

2. AFRICA'S GLOBAL TRADE PATTERNS

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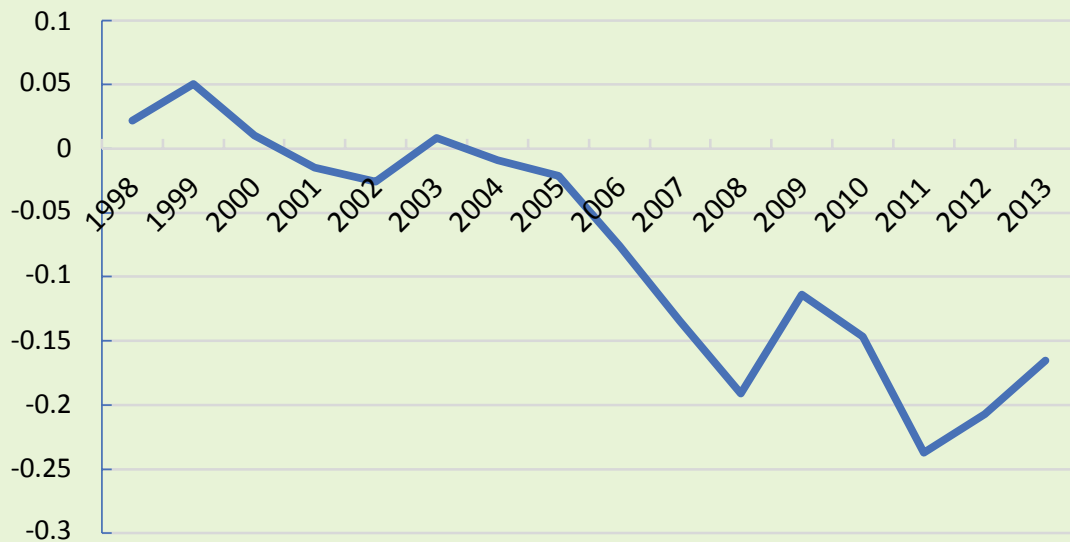
The trade performance of African countries has improved in recent years, although it is still below expectations compared with other regions of the world. This notwithstanding, and although the region is currently considered among the fastest-growing in the world, Africa's trade performance continues to be dominated by the agricultural sector. Overall, Africa's competitiveness has slightly improved over time, and trends show significant diversification of exports since 1998. This has occurred for several reasons: (1) participation in multilateral and bilateral negotiations, such as the World Trade Organization Doha Development Agenda and Economic Partnership Agreements; (2) benefits received from preferential trade agreements, such as the African Growth and Opportunity Act, Everything but Arms (EBA), and so on; and (3) deeper regional integration through free trade agreements, customs unions, and so on. In addition, foreign direct investment (FDI) from developed and emerging countries has contributed to the transformation of both agriculture and trade (FAO 2012; Cheru and Modi 2013).

Agriculture remains a key sector, with significant potential in global food markets, especially in terms of value-added (NEPAD 2013).¹ Yet the region's share of agricultural exports has declined since 1998. This constitutes a critical challenge for Africa, given its rich natural resource endowments and potential for developing high-value agricultural export products, both for local and global markets. It is, therefore, not surprising that agricultural transformation across Africa features heavily in the 2014 Malabo Declaration. Consequently, the commitment to tripling intra-African trade in agricultural commodities and services by 2025 is seen as key to growth because its expansion will trickle down to other sectors of the region's economy.

In recent years, trends in international trade were largely driven by sluggish economic growth and persisting economic and political turmoil in various parts of the world. Between 2011 and 2014, world trade grew at a rate of less than 2 percent per year, generally due to lower economic growth, but also because trade was much less responsive to output growth—which was particularly the case for Africa (UNCTAD 2015). Regarding agricultural products, while world agricultural exports grew at 7 percent per year between 2010 and 2014, Africa's exports grew by 5 percent, outperforming trade in manufacturing, which grew at 4 percent (WTO 2015).

Africa's agricultural exports increased steadily during 1998–2013, whereas its share of global trade fluctuated at around 4 percent and declined slightly from 2009. The main Regional Economic Communities (RECs) showed contrasting patterns in export growth. The Economic Community of Central African States (ECCAS) and the Southern African Development Community (SADC) registered relative declines, while the Common Market for Eastern and Southern Africa (COMESA) remained stable, and the Economic Community of West African States (ECOWAS) recorded significant short-run volatility. Since the early 1980s, Africa's agricultural exports have lagged behind imports, yielding a growing trade deficit.

¹ In fact, agriculture accounts for a significant share of Africa's GDP—for example, about 20 percent in 2015 according to World Bank (2015)—and therefore presents considerable potential for supporting broader growth and the eradication of poverty and hunger.

Figure 2.1. Normalized trade balance, 1998-2013

Source: CEPII (2015).

The region recorded a negative value in its net exports between 2001 and 2013, a pattern confirmed by the normalized trade balance (Figure 2.1).² The main drivers of this surge in imports were rapid population growth and urbanization, income changes due to economic growth, and changes in dietary patterns. Among the RECs, SADC was the only region to register a consistent trade surplus.

Noticeably, Africa's trade flows to and from the European market trended downward, whereas trade with regional partners and Asian countries continued to rise. Africa also registered a decrease in the concentration of its exports during 1998-2013. Another interesting feature is the relative decline in agriculture's share of total African exports, indicating that the main source of foreign earnings now comes from

nonagricultural products. Overall, however, despite the region's attempt to become integrated into the global market, work remains to be done in the areas of diversification, integration, and meeting international standards.

This chapter examines Africa's global trade patterns for the 1998-2013 period. Specifically, the next section highlights trends in Africa's agricultural trade, both in terms of value and volume, focusing on key agricultural commodities. This is followed by a discussion of changes in market shares and net agricultural exports, detailed analyses of the direction of African's exports and imports, a discussion of the changing composition of agricultural exports and imports over time, and of changes in unit values of agricultural exports and imports. The final section presents conclusions.

² A country's normalized balance is calculated as its agricultural exports minus its agricultural imports, divided by its total agricultural trade (imports and exports). The resulting index ranges between -1 and 1.

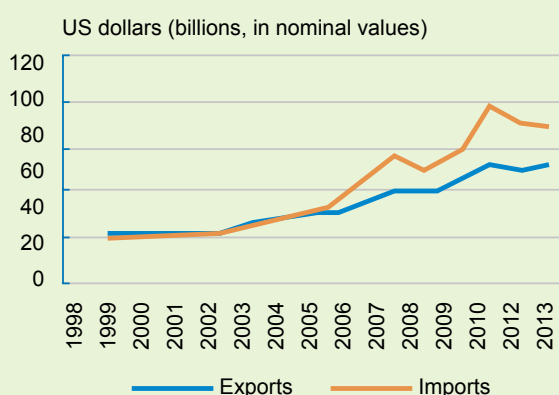
Trends in the Volume and Value of Global Agricultural Trade

Global Patterns

Globally, agricultural exports and imports by African countries have increased steadily during 1998–2013, even though Africa's share of global agricultural trade remained relatively constant, and imports were generally higher than exports (Figures 2.2 and 2.3).³ After declining in the 1990s, Africa's exports increased

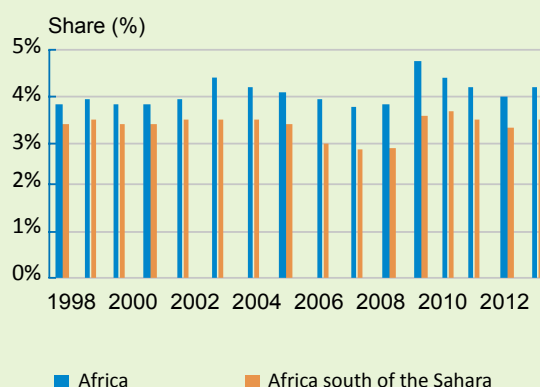
at an average rate of 8 percent per year during 1998–2013, and more than doubled over the entire period. From 2008 to 2013 (the postcrisis period), the yearly rate of agricultural export growth was 6.6 percent, reaching a peak value of approximately \$63.85 billion in 2013 (UNCTAD 2015).

