AFRICAN DEPARTMENT

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Trade in Medical Goods: Challenges and a Way Forward for Sub-Saharan Africa

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The COVID-19 crisis has magnified Africa's dependence on imported medical goods and underscored the urgency to diversify the sources of supply, build resilient intraregional production networks, and eliminate barriers to trade in the health sector. Timely implementation of the African Continental Free Trade Agreement could support the creation of resilient and sustainable health systems and help reduce Africa's exposure to future health shocks.

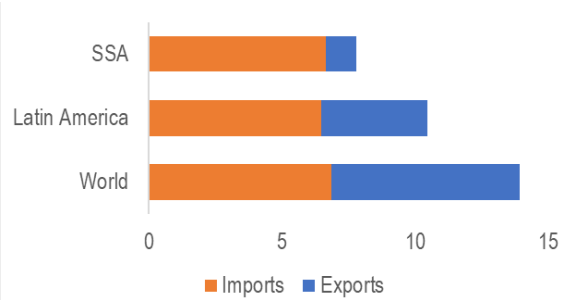
Synchronized worldwide lockdowns in response to the COVID-19 pandemic caused disruptions to global supply chains in sub-Saharan Africa. While the initial cases materialized later in sub-Saharan Africa than elsewhere, many countries in the region followed advanced and emerging market economies into national lockdowns much sooner in an attempt to contain the spread of the virus. The resulting port closures and related increases in nontariff barriers fomented a collapse in trade at the onset of the pandemic, with exports volumes in Africa and Middle East experiencing sharper decline than during the global financial crisis.

Trade in medical goods was severely impacted as countries experienced supply shortages in the face of soaring demand.[1] Demand for critical medical supplies (for example, personal protective equipment (PPE), ventilators, and medicines) surged at the outset of the crisis. Major exporters of such products imposed export restrictions to meet the domestic demand, while net importers eliminated tariffs to encourage imports. This has highlighted the importance of maintaining a reliable supply of medical goods, with implications for the extent to which countries should rely on foreign supplies versus domestic production. The earlier shortages of medical goods have subsequently subsided as resources have been reallocated, but demand for such essential goods is expected to persist given the lags in the vaccine rollout, especially in low-income countries.

[1] Medical goods are defined using the WTO-WCO and World Bank classifications of COVID-19-related medical supplies and include 154 products at the HS 6-digit level.

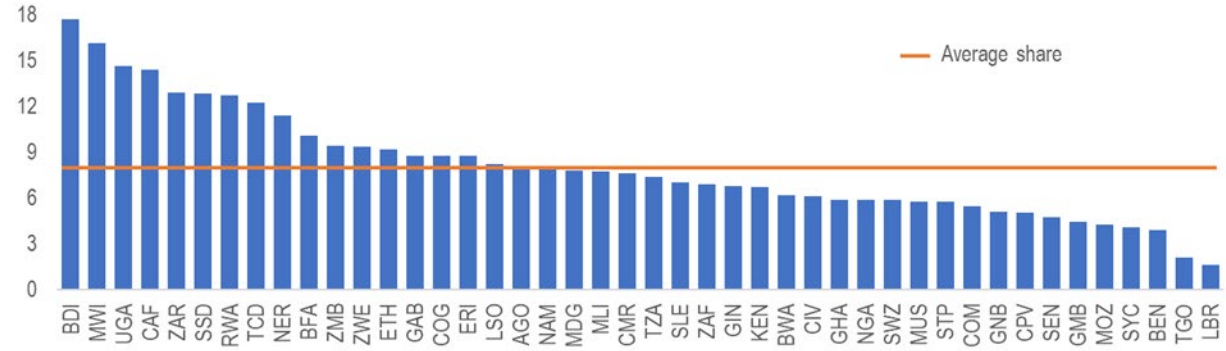
Sub-Saharan African countries rely heavily on imported medical products to meet their healthcare demands. Globally, medical goods accounted for 6.8 percent of global imports in 2019 (Figure 1).[2] Sub-Saharan Africa is a net importer of medical goods, which accounted for 6.8 percent of total imports but only 1.1 percent of exports in 2019.[3] For comparison, while Latin America is also a net importer of medical goods, its export share of medical goods is four times larger than that of sub-Saharan Africa. However, dependence on imports of medical goods varies greatly across countries in the region. The share of medical goods in total imports ranges from about 2 percent in Togo and Liberia to close to 18 percent in Burundi, with the average country's imports of medical goods at 8 percent (Figure 2).

