World Economic and Financial Surveys

Regional Economic Outlook

Sub-Saharan Africa

Recovery Amid Elevated Uncertainty

Background Paper:

Online Annexes and Statistical Tables

APR 19

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Annex 3. Is the African Continental Free Trade Area a Game Changer for the Continent? was prepared by Reda Cherif, Hilary Devine, Russell Green, Salifou Issoufou, Thomas McGregor, Geremia Palomba, Adrian Peralta-Alva, Amadou Sy,Bruno Versailles, Jason Weiss, and Yunhui Zhao.

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The following conventions are used in this publication:

- In tables, a blank cell indicates "not applicable," ellipsis points (. . .) indicate "not available," and 0 or 0.0 indicates "zero" or "negligible." Minor discrepancies between sums of constituent figures and totals are due to rounding.
- An en dash (–) between years or months (for example, 2009–10 or January–June) indicates the years or months covered, including the beginning and ending years or months; a slash or virgule (/) between years or months (for example, 2005/06) indicates a fiscal or financial year, as does the abbreviation FY (for example, FY2006).
- "Billion" means a thousand million; "trillion" means a thousand billion.
- "Basis points" refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

2.1. Online Annex— The Economic Consequences of Conflict

This annex presents additional stylized facts and provides details on the data, econometric methodology, and estimation results underlying the discussion in the chapter.

2.1.1. Data Description

Measures of Conflict

The primary source of data on conflicts for this chapter is the Uppsala Georeferenced Event Dataset (GED) compiled by the Uppsala Conflict Data Program (UCDP). While several conflict datasets are available, this dataset has the advantage that it provides comprehensive information on conflict-related deaths covering the entire world at a geographically disaggregated level. In addition to the GED, we also use information from the Uppsala Armed Conflict Dataset (ACD) and the Global Terrorism Dataset (GTD) to supplement our analysis. A brief description of each of these datasets is presented below.

Uppsala Georeferenced Event Dataset (GED)

The GED is a highly disaggregated dataset which provides information on conflict-related fatalities at the "event" level—where an event is defined as "an incident where armed force was used by an organized actor against another organized actor, or against civilians, resulting in at least 1 direct death at a specific location and a specific date." Criminal violence (including homicides and gang violence) is usually excluded from the dataset as it is often not possible to definitively attribute these events to specific organized groups. The dataset provides information on the number of deaths in each event, as well as the location of the event (latitude and longitude). It covers the period 1989–2017 and includes information on all countries in the world except for Syria.[1]

The UCDP relies on global newswire reports and translation of local news performed by the British Broadcasting Corporation (BBC) as the primary source of information. Any media bias in the coverage of conflicts is minimized by supplementary information obtained from civil society reports and historical archives. To the extent that conflict events are missed by these sources, the fatality estimates may well be understated, although are likely to be highly correlated with actual conflict-related deaths (Sundberg and Melander, 2013).

Using the GED, variables on aggregate conflict-related deaths, conflict intensity and conflict type are created as follows:

Conflict-related deaths: For most of the analysis in the chapter, the event level dataset is aggregated to the country level to construct a measure of the total number of conflict-related deaths in each year. After the aggregation, the UCDP definition of conflicts is followed and a country is classified to be in conflict in a given year if it experienced at least 25 conflict-related deaths. For the spatially disaggregated analysis using night-lights data, the individual events are aggregated to construct a state level measure of conflict-related deaths.

[1] Syria is excluded from the dataset as the location of conflict events could not be consistently identified. However, aggregate data on the number of conflict-related deaths in Syria is available and has been used in the chapter when documenting worldwide trends in the number of conflict-related deaths in Figure 2.3.

Conflict intensity: The number of conflict-related deaths relative to (lagged) population is used as a measure of conflict intensity. However, this variable has some extreme outliers (for example, the genocide against the Tutsi in Rwanda in 1994 where about 8 percent of the population perished due to conflict), which may bias the regression results. To address this issue, we construct an alternative variable based on the percentile of the conflict intensity variable in the world distribution (pooled across countries and years) and use that in the regression analysis. For this measure, the 25th, 50th and 75th percentiles in the data correspond to conflict-related death rates of 0.75, 4.5, and 28.6 per million people, respectively.

