Sectoral Diversification

Figure 3.12 shows that, while EAC, SADC, and COMESA are more diversified, exports from ECOWAS, ECCAS, and AMU are concentrated in fuel and natural resources (their share in total exports being 39.4 percent, 39.7 percent, and 42.6 percent, respectively).

Figure 3.12 Herfindahl–Hirschman Index by product average 2005-2017
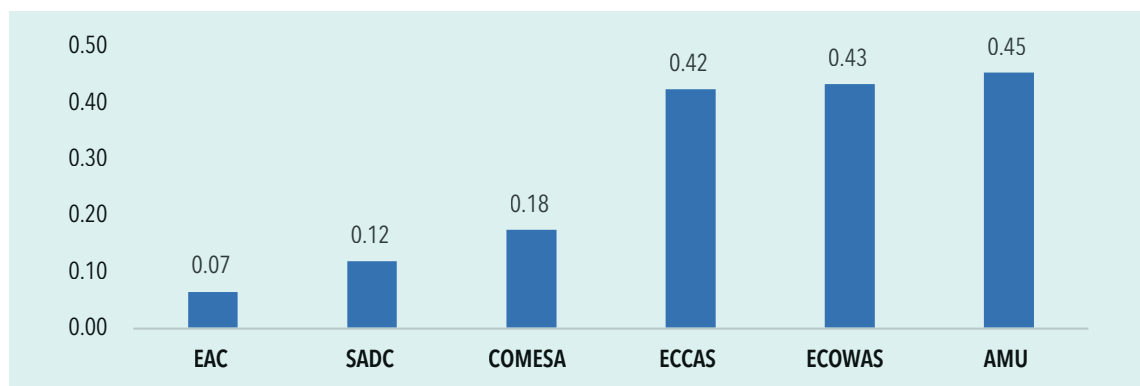
Source: Authors' elaboration using COMTRADE (2019) .
Note: Figures are calculated as an average over the period 2005–2017.COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States.

Yet, when we use the global sectoral diversification index (GSDI), which is the sectoral equivalent of the GGDI, results are relatively similar for most RECs. Indeed, the latter measures the distance between the sectorial distribution of a country's total trade and the sectorial distribution of trade in the rest of the world using Eqn 3.7:

$$GSDI(r) = 1 - \frac{\sum_k \left| \frac{X_{r.}^k + X_{.,r}^k}{X_{r.}^{\cdot} + X_{.,r}^{\cdot}} - \frac{2X_{.,.}^k - (X_{r.}^k + X_{.,r}^k)}{2X_{.,.}^{\cdot} - (X_{r.}^{\cdot} + X_{.,r}^{\cdot})} \right|}{2}$$
(3.7)

Figure 3.13 shows that all RECs have almost the same level of diversification for agricultural products, with EAC being the least and ECCAS the most diversified.

Figure 3.13 Global sectorial diversification index average 2005-2017
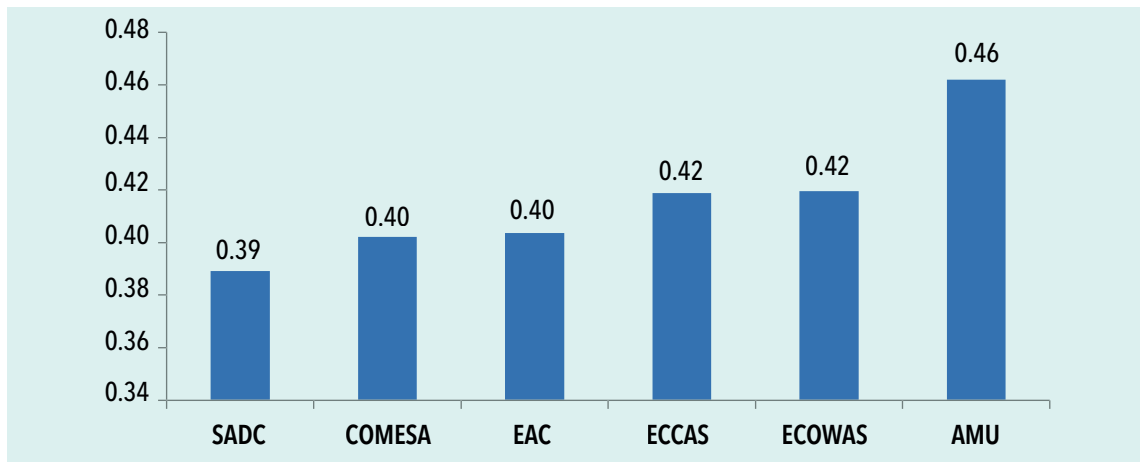
Source: Authors' elaboration using COMTRADE (2019).
Note: Figures are calculated as an average over the period 2005–2017. COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States.

Intra-industry Trade Flows

This section investigates the magnitude of intra-industry trade as an outcome of regional integration in Africa. Intra-industry trade refers to the existence of two-way exchange flows of products of the same industry between two trade partners. The Grubel–Lloyd index is used to measure intra-industry trade of raw versus processed agricultural products between African countries, considered individually or as a group in their RECs, and their trade partners in world and intra-African markets. The index measures the extent of overlap of imports and exports of product by country in market and year as in Eqn 3.8:

$$GL_{ijtk} = 1 - \frac{\left| X_{ijtk} - M_{ijtk} \right|}{X_{ijtk} + M_{ijtk}}$$
(3.8)

The index varies between 0 (denoting no intra-industry trade) and 1 (corresponding to only intra-industry trade) in exchange flows. The index is computed at the 6-digit level of the Harmonized Commodity Description and Coding System (HS6) and the results are presented below in 3.6.1 and 3.6.2, first with respect to trade flows between African countries and their partners in world markets, and then considering intra-Africa trade flows.

The results suggest that the scope of intra-industry trade by African countries with the rest of world is significantly broader for processed agricultural products than for raw agricultural products. The results also indicate that the extent of intra-industry trade is larger in intra-Africa exchanges of agricultural products than in Africa's agricultural trade with the rest of the world. Grubel–Lloyd index values are significantly higher at an REC level compared to their values for the REC's respective member countries, suggesting that exports by some countries tend to offset imports by other countries in the same REC.

Intra-industry Trade Between Africa and the Rest of the World

Figure 3.14 presents the average Grubel–Lloyd index values calculated for the trade of raw versus processed agricultural products between Africa's RECs and the rest of the world from 2005 to 2017. Across all RECs, except for ECCAS and CEMAC, intra-industry trade is higher for processed products compared to raw products. The lowest values in the index are found in ECCAS, while SADC has the highest values. For the whole Africa's trade flows the average index is 0.56 for processed products and 0.43 for raw products; it is lower for all RECs apart from SACU and SADC, where for processed products it is 0.57 and 0.58, respectively, and for raw products it is 0.50 and 0.48, respectively. Figure 3.15 shows that the higher intra-industry trade index for processed versus raw products has remained unchanged between 2005 and 2017. The index value tends to decrease over time but more markedly for processed products.

Figure 3.14 Intra-industry trade in Africa's world trade by regional economic communities, 2005–2017 average
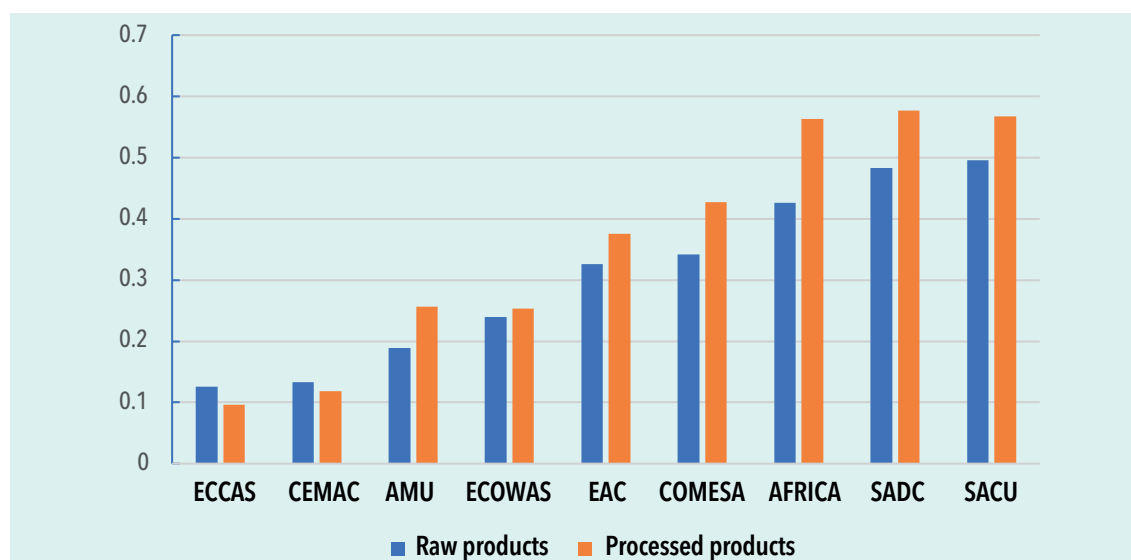
Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, CEMAC for Central African Economic and Monetary Community, SACU for Southern African Customs Union, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States.

Figure 3.15 Grubel–Lloyd Index by product category for the whole Africa, 2005–2017
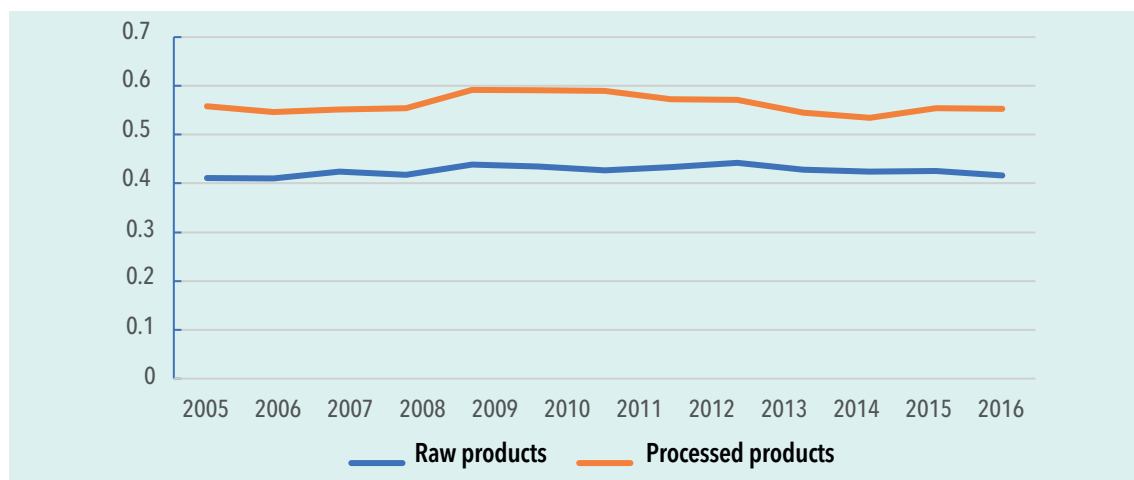
Source: Authors' elaboration using COMTRADE (2019).

3.6.2 Intra-industry Trade in Africa's Agricultural Markets

Figure 3.16 shows that for every REC, except CEMAC, the scope of intra-industry flows of agricultural products is larger in the REC's trade with other African partners than in its trade with non-African partners. As in world markets, ECCAS shows the lowest level of intra-industry trade in intra-Africa markets, while the highest level is attained in the SADC region.

The value of the index for an REC is much higher than the highest values observed for individual countries within the REC, suggesting that trade overlap is more likely at the regional than at the country level (Figure 3.17). For instance, the index of intra-industry trade in agriculture is 0.52 for ECOWAS trade in intra-Africa markets, while the highest country-level index values among the members of this REC are only 0.12, 0.13, and 0.14 for Ghana, Senegal, and Togo, respectively. This suggests a broader scope of intra-industry trade in agriculture in an REC than in its individual member countries, as imports of some countries may be offset by exports of other countries within the same REC.

Figure 3.16 Intra-industry trade in Africa's agricultural markets by regional economic community, 2005–2017 average
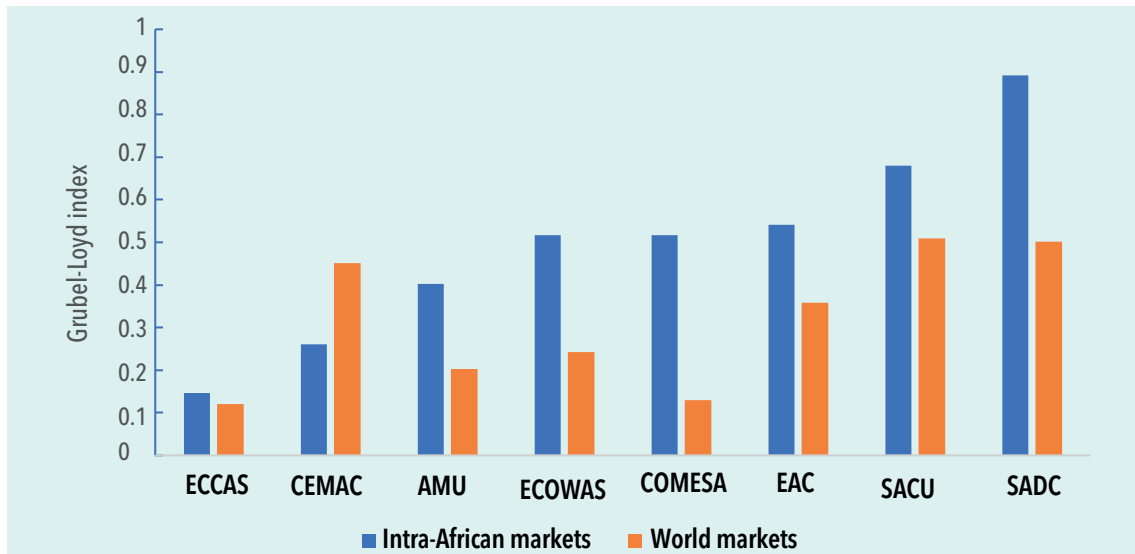
Source: Authors' elaboration using COMTRADE (2019).
Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, CEMAC for Central African Economic and Monetary Community, SACU for Southern African Customs Union, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States.

Figure 3.17 Intra-industry trade in Africa's agricultural markets, highest country-level Grubel–Lloyd index values by regional economic community, 2005–2017 average
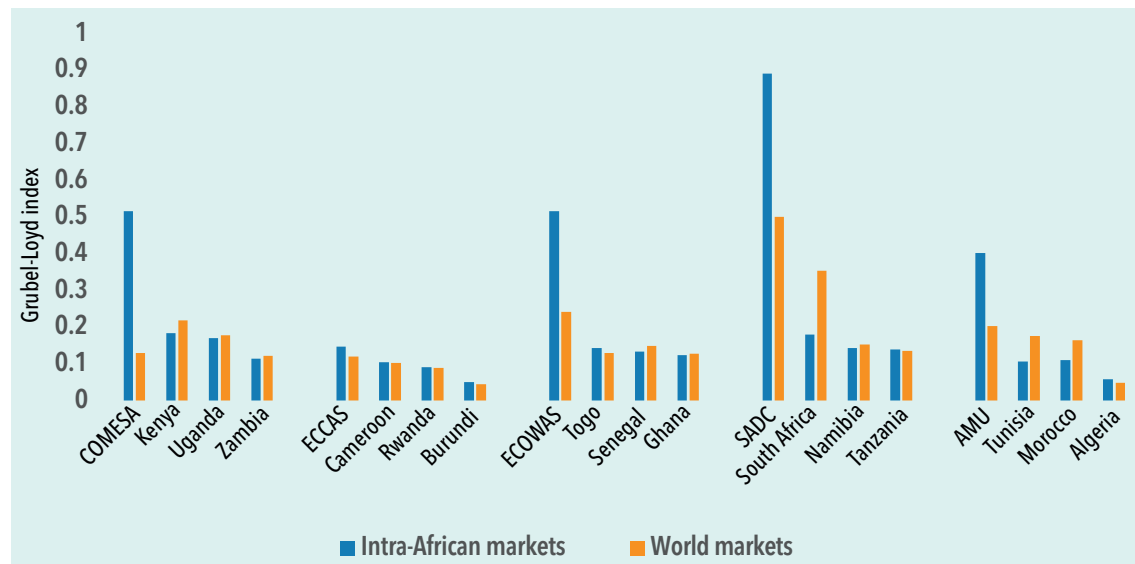
Source: Authors' elaboration using COMTRADE (2019).
Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, ECOWAS for Economic Community of West African States.

Conclusions

This chapter examines regional integration in Africa in three ways: (1) by providing an overview and comparison of different RECs in Africa since their proliferation in recent decades; (2) by examining their integration through an analysis of their intraregional trade and the different types of trade costs that are likely to hinder their integration; and (3) by assessing the diversification of these RECs at both the geographical and sectoral level and comparing their intra-industry trade.

Our main findings show that, despite low tariffs, the non-tariff measures, deficient infrastructure, and lengthy border-related measures are very costly whether they are measured by observed indices or the perceptions of the company concerned. When different RECs are compared, we see that SADC, ECOWAS, ECA, and COMESA appear to be the most introverted RECs in terms of both total trade and agricultural trade. AMU and ECCAS are, however, less introverted over the entire period. At the product level, we observe for all the RECs that there is more introversion for agricultural trade than for total trade. This is particularly the case with SADC and COMESA. Regarding the trade orientation of different RECs, one can conclude that all five RECs are more introverted than extraverted and—apart from AMU—have a relatively stable pattern. In addition, the difference between total trade and agricultural trade is less pronounced. In terms of diversification, most RECs are diversified at the geographical level, but less diversified at the sectoral level (with some of them exporting either fuel or agricultural products). Finally, agricultural products are more characterized by intra-industry trade compared to non-agricultural products, since most of the latter are concentrated in oil and minerals, which are exported to the rest of the world.

From a policy perspective, several issues must be considered with respect to Africa's integration. (1) Trade agreements have resulted in a relatively good performance, in particular in terms of trade integration within EAC and AMU and free movement of people within ECOWAS and EAC. It is, however, important to take into consideration both border-related and non-tariff measures that are still hindering trade in Africa. (2) At the level of negotiations, a more comprehensive approach is necessary for deeper integration. Indeed, improving infrastructure and facilitating trade procedures are important to boost trade in agriculture, since these products are perishable and can be quickly affected by customs inefficiency or infrastructure deficiency. (3) It is also necessary to address non-tariff measures to boost intra-and extraregional trade in Africa by harmonizing the rules of origin and standards, and norms of products, in different RECs. (4) The provision of technical assistance to different firms (in particular small and medium exporters) from both government and international donors is indispensable to assist companies in complying with international standards. This is vital to improve the quality of exported products and in the production of goods that are up to international standards. (5) It is crucial to make rules and procedures more transparent on customs websites to reduce the cost implied by NTMs and thus lead to easier and more efficient implementation. For instance, a global trade helpdesk—a recent initiative of ITC, UNCTAD, and WTO—will help micro, small, and medium enterprises to export more. This is an online platform to improve the quality and transparency of trade-related information, and to strengthen public–private dialog.

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Appendix

Table A3.1 Membership of African regional trade agreements

Country	ECOWAS	EAC	ECCAS	CEMAC	COMESA	SADC	SACU	AMU
Algeria	0	0	0	0	0	0	0	1
Angola	0	0	1	0	0	1	0	0
Benin	1	0	0	0	0	0	0	0
Botswana	0	0	0	0	0	1	1	0
Burkina Faso	1	0	0	0	0	0	0	0
Burundi	0	1	1	0	1	0	0	0
Cabo Verde	1	0	0	0	0	0	0	0
Cameroon	0	0	1	1	0	0	0	0
Central African Republic	0	0	1	1	0	0	0	0
Chad	0	0	1	1	0	0	0	0
Comoros	0	0	0	0	1	0	0	0
Congo Dem. Rep.	0	0	1	0	1	1	0	0
Congo, Rep.	0	0	1	1	0	0	0	0
Côte d'Ivoire	1	0	0	0	0	0	0	0
Djibouti	0	0	0	0	1	0	0	0
Egypt, Arab Rep.	0	0	0	0	1	0	0	0
Equatorial Guinea	0	0	1	1	0	0	0	0
Eritrea	0	0	0	0	1	0	0	0
Ethiopia	0	0	0	0	1	0	0	0
Gabon	0	0	1	1	0	0	0	0
Gambia	1	0	0	0	0	0	0	0
Ghana	1	0	0	0	0	0	0	0
Guinea	1	0	0	0	0	0	0	0
Guinea-Bissau	1	0	0	0	0	0	0	0
Kenya	0	1	0	0	1	0	0	0
Lesotho	0	0	0	0	0	1	1	0
Liberia	1	0	0	0	0	0	0	0
Libya	0	0	0	0	1	0	0	1
Madagascar	0	0	0	0	1	1	0	0
Malawi	0	0	0	0	1	1	0	0
Mali	1	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0	1
Mauritius	0	0	0	0	1	1	0	0
Morocco	0	0	0	0	0	0	0	1
Mozambique	0	0	0	0	0	1	0	0
Namibia	0	0	0	0	0	1	1	0
Niger	1	0	0	0	0	0	0	0

Country	ECOWAS	EAC	ECCAS	CEMAC	COMESA	SADC	SACU	AMU
Nigeria	1	0	0	0	0	0	0	0
Rwanda	0	1	1	0	1	0	0	0
Saint Helena	0	0	0	0	0	0	0	0
Sao Tome and Principe	0	0	1	0	0	0	0	0
Senegal	1	0	0	0	0	0	0	0
Seychelles	0	0	0	0	1	1	0	0
Sierra Leone	1	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	1	1	0
South Sudan	0	0	0	0	1	0	0	0
Sudan	0	0	0	0	1	0	0	0
Swaziland	0	0	0	0	1	1	1	0
Tanzania	0	1	0	0	0	1	0	0
Togo	1	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0	1
Uganda	0	1	0	0	1	0	0	0
Zambia	0	0	0	0	1	1	0	0
Zimbabwe	0	0	0	0	1	1	0	0

Note: COMESA for Common Market for Eastern and Southern Africa, SADC for Southern Africa Development Community, AMU for Arab Maghreb Union, ECCAS for Economic Community of Central African States, EAC for East African Community, ECOWAS for Economic Community of West African States, CEMAC for Central African Economic and Monetary Community, SACU for Southern African Customs Union.

Table A3.2 Level of customs duties on intraregional imports 2015

Country	ECOWAS	Country	COMESA	Country	SADC
Nigeria	0.4%	Burundi	0.0%	Botswana	0.0%
Senegal	0.4%	Comoros	0.3%	Lesotho	0.0%
Côte d'Ivoire	0.7%	Djibouti	12.5%	Madagascar	0.3%
Sierra Leone	0.8%	Egypt	0.1%	Malawi	1.6%
Togo	3.0%	Ethiopia	10.0%	Mauritius	0.0%
Guinea-Bissau	3.3%	Kenya	1.2%	Mozambique	1.6%
Ghana	4.8%	Libya	0.0%	Namibia	0.0%
Niger	4.9%	Madagascar	0.0%	Seychelles	12.2%
Mali	5.5%	Malawi	0.0%	South Africa	0.0%
Burkina Faso	5.7%	Mauritius	0.0%	Swaziland	0.0%
Benin	6.9%	Rwanda	0.4%	Tanzania	9.6%
Cabo Verde	11.2%	Seychelles	7.3%	Zambia	0.1%
Guinea	13.5%	Sudan	0.6%	Zimbabwe	24.0%
Gambia	16.7%	Swaziland	1.3%	Average	3.8%
Average	5.6%	Uganda	0.7%		

Country	AMU	Country	COMESA	Country	ECCAS
Algeria	3.9%	Zambia	0.0%	Cameroon	0.2%
Libya	0.0%	Zimbabwe	0.2%	Central African Rep.	0.0%
Mauritania	8.6%	Average	1.9%	Chad	0.0%
Morocco	0.0%			Congo	5.3%
Tunisia	0.5%			Gabon	0.3%
Average	2.6%			Rwanda	0.1%
				Sao Tome & Principe	5.3%
				Average	1.6%

Source: COMTRADE (2019).

Table A3.3 Enterprise surveys (by year)

Economy	Year	Economy	Year
Angola	2010	Mauritania	2014
Burundi	2014	Mauritius	2009
Benin	2016	Malawi	2014
Burkina Faso	2009	Namibia	2014
Botswana	2010	Niger	2017
Central African Republic	2011	Nigeria	2014
Côte d'Ivoire	2016	Rwanda	2011
Cameroon	2016	Sudan	2014
Congo, Rep.	2009	Senegal	2014
Cabo Verde	2009	Sierra Leone	2017
Eritrea	2009	South Sudan	2014
Ethiopia	2015	Eswatini	2016
Gabon	2009	Chad	2018
Ghana	2013	Togo	2016
Guinea	2016	Tanzania	2013
Gambia	2018	Uganda	2013
Guinea-Bissau	2006	South Africa	2007
Kenya	2018	Zambia	2013
Liberia	2017	Zimbabwe	2016
Lesotho	2016	Congo, Dem. Rep.	2013
Madagascar	2013	Djibouti	2013
Mali	2016	Egypt, Arab Rep.	2016
Mozambique	2018	Morocco	2013
		Tunisia	2013

Source: Constructed by the authors.

4

Competitiveness of African Agricultural Value Chains

Fidele Dedehouanou, Betina Dimaranan, and David Laborde

4. Introduction

The notion of competitiveness is regularly at the heart of economic debate and is the subject of many official reports: *The Global Competitiveness Report* (Schwab and Sala-i-Martín 2017), for example, ranks 137 countries in terms of this concept. The highest ranked African economy is 47 (Mauritius), and all other countries of the continent are ranked 67 or below. The African Development Bank recently released a report on the competitiveness of African countries, pointing to the overall stagnation in African competitiveness (AfDB 2017). To address these limitations, the Malabo Declaration aims to restore the competitiveness of African nations in the agricultural and agri-food sectors.

Economists agree that competitiveness is particularly difficult to define. Competitiveness can be understood in the narrow sense as the comparison of prices of the same commodity produced in two different places. Competitiveness can also be applied in a general way to a nation, as the "capacity of a country to sustainably improve the standard of living of its inhabitants and to provide them with a high level of employment and social cohesion" (Debonneuil and Fontagné 2003, 8; this definition is based on European treaties). Competitiveness can be studied through its microeconomic drivers (labor costs, input costs, productivity, etc.) and/ or macroeconomic drivers (trade costs, exchange rates, institutions, etc.), but it can also be studied through its impact on, for example, economic variables such as the level of a country's exports of a product relative to other countries. Producers can compete on price, quality, and degree of product differentiation. Finally, while the notion of competitiveness is often related to that of productivity, it should be noted that the latter concept refers to an absolute metric (e.g., production per capita) while the former refers to a relative metric, (e.g., comparison of the prices of two commodities produced in two different countries).

This chapter uses a statistical approach to explore African agricultural competitiveness. We illustrate competitiveness through all three means mentioned above: microeconomic drivers, macroeconomic drivers, and impact. We discuss the evolution of Africa's competitiveness, comparing the competitiveness of Africa's regional economic communities (RECs) with the world and among each other. We also analyze the competitiveness of value chains by commodity for the commodity value chains that are most significant for Africa's trade. We examine the various macroeconomic factors, especially the real effective exchange rate, that affect the performance of each value chain in the world market.

The quantitative analysis is based on data from the past 13 years. Comparisons are made based on averages computed between the 3-year period 2005–2007, and the more recent period, 2015–2017.

In this year's *Africa Agriculture Trade Monitor* (AATM) report, we focus on export performance and offensive interests. Next year's report will focus on defensive interests. Several export-oriented commodity value chains that are highly significant for the African continent are selected for our analysis. Of the traditional cash crops, we include cashew nuts, cocoa, coffee, cotton, sugar, and tea. We also include citrus, grapes, legumes and pulses, sesame seeds, and tomatoes. These were selected because Africa has significant shares in the world market for these commodities, ranging from 4.4 percent for grapes to 59.4 percent for sesame seeds in 2015–2017 (Table A4.1 in Appendix).

Their shares in total African agricultural exports are also significant, ranging from 1 percent for legumes and pulses to 15.3 percent for cocoa in 2015–2017. Lastly, several of these commodities have become more important over the last decade. For example, the share of African cashew nuts in the world market, as well as in total agricultural exports of Africa, has nearly doubled in the last 10 years.

In our analysis of the evolution of competitiveness, we pay particular attention to the performance of the RECs and to progress in the transformation of primary commodities to higher-value products. In their analysis of the competitiveness of African agricultural exports over the 1998–2013 period, Odjo and Badiane (2018) find that Economic Community of West African States (ECOWAS) countries were the most successful in increasing competitiveness in global markets, while the Economic Community of West African States (ECCAS) and Southern African Development Community (SADC) countries tended to lose competitiveness. These key trends are confirmed in this chapter. In terms of export commodities, African exporters increased their competitiveness in global markets in most of the primary agricultural commodities considered in the study. For traditional value chain cash crops, including cocoa, coffee, cotton, and tea, they achieved either reduced competitiveness or small gains. Finally, the study also finds that African countries lost competitiveness in global markets but gained in intraregional markets, reflecting the significant growth in intraregional trade over the period.

In section 4.2 we examine the competitiveness of RECs and of primary value chains through revealed comparative advantage and through market share decomposition. In the section 4.3, we focus on how prices matter in the assessment of competitiveness, through an analysis of unit values and the evolution of the real exchange rates over the period. We trace the transformation of our selected commodity value chains through the value chain ladder in section 4.4. Section 4.5 is devoted to the examination of exports and market shares for Africa and the RECs for each of the selected commodity value chains in 2015–2017 and to more recent developments in these markets. Conclusions are offered in section 4.6. Box 4.1 presents recent developments in agricultural e-commerce in Africa and their impacts on some value chains.

Overview of African Agricultural Competitiveness

There are different ways of measuring a country's competitiveness. We start by assessing it through its impact on trade performance. Revealed comparative advantages, although imperfect indicators (discussed in Bouët, Cosnard, and Laborde 2017), are a standard approach to this issue. We then provide a useful approach to decompose the evolution of African export shares on world markets to discriminate between country performance and the dynamics of global markets.

Comparative Advantages

Measures of revealed comparative advantage (RCA) have been used to help assess a country's export potential. Comparative advantage is a theoretical concept of what a particular producer or economy is best at producing, relative to other things it could produce and to its peers. In practice, we can measure Revealed comparative advantage. It is a bi-ratio (or a ratio of two

ratios) and compares the share of one product in a country's total exports to the share of the same product in world exports. It is often used to provide information about potential trade prospects with new partners.

Countries with similar Revealed comparative advantage profiles are unlikely to have high bilateral trade intensities, unless intra-industry trade is involved. Revealed comparative advantage measures, if estimated at high levels of product disaggregation, can focus attention on products that are comparatively unique in world markets and which might, therefore, be exported successfully. While different definitions for Revealed comparative advantage are available, we use the Revealed comparative advantage index defined by Balassa (1965), the Revealed comparative advantage of country i for product j is measured by the product's share in the country's exports in relation to its share in world trade (Eqn 4.1):

$$RCA_{ij} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt}) \qquad (4.1)$$

where X_{ij} and X_{wj} are the values of country i's exports of product j and world exports of product j, and where X_{it} and X_{wt} refer to the country i's total exports and world total exports. A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have an Revealed comparative advantage in the product.

We note that the Revealed comparative advantage reflects the comparative advantage of a country in the current policy environment. It may be the case that a country has a strong comparative advantage in, for example, maize production, but if export bans prevent maize from being exported, maize will not be revealed as a comparative advantage. It may also be the case that a comparative advantage, as revealed by this indicator, only exists due to domestic support and/or export subsidies. Put differently, this indicator reveals a comparative advantage from observed trade flows, without consideration for an explanation: competitiveness due to either access to technology, or to access to specific endowments, or a domestic policy that gives an advantage to local producers.

Revealed Comparative Advantage: Overview

Revealed comparative advantages and specialization in agriculture have been increasing in the last decade for most of Africa's RECs (Figure 4.1). Africa, as a continent, is more specialized in agriculture compared to the rest of the world. COMESA is most specialized in agriculture among Africa's RECs, and this specialization has increased further since 2012. Similarly, ECOWAS has become more specialized in agriculture. ECCAS, Arab Maghreb Union (AMU), and Communauté Economique et Monétaire d'Afrique Centrale (CEMAC), having a large share of their exports in oil and minerals, are not specialized in agriculture compared to the world specialization pattern.

Figure 4.1 Revealed comparative advantage for agriculture for Africa's regional economic communities, 2005–2017
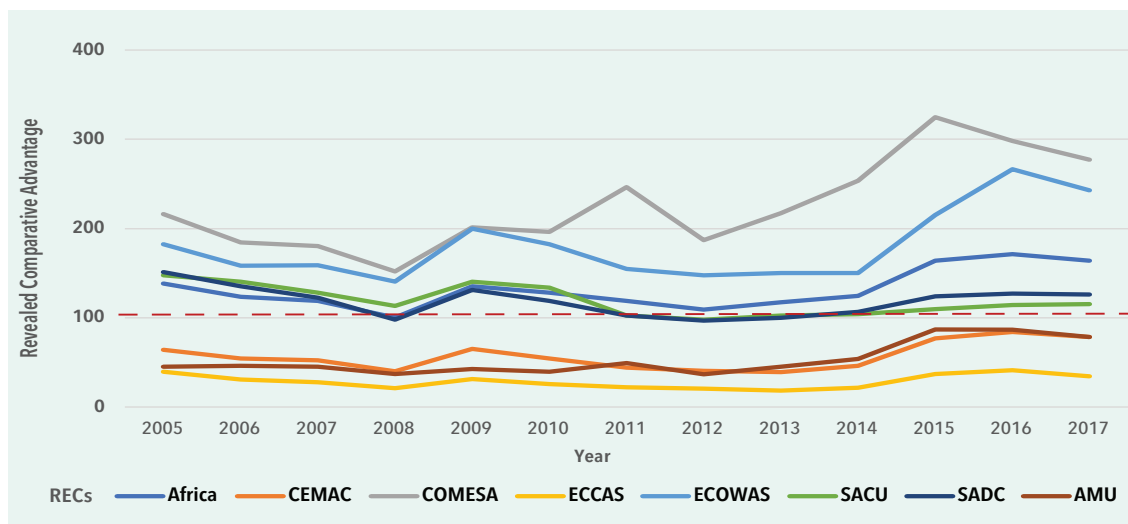
Source: COMTRADE (2019) and authors' calculation.
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Custom Union, AMU = Arab Maghreb Union.

Revealed Comparative Advantage: Focused value chains

In Figure 4.2, we examine Africa's specialization in exports of the selected commodity value chains. Africa has significant revealed comparative advantage in sesame seeds and in legumes and pulses. Its revealed comparative advantage has been fairly steady for cashew nuts, cocoa, cotton, and tea over 2005–2017. Over the same period, revealed comparative advantage is low but increasing for sugar and tomatoes, steady for grapes, and declining for coffee.

Figure 4.2 Revealed comparative advantage for Africa's value chains, 2005–2017
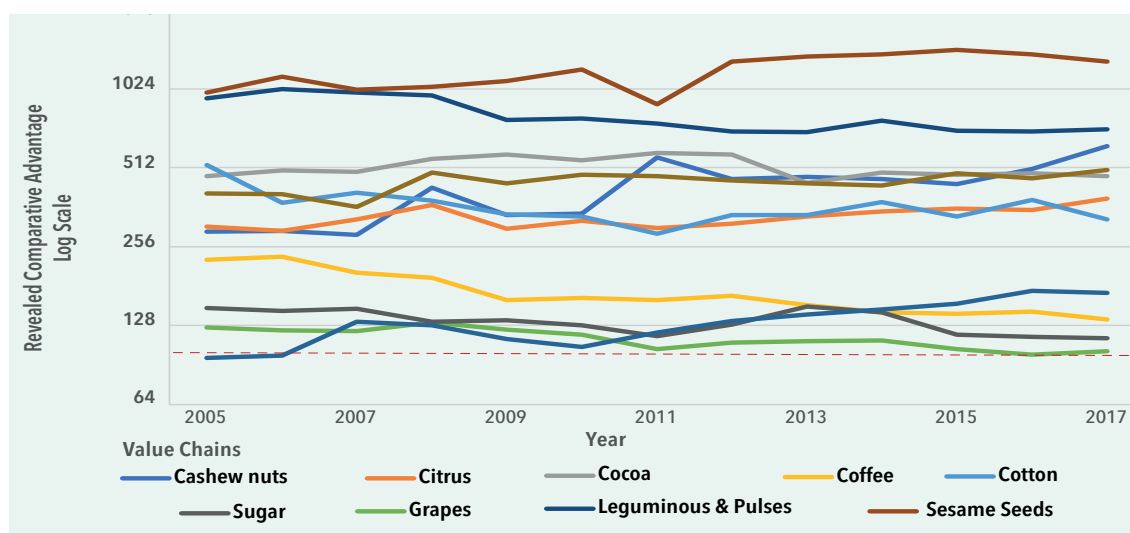
Source: COMTRADE (2019) and authors' calculation.

Market Share Decomposition

This subsection provides an evaluation of how Africa's competitiveness has varied between 2005–2007 and 2015–2017 using market share decomposition. We decompose the global market shares of African RECs and countries, to evaluate the performance of both, and to analyze what drives the performance: good geographical or sectoral specialization (i.e., benefiting from a pro-growth trend due to its sectoral or geographical specialization), or individual performance.

This approach defines a benchmark for a country's progress, and assesses if it has over- or underperformed. Here, the domestic performance is the portion of the market share growth that is not attributable to increases in sectoral or geographic demand. This residual is assumed to be the result of increased competitiveness if positive and decreased competitiveness if negative (Cheptea, Fontagné, and Zignago 2014).

We use a methodology that is similar to that used in Bouët, Laborde Debucquet, and Deason (2014) and in Odjo and Badiane (2018). With this methodology we provide a decomposition of African countries' global market shares over the 2005–2017 period to evaluate each country's performance and the underlying factors. The main differences compared with previous exercises come from the use of an updated and improved trade database, the focus on a more recent period, and the focus on the adaptation capacity of African economies to a moving international landscape. Indeed, Badiane and Makombe (2016) focused on the 1995–2007 evolution, while our analysis starts at the end of this period. Therefore, it includes a very tumultuous period associated with two food price crises (the 2007–2008 and 2010–2011 episodes), the 2008 financial crisis triggering the Great Recession, and various trade policy responses that have disrupted world markets. These events led to two reductions in the level of global trade, in constant US dollars, in 2008 and in 2015–2016. For this reason, we focus our analysis on how African countries have adjusted their export strategy, both in terms of products and destination markets, to cope with these changes.