Figure 1. Share of Medical Goods in Total Exports and Imports, 2019 *(Percent)*



Sources: UN Comtrade; and IMF staff calculations.

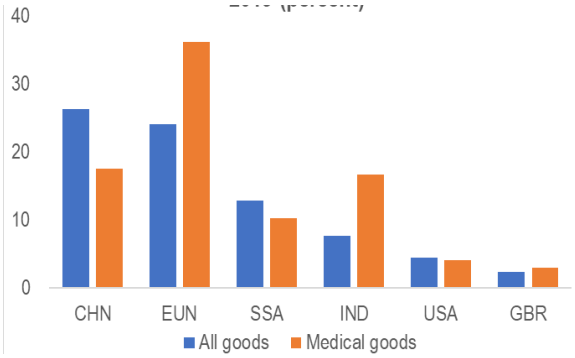
Figure 2. Share of Medical Goods Imports by Country, 2019 *(Percent)*



Sources: UN Comtrade; and IMF staff calculations.

Medical goods are supplied to the region by a handful of countries. Imports of medical goods are highly concentrated across the globe. In sub-Saharan Africa, five source countries supply more than 85 percent of medical goods. While China has emerged as the largest source of SSA total imports at 26 percent (Figure 3, blue bars), the European Union is the top supplier of medical goods to the region at 36 percent (although its share has been shirking over the last decades), followed by China and India at 17–18 percent (Figure 3, orange bars).[4] The concentration of source countries is particularly high for PPE and test kits. For instance, 63 percent of PPE imports come from China (45 percent) and the European Union (18 percent), while

Figure 3. Top Source Countries for SSA Imports, 2019 *(Percent)*



Sources: UN Comtrade; and IMF staff calculations.

[2] Excluding SSA, medical goods accounted for 7.2 percent of global exports in 2019.

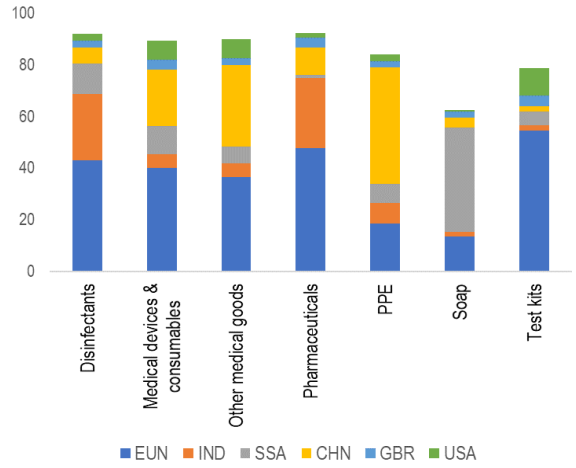
[3] The data used in this note come from UN Comtrade, accessed via WITS. Mirrored trade flows are used to compile all figures for SSA.

[4] Similarly, in Latin America, more than 80 percent of medical goods is supplied by five countries, with the United States being the largest supplier at 35 percent, followed by the European Union at 27 percent and China at 11 percent.

65 percent of test kits are sourced from the European Union (55 percent) and United States (10 percent).[5] The supply of soap is more diverse: in addition to the top five source countries, sub-Saharan Africa imports soap in considerable quantities from nontraditional trade partners such as Indonesia (18 percent) and Malaysia (11 percent). Such high concentration implies that the region is vulnerable to any potential trade restrictions from key suppliers that could adversely affect the availability of essential medical goods and the overall health policy response.