Figure 2.2. Total agricultural trade flows, 1998–2013



Source: CEPII (2015).

Figure 2.3. Share of global agricultural exports, 1998–2013



Source: CEPII (2015).

The reasons for the increase in exports include rising prices of various commodities in more recent years, improved African infrastructure (mostly transport and telecommunications), economic growth, and greater regional and global integration.

The value of agricultural imports increased even more rapidly after 1998: for the entire period, imports increased fivefold. Specifically, the value of agricultural imports rose from \$19.07 billion in 1998 to approximately \$68.28 billion in 2008 (with a dip in 2009 to \$60.61 billion). Total trade in agricultural imports rose again between 2009 and 2011, peaking at approximately \$98.89 billion. Levels declined slightly from 2012 resulting in a total import value of approximately \$89.18 billion in 2013. The higher imports may be attributed to both demand and supply factors. On the demand side, the main elements of note were increa-

sing income levels due to higher economic growth, population growth and demographic changes, and changes in consumers' dietary patterns (FAO 2015; Rakotoarisoa, lafrate, and Paschali 2011).

³ Unless otherwise specified, all data in this chapter refer to total (aggregated) African trade—that is, imports and exports among African countries and with the rest of the world. The main source of data is the International Trade Database at the Product Level (BACI) built by the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII). Based on the United Nations' Comtrade Database, BACI offers a procedure for reconciling exporter and importer declarations using both mirror data and gravity modeling (Gaulier and Zignago 2010). This means that data are available for a significantly larger number of countries. See Appendix A for a more complete description of the database.

The income effect due to economic growth was at play in some countries like Ghana and Mozambique, with consequences for dietary patterns.

For instance, with higher incomes, consumers demand more protein (such as meat, fish, milk, and peanuts). The other cause of increasing imports was population growth and rapid urbanization in Africa with a concomitant increase in rural population. Africa is indeed the most dynamic region in terms of demographics: the population in Africa south of the Sahara more than doubled between 1985 and 2013, and as of 2013, one third of people were living in cities (World Bank, 2015). By comparison, the world's population grew by 45 percent during this timeframe. The consequence of the rapid urbanization and population growth was increased consumption of more diversified and richer animal products, and of imported cereals (wheat, rice, and maize) rather than the more regularly consumed local cereals (such as millet), roots, and tubers (FAO 2015). This trend has continued since 2013, and will continue into the future given that Africa's population growth rate is twice the global average. The increase in imports also reflects agricultural constraints, such as the region's inability to sufficiently raise supply to meet the food requirements of the growing population. Low and slowly rising agricultural productivity, water constraints, low fertilizer use, and low mechanization are key underlying factors (FAO 2015).

Most regions recorded a trade deficit over the period—with the exception of the SADC region, which recorded a surplus for the entire period (see Appendix 2B). The trade deficit is particularly important for North African countries, which are huge cereal importers. According to recent studies, 23 African countries are highly import-dependent, having normalized trade-balance index values ranging from -1 to -0.1, while 37 countries are net importers of food (FAO 2015).

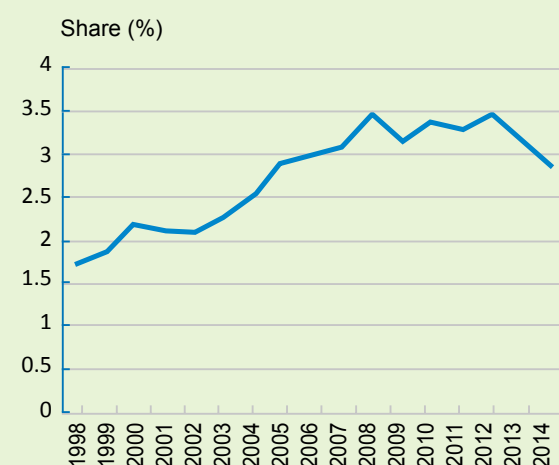
The growing agricultural trade deficit suggests that it is necessary for African countries to take relevant steps to improve export performance based on the region's "agrarian" environment. African agriculture must gradually be transfor-

med from being subsistence-oriented to having a more commercial focus, as doing so—in addition to other measures, such as improved technology and skills—will greatly improve agricultural exports.

African shares of world exports have fluctuated below 4 percent with a few exceptions, the lowest share being 3.8 percent in 2008 (Figure 2.3). Shares of world exports have followed similar trends in the countries of Africa south of the Sahara (SSA) as those of Africa as a whole, with respect to the years of peaks and troughs, meaning that North African countries do not significantly contribute to the region's agricultural exports. Trends clearly show that shares of agricultural exports are generally low by world standards, both for Africa as a whole and for SSA (Figure 2.3). The evolution of Africa's share of global exports is linked to the evolution of its competitiveness in world markets. Indeed, two-thirds of African countries registered a loss in competitiveness, whereas the remaining one-third managed to expand their exports in world markets faster than their competitors (see Chapter 4, this volume).

Africa's low share of world agricultural trade contrasts with the fact that agricultural products continue to constitute a high share of GDP in most African countries, and that agriculture employs a large proportion of the workforce (World Bank 2015). Some have explained this by the fact that, compared with other countries or regions, agricultural production in Africa is largely on a subsistence scale (Collier and Dercon 2014; Bryceson 2015), reducing the overall share of agricultural exports from Africa and SSA. However, Africa's share of global agricultural exports is slightly larger than its share of global merchandise exports, reflecting its relative specialization in agricultural products (Figure 2.3 compared with Figure 2.4). Another interesting feature is the relative decline in the share of agriculture in Africa's total exports (Figure 2.5). Indeed, the share of agricultural products fell by half between 1998 and 2013, indicating a symmetrical increase in export earnings from other sources (mainly textiles, minerals, and fossil fuel). As of 2013, agricultural exports represented 11 percent of Africa's total exports.

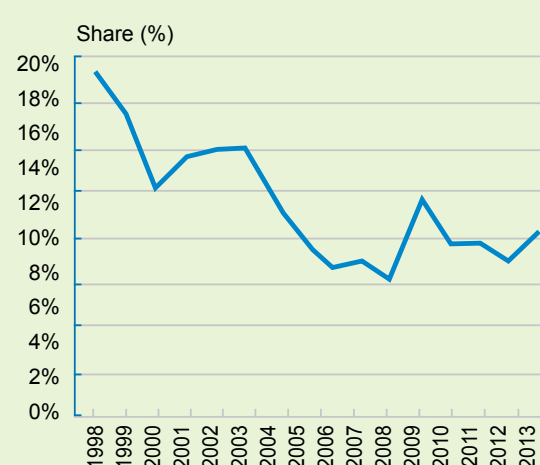
Figure 2.4. Share of global exports, 1998–2014 (nominal values)



Source: UNCTAD (2014).

Note: Data include trade in goods and services

Figure 2.5. Share of agriculture in Africa's total exports, 1998–2013 (nominal values)

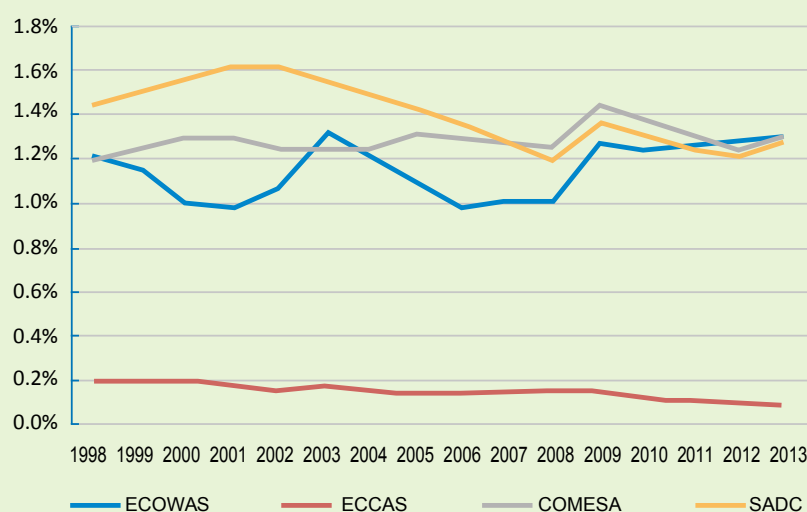


Source: CEPII (2015).