Evolution of African market shares

During this period, Africa has slightly improved its global market share, from 4 percent to 4.3 percent (Table A 4.1). While this is a notable increase, it is more limited than the evolution in the previous decade that was associated with a strong rebound after the very weak performance of the early 1990s. Figure 4.3 shows the decomposition of global market share of agricultural products for Africa and African RECs over the period 2005–2017. The vertical axis measures the percentage change in world market share and each bar indicates the decomposition by the five drivers: two for geographical specialization (initial and evolutive), two for sectoral specialization (initial and evolutive), and competitiveness. Black dots indicate the net effects of these different drivers. Figure 4.4 shows the same decomposition for African countries over the same period.

This average performance hides variation in outcomes across RECs and across countries. COMESA and UMA have seen minor increases in their global shares (relative increases of 3 percent to 5 percent, below the continental average; Figure 4.3), while ECOWAS has seen a relative increase of 18 percent, boosted by the strong performance of smaller countries (Gambia, Guinea-Bissau, and Sierra Leone) and the good performance of key exporters (Côte d'Ivoire, Ghana, and Senegal).

In contrast, the other regions (SADC, Southern Africa Custom Union (SACU), and Central Africa, especially the CEMAC block), have seen a slight deterioration in their export positions. These evolutions are consistent with the evolution of the revealed comparative advantages discussed earlier in this chapter (see subsection 4.2.1).

Figure 4.3 Decomposition of market share changes 2005-2017 – regional economic communities (RECs)
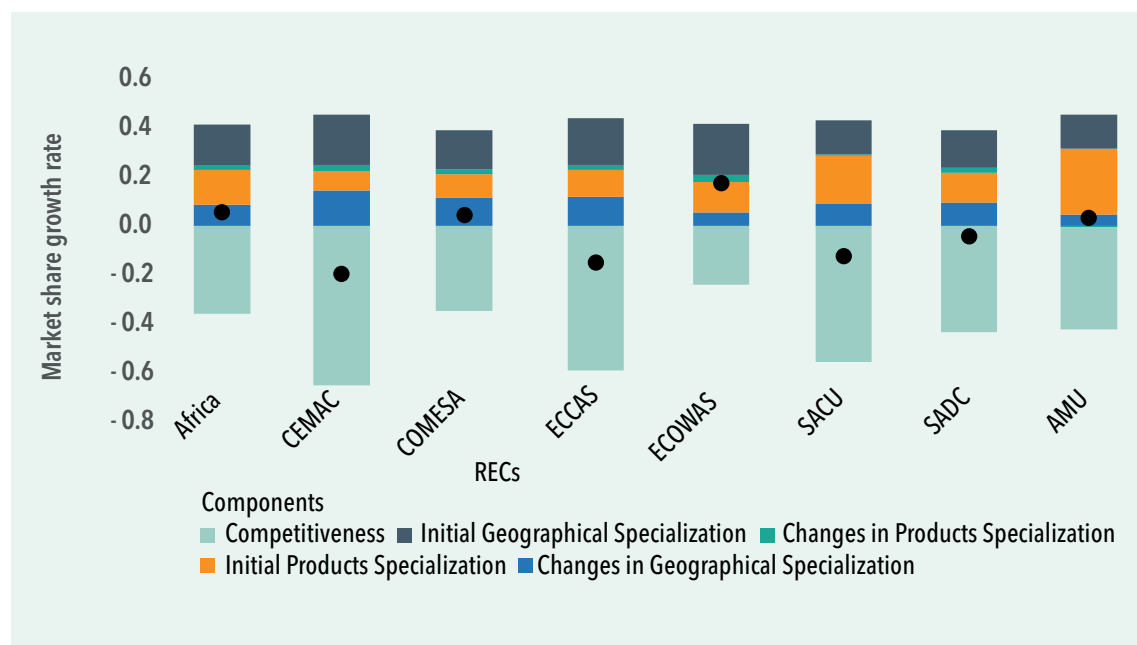
Source: COMTRADE (2019) and authors' computation.
Note: Black dots indicate the net effect; that is, the relative changes in market share of an REC on world markets over the period.

CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Custom Union, AMU = Arab Maghreb Union.

Overall, 31 African countries have increased their global market shares (indicated by the location of black dots on Figure 4.4), with the largest absolute gains of 0.05 percent of the world market for Algeria, Benin, Côte d'Ivoire, Egypt, Ethiopia, Ghana, Guinea-Bissau, Madagascar, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Somalia, Tanzania, and Uganda. Other large relative increases in market shares are notable for smaller exporters such as Mauritius. Other countries have suffered some minor setbacks, such as South Africa (which lost 0.057 percent of world markets), but in relative terms the worst performers are Gabon, Djibouti, Cabo Verde, Republic of Congo, Equatorial Guinea, Chad, Namibia, Central African Republic, and Botswana.

We explain these market share changes with five drivers:

1. The initial geographical pattern of exports. This driver shows how the initial (2005–2007) geographical export market specialization has contributed to the export dynamics. Being initially specialized in markets with strong growth could explain an increase in global market share without an actual gain in competitiveness. Markets with strong growth include numerous Asian countries such as Cambodia, China, Malaysia, Myanmar, Nepal, the Philippines, Thailand, and Viet Nam); and medium-sized Latin American countries such as Bolivia, Chile, Paraguay, Peru, and Uruguay. Increasing demand also originated in

the Arab Gulf, especially from Saudi Arabia and Qatar. African markets currently display limited growth, except for some SADC countries. On the other side of the spectrum we find countries with stagnant or decreasing import demand, such as Syria and Venezuela (political crises), North Korea (embargo), Cuba (external account constraints), and several African economies (Burundi, Chad, Eritrea, Gambia, and Liberia). The limited demand growth from some African countries will be a challenge for their regional partners.

2. The initial sectoral pattern of exports. This driver shows how the initial (2005–2007) sectoral specialization has contributed to export growth. Sectors in high demand include horticultural products (various fruits and vegetables). Avocados, in particular, have had high demand growth, followed by nuts (pine, pecans), spices (ginger, turmeric, cloves, cardamom, and others), and vanilla. With respect to the processed sectors, we see higher demand in the last decade for specific cocoa products (e.g., cocoa spreads) and beer. In terms of traditional African production, the sweet potato and groundnut (processed or shelled) markets have been among the strongest. Demand for wool products, processed tobacco products, and salted poultry meats, on the other hand, has declined. For traditional African exports, the cotton sector faces the most adverse demand conditions.

3. The changes in geographical pattern over the period. This allows us to detect if exporters have shifted from traditional markets to growing ones (for example, by increasing the share of China in their exports).

4. The changes in product specialization over the period. This factor captures both the changes in intensive margins (increased specialization in products of high demand) as well as the extensive margin (the export of new products at the end of the period that were not exported initially).

5. The residual of an exporter's performance is attributed to domestic performance (competitiveness).

Thus, the domestic performance factor is defined as the portion of market share growth that is not attributable to increases in either sectoral or geographic demand and that is assumed to be the result of increased competitiveness.

Figure 4.4 Decomposition of market share changes–countries 2005-2017

Market share growth rate between 2005-2007 and 2015-2017

Components

- ■ Competitiveness
- ■ Initial Geographical Specialization
- ■ Changes in Geographical Specialization
- ■ Initial Products Specialization
- ■ Changes in Products Specialization
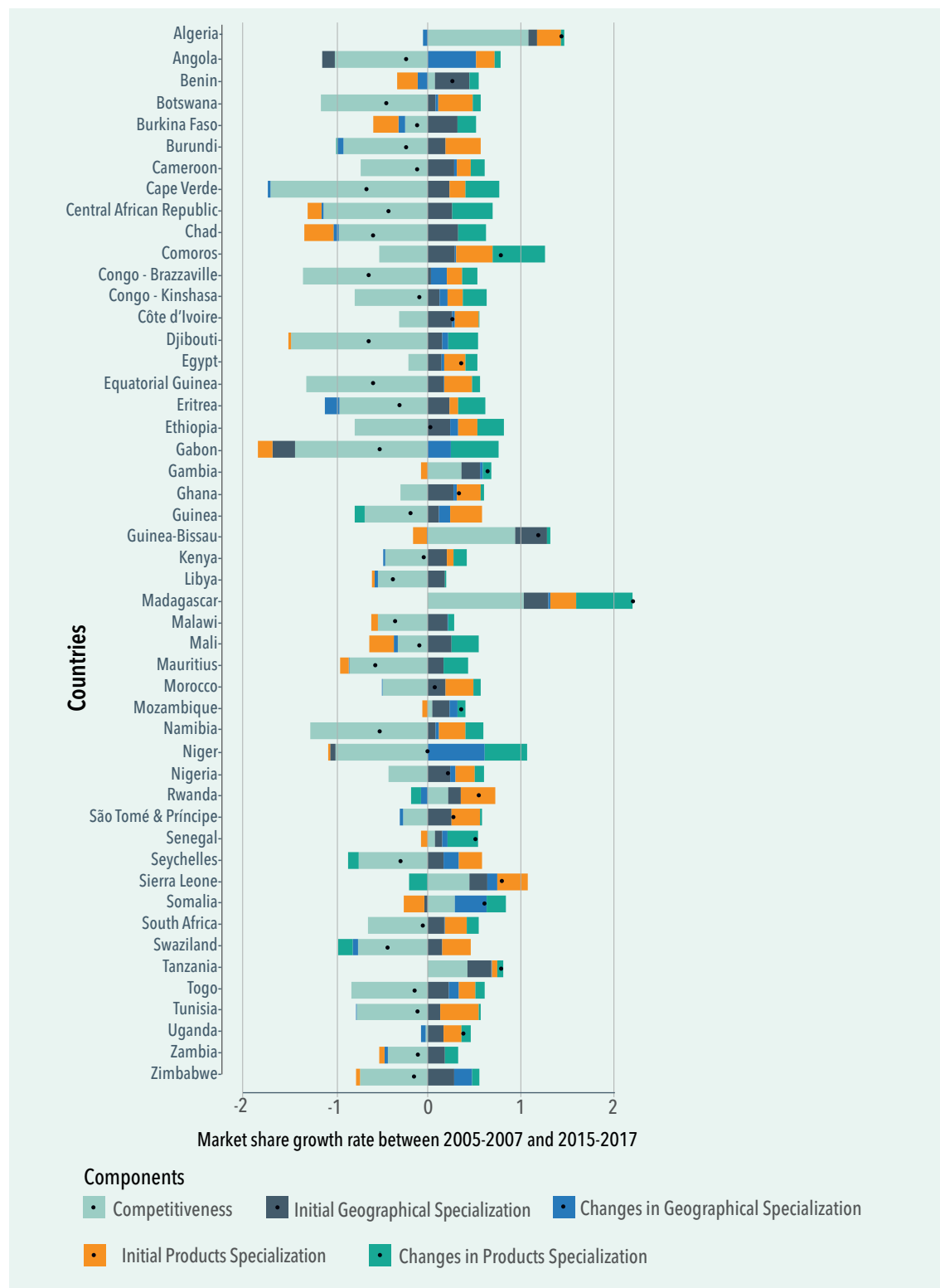
Source: Authors' computation.

Note: Lesotho, Liberia and Mauritania are excluded from the graph owing to a very large increase in market share, potentially because of under-measurement in the base period. For these three countries, the competitiveness driver is the main explanation (an export-specific story). Black dots indicate the net effect (i.e., the relative changes in market share of a regional economic community on world markets over the period).

The results are computed for each exporter in the world, at the country level, and are also presented in Figure 4.3 for each African REC. The vertical axis measures the percentage change in world market share, and each bar shows the decomposition along our five drivers: initial geographical and sectoral specialization (dark blue and dark green), changes geographical and sectoral specialization (light blue and light green), and the competitiveness factor (ochre).

For ECOWAS, for instance, while its global market share has increased by 18 percent in 10 years, its initial good specialization in terms of products (demand for these products has increased by 13 percent) and markets (the initial pattern will have led to a mechanical increase of 20 percent) has been reinforced by positive sectoral readjustment (+5 percent) and some minor reallocation in destination markets (+2 percent). However, instead of growing its export share by this full potential of 40 percent (13+ 20 + 5 + 2), its actual performance of +18 percent shows a loss of "competitiveness" of 22 percent. This loss of competitiveness must be interpreted with care, since it captures a large number of elements: changes in productivity and price competitiveness (including real exchange rate effects discussed in section 4.3.2) and increases in domestic absorption (domestic demand limiting potential export surplus, or redirection of productive resources to replace imports, not monitored here).

Similarly, Figure 4.4 shows the decomposition of the global market shares of agricultural products of individual African countries between 2005–2007 and 2015–2017. In section 4.2.2.2, we discuss the best and worst performers, and also focus our analysis on which countries and RECs have managed to reshuffle their product specialization and/or destination markets to seize better opportunities in a changing world.

Pure performance and adaptation capacity

Favorable specialization in terms of products and markets in the 2005–2007 base period led to expectations that Africa and its RECs would outpace the average growth in world markets. However, they did not achieve their expected potential, leading to a negative competitiveness measure for all RECs. In particular, UMA and SACU benefited from promising initial product specialization, while CEMAC and ECOWAS had favorable initial geographical specializations. Indeed, because demand growth in African markets has remained relatively limited compared to other markets around the world, being extraverted was actually a structural advantage (there was stronger effect for CEMAC).

Overall, we see very limited geographical reallocation across the period at the REC level. However, this hides greater changes at the country level. While the export of a REC to specific countries (China, India, and European partners, especially Germany and the Netherlands) may have remained stable, the actual member states delivering to individual markets have changed (e.g., Niger has increased its relative trade with China, while Burkina Faso has decreased it).

On the other hand, changing the product mix of exports has been very favorable for all RECS. This was the case for CEMAC, which was able to phase out growth-adverse specialization, especially in cotton. This demonstrates that new markets can emerge (extensive trade margins; a point confirmed by Carrère, 2013) and that good initial specialization can be strengthened (intensive margins). Being flexible in the product space is essential to promote growth, especially in a dynamic environment. Product flexibility has been a traditional strength of Asian countries, allowing them to integrate into world markets. This dynamic behavior must be properly taken into account when discussing the concept of competitiveness. In our quantitative framework, while the RECs (and their members) display higher adaptation capacity for a given market share increase, this leads to a reduction in their structural competitiveness.

Nevertheless, we could consider that good adaptation capacity is a positive feature of structural changes and part of the agricultural transformation process. Indeed, for a long time, poor African performance on world markets was considered the result of suboptimal specialization, inherited from the colonial era and worsened by the trade policy preferences of developed economies (in particular Europe), which were reducing the incentives of African exporters to diversify and innovate. At the same time, we also should acknowledge that changing the pattern of specialization in a market has domestic adjustment costs: a change in specialization forces local value chains to adapt, and sometimes to disappear. Farmers face sunk costs, including knowledge and machinery that is no longer relevant to the new or altered markets. REC aggregates may hide heterogeneity at the country level. The results for our 55 African economies are reviewed in Figure 4.4.

Most of the 48 African countries benefited from pro-export growth geographical specialization in the base period. Two channels explain this effect: strong demand from global re-export platforms or processing centers, especially in Europe (the Netherlands); and continuous demand in Asia, especially from China, India, and Malaysia. Chad and West African countries (Benin, Burkina Faso, and Guinea-Bissau) benefited the most from this effect. However, four African countries had disadvantageous initial geographical specialization: Angola, Gabon, Niger, and Somalia. Specific exports to Yemen and Syria negatively impacted the export growth of Somalia. Limited demand from other African economies (e.g., Chad) negatively impacted export growth in the Central and West African economies.

While remaining limited, geographical reallocation has been beneficial for 27 countries, but is notable for Niger (increased export shares to China, Malaysia, and Thailand), Angola (exports to Chile, China, and Peru), Somalia (exports to Gulf countries, especially Oman and Saudi Arabia, and to China), Liberia (exports to the Malaysia and Netherlands), Gabon (exports to Canada and Switzerland), and Zimbabwe (exports to China). On the other hand, 16 countries have seen their export performance undermined by negative reallocation. This effect is still limited and has noticeable impact mainly for Eritrea (reduction in exports share to Europe and the United States in favor of Egypt); Benin and Burkina Faso (reallocation within Asian partners from China and Thailand to India and Viet Nam, which had weak import demand growth); and East African countries such as Rwanda and Burundi (which have strengthened trade with regional partners with limited import demand, especially Kenya, in their overall export pattern).

Regarding sectoral specialization, 33 African economies had a pro-agricultural trade growth specialization pattern, especially Tunisia (olive oil, dates), the Comoros (spices, essential oils), Botswana (bovine meat), Burundi (coffee, tea, beer), Rwanda (coffee and tea), and Guinea (cocoa and coffee). We find that 19 economies were in the reverse situation, and those most impacted were the "cotton" economies (Chad, Burkina Faso, Benin, and Mali). Chad was also negatively impacted by its initial specialization in gum arabic, and Benin was negatively impacted by its specialization in cashew nuts. Somalia also faced adverse initial specialization owing to the role of exports of goat and goat-related products, which were less attractive to world markets than other livestock products.

However, drawn by growing demand, the vast majority of African economies (44) have increased their export shares in pro-growth products. This effect is particularly true for Madagascar (spices, vanilla), the Comoros (strengthening exports in spices and developing vanilla production), Gabon (reducing exports of tobacco-related products while expanding various processed items, including "niche" products such as communion wafers), Niger (sesame seeds), Central African Republic (expansion of fresh fruits while phasing out cotton), Cabo Verde (rum), Senegal (expanding fresh or chilled vegetables and groundnuts, while reducing cotton exports). Only 7 countries faced counter-current changes in product specialization: Lesotho (increasing role of

wool); Sierra Leone (relative decrease in cocoa exports); Swaziland (increasing export shares of sugarcane while the role of processed cocoa products has decreased); Seychelles (reduction in export shares of fruits); and Rwanda, Burundi, and Guinea (decrease in the relative role of coffee and/or cocoa).

The residual competitiveness measure is positive for 10 countries that have managed to outperform their structural advantage or disadvantage (Algeria, Benin, Gambia, Guinea-Bissau, Madagascar, Rwanda, Senegal, Sierra Leone, Somalia, and Tanzania), while 38 other countries have underperformed compared to the expected outcomes of their trade pattern (Angola, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of Congo, Democratic Republic of Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Kenya, Libya, Malawi, Mali, Mauritius, Morocco, Namibia, Niger, Nigeria, Sao Tome and Principe, Seychelles, South Africa, Swaziland, Togo, Tunisia, Uganda, Zambia, and Zimbabwe).

The countries in this last category are not always bad performers in absolute terms, but they have operated below their export potential. This is the case for Ethiopia, for instance, which has managed to increase its world market share slightly (from 0.155 percent to 0.16 percent) but has increased it below its potential: this country is well positioned on the coffee and horticultural markets, with significant export links with both the Netherlands and China. These are strong growth engines on agri-food markets.

The period between 2005–2007 and 2015–2017 differ markedly with the previous decade (documented in Badiane and Makombe 2016), with a slowdown in the performance of many countries (Ethiopia, Malawi, and Gabon, and of Africa as a whole). Still, the broad picture remains the same, with a minority of African countries managing to beat the average market performance and their benchmark. Some countries have managed to stay on this top-performer list for the last 20 years (e.g., Rwanda and Tanzania), but there have also been many newcomers in the last decade, even including economies recovering from traumatic events (Somalia); or from West Africa, with numerous countries from this region represented in our performing country list. Many countries of West Africa have moved from negative to positive competitiveness measures. In contrast, Central African countries have remained structurally associated with a negative competitiveness trend.

This last result was also confirmed by the AATM 2017 report (Badiane, Odjo and Collins 2018). Compared to it, we find that Djibouti, Egypt, Ethiopia, Ghana, and Nigeria have had lower performance and experienced overall export slowdown. These results, however, also originated in our split between the effects of pure competitiveness and the adaptation strategy in the product and country spaces.

Indeed, while our assessment is slightly more pessimistic in terms of pure performance, we confirm the capacity of adaptation of African economies, especially in the product space. Africa is not lagging behind and is on a par with the rest of the world. The average sectoral adjustment contribution is 0.1 for Africa and 0.11 for the rest of the world, while the regional adjustment contribution is 0.2 for Africa and 0.3 for the rest of the world. The geographical reallocation driver is particularly important for the future of African export strategy, dynamics, and the pro-integration policy forces at stake. Indeed, the political will to increase intraregional trade, and the role of regional markets for local producers, will make sense only if the import demand dynamics of the region outpace the growth of the rest of the world. Otherwise, reshaping the agricultural export strategy of African economies toward intra-Africa trade will lead to slow growth. In this context, the African Continental Free Trade Area (AfCFTA) negotiations should make sure that African markets are open and growing (not stagnant and protected) to be beneficial for African exports and to be a source of trade creation rather than trade diversion.

Prices Matter

In this section we examine the price competitiveness of African economies in several agricultural value chains. An economy's competitiveness is determined by the comparison between prices of its traded goods and the prices of competitors' goods (section 4.3.1). It can also be affected by macroeconomic factors such as the exchange rate. To address the exchange rate as a factor, we construct and analyze real effective exchange rates in section 4.3.2.

Unit Values (in US dollars)

Let us start by comparing the prices of agricultural goods produced by African economies with the prices of the same goods produced by non-African economies.

Price series for all traded goods for all world economies are not available. In addition, we need to capture the value of traded items into an harmonized nomenclature. For this reason, economic analysis rely on unit value: the ratio between the value of trade flows divided by the recorded quantities. These unit values are expressed in monetary unit per physical units (e.g., tons) when the goods are reasonably similar (e.g., maize) or as an index when goods are heterogenous.

How to interpret price differences for the same good between two countries remains to be seen. These differences may reflect either a price competitiveness of one economy in relation to another on the good in question or differences in quality. Economic analysis shows that if two goods have exactly the same quality and are offered on the market at different prices, the lowest-priced good should win the entire market. We can, therefore, conclude that persistent price differences may reflect differences in quality, while temporary differences reflect differences in price competitiveness. It should be noted, however, that we are studying agricultural goods, so this issue of quality differentiation is less influential. This is especially true when we compare average unit values for specific value chains such as tomatoes, cotton, and cashews. Beyond quality differentiation, higher unit values may also be associated with actual capture of preferential rents by exporters, for goods sold on market with high tariffs, and preferences given to African countries.

Unit values: overview

We built a trade database where trade flows have been harmonized. All flow values include cost of insurance and freight (CIF). When bundles are composed for regions and compared to the rest of the world, they are harmonized in such a way that differences between unit value averages cannot result from composition effects (that is, in differences in the weights used for aggregation) but only from differences in prices. For example, when the ratio of the CEMAC unit value to the Rest of the World unit value is calculated, the Rest of the World unit value is calculated using the weights of the CEMAC bundle.

Figure 4.5 shows the evolution of relative unit values for all agricultural commodities for Africa and by REC. For each of them, the average unit value is compared to the average unit value of the same bundle exported by the Rest of the World. We assume that "100" means that the bundle of goods is as expensive in Africa or in an African REC as it is in the rest of the world. An index of 110 means that the bundle of agricultural goods is 10 percent more expensive in Africa or in an African REC than in the rest of the world.

Figure 4.5 Evolution of unit values per regional economic community 2005-2017
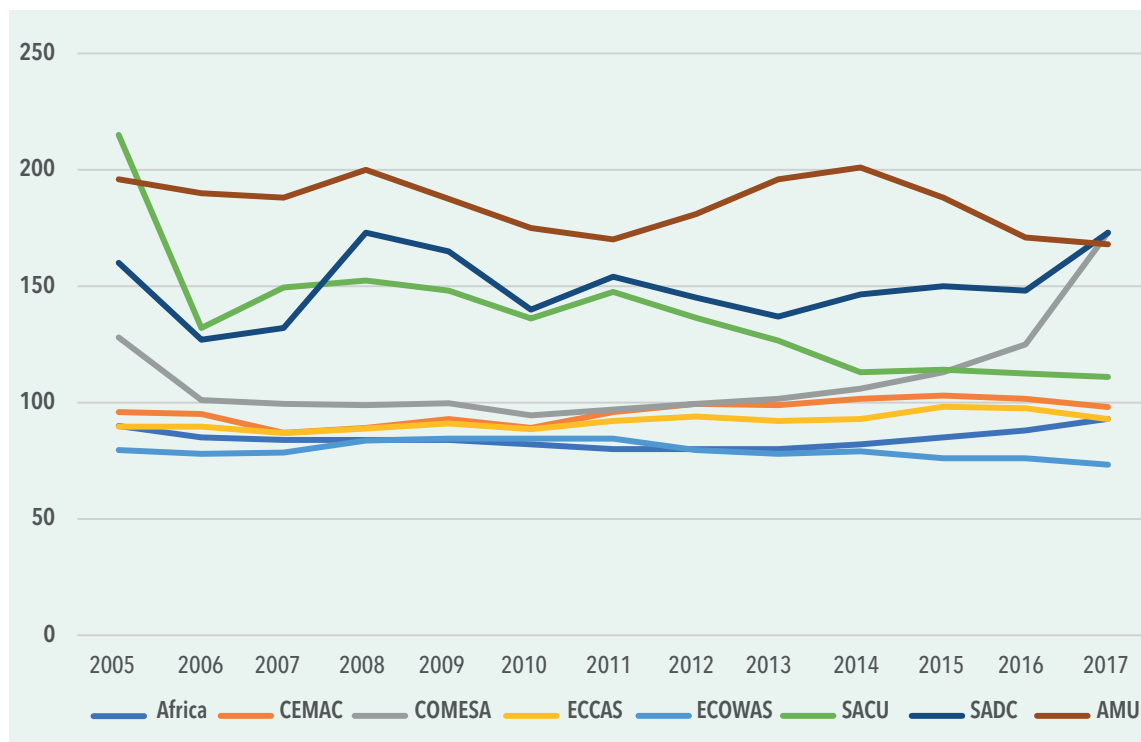
Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

At this very aggregate level, Africa appears to be competitive in terms of the price of agricultural goods compared to the rest of the world (Figure 4.5): the gap in average prices varies between 10 percent and 25 percent. The most price-competitive RECs are ECOWAS and ECCAS. In contrast, UMA, SADC, and SACU appear to be not competitive: in particular, the gap in price competitiveness between UMA and the rest of the world is systematically larger than 50 percent, reflecting higher costs but also the lack of capacity to sell on the EU markets through preferential schemes.

Unit values: specific value chains

Figure 4.6 compares the average unit value per commodity in Africa to that of the rest of the world. Africa appears to be very competitive in terms of price in the value chains of cotton, tea, sugar, sesame seeds, and cocoa. Over the 13-year period, the trend decreases globally, reflecting a general gain in price competitiveness in agriculture.

Figure 4.6 Evolution of unit values per commodity 2005-2017
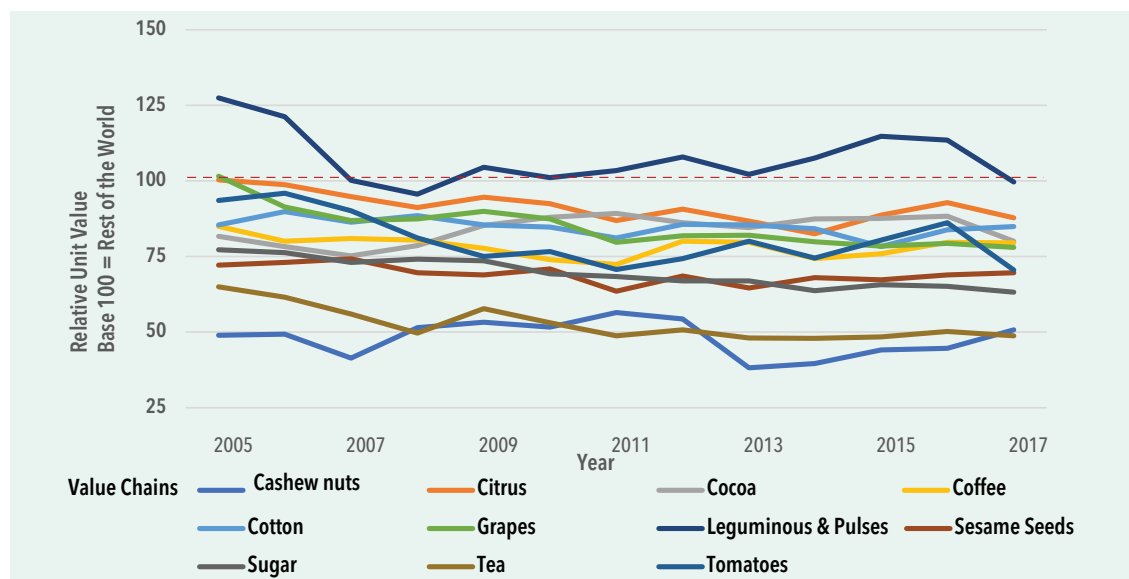
Source: COMTRADE (2019) and authors' calculation.

Real Effective Exchange Rate

This subsection accounts for macroeconomic factors that can affect the price competitiveness of African economies.

The real effective exchange rate: overview

The real effective exchange rate (REER) is often viewed as a measure of a country's competitiveness. Here, "effective" means that the value of African currencies is calculated relative to a basket of currencies, while "real" means that differences in price inflation are accounted for. Thus, the The real effective exchange rate is defined as the weighted sum of the bilateral real exchange rates of a country or group of countries, the weights being the exports (in value and for the relevant products) of each exporter to the world, and the inflation being accounted for by the gross domestic product (GDP) deflator. With an increase or appreciation in the The real effective exchange rate, exports become more expensive and imports become cheaper, signifying a loss in competitiveness. With a decrease or depreciation in the The real effective exchange rate, exports become cheaper and imports become more expensive, signifying a gain in competitiveness.

Figure 4.7 shows the evolution of the real exchange rate for agriculture versus non-agriculture in Africa from 2005 to 2017. Overall, African economies experienced an appreciation of the real exchange rate compared to other exporters of agricultural products from 2008 to 2015. The steady depreciation observed since 2015 has contributed to the increased competitiveness of African agriculture. However, this is tempered by the deterioration in the currencies of some large agricultural exporters, such as Argentina and Brazil. The real exchange rate for non-agriculture in Africa has exhibited greater volatility during the period but has declined sharply since 2012. This indicates a much greater improvement in the competitiveness of Africa's non-agriculture sectors than in its agriculture sectors in recent years.

Figure 4.7 Evolution of real exchange rate for Africa, agriculture and non-agriculture 2005-2017
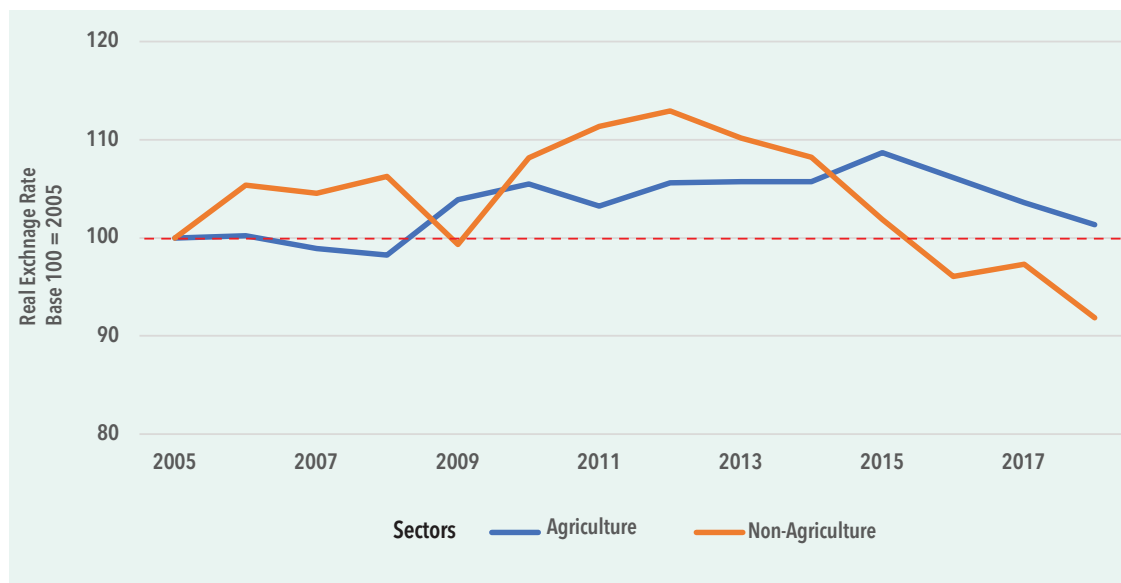
Source: COMTRADE (2019) and authors' calculation.

Figure 4.8 shows differences among RECs in the evolution of the real exchange rate for agriculture from 2005 to 2017. COMESA experienced strong real appreciation of the The real effective exchange rate of more than 50 percent from 2005 to 2015, as the currencies of several countries in the region appreciated, including Egypt and Sudan up to 2012 and Ethiopia until 2010. The The real effective exchange rate depreciation in COMESA beginning in 2015 has contributed to its improved competitiveness in agriculture. The The real effective exchange rate in SACU exhibited significant fluctuation during the period, due largely to the evolution of South Africa's rand, which appreciated until 2010 then collapsed in 2011. UMA has also experienced a real depreciation, by about 20 percent. At this aggregated level, most RECS have consistent evolution of their The real effective exchange rates and revealed comparative advantage, meaning that the The real effective exchange rate appreciation is associated with declining revealed comparative advantage: CEMAC, ECCAS, ECOWAS, SADC and UMA. Only COMESA has a non-consistent pattern, perhaps due to the size and diversity of this group.

Figure 4.8 Evolution of real exchange rate for African regional economic communities 2005-2017
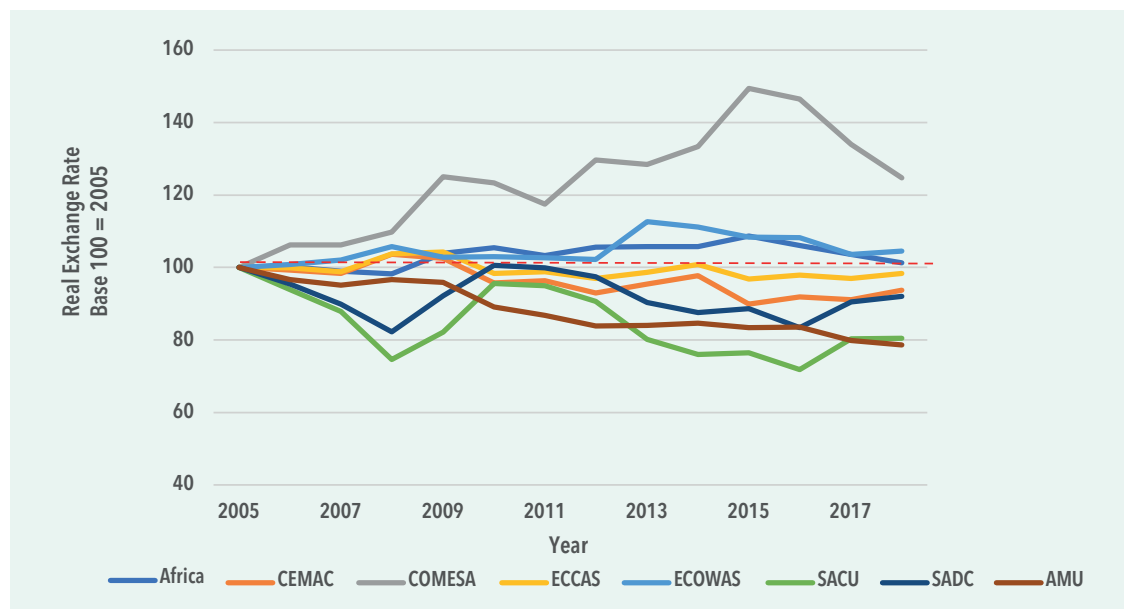
Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Custom Union, AMU= Arab Maghreb Union.

The real effective exchange rate: focused value chains

Moving to a more granular level, we see greater differences in the evolution of the real exchange rate for Africa's major value chain commodities from 2005 to 2017 than is observed at the aggregated level for the whole agricultural sector. The The real effective exchange rates for each of these commodities are influenced by which countries are the main exporters in Africa and which are its main competing exporters abroad. The real exchange rates for tea, coffee, and cocoa have appreciated over the period, signifying a decline in Africa's competitiveness in these traditional cash crops, and perhaps contributing to the decline in continental revealed comparative advantage for some of them (section 4.2.1). From Figure 4.9, we conclude that legumes and pulses have also become less competitive during the period. The The real effective exchange rates for cotton, cashew, and sugar, on the other hand, have been relatively stable over the period. Citrus, which is exported mostly by southern and North Africa, and grapes, which come primarily from southern Africa, have become more competitive, benefiting from real depreciation in these regions.

Figure 4.9 Evolution of real effective exchange rate for selected value chains 2005-2017
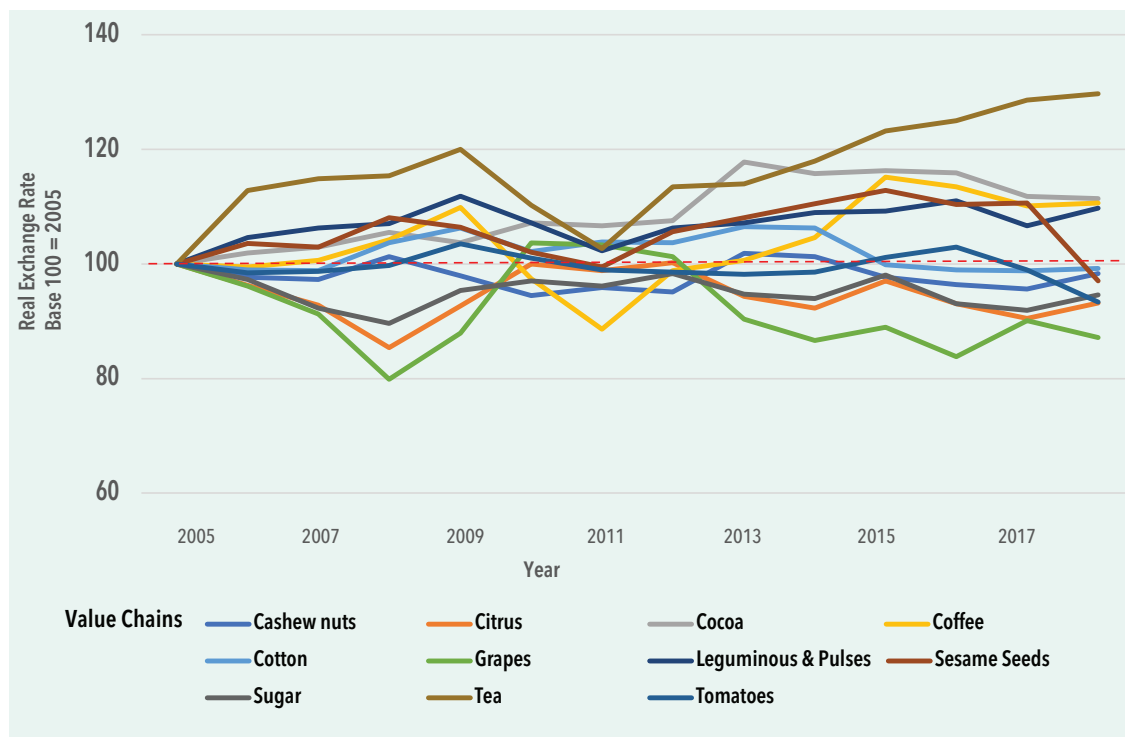
Source: COMTRADE (2019) and authors' calculation.