For some countries in the region, medical goods are primarily sourced locally. Intra-regional trade in medical goods is not insignificant—10 percent of medical imports originate from within the region (Figure 3).[6] More specifically, more than 70 percent of medical goods imports in Namibia and Swaziland originate from within the region (Annex Table 1). Zooming in on the composition of intra-regional trade, soap appears to dominate the intra-regional trade (Figure 4). With the exception of soap, it appears there is relatively low intra-regional trade in other key medical goods, suggesting there is scope for ramping up intra-regional production and distribution of medical goods going forward.

Figure 4. Top Sources of Medical Goods Imports by Category, 2019 *(Percent)*



Sources: UN Comtrade; and IMF staff calculations.

Products essential in preventing the spread of the virus appear to have been traded less before the pandemic. With more than 60 percent of imports in medical goods in disinfectants, medical devices, consumables, test kits, and PPE, two categories of products deemed essential in preventing the spread of the virus accounted for a relatively small share in total imports of medical goods in 2019 (Figure 5). For example, in some countries (Togo, Chad, Democratic Republic of Congo), test kits account for less than 2 percent of imports of medical goods.

Vaccine rollout in developing countries remains uncertain and would require international coordination and support for multilateral initiatives. There have been regional and international initiatives to ensure that low- and middle-income countries would access the vaccine in a timely manner, including the COVID-19 Vaccine Global Access (COVAX) Facility, created by Gavi, the Vaccine Alliance.[7] However, there has been very little vaccination in SSA countries as of [February 2021] compared to other regions, and sizable uncertainty remains as to when the vaccine would be deployed with some estimates stretching to 2023.[8] To this end, an international cooperation in support of such initiatives will help avoid leaving hundreds of millions of people in SSA and other regions without access to a vaccine, as it was the case during the H1N1 flu crisis in 2009.[9] In the face of a relentless virus, a timely global rollout would show international solidarity with poorer countries, while also preventing further virus mutations endangering the efficacy of the vaccine everywhere.

[5] January–November data for 2020 suggest that the value of test kit imports from China increased eight-fold, while that from the European Union and United States grew by 33 and 9 percent, respectively. While the quantity data are not available for China, the data for the European Union and Unites States point to a sharp increase in unit values, 34 and 5 percent, respectively (Figure 7).

[6] The magnitude of intra-regional trade is potentially understated, given the lack of reporting by some countries in the region available in the UN Comtrade.

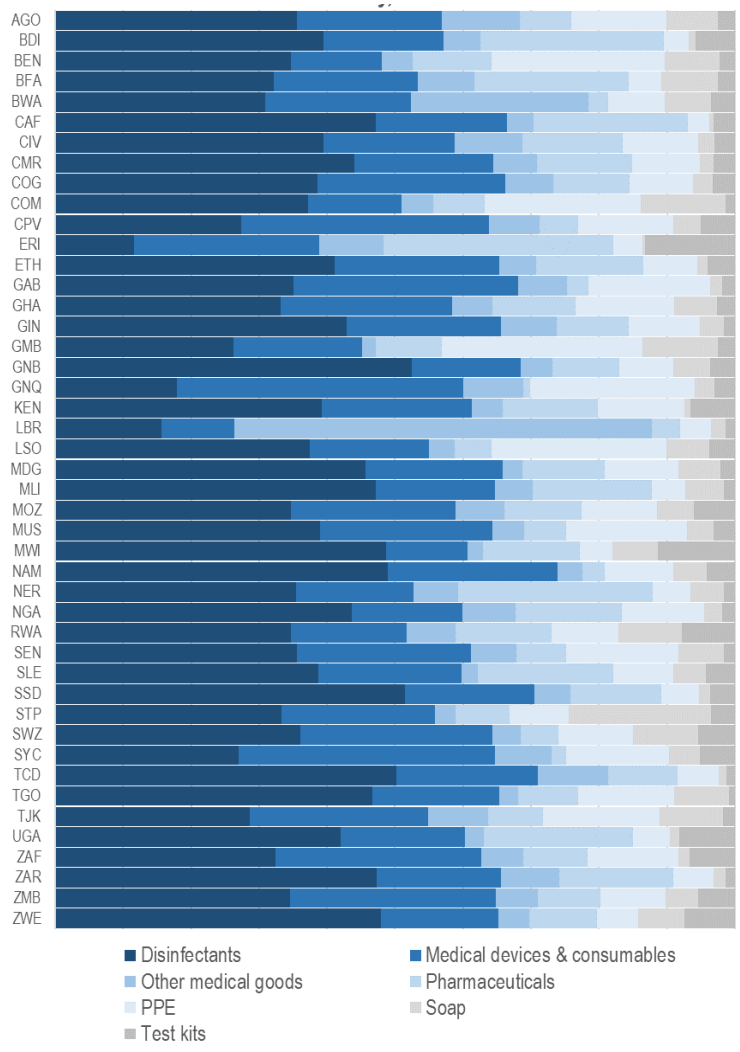
[7] It is co-led by the World Health Organization and the Coalition for Epidemic Preparedness Innovations.