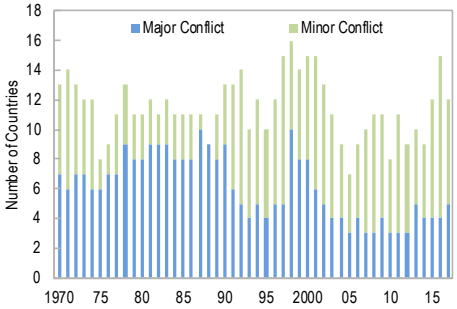
Conflict type: The GED distinguishes between conflicts based on the involved actors. Specifically, it considers three types of conflicts: (i) state-based, which involve violence between two organized groups where at least one party is the government; (ii) nonstate-based, which occur between two organized groups, neither of which is a government; and (iii) one-sided events where an organized group, which could be the government or a non-government actor, targets civilians. Since a majority of one-sided conflicts in sub-Saharan Africa involve nonstate-based actors, the categories (ii) and (iii) are combined and referred to as nonstate-based conflicts for the analysis done in the chapter.

Uppsala Armed Conflict Dataset (ACD)

To check the robustness of the results presented in the chapter, the GED dataset is supplemented with the Uppsala Armed Conflict Dataset (ACD), which provides information on conflict-related deaths for all countries starting in 1946. The unit of analysis in this dataset is an "armed conflict"—defined as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in a calendar year." A country can have several conflicts ongoing at the same time if the government has "incompatibility" with multiple organized groups.

Compared to GED, the ACD has a longer time series dimension but covers only state-based conflicts and contains less precise information on the number of conflict-related deaths. In particular, while GED can be used to determine the number of conflict-related deaths in any country, ACD only contains a discrete variable that distinguishes between minor conflicts (25 to 1000 conflict-related deaths; assigned a value of one) and major conflicts (greater than 1000 conflict-related deaths; assigned a value of two).[2] Annex Figure 2.1 provides the trend in conflicts based on the ACD, which shows that the number of sub-Saharan African countries in state-based conflicts averaged about 12 for most of the 1970s and 1980s, before peaking at 16 in 1999. The number of countries in conflict declined in the first decade of the new millennium but has increased again in recent years.

Annex Figure 2.1. Sub-Saharan Africa: Number of Countries in State-Based Conflict



Sources: Uppsala Armed Conflict Database and IMF Staff Calculations
Note: A minor (major) conflict is defined as that with conflict-related deaths between 25 and 1000 (greater than 1000).

[2] Since the unit of analysis in the ACD is an "armed conflict," we aggregate the data to country-year level for the regression analysis by summing the intensity variable across all ongoing conflicts for each country-year.

Global Terrorism Dataset (GTD)

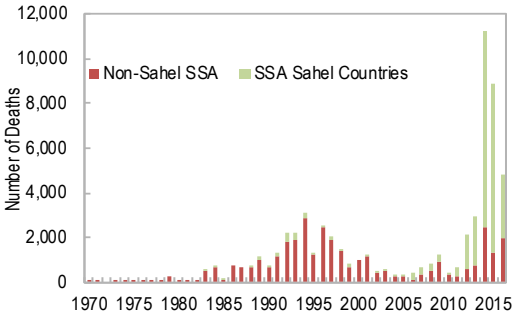
The recent increase in terrorist incidents has generated interest in measuring terrorist activity across jurisdictions, but there is no universally accepted definition of terrorism and the distinction between terrorist activities and other forms of violence is often blurred. For example, terrorism could be a manifestation of a long-standing civil or international conflict.