Climbing the value chain ladder

To foster agricultural transformation, and to use the African comparative advantages in agriculture discussed in subsection 4.2.1 as a growth and job-creation engine, it is essential that African countries develop their agri-business sectors. Indeed, increasing labor productivity at the farm level will displace the labor force, which could be used in farm downstream activities. However, Africa appears to struggle to diversify its exports and develop comparative advantages beyond the primary stage of production (Figure 4.10).

Figure 4.10 African revealed comparative advantages by stage of processing 2005-2017
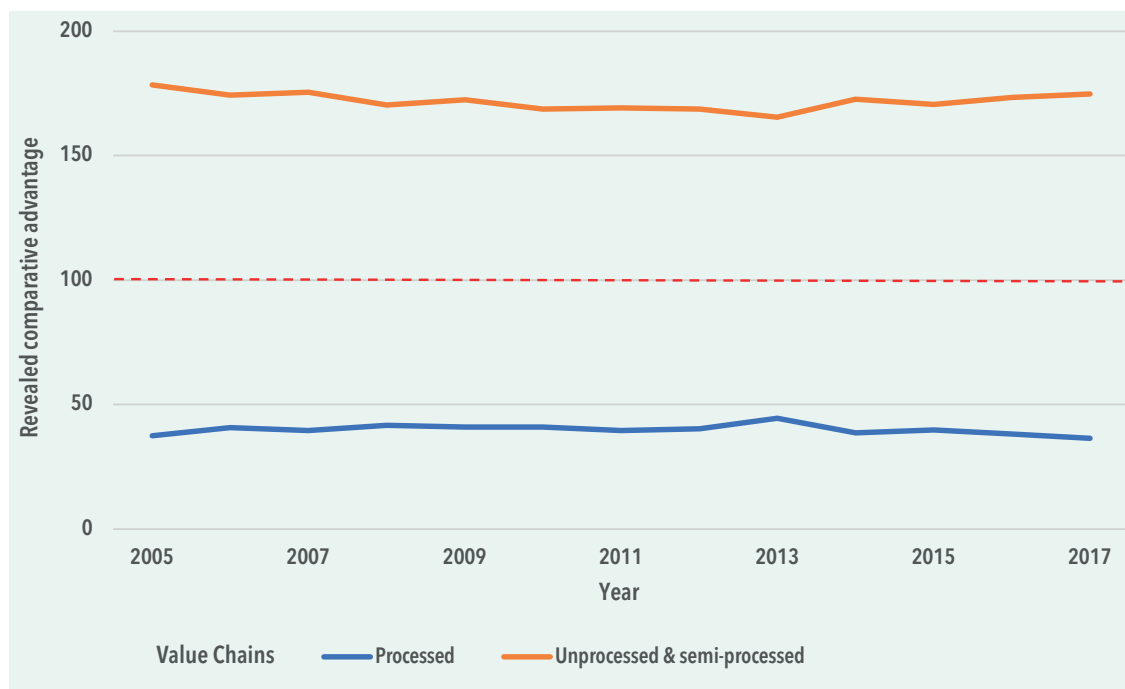
Source: COMTRADE (2019) and authors' calculation.

African Exports Remain Dominated by Primary Exports

The current export structure of African countries (Figure 4.11) illustrates the lack of progress along the value chains. Of the 62 US$ billion of agricultural products exported by Africa in 2017, only 12 US$ billion are classified as processed goods. While total exports have indeed increased between 2005 and 2017, the relative role of processed and unprocessed products has not evolved. However, we see a very distinct pattern between intra-Africa trade and extra-Africa trade.

While African exports to non-African markets are dominated (90 percent) by primary or semi-processed products, the situation with respect to regional markets is balanced: half of intraregional trade is associated with processed products (Figure 4.11). This feature is relatively important in the context of increased regional trade following the Malabo Declaration (which commits to tripling intra-Africa trade) and the implementation of the AfCFTA. Increasing regional exports will lead to a higher dividend than traditional export patterns in term of diversification and progress along the value chain. It also implies that the policy framework should not limit this potential: in the agri-business sector, protectionist pressures within the AfCFTA negotiations through lists of products excluded from the liberalization scheme and limiting rules of origin should be limited.

There are multiple reasons for this highly differentiated pattern. Unprocessed agricultural goods are likely more impacted than other products by measurement error and unregistered trade. Informal and unregistered trade are an important issue (see the case of COMESA in Chapter 6). Staple agricultural products are often liberalized within regional agreements, and therefore poorly registered. In contrast, primary products targeting world markets are mainly cash crops, and registered fully both by exporting countries (where potential taxation and commodity boards have an incentive to track) and by destination countries (which tend to have

good statistical systems). While this statistical bias should not be neglected, we still observe a very significant pattern. The available estimates of unregistered trade will increase the share of intra-Africa trade in primary products but will not make the observed bias vanish. The demand drivers are actually quite important. Consumers in advanced economies currently have limited appetite for, or limited access to, African processed products. On the other hand, regional markets within Africa tend to have many similarities in terms of consumer preferences and legislation, and are easier markets to penetrate, especially for small and medium enterprises. Finally, demand for primary cash crops within Africa remains limited owing to similar production patterns and the lack of large-scale processing facilities, so most primary commodities (such as cocoa, coffee, cotton, and tea) are produced only for world markets.

Figure 4.11 African agricultural exports by destination market and stage of processing 2005-2017
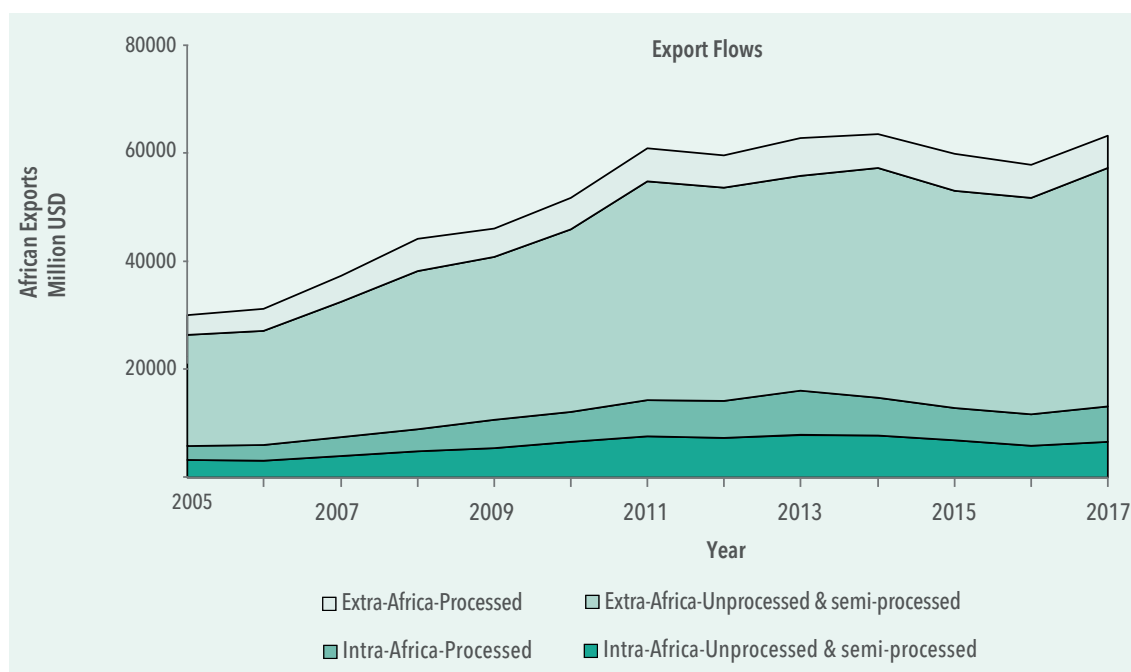
Source: COMTRADE (2019) and authors' calculation.

Tariff escalation is often cited to explain the lack of progress in diversification along the value chain. While this is still an important feature of the most favored nation (MFN) tariff structure in most world economies, African exporters (through unilateral or bilateral preferences) do not suffer from this problem, at least in OECD markets. However, other non-tariff measures (NTMs), such as sanitary and phytosanitary regulations, technical regulations (e.g., package labelling), and specific rules of origin may remain barriers to diversification. Since these issues are key elements of the AfCFTA negotiations, we expect that these barriers may be removed at the continental level relatively soon, strengthening the case for expanding the share of processed products in regional trade.

Differentiated Patterns Across RECs and Value Chains

Figure 4.12 displays the share of processed products to all destinations for the different RECs, the continental aggregate, and the Rest of the World (all non-African countries). For Africa, the share of processed products was relatively stable over the 2005-07/2015-17 period, at about

20 percent, a little more than one-third of the Rest of the World's share (55 percent). While this justifies the concerns raised in subsection 4.4.1, we can also observe a well-differentiated pattern across regions within Africa.

Figure 4.12 Shares of processed products by exporters 2005-2017
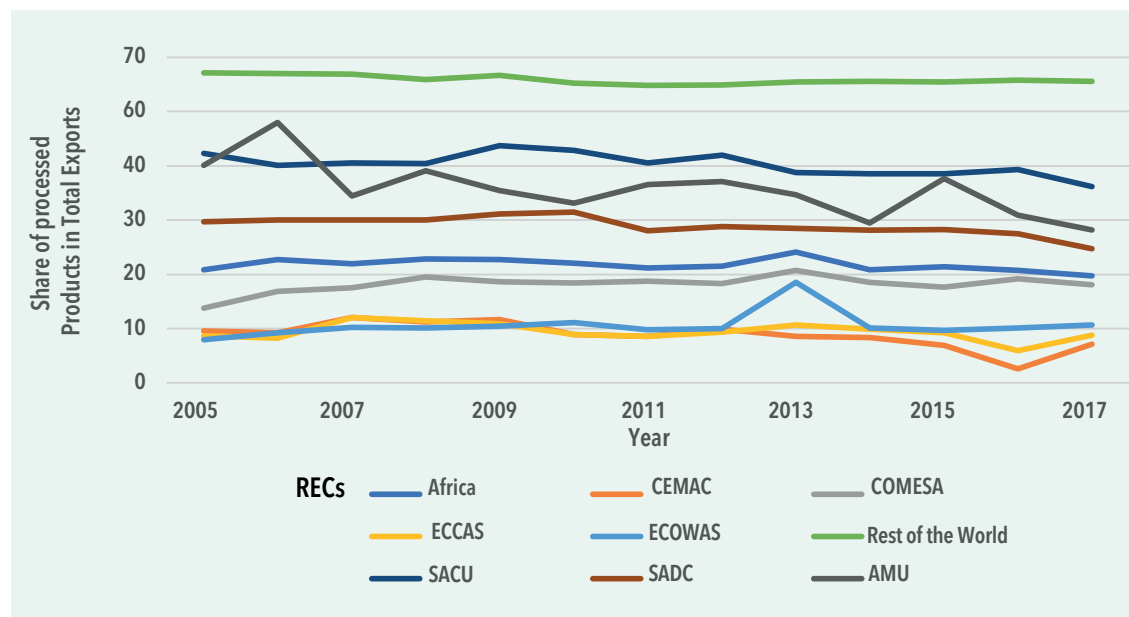
Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Custom Union, AMU = Arab Maghreb Union.

SACU countries have a much higher share of processed exports than the rest of the continent, at about 40 percent. This region is boosted by South African food processing industries, which also contribute to the expansion of its distribution and supermarket networks (Campbell 2016). While UMA (the second most advanced bloc in terms of economic structure) was initially at a similar level as SACU, it saw a large reduction in its share of processed products over this period, falling below 30 percent in 2017. This is the result of major changes for Tunisia, which had strong expansion in primary exports, from 25 percent in 2005 to 42 percent in 2017, and to some extent, in Morocco. This declining trend has also impacted SADC. In contrast, the situation of COMESA has improved, and the bloc has caught up with the continental average. The other regions, West and Central Africa, have not registered major changes and are the most dominated by primary products with a processing share below 10 percent. Key cash crops such as cocoa (West Africa), cotton (Central Africa), and numerous fruits (e.g., banana) weigh heavily in these aggregates.

Any aggregate numbers may hide differentiation at the value chain level but may also reflect strong composition effects. In other words, the high share of unprocessed products could reflect the specialization in value chains that are structurally more limited in terms of processing stage, rather than a structural inaptitude in processing the primary production. For instance, the vanilla value chain is more limited in processing opportunities than is the dairy value chain. Figure 4.13 shows for each value chain, the share of exports, by either Africa or the Rest of the World, of products classified as processed in total exports in this value chain for 2015-2017 on average".

We can see that, for our 11 value chains of interest, the share of processed products varies significantly at the world level. It reaches 80 percent for cocoa products and derivatives and for grapes (including juices and wines), while it is limited to 20 percent for coffee and tea. However, Africa systematically displays a low rate of processing in its exports for all value chains. Only that for grapes, thanks in particular to South African juice and wine industries, exceeds 40 percent. Several value chains, including cashew nuts and cocoa, display extreme gaps between the world structure and the African structure. It is relatively difficult to develop large agri-businesses in cocoa, since the later stages of processing require various inputs (including sugar and dairy products). Processing appears to be a more realistic target for cashew nuts, assuming the adoption of the more efficient technologies of Asian processors.

Figure 4.13 Shares of processed products for selected value chains: Africa versus the rest of the world average 2015-2017
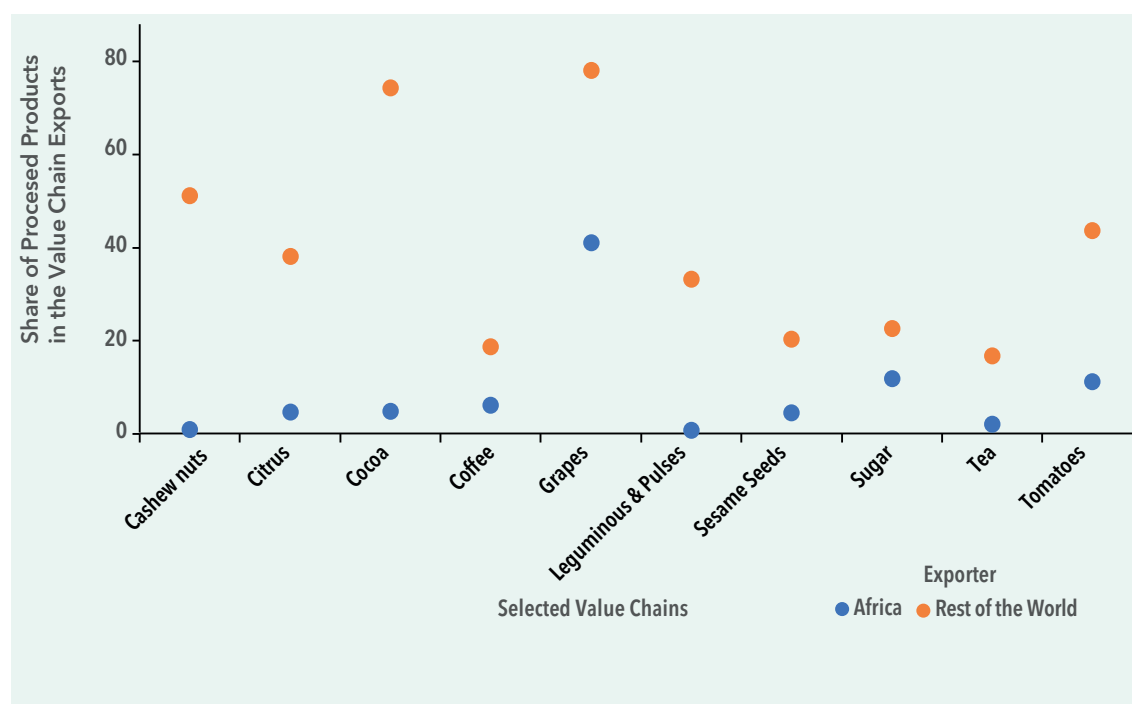
Source: COMTRADE (2019) and authors' calculation.

Major market events for key value chains in 2016–2018

While long-term trends of African economies' competitiveness have been analyzed in sections 4.2, 4.3, and 4.4, in this section we provide additional narratives for our selected value chains. This provides the opportunity to point to recent market developments that are relevant for African exporters. In addition, quantitative information is provided for the RECs in appendix.

Cocoa and Related Products

Africa corners 21 percent of the cocoa world market, owing largely to cocoa exports from ECOWAS, where cocoa represents 48 percent of total agricultural exports (Table A4.4). Cocoa is also a significant agricultural export for CEMAC and ECCAS, accounting for 42 percent and 34 percent of agricultural exports, respectively. Favorable weather conditions in the 2016/17 season helped crops across the main cocoa-growing countries in the West African region. Mild seasonal harmattan winds helped increased cocoa output for Côte d'Ivoire in 2016/17, compared to the previous season. However, the prospects of a large production for the 2018/19 season, coupled with low international prices, have created some difficulties in commercialization of the cocoa. In Ghana, the government aims to revamp the cocoa industry by investing in disease-control measures and providing incentives to farmers to adhere to practices that will not only boost production, but also enhance their livelihoods (International Cocoa Organization, 2017).

Coffee and Related Products

Africa supplies 6 percent of world exports of coffee, largely driven by exports from COMESA (Table A4.5). Coffee is a significant agricultural export product, not only for COMESA (8 percent), but also for ECCAS (11 percent) and CEMAC (5 percent). In 2018, world coffee prices (as measured by the International Coffee Organization (ICO) composite price index) had fallen about 14 percent from 2017 and had lost close to half their value since 2011. Among the potential reasons for this decline are the rapid expansion of production capacity in the main producing countries; slow growth of global consumption, especially in developed countries; technological advances in coffee processing; excess market power held by the major coffee roasters; and depreciation of the Brazilian real against the US dollar. In an effort to alleviate the effects of the current crisis, several countries have taken measures targeting the coffee subsector. For example, Kenya is implementing a series of legislative actions, including a US$15 million subsidy program, to support affected farmers. Coffee exports in Ethiopia are projected to increase in 2019 owing to a combination of factors, including the recent government reforms to the coffee marketing system, devaluation of the local currency, and ongoing marketing efforts (USDA 2018a).

Tea and Related Products

Africa captured one-fifth of the world market for tea exports in 2015–2017 (Table A4.6). Most of this is contributed by COMESA, for which tea accounts for 7.8 percent of total agricultural exports. Aside from COMESA and ECCAS (6.4 percent), tea is not a significant export for other RECs. In more recent developments, tea exports from COMESA and ECOWAS declined between 2017 and 2018 while those from ECCAS declined from 2016 to 2017 and remained steady in 2018. A steady increase was observed for SADC, which captured 2.5 percent of the world tea market, throughout 2016–2018. According to FAO (2015) forecasts, black tea exports are projected to reach 1.67 million metric tons in 2023, with similar growth rates projected for both Africa and Asia. However, by 2023, export volumes for Asia are projected to reach 820,921 tons compared to 743,384 tons for Africa. The major exporting countries are expected to remain the same, with Kenya being the largest exporter followed by Sri Lanka, India, Viet Nam, Indonesia, Malawi, Uganda, and Tanzania.

Sugar and Related Products

Sugar exports account for more than 5 percent of agricultural exports of several RECs for 2015–2017 (Table A4.7). This includes COMESA (7.4 percent), UMA (6.9 percent), SADC (6.8), and SACU (5.1). These RECs contribute to Africa's ability to capture 4.9 percent of the world market for sugar during the period. More recently, sugar exports from COMESA and SADC increased in 2018. In Ethiopia, the significant boost in sugar output is the result of substantial expansion projects undertaken by the government, with a declared strategy of achieving self-sufficiency. Six sugar mills are now operational in the country, with plans to expand their current capacity and to build new factories. Sugar output in South Africa has expanded at a moderate rate recently, as labor disputes and land reform challenges have limited any significant increase. In Mozambique, sugar production has expanded by an annual average rate of 10 percent over the past 10 years, driven by investment in irrigation and price incentives offered by trade opportunities in the region. Sugar production is forecast to increase further in 2018/19. Egypt, South Africa, Ethiopia, and Mozambique are anticipated to harvest larger crops, while output is expected to fall in Mauritius due to less-than-ideal weather conditions (FAO 2019).

Cotton and Related Products

Africa captured 14.9 percent of the world export market for cotton in 2015–2017, led by ECOWAS which accounted for 10 percent of world trade (Table A4.8). Cotton represents a sizable share of agricultural exports for several RECs, including CEMAC (13 percent), ECCAS (10 percent), and ECOWAS (7.8 percent). Cotton exports from ECCAS and ECOWAS declined from 2016 to 2018. According to the USDA Foreign Agricultural Service website "Cotton: World Markets and Trade" (2018), nearly all West African cotton is exported, as there are few mills in the region, signifying the pivotal role that foreign demand plays for West African producers and merchants. South and Southeast Asia are the predominant destinations because of robust growth in consumption for both regions. Bangladesh, the world's largest importer, has recently opted for greater supplies from West Africa over Central Asia. West Africa exports for 2018/19 are projected to surpass the previous year's record, driven by record production. Mali and Burkina Faso are the largest producers and are forecast to have record crops, driven by an expanding cropped area.

Grapes and Related Products

SACU and SADC each captured 3.8 percent of the world market for grapes in 2015–2017 (Table A4.9). Grapes represent 14.8 percent and 8.8 percent of SACU's and SADC's agricultural exports, respectively. South Africa leads the continent in production and exports of grapes and related products. In 2016, the European Union accounted for 95 percent of total South African exports of fresh grapes to Europe. This may be owing to the long trading relationship between South Africa and Europe, which spans over a century. South Africa also has preferential market access to the European Union through the Trade Development and Cooperation Agreement (TDCA) between South Africa and the European Union. South Africa is the tenth-largest producer of table grapes in the world, with an estimated share of 4.1 percent in 2017/18.

Tomatoes and Related Products

UMA leads the RECs in exports of tomatoes, with a 5.7 percent share of the world market

(Table A4.10). Tomatoes account for 13 percent of all agricultural exports for the region. Morocco, Egypt, and Tunisia are the top three African exporters, contributing the most to this trend.

Legumes and Pulses

COMESA and UMA are Africa's largest exporters of legumes and pulses, accounting for 13.3 percent and 14.7 percent of the world market, respectively (Table A4.11). Africa as a whole accounts for 30.5 percent of world exports. While legumes and pulses are a negligible proportion (less than 1 percent) of total agricultural exports in other RECs, they account for 1.3 percent and 4.8 percent of the agricultural exports of COMESA and UMA, respectively.

Cashew Nuts

Africa accounted for between 20 and 25 percent of the world market for cashew nuts. This was due largely to exports from ECOWAS and SADC, which captured 15.6 and 4.2 percent of the world market in 2015–2017, respectively (Table A4.12). Cashew nuts comprise a significant share of exports of agricultural products in these RECs, at 11.3 percent in ECOWAS and 2.6 percent in SADC. More recently, exports to Viet Nam (the world's largest processor) from Côte d'Ivoire (the main ECOWAS exporter) fell by 12 percent from 2017 to 2018. At the same time, Viet Nam's cashew nut imports from Cambodia rose 64 percent. This evolution is in line with the desire of Viet Nam to reduce its dependence on the African continent, which involves the development of trade with its Asian neighbors, especially Cambodia, where the Vietnamese invest in plantations (COMMODAFRICA 2019). In contrast to West Africa, East African raw cashew exports fell by 40 percent from 2017 to 2018. This was due to the poor harvest in 2017/18, and the new policy of Tanzania (the main exporter in SADC), which increased the price of cashews by 94 percent (COMMODAFRICA 2018).

Citrus

Citrus exports from Africa account for almost 16 percent of the world market, coming primarily from COMESA, SADC, SACU, and UMA (Table A4.13). SADC, with South Africa as the top citrus exporter in the region, accounts for 9 percent of the world market share. Oranges contributed the most to total citrus product exports in South Africa; the European Union remained the top market, accounting for over 40 percent in 2018. The increase in exports of oranges is attributable to an increase in South Africa's production from the main growing regions that recovered from the drought conditions of 2015/16, as well as to favorable weather and an expanded area (USDA 2019).

Sesame Seeds

Africa accounted for nearly 60 percent of world exports of sesame seeds in 2015–2017, driven largely by ECOWAS, COMESA, and SADC, which capture 21 percent, 28 percent, and 9 percent of the world market, respectively (Table A4.14). Although India is traditionally the largest supplier of sesame seeds to Europe, both Sudan and Nigeria became significant exporters in 2017. Ethiopia and Mozambique are also important suppliers of sesame seeds to the European market. Ethiopian supplies to Europe have experienced significant annual growth of 8 percent in volume and 3 percent in value since 2013, and Mozambican supplies have increased sharply by 82 percent since 2013. Prices of sesame seeds in the international market strongly depend

on the annual volumes produced in India and China. Any delay or failure in Chinese crops puts a constraint on the global availability of sesame seeds, which puts pressure on world prices. Unfavorable climate conditions in Asia since 2015 decreased sesame production and led to high crop prices. However, production increased in Africa, stabilizing prices, while allowing African countries to capture a larger share of the export market (Okeke 2018).

Box 4.1 New trend in value chain integration: e-commerce

Electronic commerce (e-commerce) is trade using information and communication technology (ICT) facilities. It is defined by the World Trade Organization (WTO) as the "production, distribution, marketing, sale or delivery of goods and services by electronic means." By adopting digitalization, the complexity of international trade is alleviated through the minimization of the transaction costs, easier connection between businesses and consumers, and facilitation of the coordination of global value chains (OECD 2019).

The integration of ICT facilities is important in agricultural trade because of the complexity of agricultural supply chains involving products that are sensitive to time and temperature. Virtualization enables supply chain actors to manage business processes remotely and in real time. It is expected that this improves support for food companies in dealing with perishable products, unpredictable supply variations, and stringent food safety and sustainability requirements (Verdouw et al. 2016).

Management of agricultural value chains is challenging in Africa, particularly when dealing with perishable products and the exchange and processing of large amounts of strategic information. Although it is progressing rather slowly, digitalization of agricultural value chains to overcome the constraints that smallholder farmers face is becoming a reality. The following list includes some examples of companies using mobile technology to address challenges in the value chain (Kariuki 2018):

• Lack of agri-related information such as weather forecasts, market demand, pest-related information: startups are using messaging apps to convey the needed information to farmers. For example, Techno Brain and the Microsoft Corporation launched a Digital Agriculture Platform in Africa to help farmers improve crop yields and increase income. Farmers receive insights on mobile phones via short message service (SMS) and voice platforms, including information on the best crops to plant, pest growth alerts, adverse weather notices, preferred harvesting time, market information, and farming tips developed in collaboration with African governments and other knowledge partners. WeFarm is a free peer-to-peer service that enables farmers to share information via SMS, without the internet and without having to leave their farms. Digifarm is a Safaricom platform that provides smallholder farmers with access to a suite of information and financial services, including discounted products, customized information on best farming practices, and access to credit and other financial facilities.

• Lack of access to fair, trusted, and modern markets: M-Farm matches farmers with local buyers across Kenya. It also offers important information to determine the best time to plant crops, using price trends. Once the produce is ready, M-Farm connects farmers with thousands of ready buyers for the best price. Twiga Foods is linking farmers and vendors to fair, trusted, and modern markets. Its mobile platform brings together food producers, pack houses, and vehicles to supply and deliver produce directly from farmers to urban retailers.

• Lack of access to inputs and modern machinery: Hello Tractor is an Uber-like tractor service that allows farmers to conveniently request, schedule, and prepay for tractor services from nearby smart tractor owners through text messaging and mobile money.

Conclusions

This chapter examines the evolution of competitiveness in key commodity value chains in Africa, using comparisons of the periods 2005–2007 and 2015–2017. We use different indicators and methods to do this: Revealed comparative advantage, The real effective exchange rates, average unit value ratios, and market share decomposition.

We find that Africa's comparative advantage in agriculture has strengthened in very recent years, but several remarks must be made about this:

1. This comparative advantage is not a feature of the whole of Africa. Primarily, RECs such as ECOWAS, SADC, or COMESA have a comparative advantage. Other regions with strong extractive sectors (UMA, CEMAC, or ECCAS) do not display this trend.

2. Africa is competitive mainly in unprocessed or semi-processed products and not in processed products. This is especially true for CEMAC and ECCAS, although much less so for SACU, where countries like South Africa have made significant progress along the value chain. However, intra-Africa trade is quite different, and processed and unprocessed products exports are balanced within the continent.

3. We also note a very high African competitiveness in some value chains, including sesame seeds, and legumes and pulses, while the African comparative advantage in coffee and grapes is declining.

4. A striking finding in our analysis is that the increase in African agricultural exports is mainly driven by non-African demand for unprocessed and semi-processed products.

5. African exporters have the capacity to shift their product mix and to move to new markets.

All this analysis, therefore, leads to interesting conclusions for economic policy. For AfCFTA to be a success, it must allow the development of an important and dynamic local market. Removing tariffs and non-tariff barriers, including proper rules of origin,[1] will be key to guaranteeing that strong regional import demand will allow African exporters to benefit from the regional integration agenda. This is a prerequisite for African economies to diversify their productive base and so make agricultural transformation a strong job-creation engine, by allowing African producers to move up value chains. Some products appear more promising than others in the medium term: these are strategic choices that African actors will have to make quickly.

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1- According to the WTO definition (https://www.wto.org/english/tratop_e/roi_e/roi_info_e.htm), „Rules of origin are the criteria needed to determine the national source of a product. Their importance is derived from the fact that duties and restrictions in several cases depend upon the source of imports."

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Appendix

Table A4.1 Exports and export shares of selected commodities, 2005–2007 and 2015–2017

Commodities	2005–2007			2015–2017		
	Value millions US$	Africa Share in world markets	Product share (%) in African agricultural exports	Value millions US$	Africa share in world markets	Product share (%) in African agricultural exports
All agricultural goods	32870	4	100	60369	4.3	100
Cashew nuts	464	11.7	1.4	2458	22.8	4.1
Citrus	1819	12.4	5.5	3493	15.8	5.8
Cocoa	4776	19.7	14.5	9265	20.7	15.3
Coffee	1742	8.9	5.3	2307	6	3.8
Cotton	2179	17.5	6.6	1993	14.9	3.3
Grapes	1617	5	4.9	2032	4.4	3.4
Legumes & pulses	513	39.6	1.6	622	30.5	1
Sesame seeds	477	42.1	1.5	1803	59.4	3
Sugar	1859	6	5.7	2408	5	4
Tea	746	15.7	2.3	1697	20.8	2.8
Tomatoes	438	4.4	1.3	1079	7.2	1.8

Source: COMTRADE (2019) and authors' calculation.

Table A4.2 Correspondence between value chain and HS6 (Harmonized System 6-digit) lines

Value chains	Processed	Unprocessed & semi-processed
Cashew nuts	200819	080131, 080132
Citrus	200911, 200912, 200919, 200921, 200929, 200931, 200939	080510, 080520, 080540, 080550, 080590, 081400
Cocoa	180610, 180620, 180631, 180632, 180690	180100, 180200, 180400, 180500
Coffee	210111, 210112	090111, 090112, 090121, 090122, 090190
Cotton	na	520100, 520210, 520291, 520299, 520300
Grapes	200969, 220410, 220421, 220429, 220430	080610, 080620
Legumes & Pulses	110610, 230250	070810, 070820, 070890
Sesame Seeds	151550	120740
Sugar	170410, 170490	170112, 170113, 170114, 170191, 170199, 170211, 170219, 170220, 170230, 170240, 170250, 170260, 170290, 170310, 170390
Tea	210120	090210, 090220, 090230, 090240
Tomatoes	200210, 200290, 200950, 210320	70200

Note: na for not available.

Table A4.3 Composition of each regional economic community (REC)

RECs	ISO3 CODE	Country Name
Africa	SAC, AGO, BDI, BEN, BFA, BWA, CAF, CIV, CMR, COD, COG, COM, CPV, DJI, DZA, EGY, ERI, XAF, ETH, GAB, GHA, GIN, GMB, GNB, GNQ, KEN, LBR, LBY, LSO, MAR, MDG, MLI, MOZ, MRT, MUS, MWI, NAM, NER, NGA, RWA, SDN, SEN, XAF, SLE, SOM, SSD, STP, SWZ, SYC, TCD, TGO, TUN, TZA, UGA, ZAF, ZMB, ZWE	South African Customs Union, Angola, Burundi, Benin, Burkina Faso, Botswana, Central African Republic, Côte d'Ivoire, Cameroon, Congo, Dem. Rep., Congo, Rep., Comoros, Cabo Verde, Djibouti, Algeria, Egypt, Arab Rep., Eritrea, Western Sahara, Ethiopia, Gabon, Ghana, Guinea, Gambia, Guinea-Bissau, Equatorial Guinea, Kenya, Liberia, Libya, Lesotho, Morocco, Madagascar, Mali, Mozambique, Mauritania, Mauritius, Malawi, Namibia, Niger, Nigeria, Rwanda, Sudan, Senegal, Saint Helena, Ascension and Tristan da Cunha, Sierra Leone, Somalia, South Sudan, São Tomé and Principe, Swaziland, Seychelles, Chad, Togo, Tunisia, Tanzania, Uganda, South Africa, Zambia, Zimbabwe
ECOWAS	BEN, BFA, CIV, CPV, GHA, GIN, GMB, GNB, LBR, MLI, NER, NGA, SEN, SLE, TGO	Benin, Burkina Faso, Côte d'Ivoire, Cabo Verde, Ghana, Guinea, Gambia, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo

COMESA	BDI, COD, COM, DJI, EGY, ERI, ETH, KEN, LBY, MDG, MUS, MWI, RWA, SDN, SSD, SWZ, SYC, UGA, ZMB, ZWE	Burundi, Congo, Dem. Rep., Comoros, Djibouti, Egypt, Arab Rep., Eritrea, Ethiopia, Kenya, Libya, Madagascar, Mauritius, Malawi, Rwanda, Sudan, South Sudan, Swaziland, Seychelles, Uganda, Zambia, Zimbabwe
ECCAS	AGO, BDI, CAF, CMR, COD, COG, GAB, GNQ, RWA, STP, TCD	Angola, Burundi, Central African Republic, Cameroon, Congo, Dem. Rep., Congo, Rep., Gabon, Equatorial Guinea, Rwanda, São Tomé and Principe, Chad
CEMAC	CAF, CMR, COG, GAB, GNQ, TCD	Central African Republic, Cameroon, Congo, Rep., Gabon, Equatorial Guinea, Chad
SACU	SAC, BWA, LSO, NAM, SWZ, ZAF	South African Custom Union, Botswana, Lesotho, Namibia, Swaziland, South Africa
SADC	SAC, AGO, BWA, COD, LSO, MDG, MOZ, MUS, MWI, NAM, SWZ, SYC, TZA, ZAF, ZMB, ZWE	South African Custom Union, Angola, Botswana, Congo, Dem. Rep., Lesotho, Madagascar, Mozambique, Mauritius, Malawi, Namibia, Swaziland, Seychelles, Tanzania, South Africa, Zambia, Zimbabwe
UMA	DZA, LBY, MAR, MRT, TUN	Algeria, Libya, Morocco, Mauritania, Tunisia

Table A4.4 Cocoa exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	9,265.1	20.7	15.3
CEMAC	621.8	1.4	41.7
COMESA	270.4	0.6	1.3
ECCAS	656.2	1.5	34.0
ECOWAS	8,212.5	18.3	47.4
SACU	73.4	0.2	0.6
SADC	167.7	0.4	0.8
UMA	34.2	0.1	0.5

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.5 Coffee exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	2,306.7	6.0	3.8
CEMAC	78.6	0.2	5.3
COMESA	1,687.7	4.4	8.2
ECCAS	204.1	0.5	10.6
ECOWAS	302.6	0.8	1.7

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
SACU	30.7	0.1	0.3
SADC	242.9	0.6	1.2
UMA	30.4	0.1	0.5

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.6 Tea exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	1697.2	20.8	2.8
CEMAC	0.3	0	0
COMESA	1580.1	19.4	7.7
ECCAS	121.7	1.5	6.3
ECOWAS	6.3	0.1	0
SACU	37.8	0.5	0.3
SADC	202.7	2.5	1
UMA	15.4	0.2	0.2

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.7 Sugar exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	2,408.0	5.0	4.0
CEMAC	6.5	0.0	0.4
COMESA	1,500.0	3.1	7.3
ECCAS	8.1	0.0	0.4
ECOWAS	40.2	0.1	0.2
SACU	611.2	1.3	5.2
SADC	1,376.5	2.9	6.9
UMA	447.0	0.9	7.1

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.8 Cotton exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	1,992.5	14.9	3.3
CEMAC	194.2	1.4	13.0
COMESA	305.9	2.3	1.5
ECCAS	194.4	1.4	10.1
ECOWAS	1,349.0	10.1	7.8
SACU	55.1	0.4	0.5
SADC	235.0	1.8	1.2
UMA	0.8	0.0	0.0

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.9 Grapes exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	2,032.3	4.4	3.4
CEMAC	1.4	0.0	0.1
COMESA	233.5	0.5	1.1
ECCAS	1.7	0.0	0.1
ECOWAS	6.5	0.0	0.0
SACU	1,736.9	3.7	14.8
SADC	1,749.3	3.8	8.8
UMA	43.6	0.1	0.7

Source: COMTRADE (2019) and authors' calculation.

Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU= Arab Maghreb Union.