In general, trends in the market shares for the main RECs follow those of Africa as a whole (Figure 2.6). The evolution in some groups, however, is more pronounced than for others. ECCAS, which has the lowest share, also recorded a secular decline for the entire period. This pattern is confirmed by a lack of competitiveness during 1998–2013, compared with its main competitors (see Chapter 4, this volume). After a rise in its market share in the late 1990s, SADC also recorded a relative decline during

this period, with a decline in competitiveness. ECOWAS's market share fluctuated but improved in the most recent years, whereas COMESA's market share remained relatively stable. The divergent evolution of the sub-regional market shares stems from their differences in terms of commodities exported (see Appendix B), and to their ability to respond to rising prices and to compete with other exporters in global markets.

Figure 2.6. Export shares of agricultural products by major regional economic community, 1998–2013



Source: CEPII (2015).

Notes: COMESA = Common Market for Eastern and Southern Africa; ECCAS = Economic Community of Central African States; ECOWAS = the Economic Community of West African States; SADC = the Southern African Development Community.

The Evolution of Some Key Export Commodities

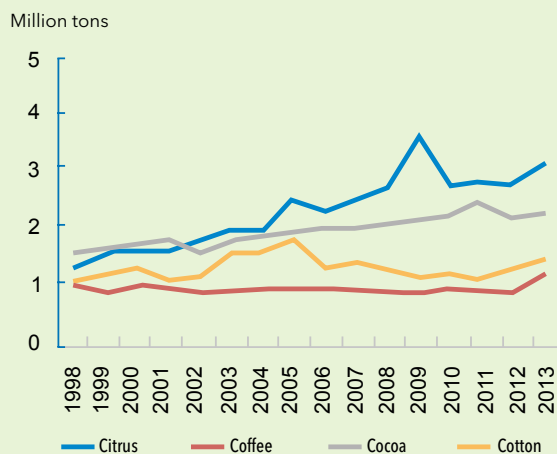
This section focuses on some key commodities, particularly citrus, coffee, cocoa, and cotton (the main commodities exported in 1998) and fish and related products that are not part of the World Trade Organization agreement on agriculture. In terms of volume, although citrus was the second most exported commodity after cocoa during 1998–2002, it outstripped the volume of cocoa exported during 2002–2013 (Figure 2.7). Notwithstanding, cocoa was the most exported commodity in terms of value during 1998–2013, with the values of citrus, coffee, and cotton all performing below that of cocoa over the same timeframe (Figure 2.8).

Globally, the prices of cocoa and coffee have risen continually since 2000 (Figure 2.9). Nevertheless, with the exception of the 2001–2004 period, the price of coffee grew faster than the price of cocoa. In addition, the cotton price

maintained a relatively stable growth rate during 2000–2009 (Figure 2.10). By 2011, the price of cotton had more than doubled its 2000 level, although the peak in 2011 did not last.

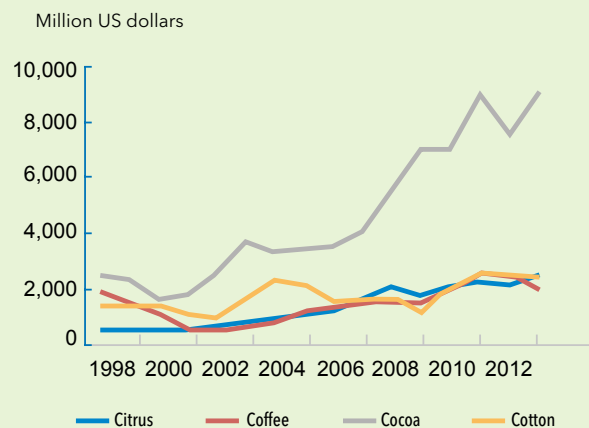
What is interesting is the imperfect and even opposite correlation between the volume of exports and world prices at the end of the period, with the exception of cocoa (Figures 2.7 compared with Figure 2.9). Despite the huge drop in the world prices of cotton and coffee, export volumes continued to rise after 2011. This may be due to an imperfect transmission of international price shocks to local producers' prices (due to stabilization mechanisms in play, exchange rate movements between the US dollar and local currencies, and so on), but also to an income effect that gave producers incentives to supply more when prices fell (Yotopoulos and Lau 1974).

Figure 2.7. Key commodities by export volume, 1998–2013



Source: CEPII (2015).

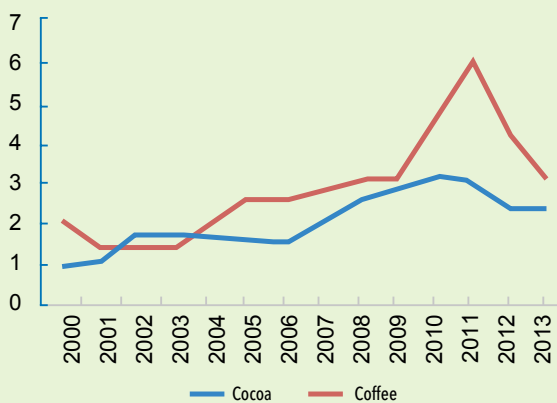
Figure 2.8. Key commodities by export value 1998–2013



Source: CEPII (2015).

Figure 2.9. Cocoa and coffee prices, 2000-2013

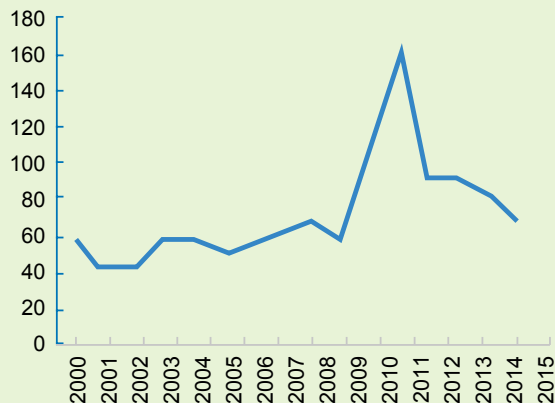
US dollars per kilogram



Source: World Bank (2016)

Figure 2.10. Cotton Cotlook A index, 2000-2015

US Cents per pound



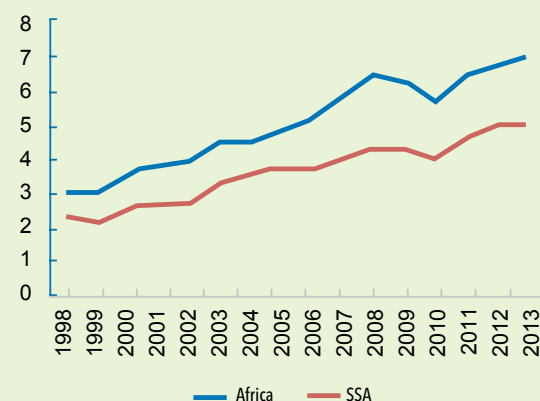
Source: NCC (2016)

Fish and related products represent a huge share of agricultural exports for some African countries (such as Senegal) but are not part of the World Trade Organization agreement on agriculture. During 1998-2013, on average, fish exports represented 15 percent of total agricultural exports. Africa's and SSA's exports of fish and related products doubled during this timeframe, rising from \$3.12 to \$7.17 billion and \$2.29 to \$4.98 billion, respectively

(Figure 2.11). In general, for both Africa and SSA, exports of fish and related products rose during 1998-2008, fell during 2008-2010, then rose again during 2010-2013. Trends were similar for the 1998-2013 period (Figure 2.12). It is worth noting that Africa's average share of global fish exports is higher than its average share in agricultural product exports, indicating a greater role in, and potential for, that particular market.