[8] See More Than 32.4 Million Shots Given: Covid-19 Vaccine Tracker https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/

[9] See https://www.project-syndicate.org/commentary/covax-vaccine-access-for-developing-and-emerging-economies-by-ngozi-okonjo-iweala-2021-01.

In parallel, countries must tackle a range of logistical hurdles to be ready for vaccine deployment. In addition to securing the needed doses, the rollout of the vaccine would also require tackling the logistical chain which includes transportation, cold chain, and service delivery which combined could cost about $6 per person (World Bank). To this end, the WHO and the World Bank introduced an assessment tool of program readiness to introduce the vaccine along key relevant dimensions (for example, planning, budgeting, logistics, training, community outreach, and regulation).[10] It shows that as of January 2021 there were disparate levels of readiness in the region. While Rwanda and Senegal have completed about 60 and 50 percent of the pillar components, respectively, many countries are lagging. For example, Republic of Congo, Burundi, Chad, and Madagascar have not even started implementing two-thirds of the pillar components.

Figure 5. Imports of Key Medical Product Categories by Country, 2019



Sources: UN Comtrade; and IMF staff calculations.

While waiting for the deployment of a vaccine, experimenting with massive rapid testing could help reopen economies safely and spur new industries and innovation on the continent. In the short term, masks, contact tracing, and social distancing are the key weapons against the virus but in the face of a more virulent variant they may not be enough to avoid repeated lockdowns and the exorbitant costs they imply. Many epidemiologists and economists have been arguing in favor of a universal testing and isolation policy (TIP) as a viable strategy to vanquish the pandemic and reopen economies safely.[11] It would help halt the pandemic while a vaccine is being deployed and ensure against the sizable uncertainty about the timing of its availability. Although not all experts agree on its feasibility or effectiveness, experimentation with this strategy would still be economically worthwhile even with very small odds of success.[12] Finally, the crisis has shown that SSA countries are capable of cutting-edge innovation that is adapted to their context, and universal testing could help scale up these efforts and spur new industries.[13] For example, Senegal's Pasteur Institute, a public biomedical research center, in collaboration with partners in the United Kingdom, is developing an affordable ($1 per test) COVID-19 test kit that can give results in minutes and can be used in remote areas as it does not require specialized training, electricity, or a laboratory. However, state intervention would be necessary to

[10] See https://www.who.int/publications/i/item/WHO-2019-nCoV-Vaccine-introduction-RA-Tool-2020.1.

[11] Among others Paul Romer, Michael Mina, the Safra Center for Ethics at Harvard University, and Cherif and Hasanov. 2020. IMF Working Paper.