Typically, terrorism is considered as the intentional use of indiscriminate violence in the pursuit of political and religious aims. Terrorism can target civilian or official targets and can be perpetrated by state or sub-national entities. In the GED—which, as mentioned above, provides information on several types of conflicts—terrorist incidents cannot be easily isolated since terrorist attacks targeting the government (for example, a Boko Haram attack on a military base in January 2015) are classified as state-based conflicts, while the targeting of civilians by terrorist groups (such as the targeting of schools and churches by Boko Haram in north-east Nigeria) is classified as one-sided violence. Furthermore, targeting of civilians directly by the government (including state terrorism) is classified as one-sided conflicts.

To focus solely on terrorist events, the GED is supplemented with information from the Global Terrorism Dataset (GTD). The GTD defines a terrorist attack as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." The GTD has a narrower coverage than GED, excluding civil war events and acts of state terrorism. Nevertheless, the GTD shows that terrorism is quite prevalent in sub-Saharan Africa, with a marked increase in terrorism-related incidents since 2012 (Figure 2.7, panel 2, in main chapter and Annex Figure 2.2). The post-2012 increase should, however, be treated with caution as it corresponds with a change in the data collection methodology that led to an increase in the efficiency of the news search algorithm used to identify terrorist events. This change in methodology makes it difficult to ascertain how much of the increase in incidents is attributable to an actual increase in violence. The GTD, therefore, does not provide a consistent measure of terrorism-related deaths and incidents, especially for time-series analysis.

Despite the limitations, the GTD corroborates some of the trends observed using the GED. Both datasets show an increase in violence-related deaths in sub-Saharan Africa in recent years (although the absolute number of fatalities is higher based on the GED due to the wider coverage of the types of conflicts), with the correlation between the number of conflict-related deaths in the two datasets being 0.75.

Annex Figure 2.2: Sub-Saharan Africa: Terrorist Related Deaths



Sources: Global Terrorism Database and IMF staff calculations.
Note: The data compilation methodology changes from 2012 onward.

Measures of Economic Activity

To capture the effect of conflicts on macroeconomic activity, two empirical approaches are followed in the chapter. The first approach considers conflicts and economic activity at the country level, where growth in real GDP per capita from the Penn World Tables (PWT) version 9.0 is used to capture economic activity. The second approach considers conflicts and economic activity at the sub-national (or state) level and, given

the lack of economic data at the sub-national level for most sub-Saharan African countries, relies on satellite-recorded night-lights data as a proxy for economic activity (e.g., Henderson, Storeygard, and Weil 2012).

The satellite night-lights data is obtained from the National Oceanic and Atmospheric Administrations (NOAA) for a sample of 182 countries over 1992–2013.[3] For sub-Saharan Africa, a comparison of night-lights images between 1992 and 2013 shows a visible increase in night-light luminosity over time, reflecting an increased level of economic activity and economic development in the region (Annex Figure 2.3).

Annex Figure 2.3. Sub-Saharan Africa: Satellite Image of Night Lightsy

Source: NOOA database.

Since both the night-lights data and GED are reported on a latitude-longitude grid, information on night-lights and conflict-related deaths is compiled at the state level and both datasets are merged together to form a state-year level dataset for spatial analysis.[4]

Other Macroeconomic Variables

Data on other macroeconomic variables used in the analysis is compiled from various sources including the IMF's World Economic Outlook, Penn World Tables, and World Bank's World Development Indicators (see Annex Table 2.1).

[3] The sample is restricted to 2013 as the launch of new satellites causes a break in the night-lights time-series in 2013.

[4] The GED is unable to precisely identify the location of about 5 percent of conflict events, which are therefore excluded from the state-level analysis.