Figure 2.11. Trends in export value of fish and related products, 1998-2013

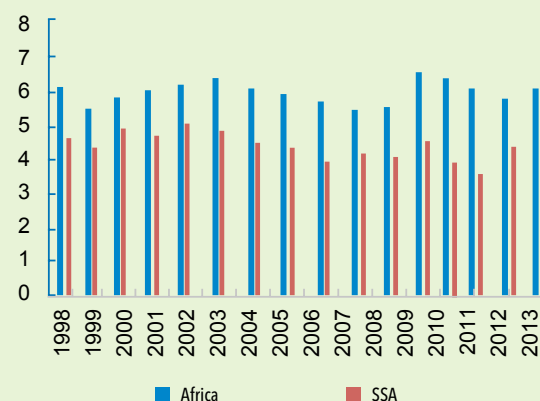
Million US dollars



Source: CEPII (2015).

Figure 2.12. Share of global fish trade, 1998-2013

Share (%)



Source: CEPII (2015).

Agricultural Export and Import Flows and Changes in Market Shares

Africa's agricultural products are exported throughout the world, but the most commonly exported commodities are cash crops. In particular, African countries export crops including cotton, cocoa, coffee, cassava, and sorghum. Naturally, the flow of these exports depends on shifts in demand for them. Figures 2.13 and 2.14 show the flow of Africa's agricultural exports within African countries, to Europe, to Asia, and to the Americas during 1998–2013. Free trade areas and improved local infrastructure promoted increased export flows within Africa, although levels were still low compared with exports outside the region (Figure 2.14). The export share among African countries averaged 15.7 percent during 1998–2012, despite the low base rate of 11.1 percent in 1998.

Exports to Europe trended downward, from 62.1 percent of the total in 1998 to 37.5 percent in 2013. Nevertheless, Europe remains the primary destination for African agricultural exports. Some African countries began developing tropical products for export to the European Union (EU) market to take advantage of preferences granted by EU countries (EBA for instance), but EU and sanitary and phytosanitary standards have a dampening effect on agricultural exports (Otsuki and Sewadeh 2001; Kareem 2014). It is also worth noting that EU negotiations with some of Africa's competitors, such as Asia and Latin America, create the risk of erosion of preferences for African countries for some commodities, such as cocoa and bananas. Exports to Asia (and Europe) are mostly high-value, low-calorie agricultural products. Notable among them are cotton, coffee, flowers, fruit, tea, tobacco, and fish. Exports of agricultural products to Asia increased at a slower rate between 1998 and 2012, whereas exports to the Americas—that is, both North America and Latin America—have been fairly low (Figure 2.14). Until 2012, the share of exports to the Americas was less than 9 percent. The highest export share to the Americas between 1998 and 2013 was 9.7 percent in 2012, but the 2013 share fell to 5.6 percent (Figure 2.13). Europe, on the other hand, received the highest share of Africa's exports, at 37.5 percent in 2013 (Figure 2.13).

On the import side, in 1999 12.5 percent of the region's imports came from within Africa (Figure

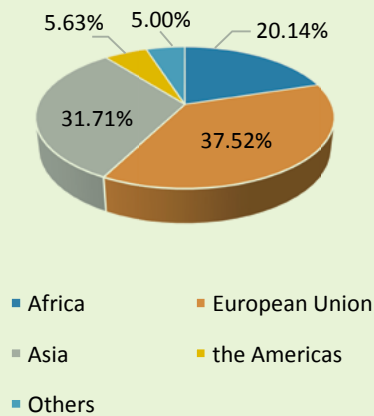
2.15). This increased to 16.0 percent in 2003, then fell to 12.4 percent in 2008. However, these low figures do not account for informal crossborder trade between African countries, which consists of flows of local products and of re-exports of imported products, sometimes in order to circumvent protectionist policies in some countries against imports from the international market (see the Nigeria-Benin case reported in LARES 2005 and Golub 2012). Since estimates of intraregional trade volumes are based on official statistics (customs declarations), the volume of trade is substantially underestimated. For instance, more than 50 percent of Benin's trade in red meat, cattle, and cereals in 2010 was informal (INSTAT 2010). Finally, the share of trade within Africa varies across commodities: cereals and live animals are the most commonly exported commodities within Africa, whereas coffee, cocoa, and tea are mostly exported beyond Africa.

Some obstacles to intra-African trade remain, however. Among these are inadequate transport, storage, and preservation infrastructure; tariffs, nontariff barriers, and export bans; technical barriers; customs procedures; lack of harmonization of procedures and documentation; lack of recognition of national certificates and standards; migratory procedures; and roadside inspections (Rolland and Alpha 2011; Levard and Benkhala 2013).

The majority of Africa's imports come from Europe. It is evident that, in 1998, 42.0 percent of the region's imports came from the EU (Figure 2.15). Although the share of imports from the EU has fallen since 1998, the region remains the largest originator of African imports. Imports from the Americas have risen steadily over time and averaged a 26.6 percent share during 1998–2003. Moreover, the highest imports to Africa in 2011 were from the Americas. Within the Americas, imports from North America fell, which benefited Latin America. The share of imports from Asia also grew substantially, from 11.3 percent in 1998 to 26.4 percent in 2012, contracting to 24.8 percent in 2013. The main feature of note is the decline of European imports and the rise of both imports and exports from Asia during this timeframe.

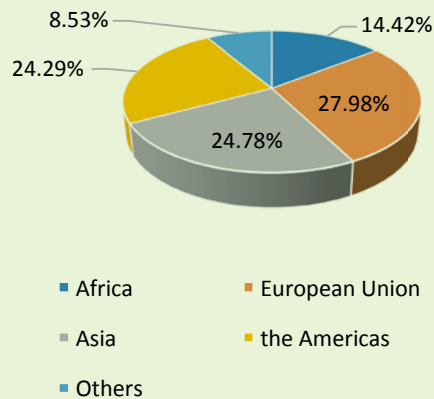
Figure 2.13. Direction of agricultural exports and imports, 2013

Exports (nominal values)



Source: CEPII (2015).

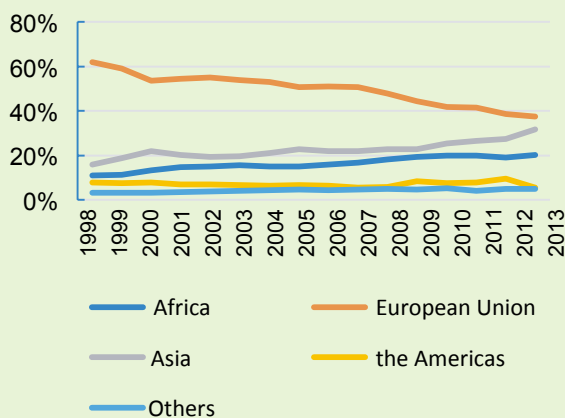
Imports (nominal values)



Source: CEPII (2015).

Figure 2.14. Directions of agricultural exports, 1998–2013

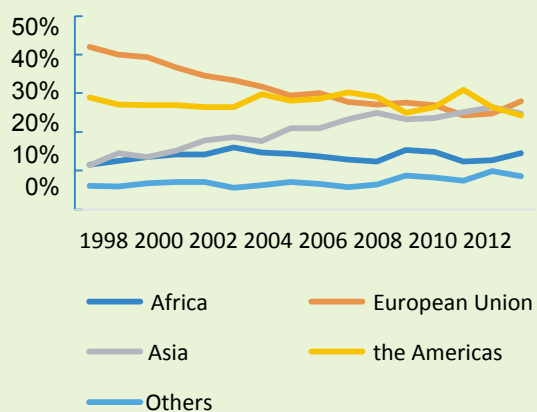
(nominal values)



Source: CEPII (2015).