Table A4.10 Tomatoes exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
Africa	1078.8	7.2	1.8
CEMAC	3.6	0	0.2
COMESA	134.8	0.9	0.7
ECCAS	5.1	0	0.3
ECOWAS	55.4	0.4	0.3
SACU	31.0	0.2	0.3
SADC	33.1	0.2	0.2

Exporter	Value US$ million	REC share in world markets (%)	Product share in total agricultural exports (%)
UMA	854.3	5.7	13.6

Source: COMTRADE (2019) and authors' calculation.
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.11 Legumes and pulses exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share total agricultural exports (%)
Africa	621.9	30.5	1.0
CEMAC	0.8	0.0	0.1
COMESA	270.9	13.3	1.3
ECCAS	4.7	0.2	0.2
ECOWAS	32.2	1.6	0.2
SACU	6.0	0.3	0.1
SADC	49.8	2.4	0.3
UMA	299.5	14.7	4.8

Source: COMTRADE (2019) and authors' calculation.
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.12 Cashew nuts exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share total agricultural exports (%)
Africa	2,457.5	22.8	4.1
CEMAC	0.3	0.0	0.0
COMESA	14.7	0.1	0.1
ECCAS	0.3	0.0	0.0
ECOWAS	1,927.1	17.8	11.1
SACU	7.3	0.1	0.1
SADC	518.1	4.8	2.6
UMA	2.7	0.0	0.0

Source: COMTRADE (2019) and authors' calculation.
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

@Table A4.13 Citrus nuts exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share total agricultural exports (%)
Africa	3,493.1	15.8	5.8
CEMAC	1.4	0.0	0.1
COMESA	832.4	3.8	4.1
ECCAS	1.8	0.0	0.1
ECOWAS	18.1	0.1	0.1
SACU	1,975.8	8.9	16.9
SADC	2,037.3	9.2	10.3
UMA	649.7	2.9	10.3

Source: COMTRADE (2019) and authors' calculation
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

Table A4.14 Sesame seeds exports values and shares in African regional economic communities (RECs), 2015–2017

Exporter	Value US$ million	REC share in world markets (%)	Product share total agricultural exports (%)
Africa	1,803.0	59.4	3.0
CEMAC	24.2	0.8	1.6
COMESA	842.5	27.8	4.1
ECCAS	24.2	0.8	1.3
ECOWAS	633.4	20.9	3.7
SACU	0.7	0.0	0.0
SADC	282.9	9.3	1.4
UMA	0.9	0.0	0.0

Source: COMTRADE (2019) and authors' calculation.
Note: CEMAC = Communauté Economique et Monétaire d'Afrique Centrale, COMESA = Common Market for Eastern and Southern Africa, ECCAS = Economic Community for Central African States, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, SACU = Southern Africa Customs Union, AMU = Arab Maghreb Union.

5

A Global Trading System in Turmoil: What is at Stake for Africa?

Antoine Bouët, Fousseini Traoré, and David Laborde

Introduction

Over the past three years, the world trading system has been subject to profound upheavals, which some do not hesitate to describe as disruptions. First, on June 23, 2016, a majority of voters in the UK's referendum on European Union membership opted to leave the bloc. Then, on November 8, 2016, the US voted for a platform openly in favor of protectionism, promising restrictive trade policies directed towards emerging economies as well as other industrial countries.

While the UK government and the EC are still working on finalizing the modalities of separation, the new US government has moved to renegotiate the North American Free Trade Agreement, impose tariffs on a first set of imported products, and draw an indicative list of other potential products that would be subjected to tariffs should several trading partners fail to reach new agreements with the US. China reacted to the new US tariffs by imposing its own tariffs on selected US products. Both the US and China are threatening to further restrict trade between the two countries. While there has been no further move in that direction yet, it is not to be excluded that the EU and possibly Mexico or Canada may be facing new US tariffs, against which they are certain to retaliate.

Since the beginning of the new administration, the US has particularly increased its customs protection on products from China. In total, the share of US imports from China impacted by special protection increased sharply from less than 10 percent to more than 50 percent between January 2017 and December 2018 after more than 35 years of steady decline (Figure 5.1). The agricultural sector quickly came to be at the heart of the retaliation process, with China including 86 percent of US agricultural exports in the list of targeted products, compared to only 37 percent of US industrial exports. Given that the US is the largest global exporter of farm goods, the loss of its exports to China may cause ripple effects. In May 2019, the United States again increased tariffs from 10 percent to 25 percent on about 5,700 products, representing US$200 billion of imported Chinese goods, and declared its readiness to impose additional tariffs of 25 percent on China's not previously targeted exports worth US$325 billion. If these latter threats are implemented, as much as 100 percent of US imports from China are expected to be affected by special protection. China has again exerted trade retaliation.

The academic economic literature has looked at trade wars. From a theoretical point of view, it has been shown that, in the case of a trade war, generally all countries lose in terms of welfare, even if a large country can win a trade war against a small country (Johnson 1953). The impact of the protectionist policies initiated by the United States has often been assessed since 2017 from an empirical point of view. Bouët and Laborde (2018) use a static computable general equilibrium (CGE) model to study 18 scenarios of protectionist policies initiated by the United States against China and Mexico. Under no circumstances does the United States gain significantly in terms of welfare or gross domestic product (GDP). China's losses are systematic but limited. There may be "free riders" which benefit from the closure of American borders to Chinese products, Central America in particular. Other studies assess the effects of the same type of trade warfare, but with a focus on the United States (Amiti et al. 2019; Fajgelbaum et al. 2019).

Figure 5.1: US imports from China covered by special protection, by sector, 1980–2018
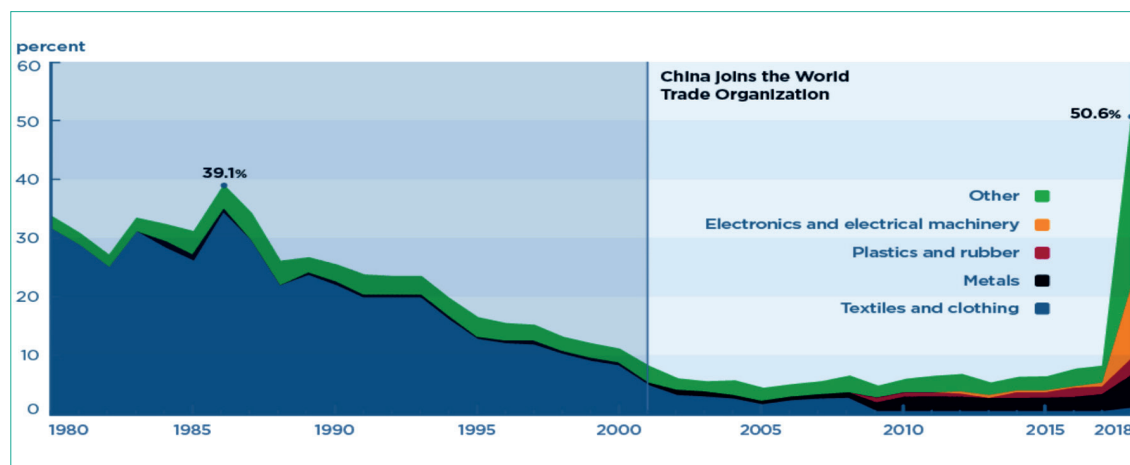
Source: Bown 2019.

The trade war between the United States and China involves the two largest players in the world economy (i.e., the two countries with the largest GDPs, and the largest exporters and importers). Consequently, increasing trade tensions between these two giants are a major stake and it is expected that these tensions will negatively affect third countries through spillover effects. Trade tensions may also become even more important and may potentially concern other players in the world economy. This is why the global trading system appears to be today in turmoil.

The issue of "free riders" is interesting, as there may be collateral victims or beneficiaries of a bilateral trade war. We focus here on the potential impact of the trade war between China and the United States on African countries. To do this, given the number of countries and sectors involved, we use a dynamic multicountry and multisectoral CGE model, using a geographical disaggregation that includes a large number of African countries. We study the potential impact of the tariffs actually imposed by these two major trading partners on their respective trade flows (section 5.3). We also study the impact of trade integration on the African continent on the effects of this trade war.

Our main conclusion is that with these increasing trade tensions between the United States and China, Africa will register a net gain or a net loss in GDP and exports to these large countries depending on the intensity of the trade war. This is related to two effects, a trade diversion effect and an income effect. However, in the case of a multilateral trade war, African exports would fall significantly. Moreover, deeper integration in Africa while the world becomes more protectionist is an attractive strategy for Africa.

The chapter is structured as follows. First, we discuss the economic mechanisms that potentially could explain the impact of a trade war between China and the United States on African countries (section 5.2), in particular the income effects (impact of the trade war on the GDP of countries that could potentially import African products) and the substitution effects or trade diversion effects. We conclude that African countries can benefit from this trade war, and that this benefit is even greater if they establish a continental free trade area.

How Will Africa be Impacted?

While the global impact of the US–China trade dispute has been much analyzed, there has been less debate about the extent to which third countries and regions could be affected (especially Africa). Yet Africa is likely to face both positive and negative outcomes from a trade war between the two giants. This section will show different impacts of these trade tensions. First, at the global level, world GDP will be negatively affected, due to lower demand for raw materials coming from Africa and lower prices. As China is a major partner for Africa, the impact could be substantial. Another potential impact is the risk of accrued competition in third markets, particularly between the US and African exporters. On the other hand, some new opportunities may emerge for African countries with new supply chain decisions by China. The overall impact on Africa of the global turmoil is, therefore, ambiguous.

Global Macro Effects

Figures 5.2 and 5.3 provide International Monetary Fund (IMF) GDP projections, illustrating the forecasts in April 2019 and the difference between those issued in March 2018 and April 2019, respectively. World GDP is projected to grow at 3.32 percent in 2019 and 3.61 percent in 2020 which, compared to 2018 projections, represents a downward revision of −0.62 and −0.15 percentage points, respectively. Although numerous factors are mentioned to explain this downward revision (macroeconomic issues in Argentina and Turkey, tighter credit and monetary policies in advanced economies, difficulties in industrial sectors of developed countries such as Germany, higher uncertainty, etc.), US–China trade tensions constitute a major consideration (IMF 2019b). For Africa south of the Sahara, growth forecasts have been revised down by −0.2 and −0.10 percentage points for 2019 and 2020, respectively. In the same vein, the World Bank's June 2019 Global Economic Prospects report (World Bank 2019) revised down global growth to 2.6 percent (0.3 percent below previous projections) and world trade growth for 2019 by one full percentage point: from 3.6 percent to 2.6 percent. This revision, which is larger than that of the IMF, takes into account the May 2019 increase in tariffs between the United States and China.

Figure 5.2 GDP growth projections in 2019 for 2019-2023
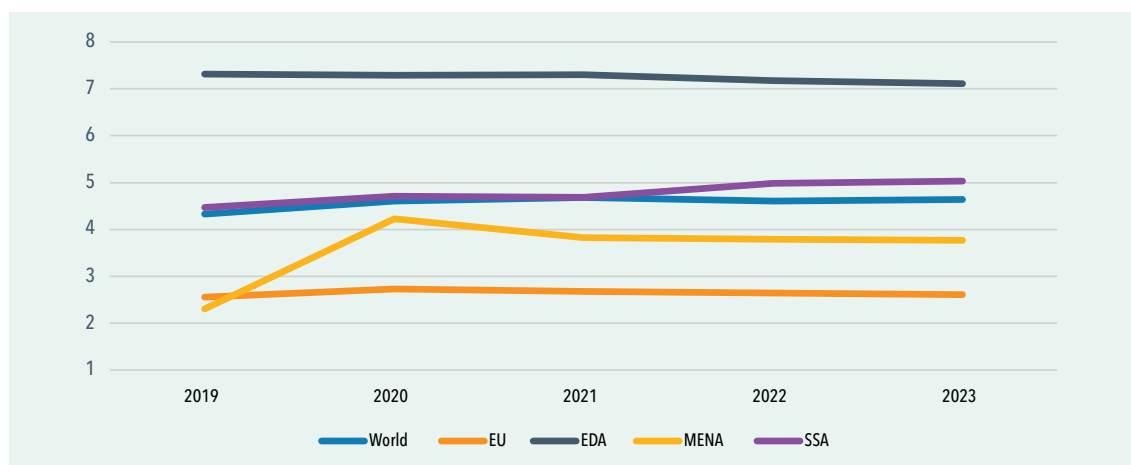
Source: IMF (2019a).
Note: MENA for Middle East and North Africa; EU for European Union; EDA for Emerging and Developing Asia; SSA for Africa, South of Sahara.

Figure 5.3 Difference between March 2018 and March 2019 growth projections for 2019-2023
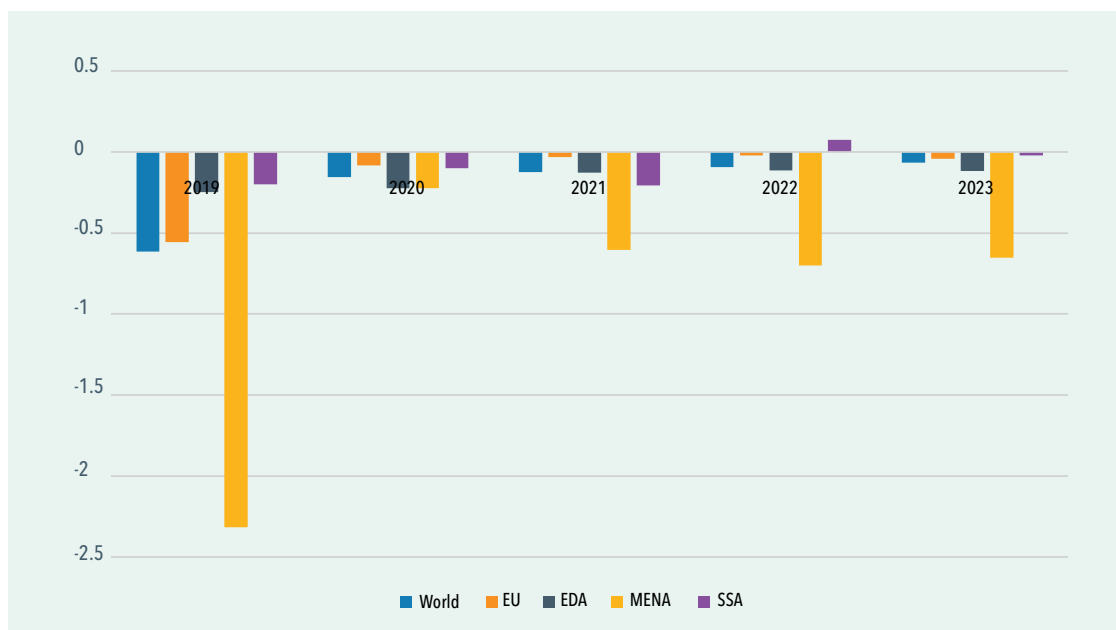
Source: IMF (2019a).

Note: MENA for Middle East and North Africa; EU for European Union; EDA for Emerging and Developing Asia; SSA for Africa, South of Sahara.

Bouët and Laborde (2018) evaluate several scenarios of trade war between the United States and China by modifying the intensity of Chinese reprisals. Total US exports are estimated to decrease between 2.7 percent to 7.7 percent in volume across the different scenarios, while total exports from Africa south of the Sahara increase slightly. Central American countries are expected to benefit most from these different trade war scenarios.

Freund et al. (2018) assess the implications of a series of tariff surcharges on products traded between China and the United States. They find that global income would decline up to 1.7 percent when combined with a decline in investor confidence (scenario with a drop in investment), with losses across all regions, while global exports fall by 3 percent. African exports could increase slightly under the full tariff war scenario but fall by 1.1 percent if the retaliation measures are accompanied by a fall in investor confidence.

In a review using three models[1] to analyze a hypothetical scenario of a 25 percentage-point increase in tariffs affecting all US–China trade, the IMF (2019b) finds that world GDP would fall between −0.1 percent and −0.2 percent. While the annual real GDP losses for the United States range from −0.3 percent to−0.6 percent, and for China from −0.5 percent to −1.5 percent, the rest of the world would register a loss ranging from −0.05 percent to +0.10 percent (long-run impact; the negative effect is based on the global integrated monetary and fiscal (GIMF) model). China is estimated to be much more affected than the United States by the tariff war owing to the high US market share in total Chinese exports.

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1 - The global integrated monetary and fiscal (GIMF) model, the Global Trade Analysis Project (GTAP) model, and a multisector heterogenous-firm model with entry and exit ‚à la Melitz’ (Caliendo et al. 2017).

With respect to trade flows, real exports for China would decrease by −3.6 percent to −5.5 percent, and United States exports would be cut by −4 percent to −6.3 percent (these ranges of variation are similar to those in Bouët and Laborde 2018). The rest of the world would benefit from increased exports to the United States at the expense of China, with real exports increasing by up to 0.4 percent. In a related study using a global vector autoregressive (VAR) model, the African Development Bank (AfDB 2019) evaluates the impact of a 1 percent contraction in world trade and concludes that the impact in the medium term (3 years) would range from −1.1 percent of GDP for non-resource-intensive exporters to −1.9 percent for oil exporters.[2]

The main channel through which US–China trade tensions are expected to affect African economies is through lower demand for commodities and raw materials exported by African countries, especially to China. Indeed, a decrease in Chinese exports to the United States could also result in lower exports for African countries that are large suppliers of China. In 2017, 20 percent of China's oil imports came from Africa. Figures 5.4 and 5.5 present the projected growth rate of China's trade in 2019 as well as the difference between the 2018 and 2019 forecasts. For both export and import flows there is a significant downward revision compared to 2018. Import forecasts have been revised down by 2.3 percentage points in 2019, while export projections have been reduced by 1.8 percentage points. The IMF (2019b) projects China's exports to the United States to fall by 71.3 percent in the worst case. While the rest of the world would benefit from more exports to the United States (up to 6 percent), replacing previous flows from China, exports to China would decrease (up to −2.8 percent) for all models. While the disaggregation of the results does not include Africa, it is likely that the net effect will be negative, given the closer trade relations between the continent and China compared to the United States.

Figure 5.4 Growth in the volume of China's trade in % 2019-2023
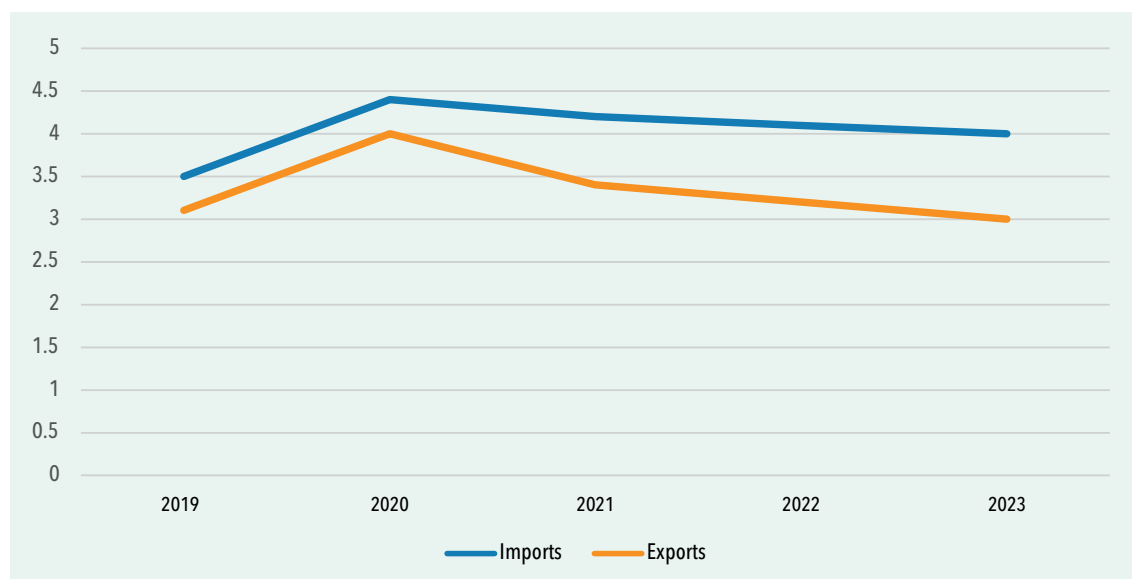
Source: IMF (2019a).

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2 - The results of the AfDB model should, however, be analyzed with caution. Indeed, the graphs do not explicitly indicate the confidence intervals around those estimates, and the range of variation shown tends to indicate that they are not significant.

Figure 5.5 Changes from March 2018 projections in %, 2019-2023
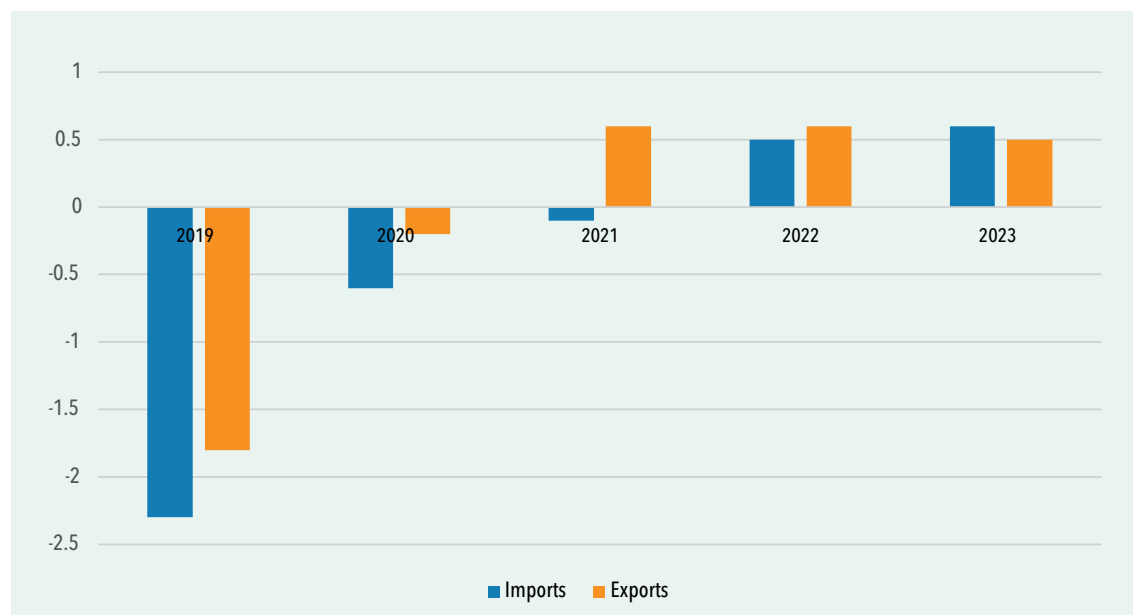
Source: IMF (2019a).

Sectoral Effects and Specific Value Chains Impacted

Subsection 5.2.1 shows that trade tensions are likely to cause global demand to contract, particularly in China, at the expense of African exporters. As demand contracts, the main consequence will be lower quantities exported by African countries to China and lower prices for the commodities under consideration. According to the IMF (2019c), more than half of the growth slowdown forecast in Africa south of the Sahara in 2019 and 2020 may be attributed to these negative terms of trade effects, the most affected countries being commodity exporters that have strong linkages with China. Figures 5.6 and 5.7 highlight the projected evolution for commodity prices in the coming years. From the 2018 peak, a decline is expected over the next 4 years. Oil and several mineral prices had already fallen in the second half of 2018. Compared to 2018 projections, recent tensions have led the IMF to project an intensification in the fall in prices for 2019 and 2020.

Figure 5.6 Commodity Price Index (2005 = 100) 2019-2023
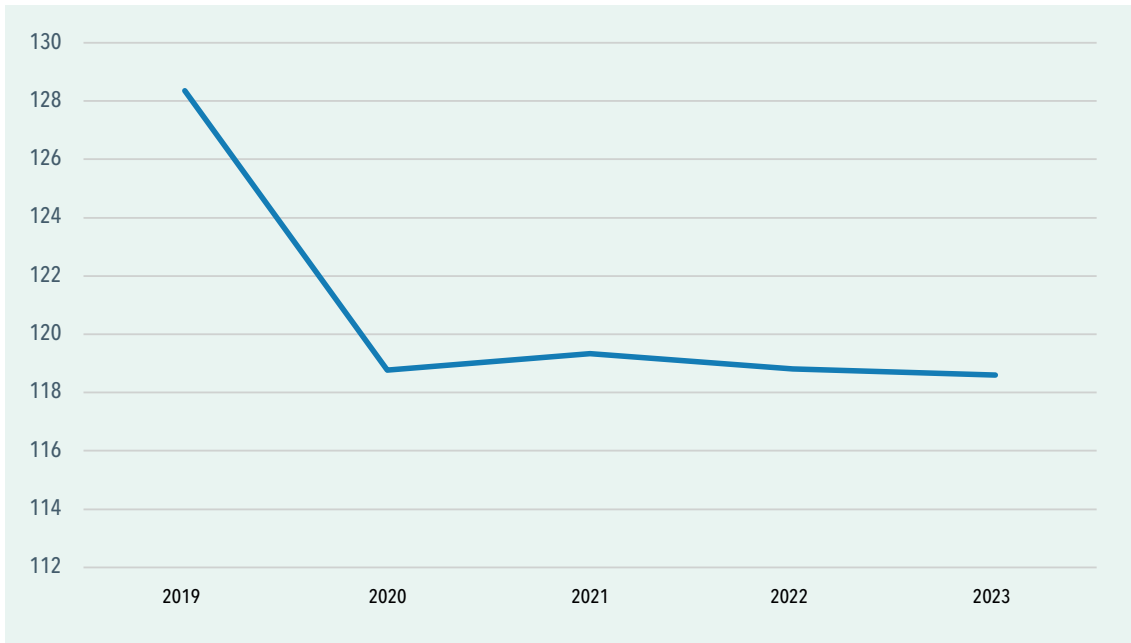
Source: IMF (2019a).

Figure 5.7 Commodity price index fuel and non-fuel price indices changes from March 2018 projections, 2019-2022
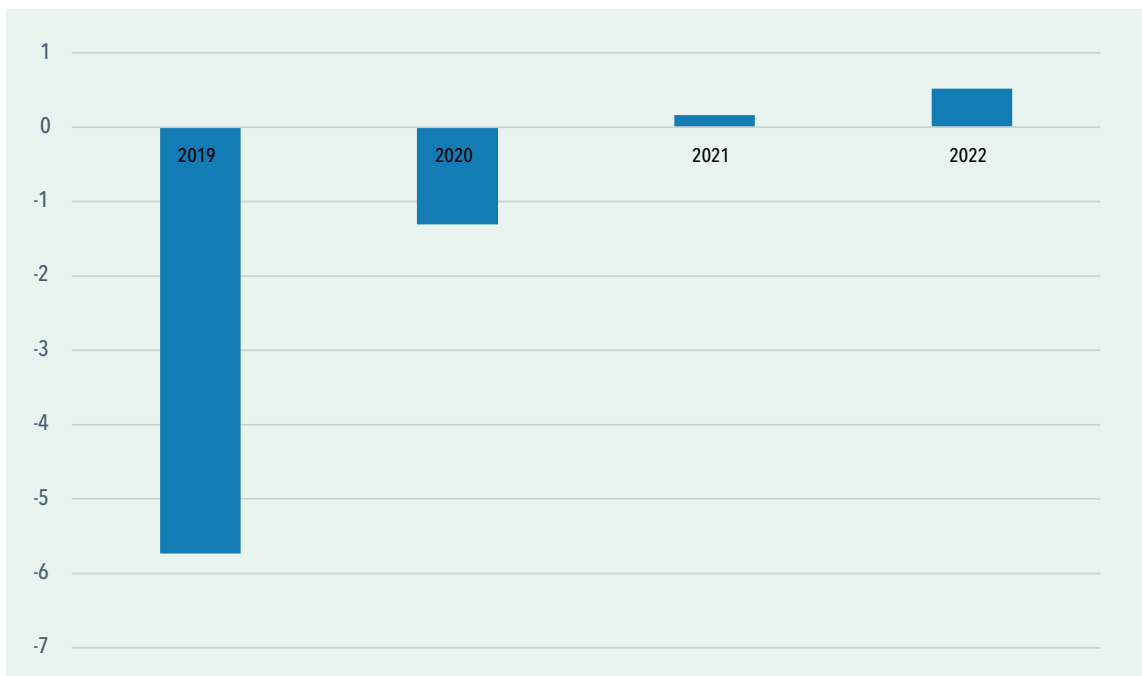
Source: IMF (2019a).

The literature shows that contraction in Chinese production and trade will be concentrated in industrial products. Therefore, raw materials and inputs used in the industrial production process will be the most affected by the negative shock. Previous estimates showed that the elasticity of metals and fuel prices to China's industrial production ranges from 5 percent to 7 percent (IMF 2016). Since 70 percent of Africa exports to China are commodities (oil, minerals, and metals), African countries that are the main exporters of those goods would be most affected. A country such as South Sudan acquires 95 percent of its foreign revenue from oil exports to China, while 60 percent of Angola's exports consist of oil and minerals exports to China. Analysis by the IMF (2018) and AfDB (2019) shows that 21 countries[3] that are commodity exporters are likely to be impacted. The situation of those commodity exporters is vulnerable, as many of them have yet to recover from the 2015–2016 price bust.

China's direct investment into Africa is also likely to be negatively affected. Indeed, over the last two decades China has invested substantially in resource-intensive countries in Africa, especially in metals and energy. The goal followed by China with this strategy is seemingly to secure the provision of these commodities by channeling these investments back into China through exports of metals and minerals (IMF 2019c).

While we would expect the majority of African exporters to be hurt by lower demand coming from China, the protectionist measures introduced by the Trump administration could affect a few countries exporting in the US market as well. This could be the case for South Africa. The tariffs imposed by the United States on steel and aluminum could hurt South Africa's steel industry, since the United States has decided not to grant an exemption to this country. With US$375 million worth of aluminum and US$950 million worth of steel exports to the United States in 2017, it is estimated that thousands of jobs in the steel industry are at risk, especially since the United States turned down the offer made by South Africa to voluntarily restrict its exports to the 2017 level (Kohnert 2018). A similar outcome is expected regarding the looming threat to raise tariffs on imported vehicles, given that the United States is the second largest destination of South Africa's car exports after the United Kingdom.

New Opportunities for Africa?

The trade tensions between the United States and China could constitute new opportunities for Africa, despite the negative effects mentioned above. First, China could start importing more oil from Africa to replace imports from the United States and reduce the dependence on Middle Eastern countries. This strategy was stated by Chinese authorities and economic actors at the 2018 September Beijing Summit on China–Africa cooperation. In addition to energy, other sectors are likely to benefit from the trade dispute. In agriculture in particular, rising tariffs on US products may bring new opportunities to African exporters that could become new suppliers of China. South Africa and Egypt are potential winners from tariff war for wine and citrus, even if the main gains are secured by Australia (Kohnert 2018).

The trade war is likely to prompt new supply chain decisions in China that could have significant impacts on Africa. The case of soybeans is an interesting example of such a phenomenon. China is targeting this product with a 25 percent tariff, despite being the largest soybean importer in the world and absorbing two-thirds of US exports. Although China has started increasing its imports from Brazil, Africa could be next. This shift in supply networks has, in fact, already seemingly begun to happen, as China has started buying soybeans from Rwanda, Ethiopia,

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3 - Including Zimbabwe, Guinea, Gabon, and DRC, for which more than 40 percent of exports are destined for China (Devermont and Chiang 2019).

Uganda, and the Democratic Republic of Congo, leading to rising prices in the region.[4] In addition to buying from Africa, new investment decisions with potential land acquisitions are likely to happen in the near future if African countries do not undertake appropriate reforms (Laborde and Smaller 2018).[5] Another potential consequence of the tensions, especially for the soybean sector, is new reallocation of US exports to Africa. Indeed, with the tariff escalation, the United States will end up with a surplus (potentially equivalent to millions of tons) that would likely be redirected to new destinations, to avoid low domestic prices. Along with Europe, Africa is a net importer with growing demand boosted by a dynamic poultry sector. Regions with growing needs include Nigeria, Senegal, and the Southern African Development Community (SADC) region (especially South Africa), with imports coming mainly from Latin America. However, in southern Africa, a regional market exists with Zambia and Zimbabwe as suppliers for South Africa (ACET 2014). There is, therefore, a risk of increased competition (and potential dumping) as US exporters displace those within the southern Africa region as well as those in Latin America.

Quantifying potential impacts

In this section we present a quantification of the potential effects on Africa of the US–China trade war. To do this, we use a multi-country, multi-sector dynamic CGE model. This model, known as MIRAGRODEP, has already been used to carry out this type of evaluation.[6] In the version we use, the model is calibrated with the GTAP10 database.[7] The trade war shock is implemented in 2018 and the results are reported for the year 2020.

A multiregion, multisector dynamic computable global CGE model is an economic representation of the world with n regions and m sectors. This representation accounts for the economic interdependence between productive sectors and between these sectors and markets for productive factors. The model is usually solved for an equilibrium on all markets through price adjustment. Like other CGE models, MIRAGRODEP is based on an input–output framework and its theoretical structure is derived from optimizing behavior of economic agents, particularly households and firms. Walras's law holds: if there is equilibrium in all but one of the markets, equilibrium also holds in the last market.

In a global CGE model, regions respect their budget constraints, considering financial relations with the rest of the world (as in a single-country CGE model), and global savings equal global net investment. It is noteworthy that a CGE model is not designed for business cycles, in contrast with IMF outcomes, and investment does not vary with uncertainty about the future.

In MIRAGRODEP, the government is explicitly modeled. Government income consists of taxes collected on production, on factors of production, on exports, on imports, on consumption, and on households' income. From the supply side in each sector, the production function is a Leontief function[8] of value-added and intermediate inputs, and the intermediate inputs function is an aggregate constant elasticity of substitution (CES) function of all goods.

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4 - Prices have increased by 25 percent in the region in less than 6 months, moving from US$520 to US$650 per ton. We refer to metric ton throughout the chapter. (https://www.thenational.ae/business/economy/how-africa-became-collateral-damage-in-us-china-trade-war-1.849843).
5 - http://www.ifpri.org/blog/could-us-%E2%80%93-china-trade-war-lead-new-wave-land-grabs.
6 - See Bouët and Laborde (2018) and Bouët et al. (2018).
7 - The GTAP 10 database is a global database containing bilateral trade information, input–output, transportation, and protection data for 141 countries and regions (Aguiar, Narayanan, McDougall 2016).
8 - This means strict complementarity between value-added and intermediate inputs.

"Value-added" is a CES function of unskilled labor, land, natural resources, and a bundle of skilled labor and capital.[9]

The utilization rate of productive factors is assumed to be constant. The only factor with a fixed supply over time is natural resources. Labor supply growth rates are fixed exogenously following the evolution of the active population. Land supply is endogenous, as it depends on the real remuneration of land.

Skilled labor is the only factor that is perfectly mobile. Installed capital and natural resources are sector specific. New capital is allocated among sectors according to an investment function. Unskilled labor is imperfectly mobile between agricultural and non-agricultural sectors, according to a constant elasticity of transformation (CET) function. Land is also imperfectly mobile between agricultural sectors.

Capital in a given region, whatever its origin (domestic or foreign), is assumed to be obtained by assembling intermediate inputs according to a specific combination. The capital good is the same regardless of the sector.

The demand side is modeled in each region through a representative agent whose propensity to save is constant. The rest of the national income is used to purchase final consumption. Preferences between goods are represented by a linear expenditure system (LES)–CES function. This implies that consumption has a non-unitary income elasticity. The sector sub-utility function used in MIRAGRODEP is a nesting of four CES–Armington functions[10] that defines the origin of the goods. In this study, Armington elasticities are drawn from the GTAP10 database and are assumed to be the same across regions.

The model is here calibrated on a representation of the world economy with 21 regions and 31 sectors (see Appendix). The 21 regions include China and the United States, and also 9 African regions. The 31 sectors comprise 16 agricultural–food sectors, 2 primary non-agricultural sectors, 8 industrial sectors, and 5 service sectors.

The closure of the public balance is always an important assumption. Here it is assumed that an additional consumption tax is levied to compensate in each country for the loss of customs revenue so as to leave the ratio of public balance to GDP constant and public expenditure per capita constant. With respect to the external account, we assume in the simulations that the current account balance is fixed (in the model it is expressed as a percentage of global GDP). The fixed level of the current account balance is maintained through an adjustment of the real exchange rate.

A Passive Africa

First, let us present the results related to three scenarios where Africa has no reaction in terms of trade policies. We study two scenarios of trade war between China and the United States, called S1-TW1 (increases in US customs duties on Chinese products and Chinese duties on US products, observed between the 2016 US elections and April 1, 2019) and S2-TW2 (scenario S1-TW1 plus the bilateral customs duty increases declared by the two countries since April 1, 2019). The S2-TW2 scenario is, therefore, a tougher trade war between the two countries.

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9 - This specification allows us to have a different elasticity of substitution between capital and skilled labor compared to capital and unskilled labor.
10 - The Armington (1969) assumptions state that imported products and domestic products are imperfect substitutes.

We also study an additional scenario that may illustrate a multilateral trade war: all countries adopt their best response (i.e., the tariff that maximizes their welfare). It is, therefore, a Nash equilibrium,[11] and we term it the S3-Nash scenario.

Table 5.1 presents the impacts of the different scenarios on the real income of the representative household from different regions: Africa as a whole, Africa south of the Sahara, six African regional economic communities,[12] the world as a whole, the group of developed economies, and the group of developing economies. Table 5.2 shows the impact of the same scenarios on the GDP of the same regions. Both tables also include a scenario (S4-AfCFTA) that will be discussed in section 5.3.2.

Table 5.1 Impact of scenarios on real household income (millions USD), 2020

Region	S1-TW1	S2-TW2	S3-Nash	S4-AfCFTA
Africa	438.3	1,258.0	−8,220.2	3,677.7
Africa south of Sahara	346.2	927.7	−6,606.5	2,629.0
AMU	92.1	330.3	−1,613.7	1,048.7
ECOWAS	96.6	319.4	438.6	585.3
SADC	57.8	118.7	−1,281.3	102.2
COMESA	205.6	524.7	−3,357.5	1,030.9
SACU	51.8	200.6	−3,956.4	1,465.3
ECCAS	15.0	46.4	189.3	−61.7
World	−7,716.3	−32,880.6	−454,601.2	−30,599.2
Developed	3,008.5	−15,967.8	−258,735.3	−16,236.1
Developing w/o Africa	−11,163.1	−18,170.8	−187,645.7	−18,040.7

Source: Authors' calculations from simulations.