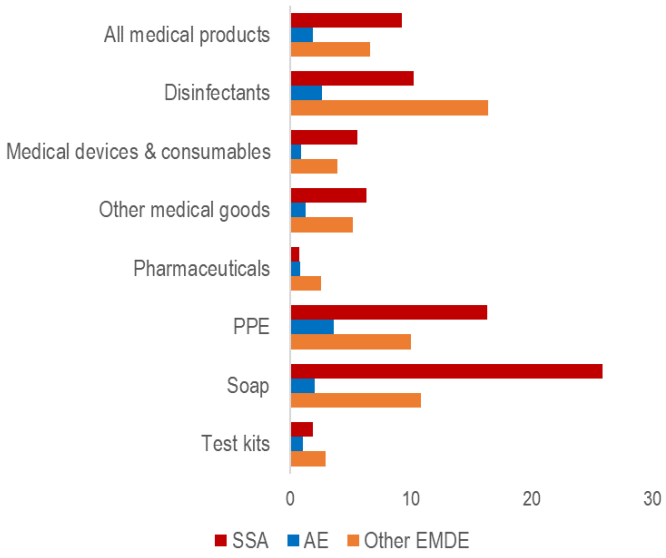
[12] See https://www.weforum.org/agenda/2020/12/universal-testing-best-hedge-covid-19-heres-why/.

[13] See https://www.cnn.com/2020/11/10/africa/senegal-coronavirus-rapid-testing-spc-intl/index.html.

achieve a rapid scale up of the production of tests and vaccines in the face of many market failures, including uncertainty and coordination failures provided that competition and accountability are ensured.[14] This could be achieved in countries which already have production capabilities (for example, South Africa with vaccines). Creating an ecosystem around these new test technologies could both help in the battle against the pandemic and other diseases while creating sustainable export industries for the future.

Trade in medical goods may be hampered by relatively high barriers to trade. Sub-Saharan Africa has the highest most-favored-nation tariff rates on medical goods (9.2 percent) compared to advanced economies (1.9 percent) and other emerging market and developing economies (6.6 percent).[15] But there is considerable heterogeneity across various categories of products. The highest import tariffs are on technologically simple goods, such as PPE and soap (for instance, tariffs on hand soap in Cabo Verde and Zimbabwe reach 40 percent), and the lowest are on more complex goods, where there is little or no production capacity, such as test kits, pharmaceuticals, and medical devices and consumables (Figure 6).[16] In addition, the production of medical supplies requires a more stringent quality control, a binding non-tariff barrier for many countries in the region. Of 45 SSA countries, 33 offer preferential tariff rates to other SSA countries on some medical products: the average preferential rate on such products is 0.2 percent, compared to the average MFN tariff rate of 15 percent. Eleven SSA countries also offer preferential tariffs rates on a fairly small set of products imported from outside of the region, most notably from the European Union: the average preferential rate on such products is about 3 percent, compared to the average MFN tariff rate of 16 percent. Furthermore, the average bound tariffs on medical goods are five times higher than applied tariffs, making trade policies less predictable in the region.

Figure 6. Average MFN Tariff rates, 2019



Sources: WTO; and IMF staff calculations.

There is scope to temporarily reduce or eliminate high tariffs on medical goods to support the public health response. According to the Global Trade Alert, only eight countries in the region (Angola, Chad, Malawi, Mauritius, Niger, Nigeria, South Africa, and Zambia) have temporarily reduced or eliminated import tariffs and sales/VAT taxes on medical goods in 2020, and in three countries these measures have already lapsed. As the pandemic continues to grapple the region, further measures to reduce or eliminate tariffs could reduce the skyrocketing healthcare costs and expand access to a range of foreign suppliers.