Figure 2.15. Directions of agricultural imports, 1998–2013

(nominal values)

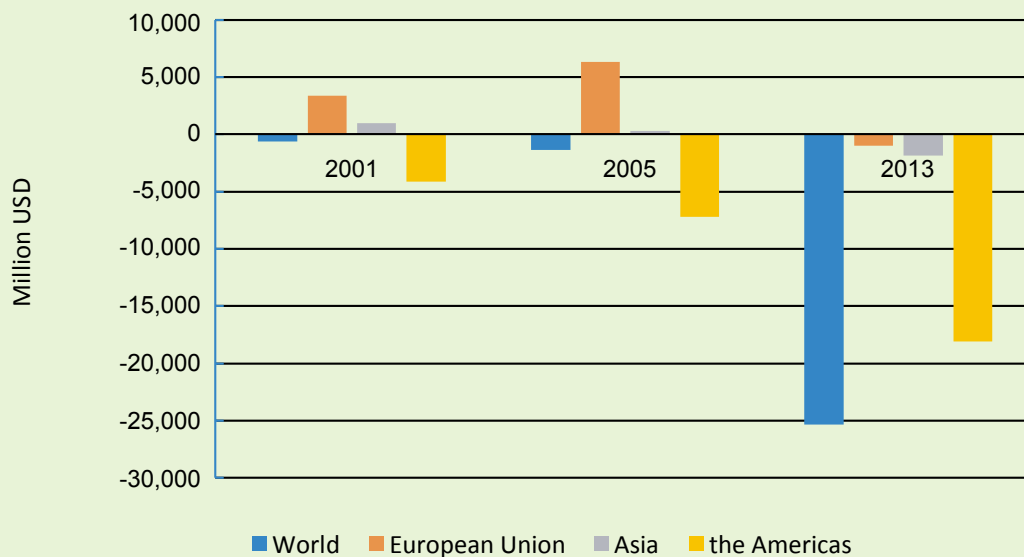


Source: CEPII (2015).

The main contributor to Africa's trade deficit is the Americas, with negative values of US\$4 billion in 2001, US\$7 billion in 2005 and US\$18 billion in 2013 (Figure 2.16). The EU and Asia recorded surpluses of US\$3.3 billion and US\$0.9 billion, respectively, in 2001. Net agricultural exports to the global market worsened thereafter, however, as Africa began recording deficits with both Asia and the EU, in addition to the Americas. The lowest deficit was recorded in 2011 (US\$39.7 billion globally). That same year,

Africa recorded negative values of US\$8.3 million to Asia, US\$1.6 million to the EU, and US\$25.3 billion to the Americas. Although the net agricultural export deficit declined somewhat, it was still largely negative as of 2013. In addition, the global deficit mainly resulted from increased imports, not declining exports. The main import commodities responsible for the deficit were sugar, maize, and wheat from the Americas; wheat, milk, and cream from the EU; and rice, palm oil, and wheat from Asia.

Figure 2.16. Net agricultural exports, selected years (nominal values)



Source: CEPII (2015).

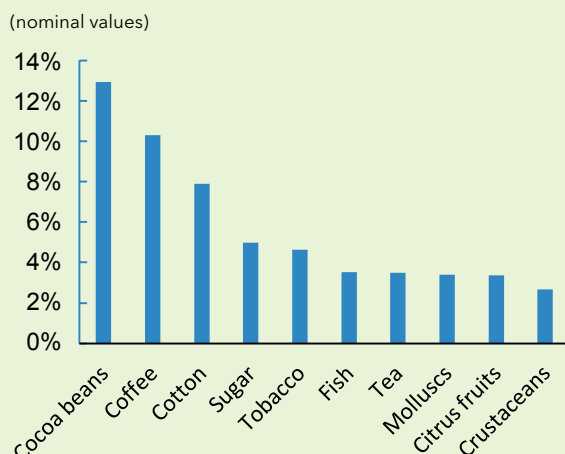
Changes in Composition of Agricultural Exports and Imports

Over time, the composition of agricultural exports and imports in Africa was mixed. It showed greater diversification of exports and relative stability for imports, with slight modifications over time. It is widely recognized that African exports are highly concentrated (Kose and Riezman 2001; Songwe and Winkler 2012). Within the agricultural sector, however, Africa appears to have begun to diversify gradually over time. The top-ten exported products (according to HS4 categorizations⁴) represented 57 percent of all exports in 1998 and 43 percent in 2013, indicating a decrease in the concentration of exports (Figure 2.17). Nevertheless, six of the

top ten products in 1998 were also among the top ten in 2013. Cocoa beans were the region's most exported agricultural product in both 1998 and 2013. Coffee and cotton emerged as the second and third most exported products in 1998, representing US\$2 billion and US\$1.5 billion, respectively. Among others, sugar, tobacco, tea, citrus fruit, grapes, and apples were also among the top ten exported agricultural products in 1998. Exports of cotton, citrus fruit, and tobacco declined after 1998, whereas cigars and cigarettes, oilseeds, and frozen fish—which were absent from the list in 1998—were among the top ten exported products in 2013.

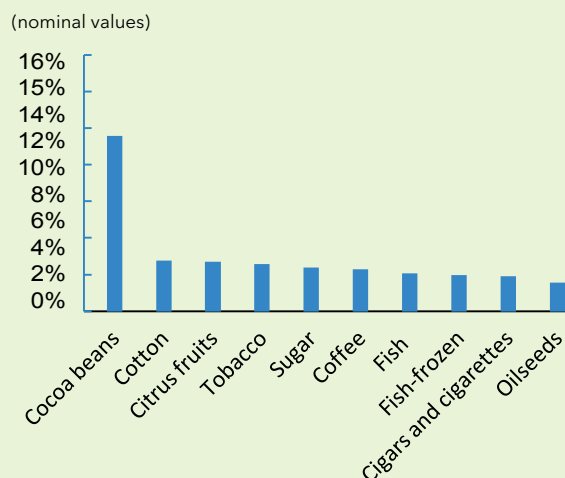
⁴The Harmonized System (HS) is an international nomenclature for the classification of products that allows participating countries to classify traded goods on a common basis for customs purposes.

Figure 2.17. Top ten agricultural export products by value, 1998



Source: CEPII (2015).

Figure 2.18. Top ten agricultural export products, by value, 2013

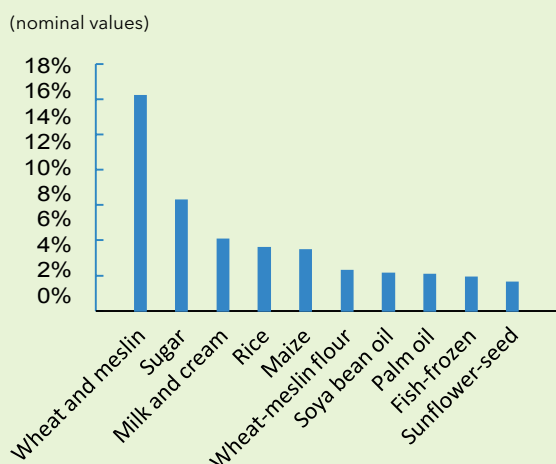


Source: CEPII (2015).

Unlike exports, Africa's imports remained relatively stable over time in terms of both composition and shares (Figure 2.18). In 1998 the top-ten (HS4) products represented 52 percent of imports, compared with 49 percent in 2013. Eight of the top-ten commodities imported in 1998 were also among the top ten in 2013 (Figures 2.19 and 2.20).

Wheat and meslin flour headed the top-ten list in both years. Sugar ranked second in 1998 and third in 2013; rice ranked fourth in 1998 and second in 2013. New entries into the top ten imported products in 2013 were meat and edible offal, and cigars and cigarettes, in place of wheat and meslin flour, and sunflower seed in 1998.

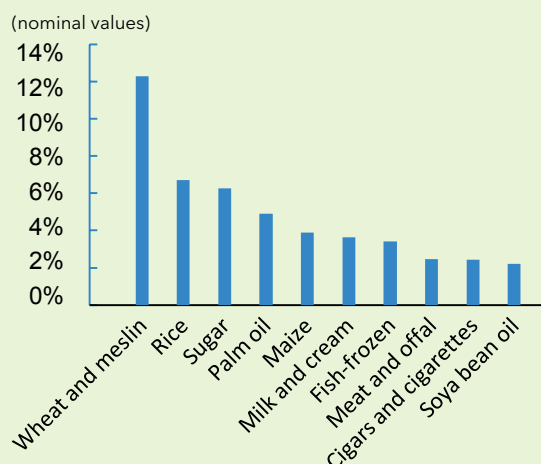
Figure 2.19. Top ten imported products, 1998



Source: CEPII (2015).