Note: S1-TW1 is a trade war scenario with changes in tariffs observed from January 1, 2018 to April 1, 2019; S2-TW2 is scenario S1-TW1 plus the bilateral customs duty increases declared after April 1, 2019; S3-Nash is a scenario where all countries adopt welfare-maximizing tariffs; S4-AfCFTA is the S1-TW1 trade war scenario, plus a continental free trade area. AMU = Arab Maghreb Union, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, SACU = Southern Africa Custom Union, ECCAS = Economic Community for Central African States.

The trade war is costly for the entire world: in particular, the increases announced after April 1, 2019, multiply by more than 4 times the loss of real income worldwide, from US$7.7 billion (S1-TW1) to US$32.9 billion (S2-TW2). If the trade war becomes multilateral (S3-Nash), real income losses at the global level become massive, multiplying by 59 times as compared to S1-TW1, for a total loss of US$454.6 billion.

But these losses are concentrated in developed and non-African developing countries. All African regions benefit from a bilateral trade war whether or not the most recent tariff increases are applied. These gains are both in terms of real income of the representative household (Table 5.1) and GDP (Table 5.2). The gains are particularly strong for the southern African region (SADC and SACU): in relative terms these are the regions with the largest gains.

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11 - In game theory a Nash equilibrium is a situation such that each player's strategy maximizes his payoff, given that the strategy of others is held fixed. The strategy at that point of each player is optimal against those of the other players.
12 - These various RECs overlap. This explains why the sum of the real incomes gains of the six RECs is not equal to the gain for Africa.

Table 5.2 Impact of scenarios on gross domestic products (%), 2020

Region	S1-TW1	S2-TW2	S3-NASH	S4-AFCFTA
Africa	0.01	0.03	−0.50	0.03
Africa south of Sahara	0.02	0.04	−0.43	0.03
AMU	0.01	0.02	−0.67	0.02
ECOWAS	0.01	0.03	−0.11	0.03
SADC	0.02	0.05	−0.28	0.04
COMESA	0.01	0.03	−0.68	0.03
SACU	0.01	0.04	−0.99	0.04
ECCAS	0.01	0.02	−0.04	0.02
World	−0.03	−0.09	−1.02	−0.09
Developed	−0.02	−0.10	−0.88	−0.10
Developing w/o Africa	−0.04	−0.08	−1.32	−0.08

Source: Authors' calculations from simulations.

Note: S1-TW1 is a trade war scenario with changes in tariffs observed from January 2019 to April 1, 2019; S2-TW2 is scenario S1-TW1 plus the bilateral customs duty increases declared after April 1, 2019; S3-Nash is a scenario where all countries adopt welfare-maximizing tariffs; S4-AfCFTA is the S1-TW1 trade war scenario, plus a continental free trade area. AMU = Arab Maghreb Union, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, SACU = Southern Africa Customs Union, ECCAS = Economic Community for Central African States.[13]

Nevertheless, a multilateral trade war (scenario S3-Nash) is costly for everyone, including Africa, with major impacts on global markets. In this scenario, the loss of GDP is 1.02 percent worldwide with low losses for the ECCAS and ECOWAS communities, but high for AMU, COMESA, and SACU.

In contrast, a bilateral trade war can open up export opportunities for Africans, who benefit as trade flows are diverted and their own exports increase, with a knock-on effect on the economy. In scenario S2-TW2, while world exports fall in value by 1.2 percent, African exports increase by 0.4 percent, with a positive figure for each of the six regions. For Africans, the increase in crop exports is particularly strong (+0.9 percent), while world exports of the same type of goods fall by 1.5 percent and those of developed countries by 2.8 percent.

Table 5.2 shows the impact of scenarios S1-TW1 and S2-TW2 on bilateral trade in value terms. We indicate here only the most important flows for Africa, or only those with significant variations.

In section 5.2 we mention a potential negative effect of trade wars on African exports due to the slowdown in economic activity (particularly in China) which would reduce African exports of primary energy goods and minerals, but also have a potential positive effect, through trade diversion: African exports to China could substitute for US exports in some sectors.

The assessment made with the MIRAGRODEP model confirms the negative effect of trade wars between the United States and China on African exports of primary energy goods and minerals, which fall by 0.1 percent and 0.5 percent, respectively, in scenario S2-TW2.

13 - These various RECs overlap. This explains why the sum of the real incomes gains of the 6 RECs is not equal to the gain for Africa.

But it also confirms a positive effect through trade diversion. Scenarios S1-TW1 and S2-TW2 substantially alter trade between the United States and China. In scenario S1-TW1 and scenario S2-TW2, developed countries' exports to China fall by 6.5 percent and 13.2 percent, respectively, mainly due to the sharp decline in US exports (−35.1 percent and −64.4 percent, respectively), while exports from developing countries outside Africa to the United States fall by 12.0 percent and 23.5 percent, respectively, mainly due to the fall in China's exports (−37.0 percent and −80.1 percent, respectively). Under these circumstances, it is understandable that opportunities are opening up for other regions of the world in terms of exports to the two largest importing countries of goods in the world. All African regions are taking advantage of this opportunity to increase their exports to these two destinations: in scenario S1-TW1 and scenario S2-TW2, in total, African exports increase by 1.4 percent (respectively 2.6 percent) to China and by 0.4 percent (respectively 2.2 percent) to the United States. Exports to China from developing countries outside Africa, however, are increasing more than those of African countries (1.7 percent and 3.5 percent, respectively). Many developing countries, particularly Asian developing countries outside China, are increasing their exports to the United States by more than African countries. Exports to China are increasingly mainly from the ECOWAS and COMESA regions, while the AMU, COMESA, and SADC regions benefit from the most significant growth in exports to the United States. The sectors with the highest export growth are agriculture and agri-food.

Table 5.3 Impact of scenarios S1-TW1 and S2-TW2 on bilateral exports (%)—Value, 2020

Exporter	S1-TW1			S2-TW2		
	Importer			Importer		
	Africa	China	USA	Africa	China	USA
Africa	−0.1	1.4	0.4	−0.3	2.6	2.2
Africa south of Sahara	−0.1	1.4	0.0	−0.3	2.5	1.3
AMU	0.0	1.2	1.2	−0.1	2.6	4.8
ECOWAS	−0.1	2.3	0.0	−0.2	3.0	0.4
SADC	−0.2	1.4	0.1	−0.4	2.7	3.5
COMESA	−0.1	1.9	1.3	−0.4	3.2	6.5
SACU	−0.1	1.4	−0.5	−0.4	2.7	2.3
ECCAS	0.0	1.1	0.2	−0.1	2.2	0.7
World	0.1	−3.1	−4.1	0.4	−6.3	−7.3
Developed	−0.1	−6.5	1.5	0.1	−13.2	4.2
Developing w/o Africa	0.5	1.7	−12.0	0.9	3.5	−23.5

Source: Authors' calculations from simulations.

Note: S1-TW1 is a trade war scenario with changes in tariffs observed from January 2019 to April 1, 2019; S2-TW2 is scenario S1-TW1 plus the bilateral customs duty increases declared after April 1, 2019. AMU = Arab Maghreb Union, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, SACU = Southern Africa Customs Union, ECCAS = Economic Community for Central African States.[14]

14 - These various RECs overlap. This explains why the sum of the real incomes gains of the 6 RECs is not equal to the gain for Africa.

A bilateral trade war, such as that represented by either the S1-TW1 or S2-TW2 scenario, can therefore represent an opportunity for African agriculture. Table 5.4 shows the effects of scenario S2-TW2 on real value-added in agriculture in the different African regions. This trade war opens up opportunities for African farmers in most of these sectors and in most regions of Africa. This is particularly true for the oilseed sector and the SADC region, which increases its value-added in volume by 1.6 percent in this scenario. It is useful to recall that, in 2017, the United States was the largest exporter of soybeans and China the largest importer (see section 5.2.3). This highlights the potential windfall effect that Chinese retaliation on this product represents for producers in the rest of the world.

Table 5.4 Impact of scenario S2-TW2 on agricultural value-added in volume (%), 2020

Region	Rice	Wheat	Corn	Veg. & Fruits	Oil seeds	Sugar	Fibers
Africa	0	0	0	0.1	0.3	0.2	0.4
Africa SoS	0	0	0.1	0.1	0.6	0.2	0.6
AMU	0	0	−0.1	0.1	−1.3	0.1	0.3
ECOWAS	0	−0.1	0	0.1	0.2	0.1	0.5
SADC	0	0.3	0.2	0.1	1.6	0.2	0.4
COMESA	0	0	0	0	0.5	0.1	0.3
SACU	0.2	0.3	0.1	0.2	−0.2	0.3	0.1
ECCAS	0	0.2	0.1	0.1	0	0.1	2

Table 5.4 (continue) Impact of scenario S2-TW2 on agricultural value-added in volume (%), 2020

	Other crops	Red Meat	White Meat	Dairy	Veg. Oils	Proc. Food
Africa	0.2	0.1	0.2	0.1	0	0.2
Africa SoS	0.2	0.1	0.2	0.2	−0.1	0.2
AMU	0.1	0.1	0.1	0	0.4	0.1
ECOWAS	0.2	0.1	0.1	0.1	−0.1	0.2
SADC	0.3	0.1	0.3	0.2	0	0.5
COMESA	0.2	0.1	0.2	0.1	0.1	0.2
SACU	0.9	0.2	0.3	0.1	0.2	0.2
ECCAS	0.3	0.1	0.1	0.1>	0.2	0.1

Source: Authors' calculations from simulations.

Note: S1-TW1 is a trade war scenario with changes in tariffs observed from January 2018 to April 1, 2019; S2-TW2 is scenario S1-TW1 plus the bilateral customs duty increases declared after April 1, 2019. Africa SoS = Africa south of Sahara; Veg. & fruits = Vegetable and fruits; Dairy = Dairy products; Veg. Oils = Vegetable oils; Proc. Food = Processed food. AMU = Arab Maghreb Union, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, SACU = Southern Africa Customs Union, ECCAS = Economic Community for Central African States.[15]

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15 - These various RECs overlap. This explains why the sum of the real incomes gains of the 6 RECs is not equal to the gain for Africa.

On the other hand, if the trade war becomes multilateral, the depressive effect on world GDP and on GDP in each region is so strong that the overall impact becomes negative for all countries. Not only does each country's GDP decline, which negatively affects its import demand (and the exports of its partners), but the tariffs each country imposes at its borders are also costly distortions. In the S3-Nash scenario, trade declines are particularly significant at the global level (−27.5 percent), and even more so for developed countries (−31.5 percent), while African countries' exports fall by only 9.9 percent.

The left side of   shows the variations in bilateral merchandise trade flows between regions in scenario S3-Nash. It should be recalled that this is a multilateral trade war where each country imposes the customs duty that maximizes its welfare on the basis of the optimal tariffs of other countries or regions. Compared to the previous table, the European region (European Free Trade Association, EFTA) is added because it is an important destination in terms of trade.

Overall, Africa's total exports fall by 10.1 percent, due to a return to protectionism and a related decline in activity in all regions of the world. African exports fall by 7.4 percent to China, 15.9 percent to Europe, and 13.6 percent to the United States. On the other hand, intra-African trade increases by 14.3 percent, for two reasons. First, tariff increases are lower in Africa because African countries have lower market power, which implies lower optimal tariffs. Second, if each region sets a tariff on imports from other countries or regions, there is no change in the region's internal trade tariff. In this scenario, internal trade in ECOWAS increases by 5.4 percent, COMESA by 25.1 percent, SACU by 29.8 percent, etc.

Table 5.5 Impact of scenarios S3-Nash and S4-AfCFTA on bilateral exports (%)–Value, 2020

Exporter	S3-Nash Importer				S4-AfCFTA Importer			
	Africa	China	EFTA	USA	Africa	China	EFTA	USA
Africa	14.3	−7.4	−15.9	−13.6	34.8	1.5	−1.3	1.1
Africa South of Sahara	12.7	−7.1	−13.7	−13.4	35.2	0.9	−2.0	−0.2
AMU	26.1	−10.5	−18.7	−15.8	30.5	2.6	−0.6	4.4
ECOWAS	3.0	−5.6	−7.4	−7.7	82.2	0.6	−2.9	−1.4
SADC	10.4	−2.1	−14.8	−12.1	8.7	2.3	−1.1	3.1
COMESA	18.2	−8.1	−22.0	−16.8	20.4	2.9	−1.0	6.4
SACU	19.2	−23.7	−28.9	−37.3	17.8	2.5	−0.7	0.9
ECCAS	2.8	4.0	−4.4	−4.0	50.6	−2.1	−1.6	−2.2
World	−9.9	−37.9	−31.7	−43.5	3.1	−6.4	1.6	−7.3
Developed	−14.5	−47.5	−31.6	−39.9	−1.1	−13.2	2.3	4.2
Developing w/o Africa	−11.1	−26.8	−34.7	−50.4	−0.6	3.5	1.6	−23.5

Source: Authors' calculations from simulations.

Note: S3-Nash is a scenario in which all countries adopt welfare-maximizing tariffs; S4-AFCFTA is the S1-TW1 trade war scenario, plus a continental free trade area. AMU = Arab Maghreb Union, ECOWAS = Economic Community of Western African States, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, SACU = Southern Africa Customs Union, ECCAS = Economic Community for Central African States.[16]

16 - These various RECs overlap. This explains why the sum of the real incomes gains of the 6 RECs is not equal to the gain for Africa.

A proactive strategy for Africa

What happens if African countries have a proactive strategy and decide to set up a continental free trade area? We study here these potential consequences in a scenario where this agreement is in addition to scenario S1-TW1, the least serious of the bilateral trade wars.

In March 2018, in Kigali, Rwanda, 44 African countries signed a framework agreement providing for the creation of a free trade area covering the entire African continent; in July the same year they were joined by five additional countries. By late April 2019, 52 countries had signed the agreement, among which 22 had deposited their instrument of ratification with the Chairperson of the African Union Commission (AUC). Therefore, the agreement entered into force on May 30, 2019.[17]

We propose here a non-detailed assessment of this free trade area. We only account for the consequences of eliminating all tariffs on trade in goods between African countries. We do not go into the potential details of the agreement, such as excluded products, sensitive products, rules of origin, or potential most favored nation clauses in bilateral agreements of some members with non-African countries. Therefore, the modeling exercise here should be considered as indicative. This scenario is entitled S4-AfCFTA.

As   and   show, the establishment of a free trade area in Africa amplifies the gains that these countries can make from a bilateral trade war: GDP at the continental level increases by 0.03 percent instead of by 0.01 percent, and the real income of the representative consumer increases by US$3.7 billion instead of by US$0.4 billion. Africa's total exports increase by 3.1 percent in this scenario instead of by 0.1 percent in S1-TW1.

The right-hand side of Table 5.5 shows the variations in bilateral merchandise trade flows between regions in scenario S4-AfCFTA. This scenario implies a very significant increase in trade within Africa (+34.8 percent), including relatively strong growth in the exports of ECOWAS countries and trade in agricultural and agri-food products.

Our results are in accordance with previous studies, particularly Devarajan et al. (2018). Studying the effects of the US–China trade war, Devarajan et al. (2018) consider four possible responses by developing countries: (1) join the trade war; (2) do nothing; (3) pursue regional trade agreements (RTAs) with all regions outside the United States; and (4) option (3) and unilaterally liberalize tariffs on imports from the United States. The results show that joining the trade war is the worst option for developing countries[18] while forming RTAs with non-US regions and liberalizing tariffs on US imports is the best.[19] Regional integration in developing countries offsets the negative effects of the trade war even in the absence of removal of tariffs on US imports (scenario 3).

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17 - The agreement was set to enter into force 30 days after the 22nd country has deposited its instrument of ratification. This happened on April 29, 2019.
18 - African exports decline up to −0.6 percent and GDP falls up to −0.2 percent.
19 - Exports increase up to 2.5 percent and GDP increases up to 1.3 percent.

Conclusions

While the late 2000s were characterized by emerging non-cooperative trade policies on the export side to protect domestic consumers in the wake of the food price spikes (Bouët and Laborde 2012), the 2016–2019 years have been marked by rising tensions on the import side to protect domestic industries. The bilateral trade war between the United States and China, triggered by the United States, constitutes one of the best illustrations of this new wave of protectionism. A popular proverb in Africa states that when elephants fight, the grass suffers: similarly, there are rising concerns about the extent to which this trade war between the two major players in the world economy could affect Africa. These concerns are legitimate given the strong trade linkages between Africa and China in particular.

Many experts and analysts expect the trade conflict between the United States and China to have negative impacts on Africa. These observers consider that, as China is Africa's most important trading partner, lower exports and lower growth in China would imply a reduction in Chinese imports (mainly commodities), and would lower prices for Africa's exports. We come to a more nuanced conclusion: Africa will register a net gain or a net loss in exports to these large countries depending on the intensity of the trade war. African countries can take advantage of the new opportunity offered to them to increase their exports in both the United States and China under the first scenario, which depicts the changes in tariffs from January 2018 until April 2019. In this case, the trade diversion between the United States and China could be of benefit to Africa in offsetting the negative spillover effects of lower growth, especially in China. Under the second scenario, which includes tariff changes in China and the United States after April 2019, total African exports to China fall owing to this negative spillover effect.

Developing countries outside Africa (mainly Asia) are likely to be the main beneficiaries of the new opportunities in the United States and Chinese markets. The gains for Africa could be amplified if the continent adopts a proactive strategy, with deeper regional integration such as the upcoming African continental free trade area. It is, nonetheless, worth noting that this trade turmoil has other consequences for Africa that are not well captured by this work. For example, it has increased uncertainty in the business climate and diminished investors' confidence, causing the depreciation of local currencies and falls in stock markets (Devermont and Chiang 2019).[20]

Furthermore, if the trading system of the whole world were to become more protectionist, these new opportunities for African countries in the United States and China would cease to be relevant. Indeed, in the case of a multilateral trade war, African exports would fall significantly, with SACU being the most affected region, although intra-continental trade would increase. Deeper integration in Africa while the world becomes more protectionist would be particularly important as, in addition to the trade dispute between China and the United States, there is a clear challenge to multilateralism from the new protectionist US policy. For example, African countries would have to contend with looming threats to the African Growth and Opportunity Act (AGOA). An illustration of this is the US–Rwanda dispute over second-hand clothes. In response to an increase in Rwanda import duties from US$0.25 to US$2.5 per kg of second-hand clothes to protect its domestic production, in March 2018, the United States suspended the duty-free access to its market for Rwanda's textile products under AGOA. It is worth noting that the same decision on US products was taken by both Tanzania and Uganda, and if these two countries have not been "punished" yet, this possibility cannot be disregarded in the future.

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20 - In South Africa, for instance.

The United States is also trying to move toward less asymmetrical and non-reciprocal trade deals with Africa and envisages proposing new trade deals with African countries such as South Africa or Kenya, with potential retaliatory measures in case the partner turns the offer down. The main risk here for the United States is to appear relatively unconcerned about Africa's long-term development, undermining the country's reputation and pushing China to deepen its relationships with Africa. Chinese authorities are reinforcing this perception of US actions by employing anti-American rhetoric in their dialogue with African leaders. Chinese authorities are disseminating the message that they alone are interested in developing long-term "win–win" partnerships with Africa, while the United States is focused on its own interests and easy wins. Countries like South Africa and Djibouti[21] are already receptive to this discourse and could be joined by many others if the United States does not rethink its strategy toward Africa.

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21 - See the interview of the President of Djibouti: JeuneAfrique.com, April 4, 2017, https://www.jeuneafrique.com/mag/421096/politique/ismail-omar-guelleh-personne-dautre-chinois-noffre-partenariat-a-long-terme-a-djibouti/.

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Appendix: Geographic and Sector Disaggregation

Table A5.1 Geographic disaggregation

Region code	GTAP regions
Oceania	AUS (Australia), NZL (New Zealand), XOC (Rest of Oceania)
CHN	CHN (China), HKG (Hong Kong)
Easia	JPN (Japan), KOR (Korea Republic of)
SEAsia	TWN (Taiwan), XEA (Rest of East Asia), KHM (Cambodia), IDN (Indonesia), LAO (Lao People's Democratic Republic), MYS (Malaysia), PHL (Philippines), SGP (Singapore), THA (Thailand), VNM (Viet Nam), XSE (Rest of Southern Asia)
Sasia	BGD (Bangladesh), IND (India), PAK (Pakistan), LKA (Sri Lanka), NPL (Nepal), XSA (Rest of South Asia)
xNAFTA	CAN (Canada), MEX (Mexico), XNA (Rest of North America)
USA	USA (United States of America)
LAC	ARG (Argentina), BOL (Bolivia), BRA (Brazil), CHL (Chile), COL (Colombia), ECU (Ecuador), PRY (Paraguay), PER (Peru), URY (Uruguay), VEN (Venezuela), XSM (Rest of South America)
CAM	CRI (Costa Rica), GTM (Guatemala), NIC (Nicaragua), PAN (Panama), SLV (El Salvador), HND (Honduras), XCA (Rest of Central America), DOM (Dominican Republic), JAM (Jamaica), PRI (Puerto Rico), TTO (Trinidad & Tobago), XCB (Caribbean)
EFTA	AUT (Austria), BEL (Belgium), CYP (Cyprus), CZE (Czech Republic), DNK (Denmark), EST (Estonia), FIN (Finland), FRA (France), DEU (Germany), GRC (Greece), HUN (Hungary), IRL (Ireland), ITA (Italy), LVA (Latvia), LTU (Lithuania), LUX (Luxembourg), MLT (Malta), NLD (Netherlands), POL (Poland), PRT (Portugal), SVK (Slovakia), SVN (Slovenia), ESP (Spain), SWE (Sweden), GBR (United Kingdom), CHE (Switzerland), NOR (Norway), XEF (Rest of EFTA), BGR (Bulgaria), HRV (Croatia), ROU (Romania), XTW (Rest of the world)
CIS	ALB (Albania), BLR (Bulgaria), RUS (Russia), UKR (Ukraine), XEE (Rest of Eastern Europe), XER (Rest of Europe), KAZ (Kazakhstan), KGZ (Kyrgyzstan), MNG (Mongolia), XSU (Rest of Former Soviet Union), ARM (Armenia), AZE (Azerbaijan), GEO (Georgia)
Gulf	IRN (Iran), TUR (Turkey), ISR (Israel), JOR (Jordan), ARE (United Arab Emirates), BHR (Bahrain), KWT (Kuwait), OMN (Oman), QAT (Qatar), SAU (Saudi Arabia), XWS (Rest of Western Asia)
xUMACOM	EGY (Egypt), TUN (Tunisia)
xUMA	MAR (Morocco), XNF (Rest of North Africa)
ECOWAS	NGA (Nigeria), SEN (Senegal), BEN (Benin), BFA (Burkina Faso), CIV (Côte d'Ivoire), GHA (Ghana), GIN (Guinea), TGO (Togo), XWF (Rest of Western Africa)
ECCAS	CMR (Cameroon), XCF (Central Africa), XAC (South Central Africa)
xCOMESA	ETH (Ethiopia), KEN (Kenya), RWA (Rwanda), UGA (Uganda)
xSADCOM	MDG (Madagascar), MWI (Malawi), MUS (Mauritius), ZMB (Zambia), ZWE (Zimbabwe), XEC (Rest of Eastern Africa)
xSADC	MOZ (Mozambique)
TZA	TZA (Tanzania)
SACU	BWA (Botswana), ZAF (South Africa), NAM (Namibia), XSC (Rest of South African Customs Union)

Source: GTAP10 database and authors.

Table A5.2 Sectoral disaggregation

Sector Code	GTAP Sectors	Sector Code	GTAP Sectors	Sector Code	GTAP Sectors
Rice	PDR, PCR	Wool	WOL	Metals and metal products	I_S, NFM, FMP
Wheat	WHT	Forestry	FRS	Transportation equipment	MVH, OTN
Corn	GRO	Fish	FSH	Other manufactured goods	ELE, OMF
Vegetables and fruits	V_F	Energy Primary	COA, OIL, GAS	Capital goods	OME
Oil seeds	OSD	Minerals	OMN, NMM	Utilities	ELY, GDT, WTR
Sugar	C_B, SGR	Vegetable oils	VOL	Construction	CNS
Fibers	PFB	Processed food	OFD, B_T	Trade	TRD
Other crops	OCR	Textiles	TEX, WAP, LEA	Transport	OTP, WTP, ATP
Red meat	CTL, CMT	Paper, lumber, and paper products	LUM, PPP	Other services	CMN, OFI, ISR, OBS, ROS, OSG, DWE
White meat	OAP, OMT	Coke and petroleum products	P_C		
Dairy products	RMK, MIL	Chemical and rubber products	CRP		

Source: GTAP10 database and authors.

6

Regional Trade Integration in Eastern and Southern Africa

Albert Makochekanwa and Greenwell Matchaya

Introduction

Regional integration is often seen as a powerful development strategy that provides a large parallel market for the development of new industries and minimizes external shocks through increased national income and bargaining power (Balassa 1961). At regional and subregional levels, economic cooperation has been one of the fundamental policy options for many developing countries in the last three decades (Jones 2002). There is consensus among policy makers, researchers, and political leaders that Africa could develop faster through regional integration. The United Nations Economic Commission for Africa (UNECA, 2017) has suggested that regional integration and trading blocs are critical for African nations to achieve sustainable development and increase their participation in the global economy. In addition, UNECA has asserted that regional integration promotes economic growth and industrialization through fostering intraregional trade, infrastructure, and investment (McCarthy 1996). Cooperation of countries provides a huge market for new industrial development which reduces external vulnerability through increasing bargaining power and, in turn, improves standards of living. Regional trade cooperation of countries is regarded by UNECA as a key strategy to confront globalization challenges.

There is, therefore, a need to monitor and evaluate regional integration processes. This study documents the experiences of regional trade arrangements in the eastern and southern Africa (ESA) region, notably the Common Market for Eastern and Southern Africa (COMESA), for the periods 1960–1993 and 1994–2018. It also analyzes indicators of trade flows and trade costs, to see whether there was progress in terms of trade flow expansion and cost reduction. Analyzing trade flows and trade costs indicators, as well as tracing the experiences of regional trade arrangements in the region, provides important information for monitoring the regional integration process.

Countries engage in both formal and informal trade in the ESA region. When available, informal cross-border trade (ICBT) data can provide complete and comparable external trade statistics necessary for the computation of balance of trade, national accounts compilation, and various other indicators. This point is important, especially when evaluated against the findings in some studies, which have shown that informal trade may sometimes constitute a significant fraction of total trade (Gelan et al. 2010).

Consequently, the study also examined the magnitude and trends of informal agricultural trade, using the limited data available, and documented the major ICBT monitoring mechanisms that exist in the ESA region. The objective is to understand the strengths and weaknesses of these mechanisms in order to improve them.

The origins of the regional blocs in ESA date to the 1960s. However, we find that the regional trade arrangements did not achieve the desired outcomes. Analysis of both trade flows and trade cost indicators reveals that COMESA is lagging behind other continental counterparts. Intraregional trade flows are still low even when ICBT statistics are taken into account, and this may be attributable to high trading costs in the region. There is also evidence that COMESA member states are mostly trading with third countries, rather than with regional counterparts.

This chapter also highlights the possibility of using increased intraregional trade within COMESA as a means to raise the resilience of domestic food markets to shocks across their member countries, even under current production conditions.

This chapter has been updated since its initial publication.

It demonstrates that the pace of expanding regional trade and creating more resilient domestic food markets would be boosted through a modest reduction in the overall cost of trading, a similarly modest increase in crop yields, or the removal of barriers to transborder trade.

Section 6.2 presents a history of regional trade agreements (RTAs) in ESA. Sections 6.3 and 6.4 provide measurements of trade integration in the region, using a measure based on trade costs in section 6.3, and one based on trade flows in section 6.4. As there is considerable ICBT in the region, and as many initiatives have been launched to measure this phenomenon, section 6.5 is dedicated to the importance of ICBT. An analysis of the potential for regional trade to stabilize food markets is presented in section 6.6. It is followed by an assessment of the scope for cross-border trade expansion in section 6.7. The future outlook for intraregional trade expansion is projected in section 6.8 and the implications of the volatility of regional food markets are explored in section 6.9. We conclude the chapter in section 6.10.

History of regional trade agreements in in eastern and southern Africa

UNECA became the champion of regional integration in Africa for the purposes of economic development and proposed the division of the continent into regions in the 1960s. As a result, UNECA promulgated the Lagos Plan of Action (LPA) which was launched by the Organisation of African Unity (now the African Union) in 1980. This led to the creation of separate but convergent and overarching regional arrangements in four African subregions: ESA, West Africa, Central Africa, and the Great Lakes region.

The ESA region registered the highest number of regional economic communities (RECs) in Africa, all characterized by multiple and overlapping membership. Before the launch of the LPA in 1980, the ESA region had already witnessed the creation of the East African Community (EAC) in 1967, of the Southern African Customs Union (SACU) in 1889 (revamped in 1969), and of the Economic Community of the Great Lakes Countries (CEPGL for the French acronym: Communauté Economique des Pays des Grands Lacs) in 1976. Following the recommendations of the LPA, the Preferential Trade Area (PTA) was formed in 1981 and was eventually replaced by COMESA in 1994.

The regional arrangements in the ESA region can be divided into two categories: those that fit into the LPA adopted in 1980, and those that were either in existence or came about outside the LPA (Table 6.1). The existence of regional blocs before and outside the LPA indicates the importance placed upon them for political and socioeconomic reasons. The PTA and the Cross-Border Initiative (CBI) are the blocs that fit into the LPA. The regional integration arrangements that grew outside the LPA include:

- SACU;

- The Southern African Development Coordination Community (SADCC), which was replaced by the Southern African Development Community (SADC) in 1992;

- EAC;

• The Intergovernmental Authority on Drought and Development (IGADD), which was superseded by the Intergovernmental Authority on Development (IGAD) in 1996;

• CEPGL; and

• The Indian Ocean Commission (IOC).

The other state-of-the-art regional trade arrangement is the COMESA-SADC-EAC Free Trade Framework, which was announced in 2008.

Table 6.1 Regional trade arrangements in eastern and southern Africa regions

	1960s and 1970s	1980s	1990s and 2000s
Lagos Plan of Action (LPA)		Preferential Trade Area (PTA) 1981	Common Markets for Eastern and Southern Africa (COMESA) 1994
			Cross Border Initiative (CBI) 1993
Outside LPA	Southern African Customs Union (SACU) 1969 (originally 1889) Common Monetary Area		
		Southern African Development Coordination Conference (SADCC) 1980	Southern African Development Community (SADC) 1992
		Indian Ocean Commission (IOC) 1984	
	East African Community 1 (EAC I) 1967		East African Community II (EAC II) 1999
		Intergovernmental Authority on Drought and Development (IGADD) 1986	Intergovernmental Authority on Drought and Development (IGAD) 1996
			COMESA-SADC-EAC Free Trade Area (Africa Free Trade Zone) 2008

Source: Compiled by authors.

Experiences of Regional Trade Arrangements in the Eastern and Southern Africa Region from 1994 to 2018

Within the ambit of the PTA for the ESA region were the EAC[2] of 1967, the SACU of 1969 with its associated monetary union (the Common Monetary Area, CMA), the CEPGL of 1976, and the SADCC[3] of 1980. These RECs were already in existence when the LPA was launched in 1980.

2 - Consisting of the East African High Commission (1948–1961), the East African Common Services Organization (1961–1967), and the East African Community (1967–1977).

3 - The SADCC was set up as a relatively informal organization by "frontline states", and its aim was to reduce dependence on South Africa.

Some members of the PTA later joined the IOC in 1984 or the Intergovernmental Authority on Drought and Development (IGADD) in 1986. This section addresses the experiences of the regional trade arrangements within the geographical area of the PTA for the period 1960–1993, summarizing the trade arrangements each member state concluded. A summary of all the regional trade arrangements in the ESA region and their achievements and status by 1993 is given in Table 6.2.

Table 6.2 Regional trade arrangements in eastern and southern Africa, 1960s–1993

Regional bloc$_2$ year formed	Countries involved	Main objective/aim	Achievements/ status by 1993
EAC 1967–1977	Kenya Tanzania Uganda	Strengthen economic and political ties between the member states through a common market, a common customs tariff, and a range of public services to achieve balanced economic growth	Collapsed in 1977 owing to political disparities. Signed the East African Co-operation Treaty in November 1993 which lasted until 1999
SACU 1969 (originally 1889)	Botswana Eswatini Lesotho Namibia (1990) South Africa	Duty-free movement of goods with a common external tariff on goods entering any of the countries from outside SACU	Fully operational Customs Union, and a Common Monetary Area established in 1974. Admitted Namibia in 1990
CEPGL 1976–1994	Burundi, DRC Rwanda	Promote economic and social development among member states through free movement of persons and international trade	Collapsed in 1994 owing to conflicts within and between member states, leading to lack of trust among them
SADCC 1980	Angola Botswana Eswatini Lesotho Malawi Mozambique Namibia (1990) Tanzania Zambia Zimbabwe	Reduce member states' dependence on apartheid South Africa. Implementation of projects and programs with national and regional impact	Formed foundation for a regional integration community. Admitted Namibia in 1990. Transformation to an effective and recognized community (SADC) in 1992
PTA 1981	Angola Burundi Comoros Djibouti Eritrea Eswatini Ethiopia Kenya Lesotho Madagascar Malawi Mauritius Namibia Somalia Seychelles Zambia Uganda Mozambique Sudan Tanzania Zimbabwe	Promote cooperation and integration covering all areas of economic activities, particularly trade and customs, industrialization, transport and communications, agriculture, and monetary affairs	Reduction in tariffs by 60%. Rehabilitate and upgrade interstate infrastructure. Single road customs transit declaration document. Yellow Card and travelers' checks to facilitate movement of vehicles and persons. Superseded by COMESA in 1993
IOC 1984	Comoros Mauritius Madagascar Seychelles	Promote sustainable development through cooperation on diplomacy, environment, and trade	No significant progress had been made by 1993; limited capacity, connectivity and lack of regional infrastructure to implement regional initiatives

IGADD 1986	Djibouti Eritrea (1993) Ethiopia Kenya Somalia Sudan Uganda	Provide coordinated efforts in managing drought and development across East Africa subregion with a focus on food security	No significant progress had been made by 1993 owing to conflict and lack of commitment by member states

Source: Compiled by authors.
Notes: EAC = East African Community, ESA = Eastern and Southern Africa, COMESA = Common Market for Eastern and Southern Africa, CEPGL = Communauté Economique des Pays des Grands Lacs, SACU = Southern African Customs Union, SADCC = Southern African Development Coordination Conference, PTA = Preferential Trade Area, IOC = Indian Ocean Commission, IGADD = Intergovernmental Development on Drought and Development, DRC = Democratic Republic of the Congo.

The Multinational Programming and Operational Centres (MULPOC) for ESA, based in Lusaka, Zambia, successfully negotiated a treaty for the establishment of the PTA for the region. The treaty establishing the ESA PTA was signed by 16 countries[4] in Lusaka in 1981.

The objectives of the PTA were to: (1) promote cooperation and development in all fields of economic activity, in particular trade, customs, industry, transport, communications, agriculture, natural resources, and monetary affairs; (2) raise the standards of living of the people of the region by fostering close relations among members; (3) create a common market by the year 2000 to allow the free movement of goods, capital, and labor within the subregion; and (4) contribute to the progress and development of all other countries in Africa.

To achieve these objectives, the PTA strategy included: (1) reducing and eliminating trade barriers; (2) simplifying and harmonizing customs and trade documents procedures and regulations; (3) introducing rules of origin to determine which goods should receive preferential treatment; (4) granting transit rights to all transporters; (5) introducing clearing and payments arrangements to promote trade; (6) developing coordinated and complementary policies; and (7) promoting industrialization and agricultural development.

Achievements of the PTA in terms of trade liberalization and promotion, transport and communications, and monetary and financial cooperation include:

• A 60 percent average tariff reduction on goods originating in the subregion;

• Elimination of the Common List which stated the products in each member state that could be traded at reduced tariff rates, resulting in preferential exchange of all commodities originating within the subregion;

• Streamlining of the Protocol on the Rules of Origin to facilitate intraregional trade and investment; deletion of the majority local equity and management clause. Value-added criteria have been applied with a commodity originating in the subregion if its value added is at least 45 percent;

• Establishment of a computer-based subregional trade information network, with focal points in each member state providing information on enterprises in each country, and the country's exports, imports, and tenders;

• Rehabilitation and upgrading of interstate roads, railways, ports, and telecommunications links;

• Facilitation of movement of vehicles within the subregion through the implementation of the PTA third-party motor vehicle insurance scheme (Yellow Card) in 1987;

• Simplification and harmonization of road customs transit documents through the introduction of a single road customs transit declaration document;

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4 - Burundi, Comoros, Djibouti, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Somalia, Eswatini, Tanzania, Uganda, Zambia, and Zimbabwe.

• Establishment of a clearing house in 1984;

• Establishment of the PTA Trade and Development Bank for ESA (PTA Bank) in November 1985;

• Formation of the PTA Association of Commercial Banks (BAPTA) in November 1987 to facilitate operations of the clearing house by establishing relationships between banks;

• Introduction of PTA travelers' checks, UAPTA, in August 1988 to enable citizens within the subregion to travel without having to use foreign currency;

• Launch of the PTA Monetary and Financial Harmonisation Programme in November 1990, paving the way for monetary union establishment to facilitate the regional integration process;

• Establishment of the PTA Reinsurance Company (Zep-Re) in September 1992 to control outflow of foreign exchange in the form of payments overseas. Zep-Re demanded that companies cede 10 percent of their business to it; and

• Adoption of the PTA Trade and Development Strategy in 1992 to enable member states to address problems and so enhance market integration and economic transformation for sustainable growth.

Some challenges remained: (1) high transport costs and border tolls; (2) lack of complementarity in production, trade, and consumption in the PTA, retarding trade and economic integration; (3) disparities in the economic activities and (4) development of the members, militating against the regional integration process; and more advanced economies tending to maximize their exports at the expense of weaker nations.

Experiences of Regional Trade Arrangements in the Eastern and Southern Africa Region from 1994 to 2018

The period from 1994 to 2018 witnessed significant creation and resurgence of interest in regional economic integration in the ESA region. COMESA was created in 1994 to replace the PTA while IGAD replaced IGADD in 1996. SADC replaced SADCC in 1992 and the CBI was created in 1993–1994. The EAC and the CEPGL, which had collapsed, were regenerated in 1999 and 2007, respectively. The EAC was re-established after a treaty was signed in November 1999 and entered into force in July 2000. The CEPGL was regenerated after more than 13 years of inactivity, under pressure from the international community: the Council of Ministers of CEPGL held in Bujumbura in 2007 decided to relaunch the activities of the economic community.