Major suppliers introduced non-tariff measures that curbed exports of essential medical goods. All key countries that supply essential medical goods to the sub-Saharan Africa have restricted their exports in order to stockpile and ensure domestic supply. For instance, India prohibited exports of certain PPE as early as on January 31, 2020. By early April, such restrictions were expanded to include pharmaceuticals, ventilators, sanitizers, test kits, and other medical goods exported from India. And the list of countries introducing such

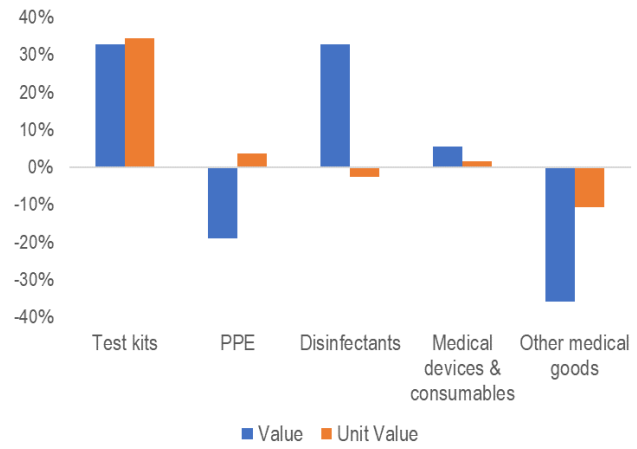
[14] See https://www.healthaffairs.org/do/10.1377/hblog20201102.521193/full/.

[15] Data on MFN, preferential and bound tariffs are obtained from the WTO tariff database.

[16] This could help explain the larger share of soap imports originating from within the region as discussed above (Figure 4), since the difference between MFN and intra-regional preferential tariff rates is much larger.

measures grew rapidly to include United Kingdom, European Union, and United States. Some of these temporary measures have since lapsed, but others remain in place.[17] This has led to sharp decline in the volume of such exports to SSA; for instance, PPE exports from EU dropped by 20 percent year over year in January–September 2020 with no major change in unit values (Figure 7). Policies that restrict timely, affordable, and equitable access to essential medical supplies are particularly harmful to the poorest and most vulnerable countries which already face considerable economic challenges.

Figure 7. Year-on Year Change in Exports from EU to SSA, Jan-Sep 2019-20



Sources: Eurostat; and IMF staff calculations.

Strong intraregional trade—backed by greater local production and lower barriers to trade—supports building resilient health systems and offers positive solutions to tackle the current pandemic. The scarcity of medical goods, export restrictions, and over-dependence on few suppliers call for greater diversity of suppliers.[18] In some cases, producing key medical supplies domestically or repurposing production lines for more COVID-19-related goods would be beneficial. For example, in Uganda, spirits manufacturers agreed to convert 7.3 million liters of ethanol into hand sanitizers.[19] Furthermore, regional initiatives such as the African Continental Free Trade Agreement could help reduce trade barriers and further encourage regional production, including by moving up the value chain. For example, Cameroon and Ghana export latex but currently do not export any surgical gloves.[20] Following in the footsteps of emerging markets, which became dominant players in the supply of vaccines and other sophisticated medical products despite a lack of "comparative advantage" just two decades ago, SSA countries can build on recent successes to develop new capabilities. For example, Senegal's Insitut Pasteur de Dakar already produces yellow fever vaccine, while in South Africa Biovac Institute and Aspen Pharmacare are involved in the production of vaccines (including the Johnson & Johnson's COVID-19 vaccine) and the Network for Genomic Surveillance in South Africa led by KRISP has created a genomic monitoring system to produce real-time sequencing data in response to the pandemic. An integrated market of 1.3 billion people would help achieve the scale required to make new and developing industries viable. Thus, the ongoing crisis has strengthened the case for developing intraregional value chains and lent support to revitalizing the regional integration agenda with a renewed sense of urgency. Furthermore, there is an urgent need to avoid trade restrictions on vaccines and medical goods as they undermine the health policy responses in the region and hold back the vaccine-powered recovery.