Note: Calculated based on share of agricultural imports.

Figure 2.20. Top ten imported products, 2013



Source: CEPII (2015).

Note: Calculated based on share of agricultural imports.

Changes in Unit Values of Agricultural Exports and Imports

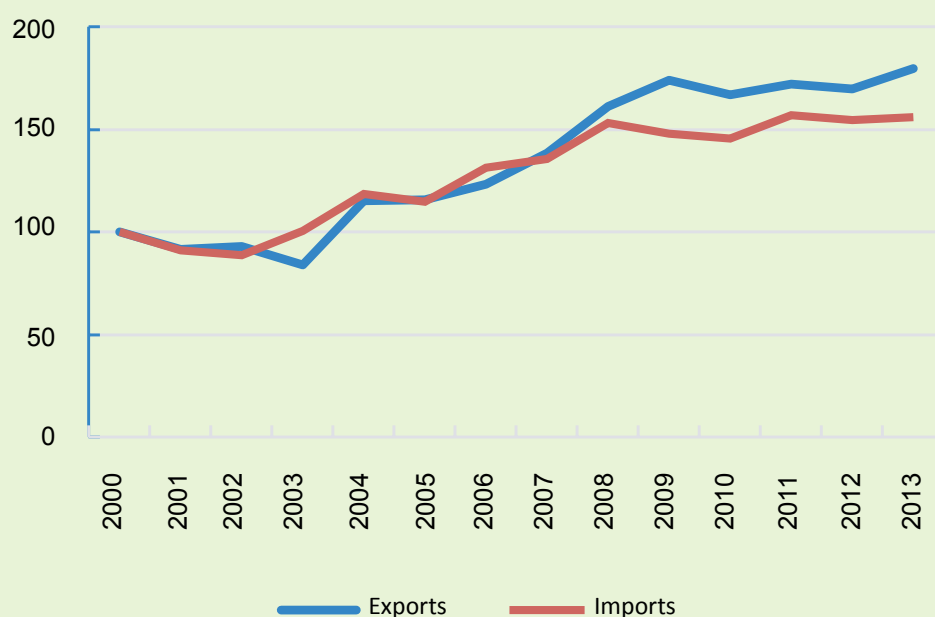
Trends in agricultural imports and exports from 2000 until 2013 indicate changes in unit values (Figure 2.21). This can be explained with reference to the so-called Prebisch-Singer hypothesis (Prebisch 1950; Singer 1950), which argues that over the long run the price of primary commodities declines relative to the price of manufactured goods, causing the terms of trade to deteriorate in countries that export primary products and import manufactured ones. Nevertheless, recent research on this topic has yielded mixed results (Arezki et al. 2013).

Overall, the unit values of both agricultural imports and exports rose during 2000–2013,

following a mixed pattern (Figure 2.21).

From 2000 to 2007, trends in both indicators show a significant increase, with imports rising faster than exports, yielding a slight deterioration of the agricultural terms of trade. During 2008–2013, the unit value of exports outstripped the unit value of imports. This improvement was mainly due to the huge increase in commodity prices in the late 2000s, which is in line with global trends in terms of trade for Africa (UNCTAD 2015). This trend is more relevant for agricultural trade than for total trade, where nonagricultural products (oil and minerals) were the contributing factor.

Figure 2.21. Trends in the unit value of exports and imports, 2000–2013 (100=2000)



Source: CEPII (2015).

Conclusion

Africa experienced a significant increase in the value of both its exports and its imports over the 1998–2013 period, boosted by increased international commodity prices. However, from 1998 to 2013, imports grew more rapidly than exports, in both percentage and value terms, yielding a growing trade deficit. This trend was driven by increased imports, mainly due to population and economic growth, changes in dietary patterns, increasing income levels, and the lack of competitiveness of the domestic sector. Among the main RECs, the SADC region is the only one to record a surplus for the entire period.

Africa's share of global trade in agriculture remained stable around 4 percent, with some small fluctuations between 2010 and 2013. Trends in market shares for the main RECs indicate a regular decline for ECCAS and SADC, relative stability for COMESA, and a highly volatile pattern for ECOWAS. One of the main interesting features is the decline in the agricultural sector's contribution to Africa's total exports, which was cut by half during 1998–2013 to the benefit of minerals and fossil fuels.

The composition of agricultural exports and imports in Africa was mixed, with exports becoming increasingly more diversified and imports remaining relatively stable. Indeed, Africa's agricultural exports seem to have started a gradual diversification. As of 2013, the top ten (HS4) exported products constituted 43 percent of exports compared with 57 percent in 1998. Nevertheless, most of the top-ten exported commodities in 1998 were still among the top ten in 2013, with a concentration of cocoa beans, coffee and cotton. Unlike exports, both the composition and shares of Africa's imports remained quite stable during 1998–2013. The top-ten (HS4) products still represented half the imports, with cereals (wheat, rice, maize) and sugar remaining dominant, combined with an increase in protein (meat and offal, and fish).

In terms of directions of trade, both imports and exports with the European market declined from 2000, although the EU remains Africa's predominant trade partner. At the same time, Asia emerged as a major import and export partner. If the trend were to continue, Asia will soon overtake the EU to become Africa's primary trade partner. It is worth noting that the ability to meet export standards, including sanitary and phytosanitary measures, still dampens Africa's export potential, especially in European and U.S. markets. The risk of the erosion of preferences for some African countries also exists; the EU, for instance, has ongoing negotiations with some of Africa's competitors, such as Asia and Latin America—the main commodities at risk being cocoa beans and bananas.

African countries have also expanded trade within the region in recent years and have hence become less dependent on international markets. In particular, the shares of agricultural imports and exports among African countries more than doubled between 2000 and 2013. Recent improvement in intra-African trade can be attributed to efforts to integrate African markets at both regional and international levels (Bouet, Laborde, and Deason 2013). Despite this improvement, intra-African trade is still low and needs to be strengthened. Market fragmentation—including lack of infrastructure; monetary, tax, and trade fragmentation; and bureaucratic barriers for traders—limits the development of the region's trade potential. These barriers should be addressed with priority because they increase price instability within the region and negatively affect food security (NEPAD 2013; Badiane, Odjo, and Jemaneh 2014).

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Appendix 2A. BACI: The International Trade Database at the Product Level

The BACI database is defined at a high level of product disaggregation and is the main source used throughout this chapter. BACI is based on data from the UN Comtrade database, which is the world's largest database of trade statistics, maintained by the United Nations Statistics Division. Comtrade is the main global source of trade statistics in goods, covering more than 95 percent of world trade. BACI endeavors to improve on UN Comtrade by addressing the key issues of missing information for some African countries, reporting in different nomenclatures, lack of distinction between zero trade flows and missing values in raw data, and so on. To address the issues, BACI has developed a procedure that reconciles exporter and importer

declarations using both mirror data and gravity modeling (see Gaulier and Zignago 2010). This procedure significantly increases the number of countries with available data.

In its standard version, BACI provides export values and quantities at the HS six-digit level. Data are provided for over 200 countries from 1995 onward, and the database is updated annually. The retreatment of data is particularly important for countries that do not report frequently to Comtrade (especially in Africa). Appendix Table 2A.1 illustrates the data issue and the absence of reporting for ECOWAS countries to UN Comtrade from 1988 to 2010. In BACI, all countries are observed for imports and exports.