This section documents the experiences of the regional trade arrangements involving COMESA member states in 1994–2018. The experiences of each regional trade arrangement are detailed in Table 6.3.

The strategy for the 1990s was based on past experiences and member states' determination to cooperate in bringing about sustainable growth and development. It aimed to bring about full market integration, beginning with the transformation of the PTA to COMESA in 1994. COMESA is the largest trading bloc in Africa and has 21 member states, from Tunisia to Eswatini. COMESA is based on the concept of multi-speed development by which two or more member states can agree to accelerate the implementation of specific provisions of the Treaty while allowing others to join in later on a reciprocal basis. Whereas the PTA emphasized decision

by consensus (and so programs were pegged to the slowest-moving member states), under COMESA a two-thirds majority will prevail where consensus cannot be reached.

COMESA maintained the structures of the PTA, although the Tribunal was replaced by the Court of Justice. COMESA embodies the following principal elements which are not contained in the PTA:

• A full free trade area (FTA) involving trade liberalization under which there is free movement of goods and services produced within the common market and removal of all non-tariff barriers.

• A customs union involving zero tariffs on all products originating in the common market, and the adoption of a common external tariff on imports from non-COMESA countries.

• Free movement of capital and finance and a common investment procedure to create a more favorable environment for foreign direct investment, cross-border investment, and domestic investment.

• A payments union and eventual establishment of a COMESA monetary union.

• Free movement of persons and common visa arrangements, including the right of establishment and (eventually) the right of settlement.

COMESA is designed specifically to support the business community in taking maximum advantages of regional integration. Governments of member states seek to create an environment for business to invest and produce more efficiently. The bloc has achieved the following since its inception in 1994:

• Increasing the number of member states from 19 to 21, when Somalia and Tunisia joined the COMESA regional bloc.

• Establishment of the institutions that support regional integration across member states, such as the COMESA Court of Justice; Federation of National Associations of Women in Business in Eastern and Southern Africa (FEMCOM); COMESA Business Council; and Regional Investment Agency, in addition to those adopted from the PTA.

• Nine member states formed a FTA in 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia, and Zimbabwe). Rwanda and Burundi joined in 2004, the Comoros and Libya in 2006, Seychelles in 2009, and Tunisia and Somalia in 2018.

• In 2008, COMESA agreed to an expanded free trade zone including members of the other African trade blocs, the EAC, and the SADC to form an African free trade zone.

• In 2009, COMESA launched the customs union which was in the process of being implemented.

• Launch of new trade facilitation instruments that are creating a borderless economy, resulting in drastic reductions in the cost of doing business: COMESA Virtual Trade Facilitation System (CVTFS) and the online trading system known as the COMESA Electronic Market Exchange System (CEMES).

• The Yellow Card scheme, providing regional third-party motor insurance cover, which is a success story for COMESA market integration. More than 200 insurance companies are involved and over 200,000 interstate motorists use the Yellow Card. For instance, between over 500 motor vehicles crossed the border between Ethiopia and Djibouti using Yellow

Cards and over US$3 million in compensation has been paid to road accident victims in Djibouti for the period 2012–2017 (COMESA 2014).

• Launch of a digital FTA, the first of its kind in Africa.

Although COMESA has amassed a number of achievements, the following challenges seem to be working against regional integration efforts:

• Overlapping membership of various countries is limiting full attention and commitment to COMESA aims. This has also led to some former member states (such as Tanzania) pulling out of COMESA for failing to cut ties with other blocs.

• Free movement of people between member states remains a challenge, if not impossible, as member states are too slow to ratify protocols already in place that should allow the free movement of people. Only four member states have signed the protocol of free movement of people (Burundi, Rwanda, Kenya, and Zimbabwe). This is due to the issue of reciprocity, where one country relaxes its visa rules but their nationals do not enjoy similar treatment in the corresponding member states.

• The level of investments in infrastructure and energy to enhance social and economic integration through interconnectivity has been low.

Table 6.3 Experiences of regional trade arrangements in the the eastern and southern Africa region from 1994 to 2018

Regional bloc year formed	Countries involved	Main objective/ terms	Achievements by 2018
SACU 1969	Botswana Eswatini Lesotho Namibia South Africa	Duty-free movement of goods with a common external tariff on goods entering any of the countries from outside SACU	Established free trade area, customs union and monetary union. Harmonization of national and regional policies, e.g., common industrial policy in 2002
IOC 1984	Comoros Mauritius Madagascar Seychelles	Promote sustainable development through cooperation on diplomacy, environment, and trade	Preferential trade regime between Mauritius and Madagascar. Regional Integration Support Programme including EAC, IGAD, and COMESA
SADC 1992	Angola Botswana Comoros Eswatini Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles South Africa Tanzania Zambia Zimbabwe	Achieve regional integration and eradicate poverty within the southern African region	Launched a free trade area in 2008. Joined the Africa free trade zone in 2008. Adopted the Protocol on Gender and Development. Increased membership from 15 to 16 (admitted Comoros in 2017)

CBI 1993	Burundi Comoros Eswatini Kenya Madagascar Malawi Mauritius Namibia Rwanda Seychelles Tanzania Uganda Zambia Zimbabwe	Facilitate cross-border activity by eliminating barriers to cross-border flows of goods, services, labor, and capital	Harmonization of road transit charges. Launch of Road Customs and Transit Document and a single goods customs declaration form
IGAD 1996	Djibouti Eritrea (1993) Ethiopia Kenya Somalia Sudan Uganda	Promote peace, prosperity, and integration by assisting and complementing the efforts of member states to achieve regional integration through increased cooperation	Significant progress toward establishing free trade area. Initiatives to improve the investment, trade, and banking environments of member states
EAC 1999	Burundi (2007) Kenya Rwanda (2007) Tanzania Uganda South Sudan (2016)	Strengthen the economic and political ties between member states through common market, common customs tariff, and range of public services to achieve balanced economic growth	Free trade area, customs union, and common market. Established a 3-year revolving presidency in 2011, and elected a president for federation by 2013. Acceded to Africa's free trade zone
COMESA 1994	Burundi Comoros DRC Djibouti Egypt Eritrea Eswatini Ethiopia Kenya Lesotho Libya Madagascar Malawi Mauritius Seychelles Somalia Sudan Tunisia Uganda Zambia Zimbabwe	Promote joint development in all fields of economic activity and adoption of macroeconomic policies and programs to raise living standards of its people	Free trade area in 2000. Proposed a customs union. Agreed to the SADC-EAC-COMESA Free Trade Zone in 2008. Launch of customs union in 2009. Launched digital free trade area. Increased membership to 22 by admitting Tunisia and Somalia
CEPGL 2007	Burundi DRC Rwanda	Promote peace and economic and social development among member states through free movement of persons and international trade	Sustainable peace in the Great Lakes countries. Facilitation of movement of people and goods within the region

Source: Compiled by authors.
Notes: EAC = East African Community, ESA, Eastern and Southern Africa, CEPGL = Community of the Great Lakes Countries, SACU = Southern African Customs Union, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, CBICB = Cross-Border Initiative, IOC = Indian Ocean Commission, IGADD = Intergovernmental Authority on Development, DRC = Democratic Republic of the Congo.

The overall progress of the RECs in ESA is summarized in Table 6.4.

Table 6.4 Summary of overall progress of regional economic communities in the eastern and southern Africa region

Activity	COMESA	SADC	EAC	IGAD	SACU
Free Trade Area	Progressing	Progressing	Fully in force	Proposed	Fully in force
Customs Union	Launched in 2009	Proposed for 2010	Fully in force	Stalled	Fully in force
Common Market	-	Proposed for 2015	Proposed for 2015	-	-
Currency Union	Proposed for 2018	Proposed for 2016	Proposed for 2024	-	Four countries participate
Visa free	-	-	Proposed for 2018	-	-
Political Pact	-	-	Proposed for 2023	-	-

Source: Compiled by authors.

Note: EAC = East African Community, SACU = Southern African Customs Union, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, IGAD=Intergovernmental Authority on Development.

The analysis suggests that EAC and SACU have made significant strides in promoting regional integration compared to other RECs. COMESA and SADC are yet to achieve a full FTA status. In COMESA, 16 of 21 member states are already participating in the established FTA, while in SADC only Angola and the Democratic Republic of Congo (DRC) are not participating in the FTA. IGAD has proposed implementing the FTA, but no significant progress has been made so far.

Membership of regional economic communities

Changes in the membership of regional economic communities

A number of trade arrangements in the ESA region are expanding their membership (Table 6.5).

Table 6.5 Summary of the changes in selected regional blocs in the eastern and southern Africa region

COMESA	SADC	EAC	IGAD
Founding states 1994	Founding states 1980	Founding states 2001	Founding states 1986
Burundi, Comoros, DRC, Djibouti, Eritrea, Eswatini, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Zambia, Zimbabwe	Angola, Botswana, Eswatini Lesotho, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe	Kenya, Tanzania, Uganda	Djibouti, Ethiopia, Kenya, Somalia, Sudan, Uganda
Joined later			
Egypt 1999, Seychelles 2001, Libya 2006, Tunisia 2018, Somalia 2018	**Joined later** Namibia 1991, South Africa 1994, Mauritius 1995, DRC 1997, Seychelles 1997 (withdrawn 2004–2007 and re-joined 2008), Madagascar 2005, Comoros 2017	**Joined later** Burundi 2007, Rwanda 2007, South Sudan 2016	**Joined later** Eritrea 1993, South Sudan 2011
Former states			
Lesotho 1994–1997, Mozambique 1994–1997, Tanzania 1994–2000, Namibia 1994–2004, Angola 1994–2007			

Source: Compiled by authors.
Note: EAC = East African Community, SADC = Southern African Development Community, COMESA = Common Market for Eastern and Southern Africa, IGAD=Intergovernmental Authority on Development, DRC = Democratic Republic of the Congo.

COMESA is the only REC that has experienced the departure of five former member states (Angola, Lesotho, Mozambique, Namibia, and Tanzania), while five new member states have also joined the bloc (Egypt, Libya, Seychelles, Somalia, and Tunisia). Tanzania withdrew because of revenue implications, and Namibia cited unfair trade competition and financial constraints as the major causes for withdrawal from COMESA. Somalia was a former member of the PTA (a precursor of COMESA) which wanted to regain its status in the bloc. SADC, EAC, and IGAD have experienced a growth in membership as they witnessed admission of other members into the blocs. SACU, IOC, CEPGL, and CBI have not experienced membership expansion.

Overlapping membership in the eastern and southern Africa region

ESA registered the highest number of RECs in Africa, all characterized by multiple and overlapping membership. Table 6.6 shows that every country in the region, except for Mozambique, belongs to more than one REC.

Table 6.6 Membership of each regional economic community in the eastern and southern Africa region

Countries	COMESA	SADC	SACU	EAC	IGAD	CEPGL	IOC	CBI
Angola		×						
Botswana		× (FTA)	×					
Burundi	× (FTA)			×		×		×
Comoros	× (FTA)	× (FTA)					×	×
DRC	×	×				×		
Djibouti	× (FTA)				×			
Eritrea	×				×			
Eswatini	×	× (FTA)	× (CMA)					×
Ethiopia	×				×			
Kenya	× (FTA)			×				×
Lesotho		× (FTA)	× (CMA)					
Madagascar	× (FTA)	× (FTA)					×	×
Malawi	× (FTA)	× (FTA)						×
Mauritius	× (FTA)	× (FTA)					×	×
Mozambique		× (FTA)						
Namibia		× (FTA)	× (CMA)					×
Rwanda	× (FTA)			×		×		×
Seychelles	× (FTA)	× (FTA)					×	×
Somalia	× (FTA)				×			
South Africa		× (FTA)	× (CMA)					
Sudan	× (FTA)				×			
South Sudan				×	×			
Tanzania		× (FTA)		×				×
Uganda	×			×	×			×
Zambia	× (FTA)	× (FTA)						×
Zimbabwe	× (FTA)	× (FTA)						×
Non-ESA countries that joined the RECs in the ESA region								
Egypt	× (FTA)							
Libya	× (FTA)							
Tunisia	× (FTA)							
Total members	21	16	5	6	7	3	4	14

Source: Compiled by authors.
Notes: EAC = East African Community, CEPGL = Communauté Economique des Pays des Grands Lacs, SACU = Southern African Customs Union, SADC = Southern African Development Community, IOC = Indian Ocean Commission, IGAD=Intergovernmental Authority on Development, CMA = Common Monetary Area, COMESA = Common Markets for Eastern and Southern Africa, ESA = Eastern and Southern Africa, CBI = Cross Border Initiative. FTA = Free Trade Area, DRC = Democratic Republic of the Congo.

The multiple membership had resulted in divided attention among members, which slowed regional convergence processes in the blocs.

After presenting the history of RTAs in ESA, we now evaluate the level of trade integration in the region.

Measurement of Trade Integration Based on Trade Costs

Tariffs, non-tariff measures, and transportation costs can directly impede the regional integration process. Examination of these costs gives a clear picture as to whether the conditions necessary for regional integration are satisfied in the ESA region. These indicators give a first proxy of regional integration, but they do not measure the actual realization of regional integration. This section gives an analysis of trade cost indicators in the COMESA region.

Tariffs

Chapter 3 has shown that in 2015, COMESA implemented low tariffs on intraregional trade: 1.9 percent, on average, which is lower than in SADC (3.8 percent) and in the Economic Community of West African States (ECOWAS) (5.6 percent in 2015, 0 percent now), but greater than in the Economic Community of Central African States (ECCAS) (1.6 percent) and in EAC (0 percent). However, in COMESA the average import duty on all imports remained relatively high at 6.9 percent, even if ECCAS and ECOWAS charged higher average import duties on all imports. This implies that average import duty on extraregional imports was high.

Bouët, Laborde, and Cosnard (2017) calculate the average duties applied on imports and faced by exports for COMESA member states. Analysis shows that Libya and Mauritius are relatively open in all sectors compared to other members. Protection is high in countries such as Djibouti (21.7 percent), Tunisia (16.5 percent), Sudan (15.6 percent), and DRC (15.4 percent). High restrictions in Djibouti are quite interesting and somewhat counterintuitive given the country's historical role as a trading post, as well as limited production in many sectors of its economy. With respect to the agricultural sector, Egypt, Tunisia, and Seychelles have high import duties at 46.7 percent, 45.3 percent, and 36 percent, respectively.[5]

When evaluating the average duties faced by exports from the COMESA region, it can be concluded that merchandise exports from Libya, Eritrea, DRC, and Zambia face the lowest duties globally. Exports from Libya face 0 percent globally because they consist primarily of crude oil and petroleum, while exports from Kenya and Malawi (which are mostly agricultural products) face relatively high duties: 11.7 percent and 12.6 percent, respectively. Agricultural exports from Egypt, Tunisia, and Malawi face higher duties globally compared to other member states.

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5 - These average import duties are for 2007.
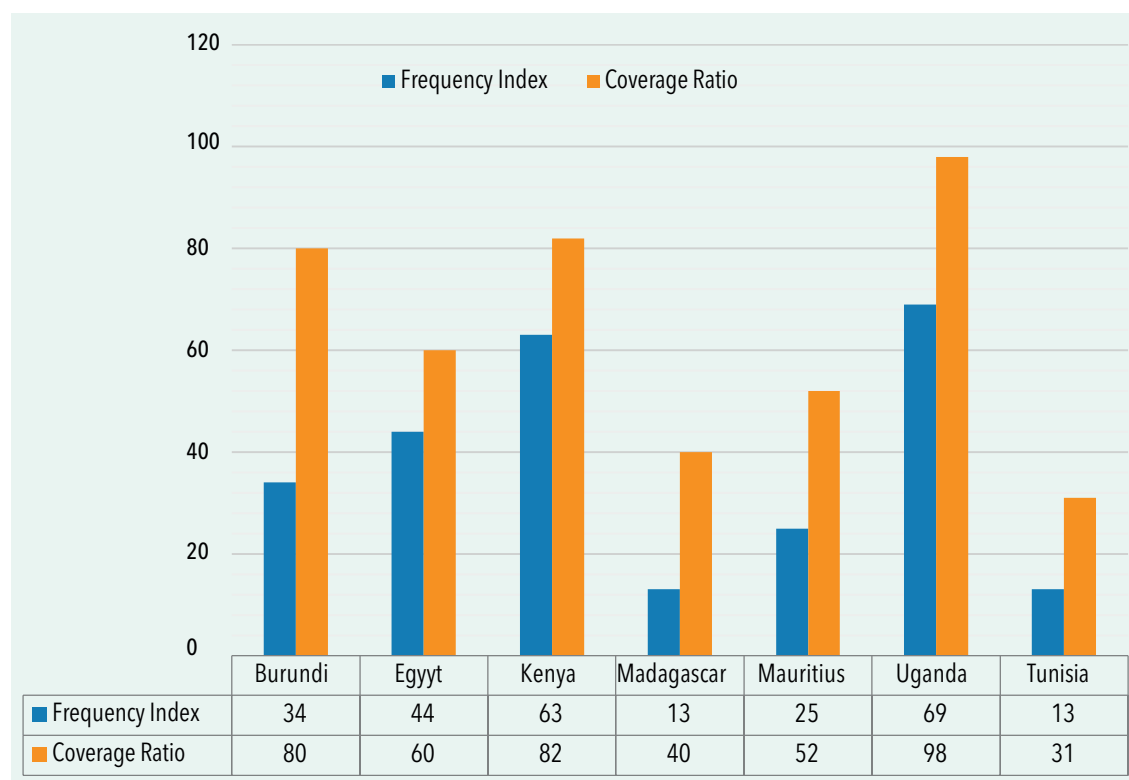
Non-tariff Measures

With regional economic integration, conventional tariffs decrease, giving rise to non-tariff measures (NTMs). Although these NTMs are applied for protectionist purposes, governments may apply them for public policy reasons as well, such as for the protection of human and plant health. Examples of NTMs are sanitary and phytosanitary measures (SPS), technical barriers to trade (TBT), export measures, price and quantity control measures, trade remedies, and measures related to intellectual property rights and rules of origin.

Kee, Nicita, and Olarreaga (2009) and Bouët, Laborde, and Cosnard (2017) show that NTMs are present in the COMESA region. This supports the hypothesis that NTMs can be used by governments to protect human health by imposing food safety regulations. Egypt, Sudan, and Tunisia have higher averages of NTMs on all merchandise as well as on agricultural products. Uganda has the lowest NTMs, at 0.1 percent, followed by Rwanda (0.75 percent).

The Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)'s NTM-Map database measures the incidence of NTMs based on the United Nations Conference on Trade and Development (UNCTAD) database (Gourdon 2014). The database covers frequency index values and coverage ratios for 63 nations over the period 2010–2012. The frequency index simply captures the percentage of products that are subject to one or more NTMs. The coverage ratio captures the percentage of imports that are subject to one or more NTMs.

Figure 6.1 shows the frequency index values and coverage ratios of NTMs for each country. Analysis shows that Burundi, Egypt, Kenya, and Uganda have higher shares of products and imports that are subject to NTMs compared to other regional counterparts.

Figure 6.1 Frequency index values and coverage ratios by country (percentage)

	Burundi	Egyyt	Kenya	Madagascar	Mauritius	Uganda	Tunisia
Frequency Index	34	44	63	13	25	69	13
Coverage Ratio	80	60	82	40	52	98	31

Source: Gourdon (2014).

There is a large literature pointing out the considerable time and cost associated with exports and imports in Africa. These include cost and time spent on documentary compliance, border compliance, and domestic transport. According to the World Bank "Doing Business" indicators, Eswatini and Mauritius are the most efficient countries in the region, and DRC is the least efficient. In DRC, in 2018, it took 336 hours and US$3,039 in border compliance costs to import a container, whereas it took only 3 hours and cost US$134 in Eswatini. Further analysis of Doing Business indicators shows that there is high heterogeneity in the region in terms of efficiency. Border and documentary compliance time when exporting or importing ranges from 2 hours to 336 hours. Costs, range from US$60 to US$3,039. Efficiency issues need to be addressed for member states to improve trade volumes (World Bank, 2019).

Border infrastructure rarely caters for the needs of small-scale traders, often forcing them to share the clearance area with trucks and other vehicles, which increases insecurity and slows down procedures. According to Brenton and Soprano (2018), the vast majority of Africa's small-scale traders are female: up to 70 percent–80 percent in some cases. Women traders are often among vulnerable groups across the continent, as they suffer sexual harassment, verbal abuse, and confiscation of their possessions. Research conducted in the ESA region also shows that there is a high prevalence of small-scale traders, especially women. The high levels of sexual harassment faced by small-scale traders has been documented by the Eastern African Subregional Support Initiative for the Advancement of Women (2012); Chiliya, Masocha, and Zindiye (2012); and FAO (2017). The analysis indicates that, in particular, these traders face sexual harassment, stigmatization, extortion, and bribery by customs officials. These are critical challenges that significantly reduce trade volumes in the region.

Measurement of Trade Integration Based on Trade Flows

This section discusses intraregional trade flows as measures of regional integration. More superior or refined indicators that are used for international comparisons are also used to measure the regional integration of COMESA.

Intra-Common Market for Eastern and Southern Africa Trade Shares

The simplest regional integration indicator, and the one most often used, is the share of intraregional trade in a region's total trade. Figure 6.2 shows that intra-COMESA trade has been fluctuating in the period 2005–2017.

Figure 6.2 Total intra-common market exports for eastern and southern Africa (2005–2017)
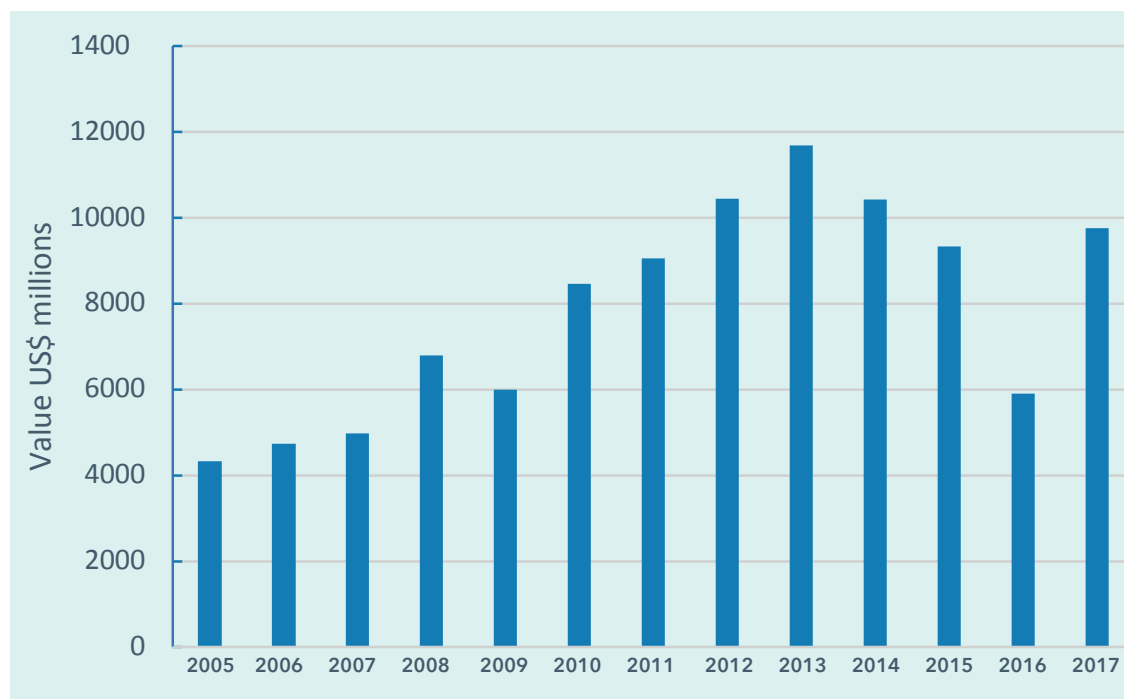
Source: Authors' calculations from COMTRADE (2019).

Total intra-COMESA trade as a percentage of total COMESA trade rose from 9 percent in 2008 to 14 percent in 2011 and 18 percent in 2015 (Table 6.7). The regular increase in trade share may be explained by the launch of a customs union in 2009. Table 6.7 also shows that this regional aggregate share looks low as compared to the intra-COMESA trade shares in Rwanda, Burundi, Uganda and Zambia.

Table 6.7 Intra-common market trade for eastern and southern Africa as a share of total trade by country (2008–2015)

	2008	2009	2010	2011	2012	2013	2014	2015
Burundi	26%	26%	26%	15%	14%	17%	17%	23%
Comoros	3%	5%	7%	3%	4%	11%	4%	3%
DRC	16%	20%	21%	19%	19%	25%	18%	16%
Djibouti	6%	10%	7%	7%	5%	6%	5%	6%
Egypt	3%	3%	4%	3%	3%	3%	3%	3%
Eritrea	8%	22%	32%	10%	6%	9%	5%	8%
Eswatini	15%	18%	5%	4%	3%	4%	3%	5%
Ethiopia	5%	4%	5%	5%	4%	3%	3%	2%
Kenya	13%	11%	12%	12%	10%	13%	10%	10%
Libya	1%	1%	2%	3%	2%	2%	3%	3%
Madagascar	3%	5%	6%	5%	4%	4%	5%	5%
Mauritius	5%	7%	7%	8%	5%	5%	6%	12%
Malawi	8%	8%	12%	15%	10%	8%	9%	10%
Rwanda	38%	29%	27%	28%	31%	25%	30%	30%
Seychelles	7%	5%	5%	4%	4%	7%	6%	9%
Sudan	4%	6%	6%	5%	7%	8%	6%	6%
Uganda	19%	20%	21%	21%	21%	21%	20%	21%
Zambia	20%	19%	22%	22%	19%	23%	21%	21%
Zimbabwe	7%	7%	7%	6%	6%	7%	5%	6%
COMESA	9%	11%	12%	14%	12%	15%	16%	18%

Source: Authors' calculations from COMTRADE (2019).

Note: Somalia and Tunisia not included since they joined COMESA in 2018; COMESA = Common Market for Eastern and Southern Africa. DRC = Democratic Republic of the Congo.

The share of intra-COMESA trade in total country trade differs from country to country, with Rwanda having the highest share at 30 percent in 2015, followed by Burundi (23 percent), and by Uganda and Zambia at 21 percent. For the period 2008–2015, Rwanda, Burundi, DR Congo, and Zambia had a relatively high share of trade with other COMESA member states. In contrast, intra-COMESA trade has been below 5 percent for Egypt, Ethiopia, and Libya as the bulk of the trade of these countries is with trading partners outside the COMESA region.

Regional Trade Introversion Index

This index is based on modifications of both intra- and extraregional trade intensity indices, and compares a region's share in trade with the rest of the world (see Chapter 3 for a detailed presentation). It is the ratio of the difference between intra- and extraregional intensity indexes to their summation. A positive figure shows that the region is more introverted than extraverted. Moreover, when the value of the indicator increases, it means that trade introversion increases. Comparison between regions is possible.

In Chapter 3 of this report, Figure 3.8 illustrates the regional trade introversion indices for selected African regional communities for the period 2005–2017. The analysis shows that these indicators are very close for all African RECs, and that all these RECs are more introverted than extroverted. The introversion of the Arab Maghreb Union (AMU) is the least among the regional blocs.

Bouët, Cosnard, and Laborde (2017) estimate regional introversion indices of COMESA and the introversion of member states toward the region for the period 2000–2013. Burundi, DRC, Kenya, Rwanda, Uganda, and Zambia are more introverted toward the region. Libya appears to be the least introverted member state compared to the others. It can also be concluded that the introversion for countries such as Egypt and Eritrea has been increasing, while that of the Comoros and Ethiopia was decreasing for the period 2000–2013.

The importance of informal cross-border trade

ICBT describes trade transactions that, for one reason or another, are never captured by official customs agencies nor in a country's official trade data. Traders engaged in ICBT often use unofficial routes and avoid customs controls. The term also includes transactions that pass through official routes but are intentionally under-reported or misreported (Ackello-Ogutu 1996; Macamo 1998; Minde and Nakhumwa 1998). In some cases, ICBT is referred to as parallel trade or smuggling. In government circles, for example, ICBT is more often associated with smuggling, tax evasion (Lesser and Moisé-Leeman 2009), and illegality than with innovation, enterprise, and job creation. Formal trade describes those international transactions that are well recorded and that can be traced through national data systems at border points or elsewhere.

There seems to be a growing body of case study evidence confirming that ICBT plays a critical role in poverty alleviation, food security, and household livelihoods in southern Africa (Crush 2015). For example, in the SADC region, ICBT makes up an estimated 30 percent–40 percent of total intra-SADC trade, with an estimated value of US$17.6 billion (FAO 2017).

Cross-Border trade surveys indicate that, in some African countries, informal regional trade flows represent up to 90 percent of official flows (Lesser and Moisé-Leeman 2009), although in some cases the proportion may be much lower than this. Surveys by the Uganda Bureau of Statistics and the Bank of Uganda have established that ICBT is an important part of Uganda's regional trade, and accounts for between 25 percent and 40 percent of formal intraregional trade flows (UBOS and Bank of Uganda 2005; UBOS and Bank of Uganda 2010; UBOS and Bank of Uganda 2016), which underscores its importance in Uganda and its neighbors. The prevalence of ICBT in ESA varies between countries, but it is common where there are restrictive trade regimes (FAO 2017). Generally, though, ICBT is significant in the EAC (Ogalo 2010), and it remains a significant feature of regional trade and international mobility in southern Africa (Crush 2015).

The nature of ICBT, nevertheless, makes its data availability challenging and there continues to be a paucity of information on its dimensions. The absence of sufficient data means that ICBT does not receive the level of attention it deserves, and monitoring efforts are scant.

An inherent challenge that undermines the availability of ICBT data is how to monitor ICBT across countries and over time. Formal trade data are readily available because custom authorities placed at various official borders have a duty and capacity to capture the transactions from one country to another in their normal course of business. ICBT, however, is difficult to capture because the traders avoid custom authorities for one reason or another. Ackello-Ogutu (1996) recommends three techniques for collecting primary ICBT data: (1) border observation or border monitoring; (2) tracking movement of large transport vehicles; and (3) stocktaking at open markets. These techniques are applied either alone, or in combination, depending on the circumstances.

In general, border observation requires selection of popular and accessible border sites for the posting of enumerators. The monitors may then carry out border monitoring by applying census techniques to cover major agricultural and industrial commodities during a randomly selected number of weeks from each month over a period of 12 months (Ackello-Ogutu 1996). The second step is to estimate average monthly trade volumes from observed figures and then use such estimates to approximate the annual volume and value of unrecorded trade flows between two trading partners (Ackello-Ogutu 1996).

Border observation alone may not give a realistic picture of unrecorded trade as it may miss under-declaration of the true values and volumes of the goods being transported across borders. The tracking technique can complement border observation. The former aims to estimate the volume of unrecorded trade that passes across the border through misrepresentation or manipulation of the documentation procedures (Ackello-Ogutu 1996). To achieve this, tracking may be conducted only on a small sample (for instance, 10 percent) of the trucks passing through selected borders, and subsequently cargo movements are traced from the port of entry to the declared destination with the intention to compare the findings with those in the official customs records (Ackello-Ogutu 1996). This provides an estimate for unrecorded trade.

Finally, the stocktaking technique is more suitable for open border markets commonly found along the frontier roads between countries. The technique requires quantification of net import and export figures based on the volume of goods brought to the market by traders from each of the neighboring countries. This is done each day over all the selected days (Ackello-Ogutu 1996). This approach is combined with border observation on non-market days when the level of trade activity declines appreciably (Ackello-Ogutu 1996). Details of initiatives to measure informal trade using these approaches are provided below.

Intergovernmental Initiatives

The Famine Early Warning Systems Network initiative

Although the drive to monitor and collect ICBT data is not widespread in the COMESA region, compared with the drive to collect formal trade data, several initiatives utilizing a different combination of the methods above nonetheless exist. In the southern Africa region there are efforts by the Famine Early Warning Systems Network (FEWSNET), the World Food Programme (WFP), and the Food and Agriculture Organization (FAO) to track prices of various agricultural commodities across borders in Malawi, Zambia, Mozambique, Zimbabwe, Tanzania, and other countries.

FEWSNET was set up in 2004 in southern Africa to better understand regional trade flows in food commodities and to apply this information and analysis to the planning of food aid, humanitarian responses, and strategic food import decisions. FEWSNET collects some informal trade data, but these are often incomplete (Gelan et al. 2010). The system consists of monitors

being placed at key border posts shared by Malawi, Mozambique, Zambia, Tanzania, DRC, Zimbabwe, and South Africa. The goal of the initiative is to observe and record prices and volumes of informal trade flows of the main food commodities. Once collected, the information feeds into national and regional food balance sheets. It is also used by agro-business planners, research institutions, and international trade monitors and humanitarian agencies for planning. A monthly report is produced at the regional level using the data collected and is widely disseminated.

FEWSNET collects such data using the observation technique described in Ackello-Ogutu (1996) with the objective of better understanding regional trade flows to help plan food aid and humanitarian responses, and hence the approach relies on monitors placed at various border points. The job of the monitors is to collect daily import and export volumes and prices of commodities where possible, and subsequently transmit the data weekly to the FEWSNET country focal point. The focal point person consolidates the data, makes a preliminary analysis, and then transmits it to the FEWSNET regional office. At the regional level, a FEWSNET/WFP team produces monthly or quarterly reports which are disseminated through a distribution list with copies posted on the FEWSNET and other websites. At the country level, the data feed into the food balance sheets of Ministries of Agriculture. At the regional level, the ICBT trends feed into FEWSNET Regional and Global Price Watch Bulletins (FEWSNET 2011). The country nodes of FEWSNET present ICBT reports to food and nutrition security monitoring and evaluation bodies bi-annually (FEWSNET 2012).

The Alliance for Commodity Trade in Eastern and Southern Africa informal cross-border food trade monitoring system

The Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) is a specialized agency of COMESA and was established in 2008. In 2010, ACTESA signed a Memorandum of Understanding (MoU) with COMESA to serve as an implementing institution for regional initiatives in strategically important agricultural value chains, trade, and investment. Since March 2011, ACTESA been collaborating with WFP and FEWSNET in cross-border trade monitoring through the Informal Cross Border Food Trade Monitoring System (ICB-FTMS) initiative.

Thus ACTESA works with FEWSNET country offices to enhance the tracking of ICBT (prices, quantities, and value) in the same areas that FEWSNET monitors. However, not all border crossing points or crops that are considered critical are currently monitored, owing to resource constraints. The map in Figure 6.3 illustrates where borders are currently monitored within the FEWSNET-ACTESA collaborative arrangement.

Figure 6.3 Borders monitored by the Famine Early Warning Systems Network

The FEWSNET program monitors many borders in Malawi, Zambia, Mozambique, and Tanzania. Table 6.8 presents the borders that are being monitored by FEWSNET in Malawi. Most of the borders are in the southern region; only two are being monitored in the center, and three are being monitored in the northern region. The agrarian structure in Malawi is such that the south is prone to famine as most of the land is less favorable to farming. The center, followed by the north, is the grain basket of Malawi. FEWSNET chose these borders based on the expectation of food shortages. The result, unfortunately, is that the amount of trade that takes place in the center is not fully captured.

**Table 6.8 Borders monitored under the Famine Early Warning Systems Network program**

Malawi border points	
North	**Center**
Mbirima–Chitipa/Tanzania	Mchinji–Mchinji/ Zambia
Songwe–Karonga/Tanzania	Dedza–Dedza/Mozambique
Mqocha–Mzimba/Zambia	
South	**South**
Mwanza–Mwanza/Mozambique	Sankhulani–Nsanje/Mozambique
Mkumaniza–Chikwawa/Mozambique	Makhanga–Nsanje/Mozambique
Marka–Nsanje/Mozambique	Muloza–Mulanje/Mozambique
Marine–Nsanje/Mozambique	Naminkhaka–Phalombe/Mozambique
Tengani–Nsanje/Mozambique	Kolowiko–Phalombe/Mozambique
Chiponde/Kalanje–Mangochi/Mozambique	Nayuchi–Machinga/Mozambique

The list of commodities monitored include: maize, maize flour, rice, beans, fresh cassava, dry cassava, sweet potatoes, millet, sorghum, pigeon peas, cow peas, groundnuts, sunflower, soy, wheat, wheat flour, green gram, European potatoes, cotton, maize seed, and fertilizers. Nevertheless, the key commodities that are fully reported are maize, rice, and beans. Maize constitutes the largest share of the total quantity.

Figure 6.4 presents maize quantities, both as reported formally and as tracked through ICBT monitoring. It shows the informal maize exports as well as the ratio of informal maize exports to formal maize exports by Malawi, Mozambique, Tanzania, Zambia, Zimbabwe, and South Africa into SADC/COMESA. This sample of countries and the period of coverage are determined by the availability of data.