Annex Table 2.1. Data Sources

Variable	Description	Sources
Agriculture, value added	In percent of GDP	WB, World Development Indicators
Capital account openness	Index (high values: more open)	Chinn and Ito (2006)[1/]
Capital and current expenditure	In billions of national currency	IMF, WEO database
Revenues	In billions of national currency	IMF, WEO database
Consumer price index (CPI)	Index	IMF, WEO and INS databases
Exchange rate regime (de facto)	Index (1=hard or conventional peg; 2=basket peg/band/crawl/managed float; 3=free float).	Ghosh, Ostry, and Qureshi (2015)[2/]
Fiscal balance	In percent of GDP	IMF, WEO database
GDP per capita	Log	IMF, WEO database, Penn World Tables 9.0
Gross debt	In percent of GDP	IMF, WEO database, FAD Database
HIPC/MDRI	Dummy (1 if there is a HIPC/MDRI disbursment)	IMF and Worldbank
Human capital	Index	Penn World Tables 9.0 based on Barro-Lee
Institutional quality index	Average of bureaucracy quality, corruption, democratic accountability, investment profile, and law and order (high values indicate better quality)	International Country Risk Guide
Military spending	US Dollars	Stockholm International Peace Research Institute (SIPRI)
Nominal GDP	In billions (USD and national currency)	IMF, WEO database
Poluation	Number	IMF, WEO database, and Penn World Tables 9.0
Price of investment	Index	Penn World Tables 9.0
Real effective exchange rate (REER)	Percent change	IMF, WEO database
Real GDP	In billions of national currency	IMF, WEO database
Real GDP growth	In percent	IMF, WEO database, Penn World Tables 9.0
Real GDP growth in trading partners	In percent	IMF, WEO database
Real GDP per capita	In PPP terms	IMF, WEO database, Penn World Tables 9.0
Terms of trade of goods	Index	IMF, WEO database
Total exports	Percent change	Penn World Tables 9.0
Total factor productivity	Index	IMF, 2018
Total investment	In percent of GDP	IMF, WEO database, Penn World Tables 9.0
Total natural resources rents	In percent of GDP	WB, World Development Indicators
Trade openness	Sum of exports and imports, in percent of GDP	IMF, WEO database

1/ Chinn, M., and H. Ito, 2006, "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," Journal of Development Economics, 81 (1): 163-192.

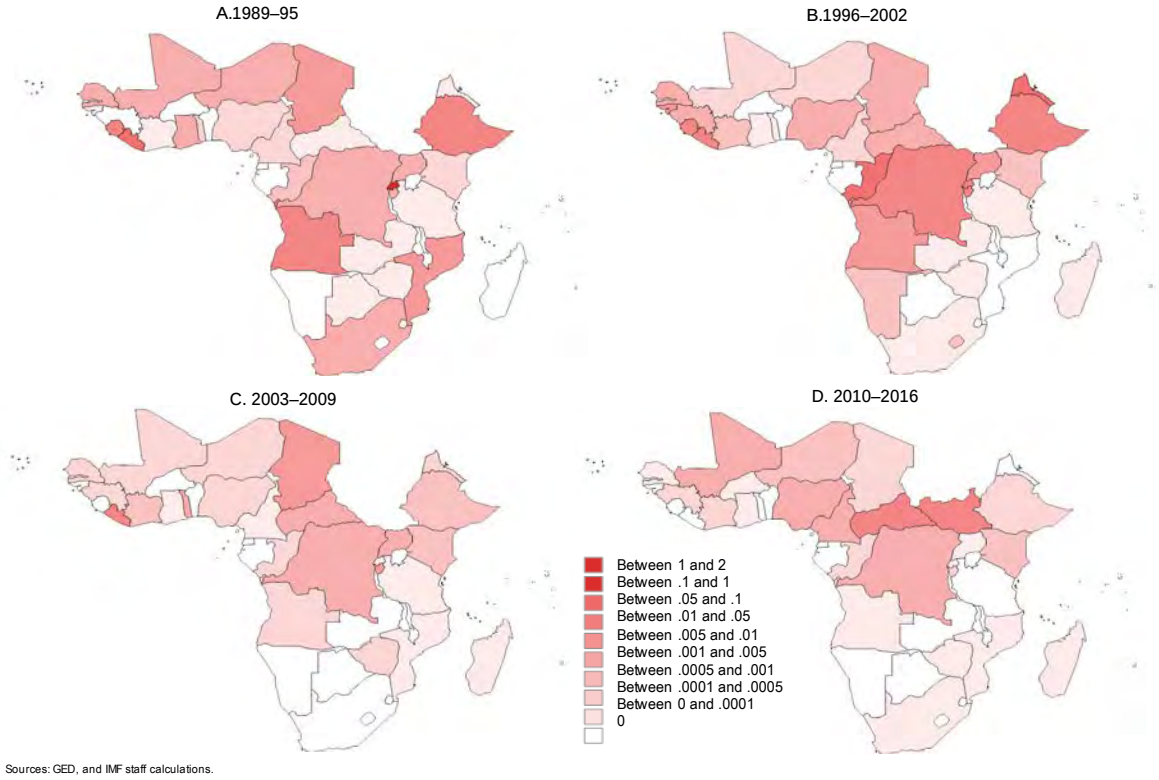
2/ Ghosh, A., J. Ostry, and M. Qureshi, 2015, "Exchange Rate Management and Crisis Susceptibility: A Reassessment," IMF Economic Review, 63 (1): 238-276.