Appendix Table 2A.1. ECOWAS countries' declarations to United Nations Comtrade

Country	1988	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Benin	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
Burkina Faso				Y	Y	Y	Y	Y		Y	Y	Y	Y	9
Côte d'Ivoire				Y		Y	Y	Y	Y	Y	Y	Y	Y	9
Cabo Verde	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
Ghana						Y	Y	Y	Y	Y	Y	Y	Y	8
Guinea	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y			10
Gambia	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
Guinea-Bissau						Y	Y	Y						3
Liberia														0
Mali	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	12
Niger	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
Nigeria		Y		Y	Y	Y			Y	Y	Y	Y	Y	9
Senegal	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
Sierra Leone														0
Togo	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	12
Number of countries declaring imports	8	9	8	11	10	12	12	12	10	12	12	10	11	

Source: United Nations (2016).

Note: ECOWAS = the Economic Community of West African States. Y = yes if a country declares in the year in question

Appendix 2B. Main Descriptive Statistics

Appendix Table 2B.1. Africa's top 15 exported products by destination, 2013 (nominal values)

World			Africa			North, Central and South America		
HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)
1801	8,949,056	2,588,938	2402	1,659,452	34,813.8	1801	933,360	355,881.7
5201	2,590,810	1,517,283	0303	919,411.9	1,424,777	0901	224,440.7	63,762.3
0805	2,535,454	3,700,486	1701	669,666.3	2,604,785	0805	187,423.8	162,056.8
2401	2,417,195	527,845.9	0709	582,662.9	131,412.5	1803	182,423.8	49,903.4
1701	2,257,720	6,833,846	0902	513,835.6	241,690.7	1509	140,348.4	37,054.3
0901	2,151,131	1,137,948	2401	351,878.4	123,330.4	2204	119,619.3	45,068.3
1604	1,948,820	486,239.3	1511	344,980.4	2,543,051	0303	118,032	57,591.9
0303	1,853,421	1,834,613	1005	295,261.2	1,589,105	2401	102,585.4	25,137.2
2402	1,801,219	46,722.3	1101	285,483	2,860,764	0802	100,752.7	30,831.8
1207	1,472,631	12,451,721	0901	278,569.7	402,602.5	1005	100,256.6	293,195.7
0801	1,452,097	1,611,323	2106	266,778.5	128,092.1	0801	90,033.5	39,679.8
0902	1,347,222	526,269.2	1902	225,433.6	1,218,597	1604	85,488.5	14,904.2
1803	1,346,488	391,861.1	0102	215,255.4	144,427.8	0603	78,142.3	30,699.3
0603	1,274,794	266,750.3	2202	207,381.9	307,924.4	1802	77,175.9	23,988.4
0307	1,097,386	246,285.3	1604	196,898.9	82,363.4	1211	56,772.5	27,141.3

Appendix Table 2B.1 continued.

Asia			European Union		
HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)
1801	3,999,891	326,122.8	1801	3,576,260	1,738,438
5201	2,136,118	1,261,332	1604	1,582,322	367,771.1
0801	1,264,986	1,440,414	1701	1,112,135	3,388,362
0805	1,214,586	1,984,923	0901	1,056,904	468,869.4
1207	1,020,944	650,511.8	0805	954,438.1	1,170,226
2401	1,004,399	151,146	0603	908,689.2	187,579.4
0902	516,089.2	173,524	1803	882,639.2	259,285.2
0307	453,306.5	100,128.9	2401	767,497.2	189,279.5
0901	403,178.8	132,506.4	0806	710,809.7	315,833.6
0406	385,945.1	100,727.4	1804	635,869.3	125,528.2
1005	370,671.5	1,250,419	0307	627,574.8	128,131.7
0104	369,376.8	114,676.2	0803	611,995.4	630,686.3
0713	336,437.6	1,635,826	2204	599,264.4	347,734.6
0303	318,154.1	137,725.6	0304	571,980.9	111,401.3
5101	266,543.5	46,343.2	0702	540,095.2	467,447.5

Source: CEPII (2015).

Note: HS = Harmonized System.

See the list of products corresponding to the HS nomenclature in Appendix Table 2B.4.

Appendix Table 2B.2. Africa's top 15 imported products by origin, 2013 (nominal values)

World			Africa			North, Central and South America		
HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)
1001	11,315,164	37,956,637	2402	1,659,452	34,813.8	1701	4,011,909	9,411,226
1006	6,192,685	15,621,186	0303	919,411.9	1,424,777	1001	3,148,162	10,857,641
1701	5,789,882	15,825,559	1701	669,666.3	2,604,785	1005	2,303,404	8,999,137
1511	4,536,369	10,423,995	0709	582,662.9	131,412.5	2304	1,835,747	4,138,790
1005	3,606,254	14,965,351	0902	513,835.6	241,690.7	0207	1,423,035	1,123,708
0402	3,365,801	1,062,497	2401	351,878.4	123,330.4	1507	1,006,265	1,293,838
0303	3,164,988	2,972,965	1511	344,980.4	2,543,051	1201	984,894.7	1,782,988
0207	2,295,812	1,755,920	1005	295,261.2	1,589,105	0202	738,227.8	251,871
2402	2,256,805	89,823.4	1101	285,483	2,860,764	0402	649,771.9	170,187.6
1507	2,044,662	2,457,679	0901	278,569.7	402,602.5	0713	387,738.9	522,599
2304	1,926,556	4,629,271	2106	266,778.5	128,092.1	1006	369,890.1	1,135,149
1901	1,749,542	795,508.4	1902	225,433.6	1,218,597	0303	314,510.4	242,943.1
0202	1,505,473	570,665.6	0102	215,255.4	144,427.8	0206	254,577.8	198,430.5
2106	1,461,689	577,673.1	2202	207,381.9	307,924.4	2207	224,787.8	228,138.2
0902	1,161,753	438,684.9	1604	196,898.9	82,363.4	2303	211,352.9	484,886.2

Appendix Table 2B.2. Continued.

Asia			European Union		
HS4	Value US\$ (thousands)	Volume (tons)	HS4	Value US\$ (thousands)	Volume (tons)
1006	5,568,320	13,508,022	1001	4,772,036	14,966,210
1511	4,142,895	7,450,407	0402	1,560,448	453,891.9
1001	1,562,951	5,523,065	1901	1,272,133	347,804.6
1701	816,755.5	3,337,692	0303	1,161,104	712,226.3
1604	789,623.4	284,669.2	2106	829,718.2	245,938.9
0202	664,980.4	215,213.5	2208	818,824.5	132,224.1
0902	629,274	192,373.3	2403	805,653.5	41,764.71
0303	618,133.8	496,250.9	1507	784,504.3	724,614.6
2002	442,291	434,381.8	0207	764,927	543,898.6
0402	331,543.1	183,218.5	2204	528,823.8	280,842
0901	309,772.6	138,142.9	2202	469,341.3	506,755.1
1516	272,551.5	305,105.8	1107	462,966.1	1,037,474
1512	241,708.3	273,454.3	2203	415,659.4	421,534
1905	238,722	312,852.2	0102	406,498.5	104,375
2009	232,720.1	336,060.3	2309	405,577.4	687,164

Source: CEPII (2015).

Note: HS = Harmonized System.

See the list of products corresponding to the HS nomenclature in Appendix Table 2B.4.