Figure 6.4 Informal and formal maize exports by Malawi, Mozambique, Tanzania, Zambia, Zimbabwe, and South Africa into the Southern African Development Community/Common Market for Eastern and Southern Africa, 2004-2013
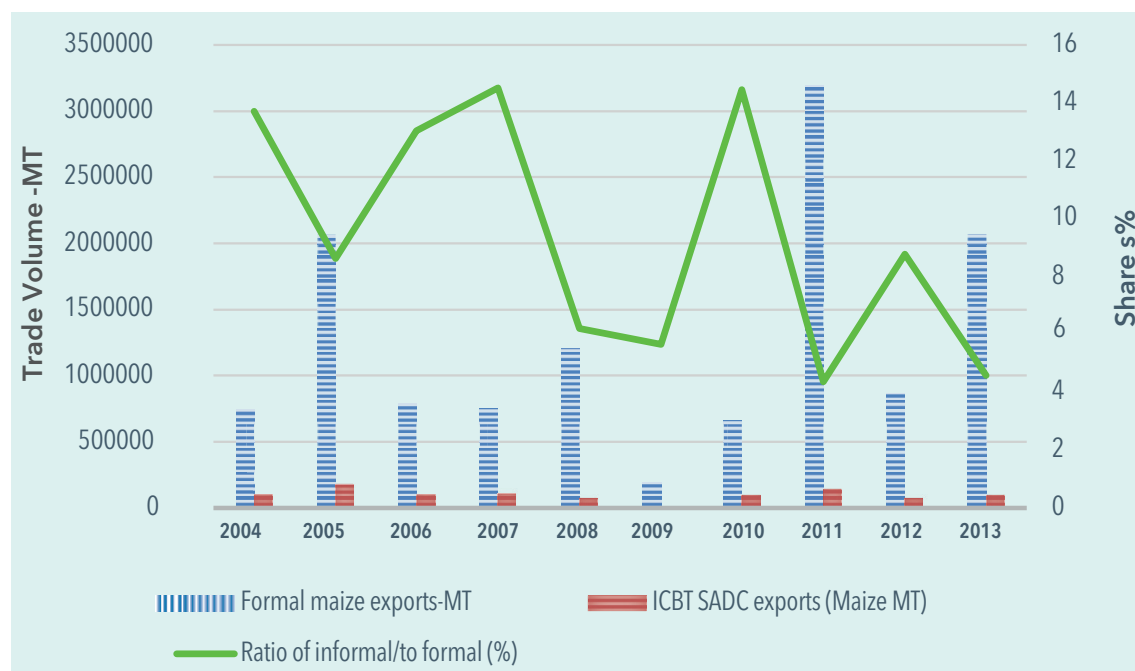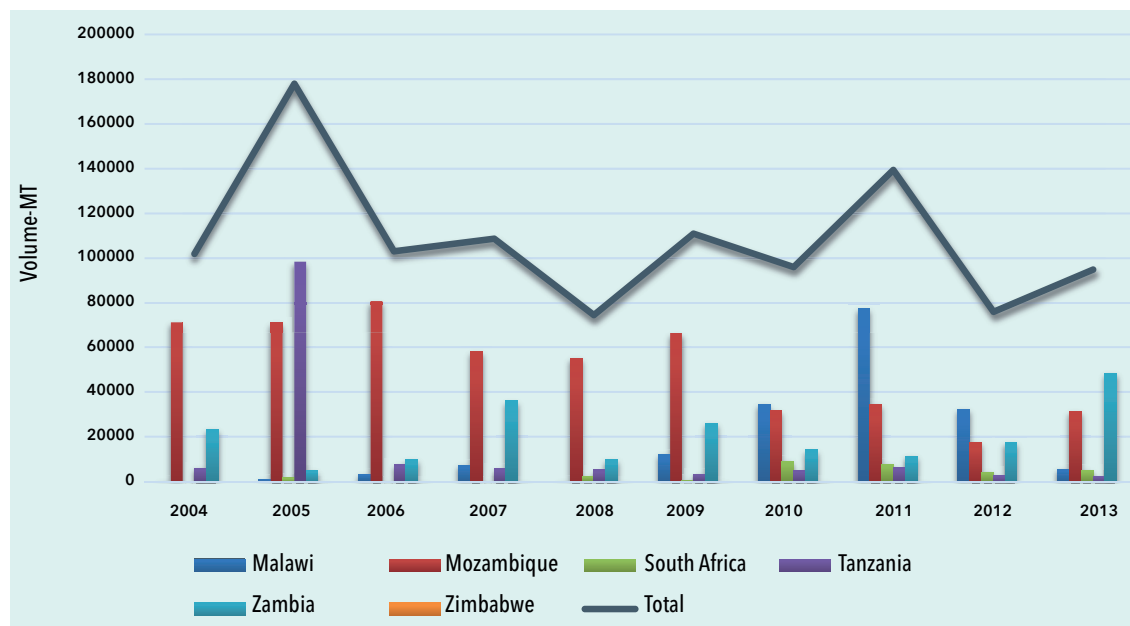

Source: Authors' computation based on FEWSNET (2019).

Note: ICBT for Informal Cross-Border Trade; SADC for Southern African Development Community; MT for Metric Tons

In general, informal agricultural trade data are scant and are available only from 2004. The general trend is that the volume of formal maize trade has been volatile over time (ranging from under 250,000 metric tons (MT) in 2009 to around 3 million MT in 2011). This may be explained by the erratic rainfall patterns over time, considering that there is a close relationship between cereal production and annual rainfall (see, for example, Nhamo et al. 2019).

Figure 6.4 also shows that informal cross-border maize trade expressed as a share of formal trade accounts for between 4 percent and 15 percent and has been on the decline over time. Figure6.5 gives the informal maize exports by origin country. The seemingly lower level may be ascribed to data collection challenges for ICBT for maize. The observed decline may point to the effect of regional integration (which encourages formal trade) in the southern Africa region, which would be in line with findings from FAO (2017).

Figure 6.5 Informal cross-border maize exports into the Southern African Development Community, 2004-2013

Source: Authors' computation based on FEWSNET (2019)

Note: MT= Metric Tons

The FEWSNET program is a good effort toward understanding ICBT and price dynamics in the southern Africa region. Even if the amount of trade captured under the program may not reflect the totality of ICBT, the trends computed from such data may still be informative and the price changes may be useful for decision making.

The program covers a limited number of borders in these countries, so the data collected may not reveal all ICBT. There are also other times that FEWSNET monitors cannot collect data: for example, at night, when trade also continues. Furthermore, it is not practical to examine all assorted items packed in the same bags, a consideration that compromises the quality of data. As the program is donor supported and has not yet been domesticated in national budgets, its sustainability may also be called into question.

The market analysis sub-group of the Food Security and Nutrition Working Group

The market analysis sub-group of the Food Security and Nutrition Working Group (FSNWG) monitors the ICBT of 88 food commodities and livestock in eastern Africa to quantify the impact on regional food security (FSNWG 2017). It monitors informal trade across selected borders of Tanzania, Burundi, Rwanda, Uganda, Kenya, Somalia, Djibouti, Ethiopia, Sudan, South Sudan, and DRC. Data are provided by the East Africa Grain Council (EAGC), FEWSNET, FAO, the National Bank of Rwanda (NBR), and WFP (FSNWG 2017). The group monitors a representative sample, but does not cover all borders or collect data every day of the year.

The Southern Africa Migration Program

In 2007–2008, the Southern Africa Migration Program (SAMP) planned and implemented a major regional survey of cross-border trade in southern Africa as part of a larger project on migration, development, and poverty reduction. A series of individual country reports was produced by the project. For the Growing Informal Cities Report, the individual country datasets were combined into a single regional dataset. This provides important insights into the nature of ICBT and the character of informal traders across the SADC region (Crush 2015).

The SAMP survey covered 20 land border posts connecting 11 southern African countries using a threefold methodology. (1) All people crossing through the selected border posts were monitored over a 10-day period, and the number of ICBT traders counted. (2) Monitors observed the interactions of traders with customs officials and recorded the types, values, and volumes of goods declared and duties paid. (3) Monitors interviewed a sample of traders using an "origin and destination" survey tool which sought to trace origins and destinations of commodities. During the course of the exercise, more than 205,000 people—including 85,000 traders—passed through the border posts being monitored. The monitors recorded transactions of over 5,500 traders with customs officials and interviewed over 4,500 traders (Crush 2015).

The study by Minde and Nakhumwa (1998) involved monitoring frontier markets, informal routes, and crossing points along the border regions in Kenya, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe. Monitoring was done for 2 weeks per month for a period of 12 months. Trade volumes and values were obtained by aggregating the weekly trade volumes and values. For comparability, all the country studies adopted the same methodology (Minde and Nakhumwa 1998). Shortcomings included that not all borders could be covered and not all days of the year could be covered owing to resources constraints.

National Initiatives

Under the leadership of the Uganda Bureau of Statistics (UBOS) and the Central Bank of Uganda, ICBT surveys collect trade data between Uganda and her neighbors (Kenya, DRC, Rwanda, Tanzania, and Sudan) that are not included in the official records of the Uganda Revenue Authority (URA) and other authorities. To collect these data, the UBOS and the Bank of Uganda (BOU) collaborate in monitoring efforts at the main border crossings of the country, using monitors.[6]

The approach to data collection at UBOS hinges on direct observation as described in Ackello-Ogutu (1996) and, where necessary, verification is done through inquiries made to traders, clearing agents, revenue officers, and security personnel, and through weighing to ascertain quantities for some selected items. The methods used are the most cost-effective way of gathering data at border posts where conditions are far from ideal.

The direct observation technique entails strategic positioning of enumerators at border posts to enable them to record all merchandise moving into and out of the country. All traded goods that are not recorded by customs authorities are captured at the point of crossing the customs frontier in counter books or specially designed forms, specifying the item, quantity, value, and mode of transport among others (UBOS and Bank of Uganda 2005).

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6 - https://www.bou.or.ug/bou/publications_research/icbt.html.

The main objective of these surveys is to establish and track the magnitude of unrecorded trade between Uganda and her neighbors in order to improve the coverage of external trade statistics (UBOS and Bank of Uganda 2005), national accounts, and balance of payment (BOP) statistics. In the absence of these surveys, estimates by BOP and national accounts compilers grossly understate the contribution of informal trade to overall international merchandise trade statistics in the BOP current account (UBOS and Bank of Uganda 2005).

The initial surveys involved 14 border stations: 4 along the Uganda–Kenya border, 6 along the Uganda–DRC border, 2 along the Uganda–Rwanda border, and 1 each along the Uganda–Sudan and Uganda–Tanzania borders for monitoring over a period of 140 days (each having 14 days monitored) in 10 months (UBOS and Bank of Uganda 2005) (Figure 6.6).

Figure 6.6 Border points monitored
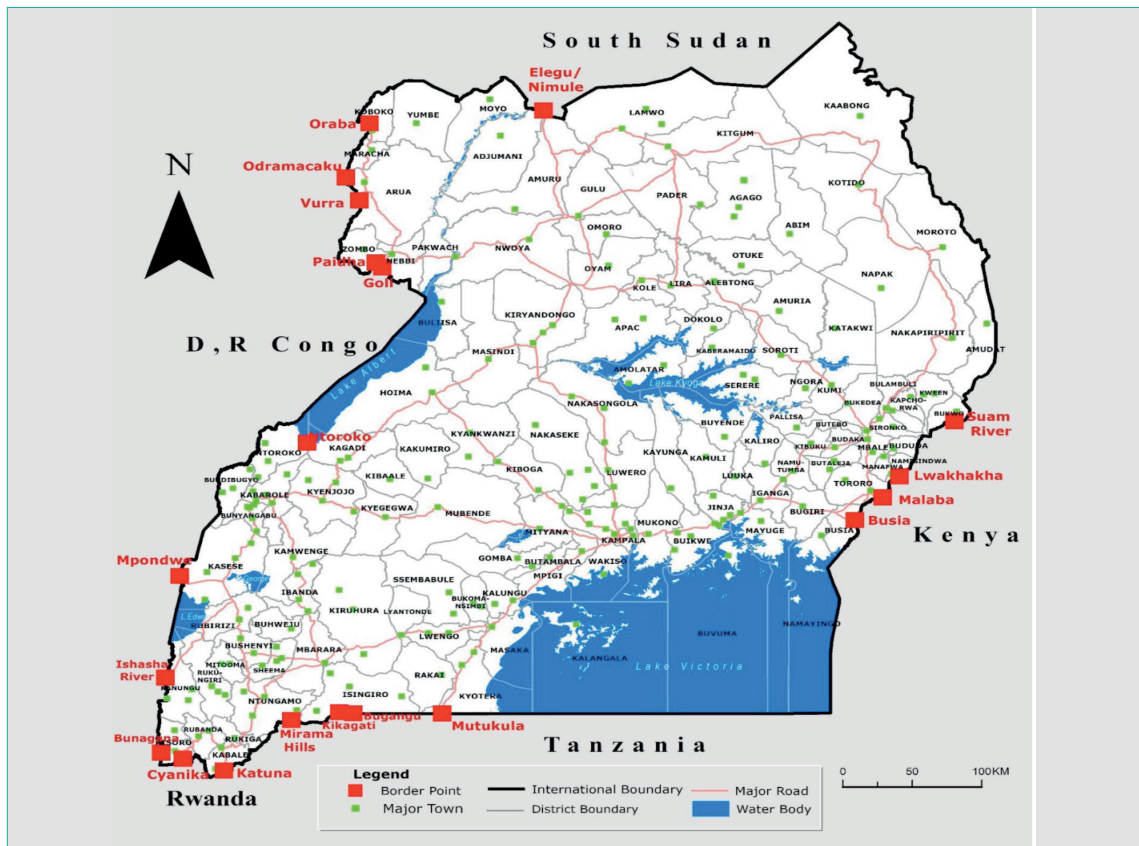
Source: Adapted from UBOS and Bank of Uganda 2017.

By 2016, the ICBT survey covered 20 border points and 4 bus terminals, representing coverage of over 90 percent of the informal trade transactions between Uganda and its neighbors (UBOS and Bank of Uganda 2016). There were indications that unrecorded (informal) trade was still extremely high in ESA. For instance, Ackello-Ogutu (1996) estimated that 30,000–60,000 tons of maize were traded informally annually from Zambia to DRC, costing Zambia US$3 million, and that much of Malawian "surplus" maize in the early 1980s was Mozambican.

Official border points tend to be located next to unofficial border routes, hence substantial volumes of informal trade can easily go unrecorded. Some ICBT surveys do not consider the unrecorded value or volume of trade caused by under-reporting or misclassification at official border points. Currently all agencies monitor ICBT between 6 am and 7 pm, and hence do not account for night trading activities. A snapshot of the trends in informal cross-border trade is provided below.

Figure 6.7 shows that Uganda's total trade (both exports and imports) has been increasing over time. Total exports have increased from US$1 billion in 2005 to almost US$3 billion in 2016, whereas total imports for all goods into Uganda have increased from just around US$2 billion in 2005 to over US$6 billion in 2014 before slightly declining to US$5 billion by 2016. Although both imports and exports have increased over the period from 2005 to 2016, it is important to note the large and yet widening gap between exports and imports, which implies that Uganda runs a trade deficit annually and it is on the increase. Informal trade accounts for a small but significant share of total trade. Uganda, however, exports more than it imports informally. Generally, the share of informal exports in total exports has stayed stable since 2011 at around 15 percent. Prior to 2011, the share of informal exports in total exports rose from under 10 percent in 2005 to just over 40 percent in 2009. The share of informal imports to total imports has been under 10 percent throughout the period, implying that Uganda's imports are dominated by formal imports. In passing, one could argue that, from a macroeconomic viewpoint, there is a need for Uganda to manage its imports to stabilize its trade balance. Increasing informal exports can play a role in reducing its trade deficit. Interestingly, informal exports account for more than 10 percent of formal exports, although informal imports account for a smaller share of formal imports. It is not clear whether this difference is due to under-declaration of informal imports.

Figure 6.7 Comparison of Uganda's formal and informal exports and imports – trade with neighbors – all goods 2004-2013
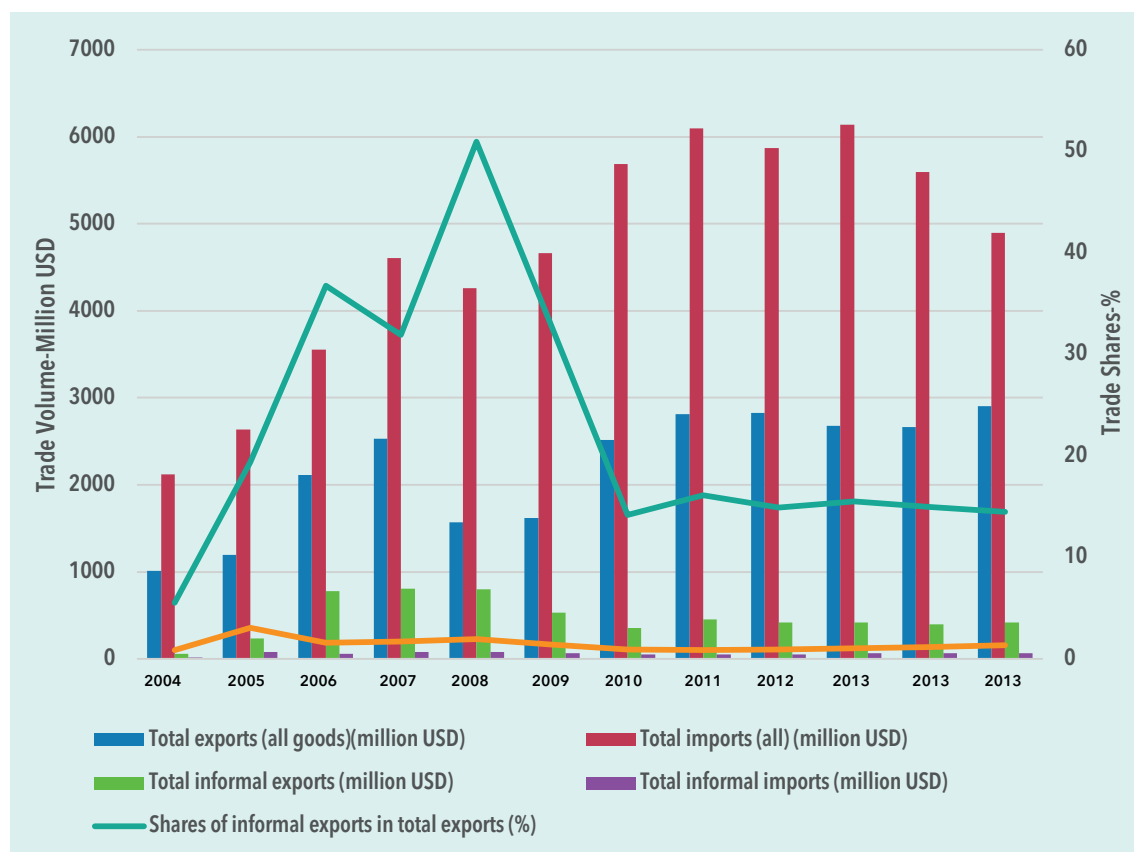
Source: Authors' computation from UBOS and Bank of Uganda (2005,2010, 2016).

The surveys for ICBT in the initial years (2004–2005) showed that informal exports amounted to US$162.0 million, whereas informal imports were approximated to be as high as US$54.2 million. A comparison with US$189.7 million of formal (recorded) exports and US$432.5 million of formal imports with the five neighboring countries during the same period of the survey implies that informal (unrecorded) exports amount to approximately 85.3 percent of official exports, whereas informal imports amount to about 12.5 percent of official imports (UBOS and Bank of Uganda 2005, 2010 and 2016). Ugandan informal exports to DRC, Kenya, Rwanda, Sudan, and Tanzania represented US$224 million or 83 percent of its total recorded trade to these countries in 2006. In 2009 and 2010 Ugandan informal exports to its neighbors were worth US$790 million and US$520 million, respectively (UBOS and Bank of Uganda 2016).

Figure 6.8 Evolution of informal agricultural trade (in value and in share) between Uganda and neighbors 2005-2016
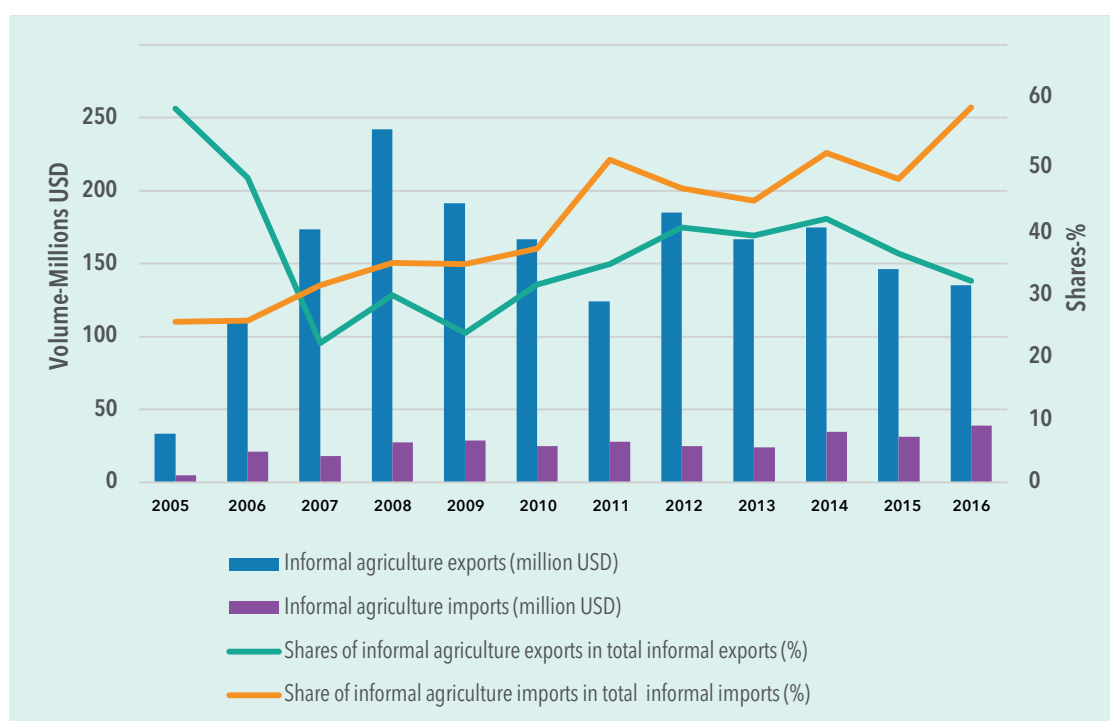
Source: Authors' computation from UBOS and Bank of Uganda (2005, 2010, 2016).

The goods traded informally across borders include agricultural goods (maize, groundnuts, soybeans, maize flour, etc.) and industrial goods (shoes, clothes, petroleum jelly, beers, mattresses, etc.) (UBOS and Bank of Uganda 2016).

Figure 6.8 clearly shows that both informal agricultural exports from and imports into Uganda have been increasing over time. It also notes that informal agricultural exports supersede informal agricultural imports, implying that Uganda has an informal agricultural trade surplus. Increasing informal cross-border agricultural exports could further complement any effort the government may be undertaking to reduce the conspicuous total trade deficit highlighted previously. While we note in this section that total informal imports are much lower than total informal exports, informal agricultural imports account for more than 20 percent of the total informal imports and have been increasing over time. The range of this share is 20 percent–60 percent. The percentage is comparable to the share of informal agricultural exports in total

informal exports. Informal imports, therefore, are dominated by agricultural informal imports, signifying that Uganda is increasingly relying on neighbors to meet its food demands. Once again, it is not clear whether the differential in shares for informal imports and informal exports is due to the under-declaration of informal imports often reported in such studies (e.g., Gelan et al. 2010).

Adding ICBT to official figures for intra-Africa trade would increase the share of intra-Africa trade in total trade. Although there are no systematic statistics on this form of intra-Africa trade, surveys undertaken in some regions reveal that it represents a large share of officially recorded trade.

Monitoring ICBT is resource intensive because, for complete coverage at an informal border crossing, there would have to be a dedicated monitor or group of monitors 24 hours a day, every day. Thus, it is not possible to collect data on all the trade that flows through even a single border. Night trade, for example, is likely to be missed. To generate realistic estimates that would capture seasonal patterns, it would be desirable that the surveys cover the whole calendar year. This is not possible in many cases, owing to financial constraints (UBOS and Bank of Uganda 2005).

Regional potential for stabilization of domestic food markets through trade

Variability in domestic production is a major contributor to local food price instability among low-income countries. The causes of production variability (climate variability, water availability, inefficiency of credit and insurance markets, volatility of international prices, uncertainty in policy decisions, etc.) are such that an entire region is less likely to be affected than are individual countries. Moreover, fluctuations in national production tend to partially offset each other. To the extent that such fluctuations are less than perfectly correlated, food production can be expected to be more stable at the regional than at individual country levels (Minot, 2014). If that is the case, expanding cross-border trade and allowing greater integration of domestic food markets would reduce supply volatility and price instability in these markets. Integration of regional markets through increased trade raises the capacity of domestic markets to absorb local price risks by: (1) enlarging the areas of production and consumption and thus increasing the volume of demand and supply that can be adjusted to respond to and dampen the effects of shocks; (2) providing incentives to invest in marketing services, and expanding capacities and activities in the marketing sector, which raise the capacity of the private sector to respond to future shocks; and (3) lowering the size of needed carryover stocks, thereby reducing the cost of supplying markets during periods of shortage and hence decreasing the likely amplitude of price variation.

This section presents a simple comparison of the variability of cereal production in individual countries, against the regional average, to illustrate the potential for local market stabilization through greater market integration. For that purpose, a trend-corrected coefficient of variation is calculated as a measure of cereal production variability at country level. Then an index of regional cereal production volatility is derived for the COMESA region as a weighted average of the trend-corrected coefficients of variation of its member countries (Koester, 1986). Finally, country coefficients are normalized by dividing them by the regional coefficient.

In Figure 6.9, the bars represent the normalized coefficients of variation, which indicate by how much individual country production levels are more (normalized coefficient greater than 1) or less (normalized coefficient less than 1) volatile than production in the COMESA region. The figure shows that, in all countries, national production volatility is larger than regional level volatility. COMESA countries can be divided into a relatively low-volatility sub-group with normalized coefficients of less than twice the regional average (including Burundi, Comoros, DRC, Egypt, and Uganda), and a high-volatility regional sub-group with volatility levels that are at least five times higher than the regional level (Eswatini, Malawi, Mauritius,[7] Rwanda, Sudan, Zambia, and Zimbabwe). Between the two groups are Kenya and Madagascar with moderate levels of volatility. The countries in the moderate- and high-volatility sub-groups would be the biggest beneficiaries of increased regional trade in terms of greater stability of domestic supplies. However, the likelihood that a given country will benefit from the trade stabilization potential here described will be greater when the fluctuations of its production and those of the other countries in the region are less correlated.

Figure 6.9 Cereal production instability in countries in the common market for eastern and southern Africa (1980–2010)
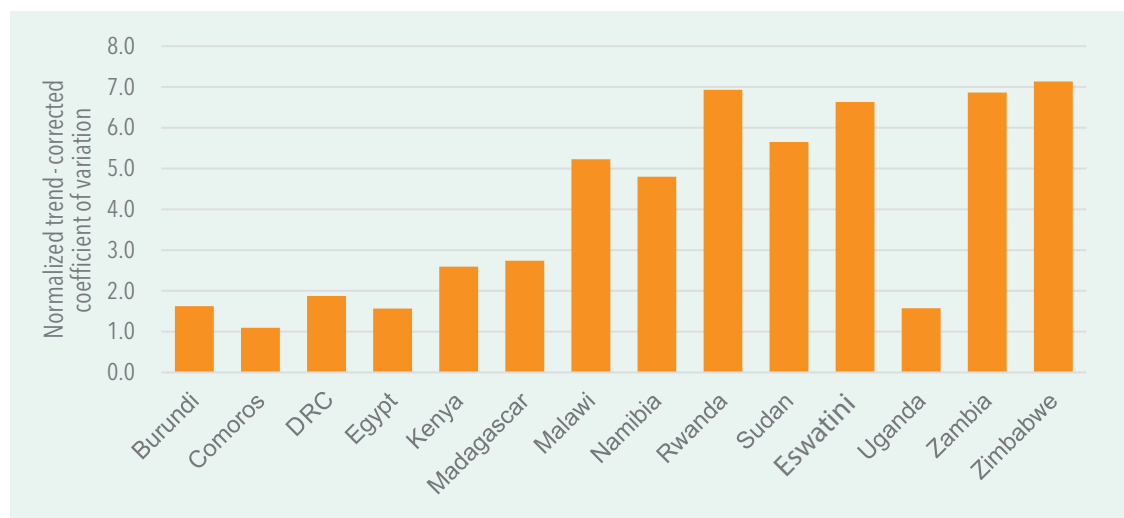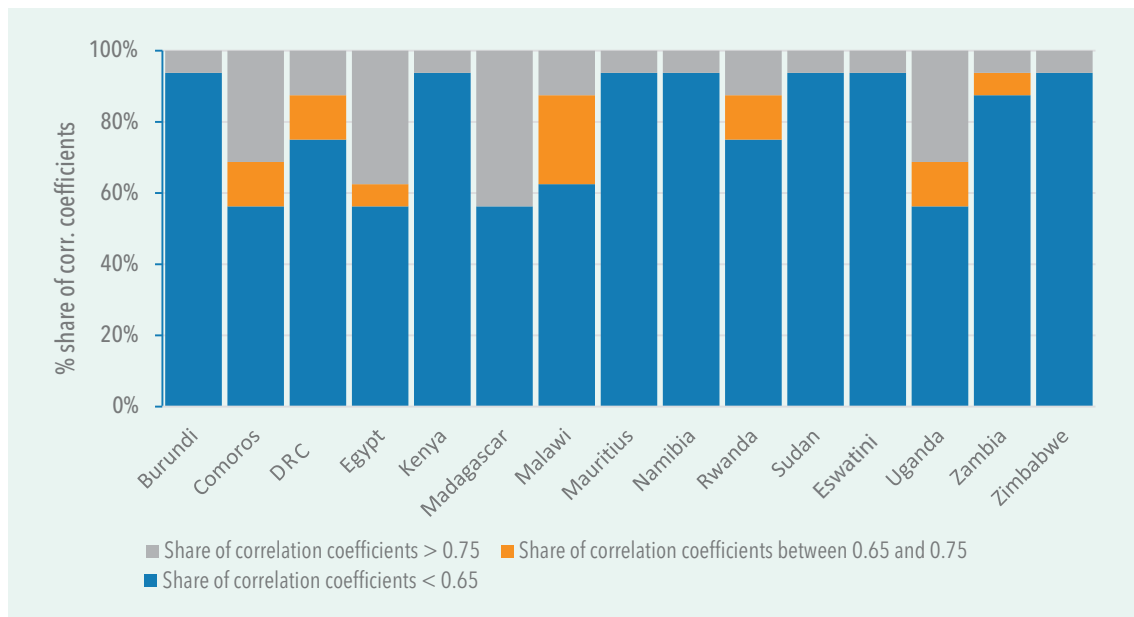

Source: Adapted from Badiane and Odjo, 2016.

Figure 6.10 presents the distribution of correlation coefficients between individual country production levels for each regional group. For each country, the lower segment of the bar shows the percentage of correlation coefficients that are 0.65 or less, or the share of other countries in the region with production fluctuations that we define as relatively weakly correlated with the country's own production movements. The top segment represents the share of countries with highly correlated production fluctuations, with coefficients that are higher than 0.75. The middle segment is the share of moderately correlated country production levels with coefficients that are between 0.65 and 0.75. For example there are 12 countries (75 percent) for which the coefficient of correlation between production of these countries and DRC is less than 0.65, 2 countries (12.5 percent) for which this coefficient is between 0.65 and 0.75, and 2 for which it is greater than 0.75 (12.5 percent). This explains the distribution within DRC's bar.

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7 Mauritius has a coefficient that is more than 18 times the regional average and is not shown on the figure for the sake of clarity.

Figure 6.10 shows a high concentration of weakly correlated country production levels, with 60 percent of the correlation coefficients for any given country in the below 0.65 category. The combination of high volatility and weak correlation suggests that countries in this region would reap a large benefit from increased regional trade in terms of domestic market stabilization. In general, the patterns and distribution of production fluctuations across countries in the region are such that increased trade may be expected to contribute to stabilizing domestic agricultural and food markets. But that is only one condition: the other is that there is actual potential to increase cross-border trade, a question that is examined in the next section.

Figure 6.10 Distribution of production correlation coefficients between countries in the common market for eastern and southern Africa (1980–2010)

Source: Adapted from Badiane and Odjo, 2016.

# The scope for specialization and regional trade expansion in agriculture

Despite recent upward trends, levels of intra-Africa and intraregional trade are low. There may be a host of factors behind these low levels. These factors may raise the cost of supplying regional markets from intraregional sources. The exploitation of the regional stabilization potential pointed out above would require measures to lower the barriers to and bias against transborder trade; these measures would stimulate the expansion of regional supply capacities and of trade flows across borders. This supposes that there is sufficient scope for specialization in production and trade within the region. Often, it is assumed that neighboring developing countries would exhibit similar production and trading patterns because of similarities in their resource bases, with little room for future specialization.

There are, however, several factors that may lead to different specialization patterns among such countries. These factors include: (1) differences in historical investments in technologies and thus the level and structure of accumulated production capacities and skills; (2) the economic distance to, and opportunity to trade with, distant markets; and (3) differences in dietary patterns as well as other consumer preferences that affect the structure of local production as it responds to local demand. The relatively different patterns of specialization of Senegal compared to the rest of Sahelian West Africa, or of Kenya compared to other eastern African countries, are a good illustration of the influence of these factors.

Consequently, we use a series of indicators to assess the actual degree of specialization in agricultural production and trade. This will also allow us to see whether there is real scope for transborder trade expansion as a strategy to exploit the less-than-perfect correlation between national production levels to reduce the vulnerability of domestic food markets to shocks. The first two indicators are the production and export similarity indices through which, in every country, the relative importance of the production and trade of individual agricultural products is measured and ranked. The level of importance or position of each product is then compared for all relevant pairs of countries within the region[8]. The indices have a maximum value of 100, which would reflect complete similarity of production or trade patterns between the pair of countries being considered. The smaller the value of the indices, the greater the degree of specialization between the two countries. Index values of around 50 and below are interpreted as indicating patterns of specialization that are compatible with higher degrees of trade expansion.

Figures 6.11 and 6.12 present the results of the calculations of production and export similarity indices using FAO data for the period 2007–2011 and covering a total of 150 products. Each bar represents the number of country pairs that fall within the corresponding range of index values. The vast majority of country pairs fall within the 0–50 range. The estimated index values, therefore, suggest that there exists sufficient dissimilarity in current country production and trade patterns, and hence scope for transborder trade expansion in the region.
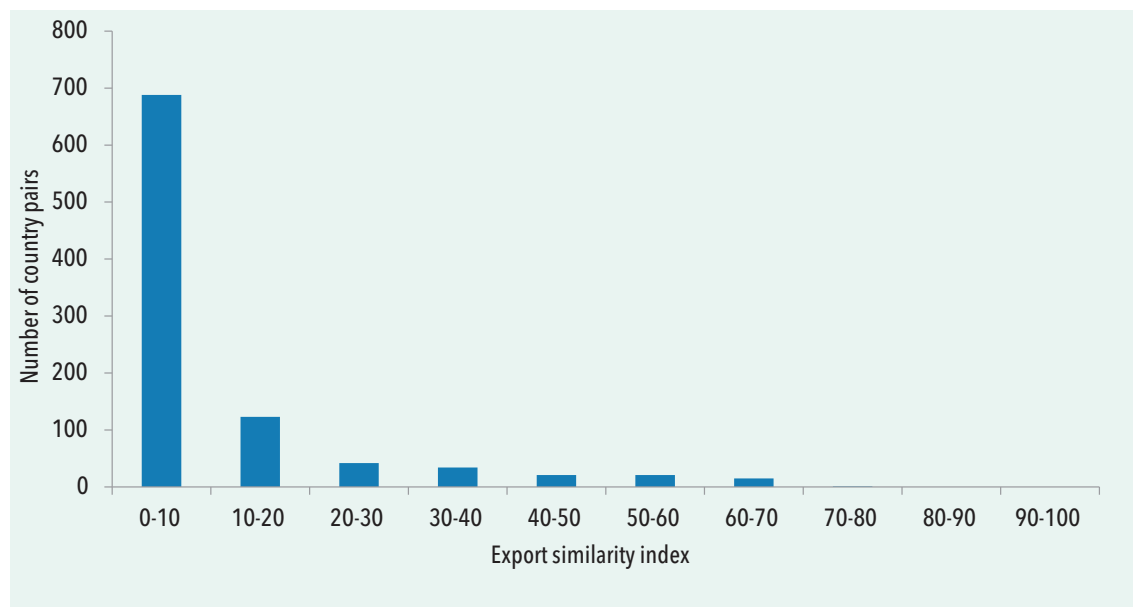
Figure 6.11 Similarity of production patterns among countries in the common market for eastern and southern Africa, 2007–2011
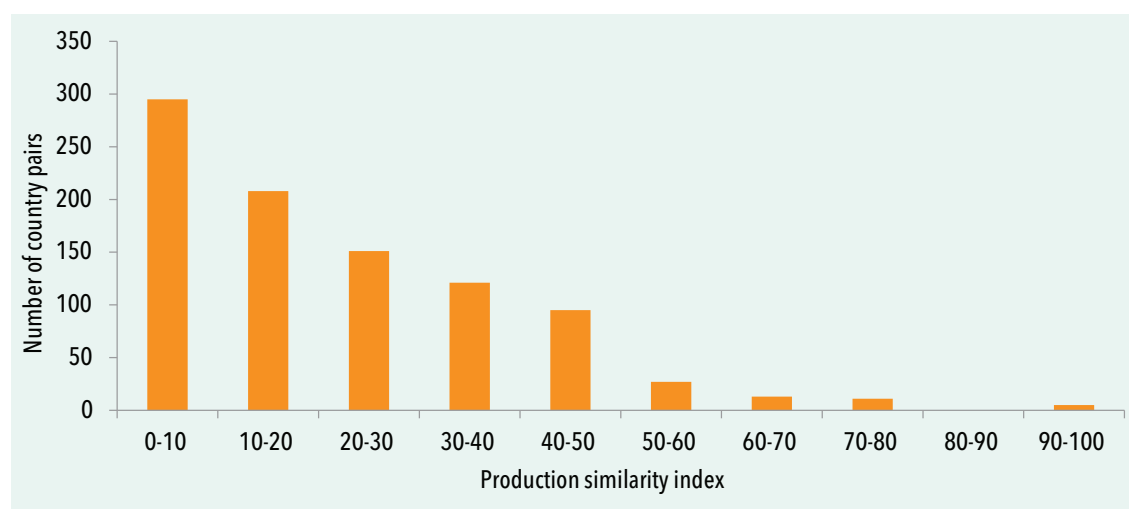
Source: Adapted from Badiane and Odjo, 2016.

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8 See Koester, 1986.

Figure 6.12 Similarity of trading patterns among countries in the common market for eastern and southern Africa, 2007–2011

Source: Adapted from Badiane and Odjo, 2016.

A third indicator, the revealed comparative advantage (RCA) index, is computed to further assess the degree of trade specialization among countries within the region. The RCA index (Balassa, 1965) compares the share of a given product in a given country's export basket with that of the same product in total world exports. A value greater than 1 indicates that the considered country performs better than the world average, and that the higher the value is, the stronger the performance of the country in exporting the considered product. Of the nearly 600 RCA indicators estimated for various products exported by different COMESA countries, 70 percent have a value higher than 1. The 20 products with the highest normalized RCA index values are presented in Table 6.9. The normalized RCA is positive for RCA indicators that are greater than 1 and negative otherwise.[9] For very high RCA indicators, the normalized value tends toward 1.

All the products listed in Table 6.9 have normalized RCA values above 0.98. The rankings reflect the degree of cross-country specialization within the COMESA region. For instance, 13 products, spread across 9 of 19 member countries, account for the highest 20 indicators for the region. This suggests that country specialization patterns are sufficiently distinct to allow scope for trade expansion.