Annex Table 2.2. Country Coverage

Group	Countries
Oil exporters	Angola, Cameroon, Chad, Republic of the Congo, Equatorial Guinea, Gabon, Nigeria, South Sudan
Other resource intensive	Botswana, Burkina Faso, Central African Republic, Democratic Republic of the Congo, Ghana, Guinea, Liberia, Mali, Namibia, Niger, Sierra Leone, South Africa, Tanzania, Zambia, Zimbabwe
Non-resource intensive	Benin, Burundi, Cabo Verde, Comoros , Côte d'Ivoire, Eritrea, Ethiopia, The Gambia, Guinea-Bissau , Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Senegal, Seychelles, eSwatini, São Tomé and Príncipe , Togo , Uganda
Central Africa	Angola, Cameroon, Central African Republic, Chad, Republic of the Congo, Democratic Republic of the Congo , Equatorial Guinea, Gabon, São Tomé and Príncipe
Western Africa	Benin, Burkina Faso , Cabo Verde, Côte d'Ivoire, Guinea, Guinea-Bissau , Liberia, Mali , Niger, Nigeria, Senegal, Sierra Leone, Togo
Eastern Africa	Burundi, Comoros, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, South Sudan, Seychelles, Tanzania,Uganda, Zambia, Zimbabwe
Southern Africa	eSwatini, Lesotho, Namibia, South Africa
Sahel	Burkina Faso, Cameroon, Chad, Mali, Niger, Nigeria

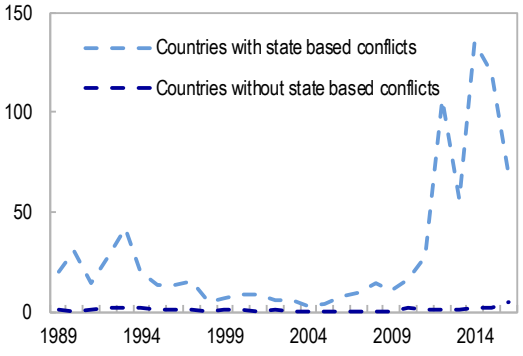
2.1.2. ADDITIONAL STYLIZED FACTS

Annex Figure 2.4. Sub-Saharan Africa: Geographical Distribution of Conflict-Related Deaths as a Share of Population, 1989-2016



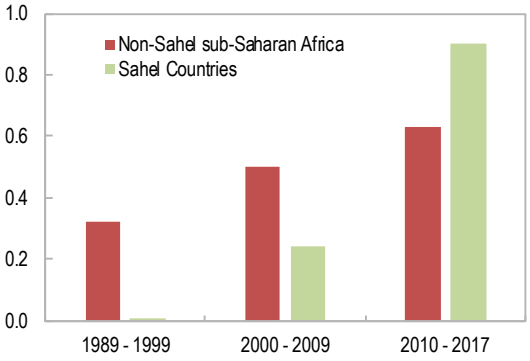
Sources: GED, and IMF staff calculations.