[17] The European Union recently implemented a new export control regime for COVID-19 vaccines scheduled to lapse by end-March. The text of the regulation is available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0111&from=EN.

[18] An alternative longer-term strategy to address medical supply shortages entails establishing a strategic stockpile of critical medical supplies to cushion the impact of supply disruptions during national emergencies.

[19] See https://www.monitor.co.ug/uganda/news/national/gov-t-permits-manufacturers-to-turn-ethanol-into-hand-sanitizers-1882010.

[20] See Strengthening African value chains in medical supplies https://www.un.org/africarenewal/news/coronavirus/strengthening-african-value-chains-medical-supplies.

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Annex Table 1: Dependence on top sources for medical supplies, 2019 (percent)

Country	EU	China	India	SSA	USA	UK
AGO	36.08	15.24	10.20	12.62	7.00	6.74
BDI	37.92	11.95	30.39	14.74	0.17	0.50
BEN	34.85	34.91	15.73	3.04	0.55	0.36
BFA	45.71	7.98	16.97	17.20	5.59	0.68
BWA	27.86	2.74	9.84	57.33	0.32	0.17
CAF	61.80	4.64	24.99	1.82	0.28	0.45
CIV	57.65	10.98	11.43	3.54	1.63	0.46
CMR	43.92	22.51	15.94	1.85	2.40	0.83
COG	54.19	9.70	13.21	2.25	4.92	2.32
COM	41.47	20.49	14.85	8.42	0.50	0.10
CPV	87.06	5.68	1.33	0.29	0.83	0.13
ERI	40.45	16.38	25.52	5.22	2.93	1.11
ETH	39.87	17.87	20.34	1.66	3.65	2.09
GAB	61.41	9.52	2.76	2.42	7.18	6.27
GHA	27.96	26.06	13.65	5.96	6.22	4.76
GIN	36.02	29.23	21.67	4.08	1.13	0.43
GMB	11.96	51.12	14.09	6.74	0.85	3.73
GNB	60.55	4.29	18.55	6.59	2.31	0.19
KEN	21.50	20.93	27.93	4.85	3.30	4.34
LBR	10.79	66.63	7.79	2.26	3.62	0.42
LSO	2.92	1.45	24.38	62.65	0.08	0.04
MDG	41.00	19.06	10.05	14.19	2.52	0.42
MLI	49.09	13.81	12.60	13.31	3.97	0.50
MOZ	17.18	14.80	27.11	28.06	1.79	1.68
MUS	35.22	12.46	19.57	10.50	0.99	3.10
MWI	21.47	5.59	45.97	16.66	1.34	0.85
NAM	5.90	3.27	7.41	73.05	8.83	0.45
NER	53.63	18.17	8.55	9.51	1.38	0.65
NGA	37.85	21.22	18.79	2.78	4.37	3.16
RWA	31.34	11.80	23.63	21.60	2.11	0.69
SEN	51.37	24.28	6.33	4.17	1.25	1.25
SLE	18.42	21.93	29.87	8.01	1.42	2.85
SSD	10.45	20.04	4.42	12.98	0.88	0.59
STP	70.63	12.09	2.09	4.45	1.55	0.39
SWZ	3.38	1.29	11.85	72.63	0.46	0.38
SYC	27.90	6.54	14.01	24.29	1.57	5.32
TCD	22.67	30.08	23.51	2.40	5.93	7.45
TGO	41.29	32.61	11.38	6.22	0.11	0.21
TZA	16.80	25.36	31.30	12.52	1.26	0.69
UGA	18.99	12.07	39.47	12.25	1.58	1.25
ZAF	46.64	13.21	11.01	3.22	7.41	5.72
ZAR	42.66	20.28	15.32	16.86	0.57	0.56
ZMB	19.55	17.61	18.54	37.93	0.59	1.40
ZWE	11.69	6.33	34.51	39.86	1.12	0.94

Source: UN Contrade and IMF staff calculations.