Table 6.9 The 20 products with highest normalized revealed comparative advantage index values in countries in the Common Market for Eastern and Southern Africa, average 2007–2011

Commodity	Country
Cloves	Comoros
Vanilla	Comoros
Vanilla	Madagascar
Coffee husks and skins	Uganda

9 The formula for the normalized RCA is (RCA-1)/(RCA+1), following Laursen (2000).

Cloves	Madagascar
Oil essential nes	Comoros
Coffee husks and skins	Burundi
Sesame seed	Ethiopia
Skins, sheep, dry salted	Ethiopia
Coffee, substitutes containing coffee	Rwanda
Coffee husks and skins	Kenya
Goat meat	Ethiopia
Cotton carded, combed	Uganda
Sesame seed	Eritrea
Tobacco, unmanufactured	Malawi
Oilseeds, nes	Ethiopia
Broad beans, horse beans, dry	Ethiopia
Cotton carded, combed	Burundi
Skins, sheep, dry salted	Rwanda
Tea	Rwanda

Source: Adapted from Badiane and Odjo, 2016

So far, the analysis in this section has established the existence of dissimilar patterns of specialization in production and trade of agricultural products among countries within COMESA. Two final indicators, the Trade Overlap Indicator (TOI) and the Trade Expansion Indicator (TEI), are calculated to examine the potential to expand trade within the region based on current trade patterns. They measure how much of the same product a given country exports and imports at the same time. The TOI measures the overall degree of overlapping trade flows for a country or the region as a whole, while the TEI measures the overlapping trade flows at the level of individual products for a country or the region. The TOI and TEI are calculated as:

$$TOI_i = 2\left(\sum_k Min(E_{ik}, M_{ik})\right)\bigg/\sum_k (E_{ik} + M_{ik})$$

$$TEI_{ik} = 100 \cdot [Min(E_{ik}, M_{ik})/Max(E_{ik}, M_{ik})]$$

where E_{ik} and M_{ik} denote the values of the exports and imports of an agricultural product by a country . The TOI varies between 0 and 1. It will be 0 if each individual product is only exported or only imported by the country. It will be 1 in the unlikely situation in which the country both exports and imports all traded products by an equal amount. The TEI indicates the percentage of the country's exports (imports) of a product that are matched by the country's imports (exports) of the same product.

The results of TOI and TEI calculations using FAO trade data are presented in Figure 6.13 and Table 6.10. Figure 6.13 indicates that there is a considerable degree of overlapping trade flows: 25 percent for Africa as whole and as much as 21 percent for the COMESA region. Normalized TOI values obtained by dividing country TOI values by the TOI value for the region can be found in Badiane et al. (2014). In the vast majority of cases, they are significantly less than 1. The overlapping regional trade flows must, therefore, be from different importing and exporting countries. In other words, some countries are exporting (importing) the same products that are being imported (exported) by other COMESA member countries, but in both cases to and from countries outside the region. By redirecting such flows, countries should be able to expand transborder trade within the region.

The TEI indicates which products have the highest potential for increased transborder trade based on the degree of overlapping trade flows. Table 6.10 lists the 20 products with the highest TEI value for the region. The lowest indicator value in the region is 0.57. RCA values for the same products presented in Badiane et al. (2014) are all greater than 1, except for bananas. The fact that products with high TEI values also have high RCA indicator values points to a real scope for transborder trade expansion in the region.

Figure 6.13 Trade overlap indicators, average 2007–2011
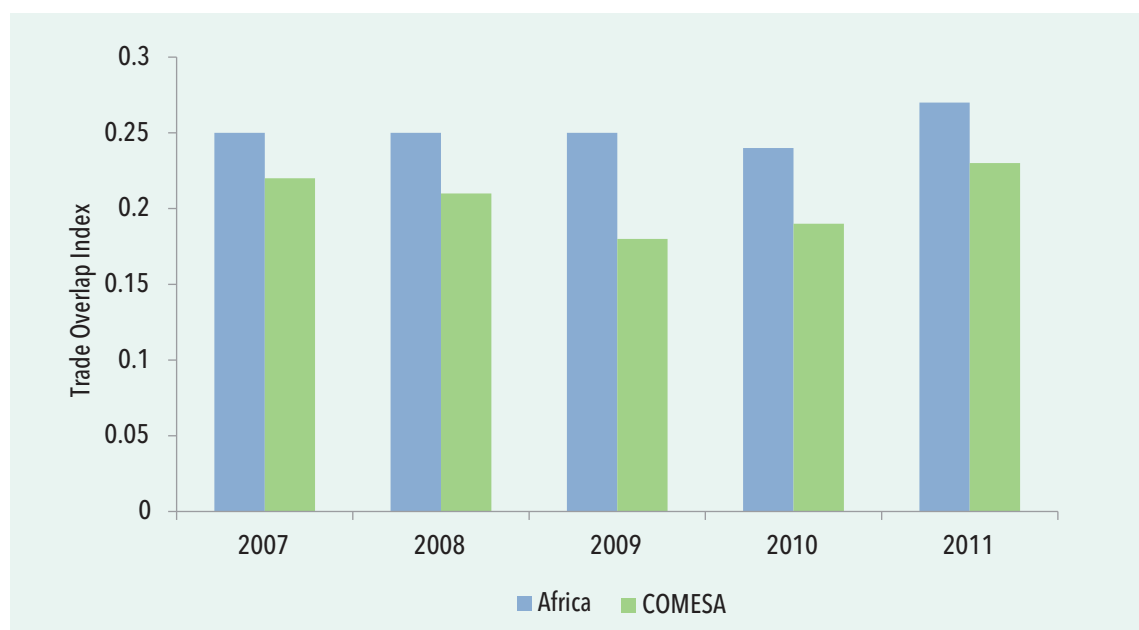
Source: Adapted from Badiane and Odjo, 2016.
Note: COMESA = Common Market for Eastern and Southern Africa.

Table 6.10 Trade expansion indicators, average 2007–2011

Commodity	TEI value
Beans, dry	0.825
Sugar confectionery	0.821
Vegetables, preserved	0.819
Juice, fruit	0.819
Cigarettes	0.782
Spices	0.716
Sugar, raw centrifugal	0.716
Fruit, prepared	0.703
Groundnuts, shelled	0.700
Cake, cottonseed	0.680
Pineapples	0.677
Cereal preparations	0.665
Anise, badian, fennel, coriander	0.655
Waters, ice, etc.	0.655

Cheese, whole cows' milk	0.604
Bananas	0.592
Bran, wheat	0.586
Tobacco products	0.586
Pepper	0.578
Orange juice, single strength	0.566

Source: Adapted from Badiane and Odjo, 2016.

Note: Two products with high trade expansion indicators (TEI) but which are not being produced in the regions are included, as they relate to re-export trade.

These findings point to the existence of a real potential to expand intra-trade within COMESA beyond current levels, even with current production and trade patterns. The remainder of this chapter, therefore, analyzes the outlook for intra-trade expansion and the expected impact on the volatility of regional food markets over the next decade. This is done by simulating alternative policy scenarios to boost intraregional trade, and by comparing the effects on the level and volatility of trade flows up to 2025 to historical trends and outcomes under a baseline scenario that would continue these trends.

# The outlook for regional cross-border trade and market volatility under alternative scenarios

The preceding analysis presents evidence showing that African countries could use increased regional trade to enhance the resilience of domestic markets to supply shocks. The high cost of moving goods across domestic and transborder markets, and outwardly biased trading infrastructure, are major determinants of the level and direction of trade among African countries. A strategy to exploit the regional stabilization potential, therefore, has to include measures to lower the general cost of trading and remove additional barriers to cross-border trade. This section simulates the impact on regional trade flows of changes in that direction. Simulations of changes are carried out using IFPRI's regional Economy-wide Multimarket Model (EMM) described in Badiane and Odjo (2016).

Four different scenarios are simulated using the EMM. The first is the baseline scenario, which assumes that each country maintains a continuation of current trends in population, yields, cultivated areas, outputs, and GDP until 2025. It is used later as a reference to evaluate the impact of changes under the remaining three scenarios. The latter scenarios introduce the following three different sets of changes to examine their impacts on regional trade levels: (1) a reduction of 10 percent in the overall cost of trading across the economy; (2) a removal of all cross-border trade barriers (that is, a reduction in their tariff equivalent to 0); and (3) an across-the-board 10 percent increase in yields. These changes are to take place between 2008, the base year, and 2025. The change in cross-border exports is used as an indicator of the impact on intraregional trade.

The results are presented in Figures 6.14 and 6.15. The results of the baseline scenarios from 2008 to 2025 are shown in Figure 6.14. If the current rates of growth in yields, cultivated areas, population, and non-farm income are sustained to 2025, the levels of intra-COMESA trade would continue to stagnate, except in the case of cereals. Even in the latter case, the decline in trade volumes would be reversed, but not enough to bring them back to their initial levels. The projected evolution of the cereals trade reflects different country dynamics and a shift in the sources of regional exports. The fall in regional trade levels at the beginning of the period is a result of continuing decline in exports from the two main traditional suppliers, Egypt and Malawi. At the same time, faster growth in several other countries, particularly Tanzania and Ethiopia, results in rising exports from these countries, starting from 2011 for Tanzania and from 2019 for Ethiopia. The result is a U-shaped pattern in COMESA cereals exports, as export declines in some countries are eventually outweighed by increases in others.

Figure 6.15 shows the cumulated changes in intraregional export levels by 2025 compared to the baseline, which would result from a reduction in total trading cost, removal of transborder trade barriers, and an increase in yields. The bars represent the proportional changes in percent and the numbers on top of the bars indicate the corresponding absolute changes in thousand MT. The results invariably show considerable increases in intraregional trade in cereals and in roots and tubers, the main food crops, in response to changes in trading costs and yields. Intra-community cereals trade levels in COMESA tend to respond less than trade in roots and tubers in proportional terms but, because of initially higher levels, the accumulated additional volume of regional trade is much higher, ranging from 1 million MT to more than 5 million MT above the baseline. Intraregional trade seems to respond more to changes in overall costs of trading and yields than to changes in cross-border barriers. This may be explained by the fact that equivalent tariffs constitute a smaller fraction of producer prices; hence, changes in barriers result in smaller changes in incentives. Cereals seem to respond better than other products in general.

Figure 6.14 Regional exports outlook, baseline, 2008–2024
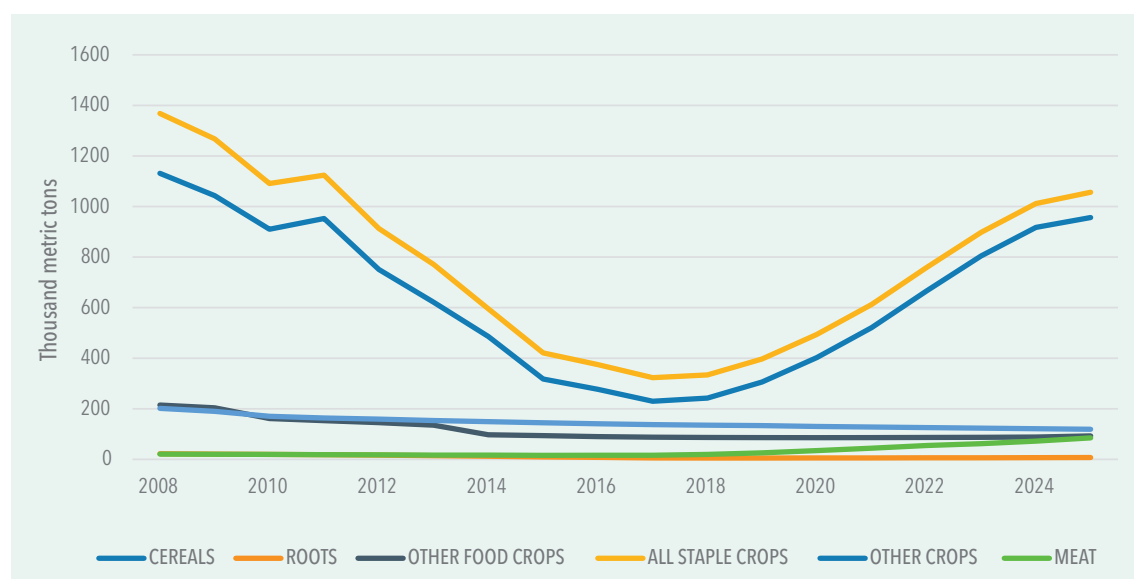
Source: Adapted from Badiane and Odjo, 2016.

Figure 6.15 Changes in intraregional exports by 2025 resulting from three cost and yield scenarios
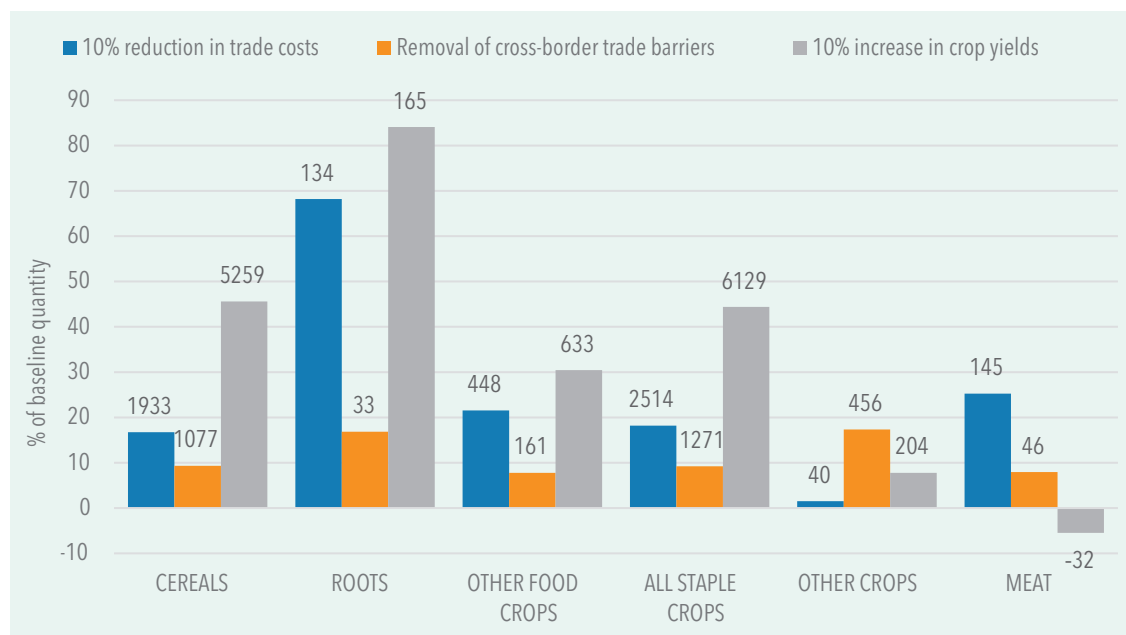
Source: Adapted from Badiane and Odjo, 2016.

Note: Figures on top of bars indicate cumulative increases in regional export supply in 1,000 metric tons. Other crops include all or a subset of the following crops: fruits and vegetables, cotton, sugar, cocoa, coffee, tea, tobacco, spices, and nuts.

Regional market volatility under alternative policy scenarios

Under each scenario, model-simulated quantities of intraregional exports are used to estimate an index of future export volatility at country and regional levels. The historical and simulated levels of volatility of cross-border trade in food staples in the region under historical trends, and in each of the alternative scenarios, are reported in Table 6.11. Calculations of volatility levels under historical trends are based on the International Trade Center's Trade Map database (ITC, 2016). In Table 6.11, simulated volatility levels under the various scenarios are compared with the historical levels of volatility, with the difference expressed in point changes. As can be seen from the numbers in the table, volatility levels are lower under all scenarios than under historical trends. The magnitude of changes is, however, rather small across all three scenarios. The numbers also show that if current trends of rising volumes of intraregional trade continue, volatility levels in the region are expected to decline compared to historical trends. A better comparison is, therefore, to contrast changes under the two trade policy scenarios and the productivity scenario with expected volatility levels under the baseline scenario. Furthermore, the direction and magnitude of changes in the level of intraregional trade volatility are determined by the combined effect of changes in the level of volatility, as well as by shares of cross-border exports by individual countries. Figure 6.16 shows changes in volatility levels (x-axis) and shares of exports (y-axis) by individual countries under each of the trade and productivity scenarios compared to the baseline. The different dots indicate the position of different countries under the three scenarios. The tilted distribution of country positions to the left of the x-axis indicates

that exports by most countries would experience a lower level of volatility under regional policies that would reduce the overall cost of trading, eliminate administrative and regulatory obstacles to transborder trade, or raise yields of staple crops in member countries.

Table 6.11 Change in volatility in intra-common market for eastern and southern Africa trade under alternative scenarios (2008–2025)

	Historical trend (1996–2012)	Baseline trend (2008–2025)	10% reduction in trade costs (2008–2025)	Removal of cross-border trade barriers (2008–2025)	10% increase in crop yields (2008–2025)
Volatility index	0.682	0.55	0.505	0.551	0.449
Change in volatility from historical trend		−0.132	−0.178	−0.132	−0.234

Source: Adapted from Badiane and Odjo, 2016.

Figure 6.16 Changes in country export shares and volatility compared to baseline trends
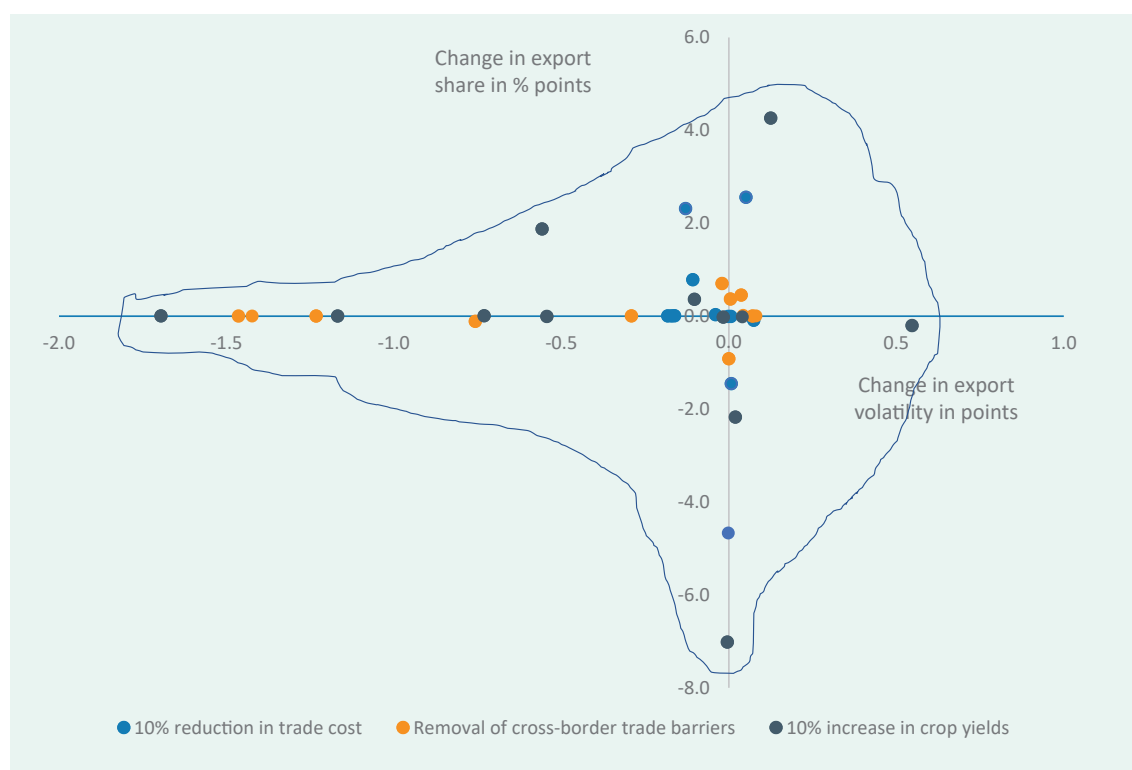
Source: Adapted from Badiane and Odjo, 2016

The combined changes in export share and volatility for individual countries under each of the scenarios are reported in Table A6.1 and presented in Figures A6.1 to A6.3 in the Annex. Only countries that have exported historically are considered. Changes in country production patterns resulting from the simulated policy actions lead to changes in both the volatility as well as in the level of exports, and hence in the shares in regional trade for each country. The magnitude and direction of these changes determine the contribution of individual countries to changes in the level of volatility in regional food markets.

Conclusions

The RECs in the ESA region can be divided into two categories: those that fit into the LPA, and those that grew outside the LPA. The PTA, which was superseded by COMESA in 1994, was created as a result of the LPA to serve the ESA region. Within the geographic area of the PTA, the EAC, SACU, and CEPGL groupings existed before the LPA of 1980. The members of the PTA were also joined by IGADD in 1986; this was replaced in 1996 by IGAD, as well as by the IOC, which was founded in 1984. SADCC, a precursor of SADC, was established in 1980. The CBI was established by 14 countries in 1993 as an approach to regionalism, with an emphasis on private sector involvement in policy formulation and implementation. The common feature among all the RECs is that their main aims converge toward regional integration and cooperation in economic, social, and political spheres.

The regional trade arrangements that existed between the 1960s and 1993 were created for political rather than economic reasons, as the majority of the states had conflicts within and between themselves. These conflicts led to sluggish performance and even the collapse of some RECs, for instance EAC and CEPGL, which fell apart in 1977 and 1994, respectively. Before 1994, almost none of the regional trade arrangements recorded membership expansion, except for SACU and SADC (which admitted Namibia in 1990), and IGADD (which admitted Eritrea in 1993). We also learn that only SACU achieved full FTA and customs union status: these were inherited from the colonial era. SADC was also transformed from a conference to a formally recognized regional community in 1992.

The period 1994–2018 saw growth in the number of RECs in the ESA region, with those that collapsed in the previous period being regenerated. Of the established regional trade arrangements, only COMESA, SADC, and SACU have FTA status, but these are only fully operational in the SACU bloc. COMESA launched a customs union in 2009 after acceding to the COMESA-SADC-EAC free trade zone in 2008. The regional trade arrangements did not achieve the desired outcomes, owing to problems such as multiple membership, which limited the cooperation of member states. The heterogeneity of states also seems to be working against the desired progress, as weaker states lose out to stronger states in each bloc.

The analysis of both trade flows and trade cost indicators reveals that COMESA is lagging behind other continental counterparts such as ECOWAS and the Central African Economic and Monetary Community (CEMAC). Intra-trade flows are still low in the region, and this could be attributable to high trading costs, as evidenced by tariffs, the presence of NTMs, strict border compliance requirements, and harassment of small-scale traders in the region. There is also evidence that COMESA member states are mostly trading with third countries, rather than with regional counterparts.

A few agencies and surveys in the region have monitored or attempted to monitor informal trade but much of the trade data remain unrecorded. It would appear that, for a quantitative assessment of informal trade, a long-term monitoring program at many border posts is required. Thus, making a deliberate effort to strengthen aspects of the existing initiatives could be valuable. To establish solid baselines for future monitoring, implementing comprehensive one-off surveys of specific borders between countries may be helpful.

Monitoring all borders has financial implications; hence there is need for monitoring agencies to identify key borders in a manner that can accurately represent the extent of informal trade in a particular country, as inaccuracy can lead to overemphasis elsewhere at the expense of the bigger picture.

This chapter has also examined the existing potential to use increased intraregional trade within COMESA as a means to raise the resilience of domestic food markets to shocks across their member countries. The distribution and correlation of production volatility, as well as the current patterns of specialization in production and trade of agricultural products across countries, suggest that it is indeed possible to raise cross-border trade to reduce the level of instability of local food markets. The results of the modeling exercise indicate that continuation of recent trends would sustain the expansion of intraregional trade flows in the region. The findings also reveal that it is possible to significantly boost the pace of regional trade expansion, and thus its contribution to creating more resilient domestic food markets, through a modest reduction in the overall cost of trading, a similarly modest increase in crop yields, or the removal of barriers to transborder trade. More importantly, simulation results also suggest that such policy actions to promote transborder trade would reduce volatility in regional markets and help lower the vulnerability of domestic food markets to shocks.

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Annex

Table A6.1 Changes in volatility and share of staple exports under alternative scenarios, 2008–2025

	Change in volatility compared to baseline (points)			Change in share compared to baseline (% points)		
	10% reduction in trade cost	Removal of cross-border trade barriers	10% increase in crop yields	10% reduction in trade cost	Removal of cross-border trade barriers	10% increase in crop yields
Egypt	−0.129	−0.020	-0.102	2.315	0.701	0.360
Eritrea	0.075	0.043	0.547	−0.091	0.014	-0.203
Eswatini	−0.002	0.071	-0.016	−0.007	0.001	-0.022
Ethiopia	0.052	0.005	0.125	2.557	0.368	4.261
Kenya	0.006	0.081	0.041	−0.009	0.004	-0.016
Libya	−0.001	0.001	-0.004	−4.669	−0.918	-7.018
Sudan	0.007	0.037	0.020	−1.456	0.453	-2.175
DRC	−0.182	−1.232	-0.730	0.004	0.000	0.006
Madagascar	−0.162	−1.423	-1.695	0.007	0.001	0.005
Malawi	−0.107	−0.757	-0.557	0.781	−0.114	1.876
Zambia	−0.170	−1.464	-1.168	0.002	0.001	0.000
Zimbabwe	−0.039	−0.290	-0.543	0.030	0.003	-0.008

Source: Adapted from Badiane and Odjo, 2016.
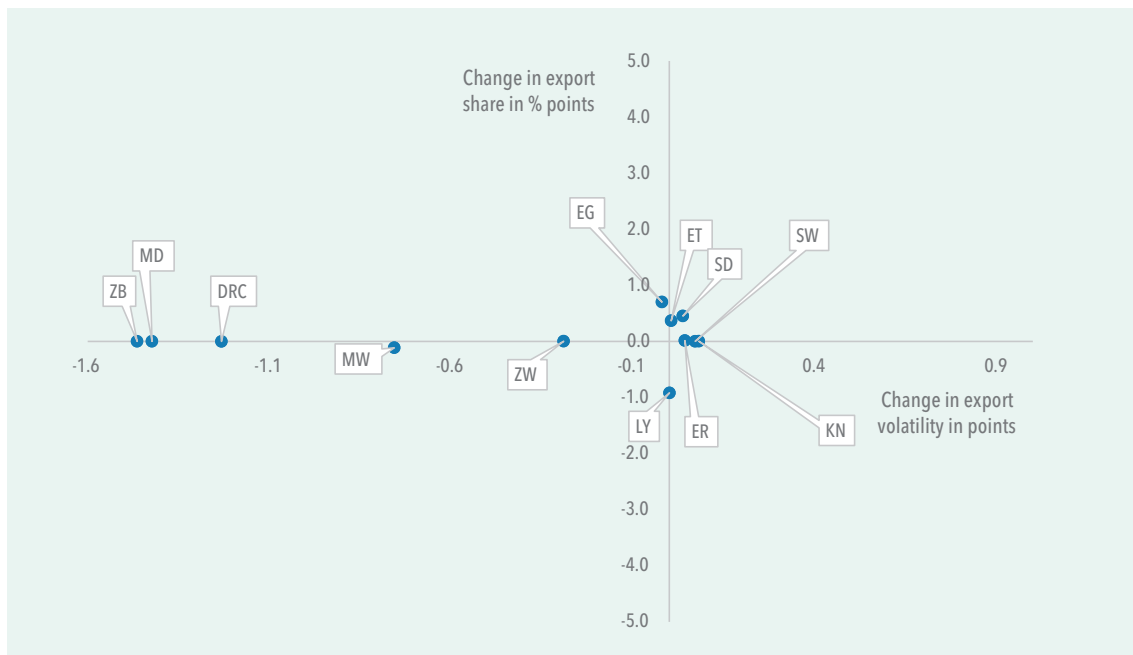Note: DRC = Democratic Republic of the Congo

Figure A6.1 Changes in country export share and volatility under 10% reduction in trade costs compared to baseline
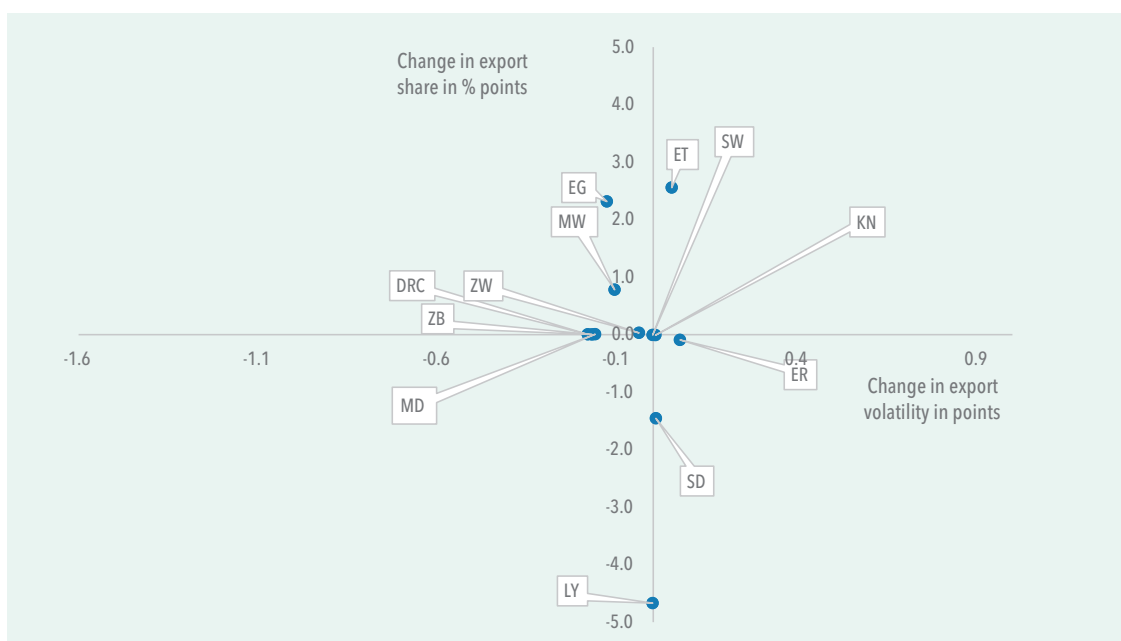
Source: Adapted from Badiane and Odjo, 2016.
Note: EG=Egypt, ER=Eritrea, ET=Ethiopia, KN=Kenya, LY=Libya, SD=Sudan, DRC=Democratic Republic of the Congo, MD=Madagascar, MW=Malawi, SW=Eswatini, ZB=Zambia, ZW=Zimbabwe

Figure A6.2 Changes in country export share and volatility under a removal of cross-border trade barriers compared to baseline

Source: Adapted from Badiane and Odjo, 2016.
Note: EG=Egypt, ER=Eritrea, ET=Ethiopia, KN=Kenya, LY=Libya, SD=Sudan, DRC=Democratic Republic of the Congo, MD=Madagascar, MW=Malawi, SW=Eswatini, ZB=Zambia, ZW=Zimbabwe

Figure A6.3 Changes in country export share and volatility under 10% increase in crop yields compared to baseline
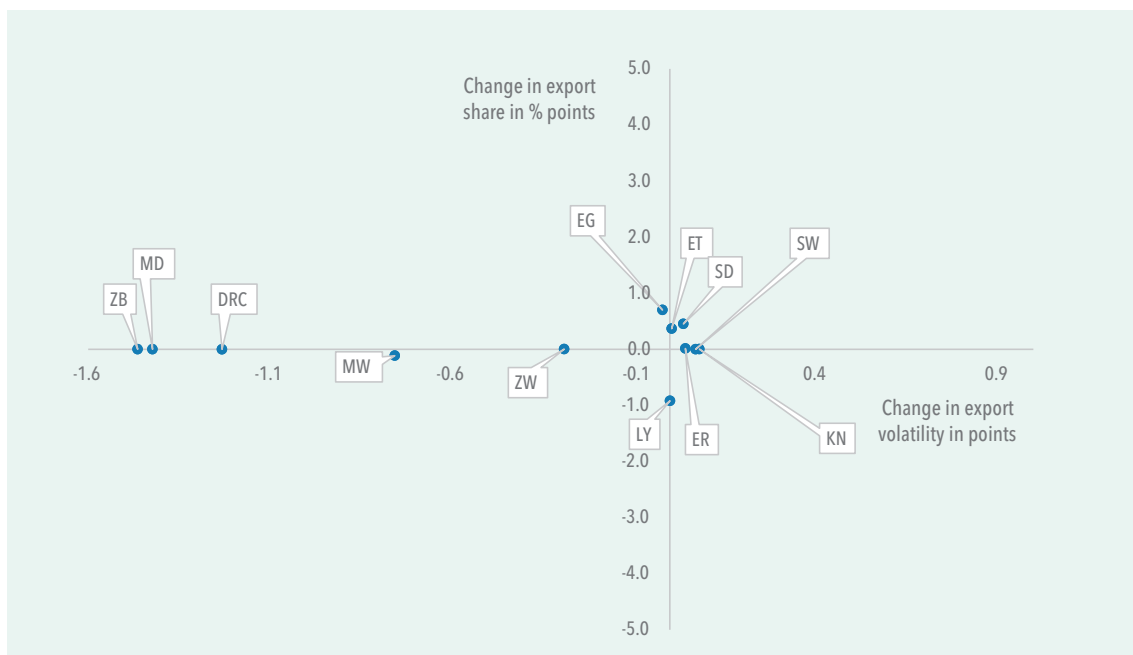
Source: Adapted from Badiane and Odjo, 2016.
Note: EG=Egypt, ER=Eritrea, ET=Ethiopia, KN=Kenya, LY=Libya, SD=Sudan, DRC=Democratic Republic of the Congo, MD=Madagascar, MW=Malawi, SW=Eswatini, ZB=Zambia, ZW=Zimbabwe

Summary and conclusions

This 2019 AATM has assessed the performance of Africa's agricultural trade, explored how effective regional trade arrangements have been in boosting integration and intra-African trade, and evaluated the potential impact of broader integration on the continent's trade performance in the context of emerging protectionism. This chapter summarizes major findings and recommends policy actions that could improve regional integration and boost trade among African countries.

Africa's agricultural trade deficit has been declining since 2012, and the continent's share in global agricultural GDP has been increasing since 1995, as shown in **Chapter 2**. These trends are linked to the fast population and economic growth rates in Africa as compared with the rest of the world. African trade is characterized by a high concentration of exports in a relatively small number of products, generally raw or semi-processed commodities. Although intraregional trade in Africa is admittedly low as a proportion of total trade, especially when compared with other regions, the level of intra-African trade appears relatively high, meaning that African trade is more introverted than extraverted. Chapter 2 demonstrates that the share of intraregional trade in total trade depends not only on trade barriers, but also on geography, economic activity, and other factors. The low intra-African trade share is therefore the result not only of poor integration but also (and especially) of lower GDP levels in Africa. The chapter concludes that non-tariff measures (NTMs) are the main obstacle to improving Africa's trade integration, with administrative barriers playing an important role, while tariff barriers are relatively low.

These findings are confirmed in **Chapter 3**, which investigated Africa's trade from a regional perspective, that is, at the REC level. Across all RECs, low applied tariffs have not significantly boosted intraregional trade due to deficient infrastructure, costly NTMs and implicit behind-the-border barriers to trade. The quality of trade and transport-related infrastructure, including port infrastructure, is below the world average levels across all RECs. Strikingly, NTMs abound in intra-African trade and the extent of NTMs faced in a REC and imposed by countries of the same REC is relatively high. As a result, African RECs face lengthier times to export than their Asian counterparts. Chapter 3 confirms that Africa's agricultural trade is more introverted than extraverted, finding SADC, ECOWAS, ECA and COMESA to be the most introverted, and AMU and ECCAS the least introverted.

Chapter 4 examined the evolution of competitiveness in key commodity value chains in Africa, showing that Africa's comparative advantage in agriculture has strengthened in very recent years. This trend mainly reflects the performance of ECOWAS, SADC, and COMESA rather than that of UMA, CEMAC, or ECCAS. The continent is generally competitive in unprocessed or semi-processed products and not in processed products. Competitiveness is very high in some value chains, such as sesame seeds and legumes and pulses, but comparative advantage is declining in coffee and grapes. The chapter indicates that the increase in African agricultural exports is mainly driven by non-African demand for unprocessed and semi-processed products.

Assessing the likely effects of emerging protectionist threats on Africa's world trade, **Chapter 5** focused on the trade war between the United States and China. Using a global economic model, the chapter finds that the impact on Africa depends on the intensity of the trade war. Clearly, African countries could increase their exports to both the United States and China under a scenario based on the changes in tariffs observed from January 2018 to April 2019. However, total African exports to China would fall under a scenario that reflects the tariff changes observed in China and the United States after April 2019. The chapter further clarifies

that developing countries outside Africa (mainly Asia) are likely to be the main beneficiaries of the new opportunities in the US and Chinese markets. More interestingly, the gains for Africa could be amplified if the continent adopts a proactive strategy that includes deeper regional integration, such as the recently signed African continental free trade agreement. Furthermore, if much of the world were to become more protectionist, African exports would fall significantly, with SACU the most affected region, although intra-continental trade would increase. Deeper integration within Africa would be particularly important in this scenario because, in addition to the trade dispute between China and the United States, there is a clear challenge to multilateralism from the new protectionist US policy.

Chapter 6 focused on regional integration experiences in the Eastern and Southern Africa region. The chapter indicates that the regional trade arrangements that existed in the region between the 1960s and 1993 were created for political rather than economic reasons, as most of the states faced conflicts within and among themselves. These conflicts led to sluggish performance and even the collapse of some RECs, notably EAC and CEPGL, which fell apart in 1977 and 1994, respectively. From 1994 to 2018, the number of RECs in the ESA region grew, with those that collapsed in the previous period being regenerated. Of the established regional trade arrangements, only COMESA, SADC, and SACU have FTA status, and this is only fully operational in the SACU bloc. COMESA launched a customs union in 2009 after acceding to the COMESA-SADC-EAC free trade zone in 2008.

In sum, strengthening regional integration in Africa can bring considerable economic benefits but will require ambitious reforms such as addressing the issue of non-tariff barriers by harmonizing the rules of origin, standards, and product norms across different RECs. It is also crucial to make rules and procedures more transparent on customs websites to reduce the cost created by NTMs and thus lead to easier and more efficient implementation. Only with investment in reform will new regional integration initiatives, such as the AfCFTA or TFTA, be a success in terms of trade integration, growth of economic activity, development, and poverty reduction.

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