Appendix Table 2B.3. Exports, imports, and trade balance for main regional economic communities (nominal values)

ECOWAS				ECCAS			COMESA		
Year	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance
US dollars (thousands)									
1998	6,116,465	3,837,574	2,278,891	985,119	1,316,618	-331,499	5,919,690	6,675,268	-755,579
1999	5,705,731	4,070,148	1,635,583	914,239.2	1,138,998	-224,759	5,953,728	6,225,979	-272,251
2000	4,849,950	3,941,394	908,556	864,932.7	1,435,258	-570,325	6,233,086	6,499,117	-266,031
2001	4,959,724	5,063,406	-103,681	870,867.2	1,669,209	-798,342	6,419,539	7,047,405	-627,867
2002	5,691,559	5,443,531	248,028	769,333.3	1,892,355	-1,123,022	6,575,509	7,367,812	-792,304
2003	8,174,045	7,172,308	1,001,737	1,034,457	2,352,183	-1,317,726	7,708,798	8,389,307	-680,509
2004	8,390,249	6,861,849	1,528,401	1,103,567	2,679,544	-1,575,977	8,639,757	9,309,681	-669,924
2005	8,182,928	8,082,486	100,442	1,259,674	3,046,911	-1,787,236	9,907,420	10,646,105	-738,685
2006	8,111,680	9,648,551	-1,536,872	1,250,582	3,733,047	-2,482,466	10,584,645	12,464,647	-1,880,001
2007	10,009,034	13,088,053	-3,079,019	1,427,620	4,784,696	-3,357,075	12,404,233	15,811,640	-3,407,407
2008	12,135,190	14,878,796	-2,743,606	1,590,252	6,346,862	-4,756,611	14,845,553	24,695,229	-9,849,676
2009	13,785,804	14,440,253	-654,449	1,769,146	5,992,694	-4,223,548	15,491,756	22,310,479	-6,818,723
2010	15,283,877	15,294,911	-11,034	1,800,128	6,405,823	-4,605,695	16,988,548	28,408,191	-11,419,643
2011	18,861,303	28,161,899	-9,300,596	1,900,651	8,795,311	-6,894,660	19,639,714	33,633,079	-13,993,364
2012	19,185,691	20,650,589	-1,464,898	1,860,603	9,031,307	-7,170,704	18,108,289	32,659,977	-14,551,688
2013	20,289,380	21,339,574	-1,050,194	1,767,716	9,572,699	-7,804,983	19,923,744	29,564,524	-9,640,780

Appendix Table 2B.3. Continued.

SADC				AMU		
Year	Exports	Imports	Trade balance	Exports	Imports	Trade balance
US dollars (thousands)						
1998	7,316,775	3,996,326	3,320,449	2,253,018	5,898,554	-3,645,536
1999	7,414,659	3,550,548	3,864,111	2,603,562	5,080,264	-2,476,702
2000	7,674,486	3,686,711	3,987,775	2,664,439	5,519,295	-2,854,856
2001	8,231,349	3,772,930	4,458,419	2,695,109	5,702,532	-3,007,422
2002	8,705,809	4,728,753	3,977,056	3,084,234	6,698,156	-3,613,922
2003	9,624,956	5,483,425	4,141,531	3,564,657	6,679,442	-3,114,786
2004	10,467,023	6,865,226	3,601,797	4,242,618	8,502,594	-4,259,976
2005	10,838,574	7,175,830	3,662,744	4,837,408	8,735,021	-3,897,613
2006	11,324,527	8,807,677	2,516,850	5,359,433	9,470,486	-4,111,052
2007	12,726,162	10,976,492	1,749,670	6,482,675	13,694,306	-7,211,631
2008	14,353,135	13,310,628	1,042,507	7,558,859	18,944,213	-11,385,353
2009	14,667,621	12,187,492	2,480,129	6,764,896	14,714,422	-7,949,526
2010	15,569,389	13,877,386	1,692,003	6,821,328	17,067,732	-10,246,405
2011	18,192,694	18,090,398	102,296	7,905,469	22,378,653	-14,473,184
2012	17,702,902	18,748,276	-1,045,374	7,579,879	22,748,748	-15,168,869
2013	19,622,634	19,302,801	319,833	8,232,886	24,009,848	-15,776,961

Source: CEPII (2015).

Note: AMU = Arab Maghreb Union; COMESA = Common Market for Eastern and Southern Africa; ECCAS = the Economic Community of Central African States; ECOWAS = the Economic Community of West African States; SADC = the Southern African Development Community.

Appendix Table 2B.4. List of products corresponding to the HS 4 nomenclature

HS4	Product description
0102	Live bovine animals
0104	Live sheep and goats
0202	Meat of bovine animals, frozen
0206	Edible offal of bovine animals, swine, sheep, goats, horses, asses, mules or hinnies, fresh, chilled, or frozen
0207	Meat and edible offal of the poultry of heading No. 01.05, fresh, chilled, or frozen
0303	Fish, frozen, excluding fish fillets and other fish meat of heading No. 03.04
0304	Fish fillets and other fish meat (whether or not minced); fresh, chilled, or frozen
0307	Molluscs, whether in shell or not; live, fresh, chilled, frozen, dried, salted or in brine; aquatic invertebrates other than crustaceans and molluscs, live, fresh, chilled, frozen, dried, salted or in brine; flours, meals and pellets
0402	Milk and cream, concentrated or containing added sugar or other sweetening matter
0406	Cheese and curd
0603	Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared
0702	Tomatoes, fresh or chilled
0709	Other vegetables, fresh or chilled
0713	Dried leguminous vegetables, shelled, whether skinned or split or not
0801	Coconuts, Brazil nuts and cashew nuts, fresh or dried, whether shelled or peeled or not
0802	Other nuts, fresh or dried, whether shelled or peeled or not
0803	Bananas, including plantains, fresh or dried
0805	Citrus fruit, fresh or dried
0806	Grapes, fresh or dried
0901	Coffee, whether roasted or not, or decaffeinated; coffee husks and skins; coffee substitutes containing coffee in any proportion
0902	Tea, whether flavored or not
1001	Wheat and meslin
1005	Maize (corn)
1006	Rice
1101	Wheat or meslin flour
1107	Malt, whether roasted or not
1201	Soybeans, whether broken or not
1207	Other oil seeds and oleaginous fruits, whether broken or not
1211	Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether cut or not, or crushed or powdered.
1507	Soybean oil and its fractions, whether refined or not, but not chemically modified
1509	Olive oil and its fractions, whether refined or not, but not chemically modified
1511	Palm oil and its fractions, whether refined or not, but not chemically modified
1512	Sunflower-seed, safflower or cotton-seed oil and fractions thereof, whether refined or not, but not chemically modified
1516	Animal or vegetable fats and oils and their fractions, partly or wholly hydrogenated, inter-esterified, re-esterified or elaidinised, whether or refined not, but not further prepared
1604	Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs
1701	Cane or beet sugar and chemically pure sucrose, in solid form
1801	Cocoa beans, whole or broken, raw or roasted
1802	Cocoa shells, husks, skins and other cocoa waste
1803	Cocoa paste, whether defatted or not
1804	Cocoa butter, fat, and oil
1901	Malt extract; food preparations of flour, meal, starch or malt extract, not containing cocoa or containing less than 40 percent by weight of cocoa calculated on a totally defatted basis, not elsewhere specified or including; food preparations
1902	Pasta, whether cooked or not or stuffed (with meat or other substances) or otherwise prepared, such as spaghetti, macaroni, noodles, lasagna, gnocchi, ravioli, cannelloni; couscous, whether prepared or not
1905	Bread, pastry, cakes, biscuits and other bakers' wares, whether containing cocoa or not; communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper and similar products
2002	Tomatoes prepared or otherwise preserved with vinegar or acetic acid

Appendix Table 2B.4. Continued.

HS4	Product description
2009	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether containing added sugar or other sweetening matter or not
2106	Food preparations not elsewhere specified or included
2202	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavored, and other nonalcoholic beverages, not including fruit or vegetable juices of heading No. 20.09
2203	Beer made from malt
	Wine of fresh grapes, including fortified wines; grape must other than that of heading No. 20.09
2204	Undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent or higher; ethyl alcohol and other spirits, denatured,
2207	of any strength
2208	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 percent; spirits, liqueurs, and other alcoholic beverages
2303	Residues of starch manufacture and similar residues, beetpulp, bagasse, and other waste of sugar manufacture, brewing or distilling dregs and waste, whether in the form of pellets or not
2304	Oilcake and other solid residues, whether ground or in the form of pellets or not, resulting from the extraction of soybean oil
2309	Preparations of a kind used in animal feeding
2401	Unmanufactured tobacco; tobacco refuse
2402	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes
2403	Other manufactured tobacco and manufactured tobacco substitutes; homogenized or reconstituted tobacco; tobacco extracts and essences
5101	Wool, not carded or combed
5201	Cotton, not carded or combed

Source: CEPII (2015).

Note: HS = Harmonized System.