Annex Figure 2.5: Sub-Saharan Africa: Terrorism-Related Incidents in Countries with and without State-Based Conflicts



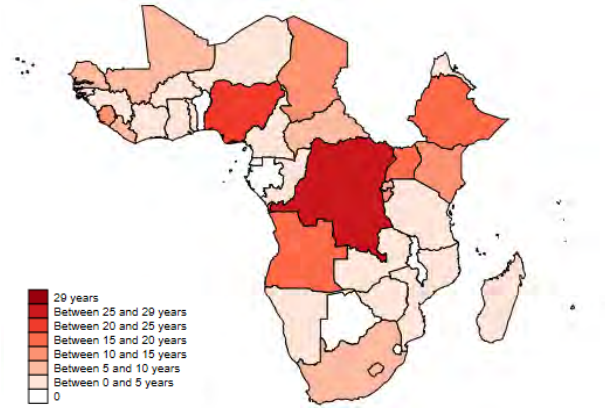
Sources: GTD, GED, and IMF staff calculations.

Annex Figure 2.6. Correlation Between Conflict-Related Deaths In State and Non-State-Conflicts



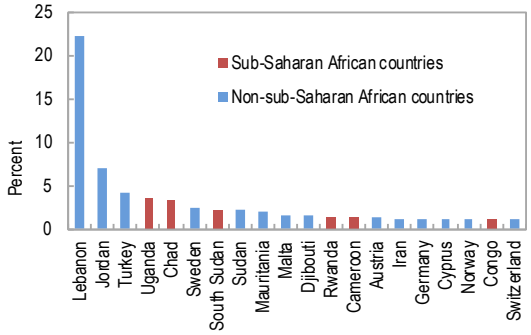
Sources: GED, and IMF staff calculations.
Note: Statistics represent period averages.

Annex Figure 2.7: Sub-Saharan Africa: Maximum Conflict Length



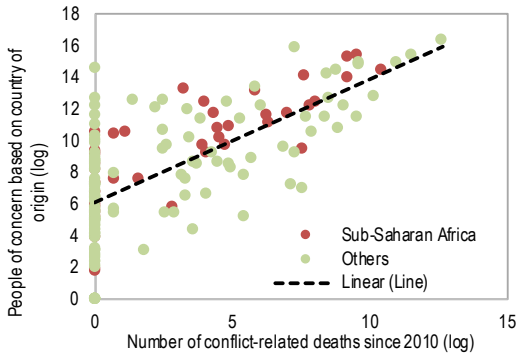
Sources: GED and IMF staff calculations.
Note: Country defined to be in conflict if it had at least 25 conflict-related deaths.

Annex Figure 2.8. Refugees as a Share of Total Population, 2017



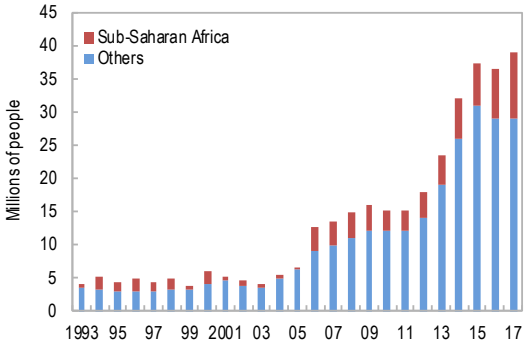
Source: United Nations High Commissioner for Refugees database.

Annex Figure 2.9: People of Concern Based on Country of Origin vs. Number of Conflict-Related Deaths



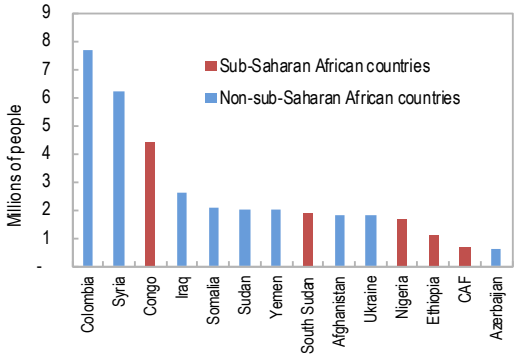
Sources: GED, United Nations High Commissioner for Refugees database, and IMF staff calculations.

Annex Figure 2.10. Internally Dispaced Persons by Region of Origin, 2017



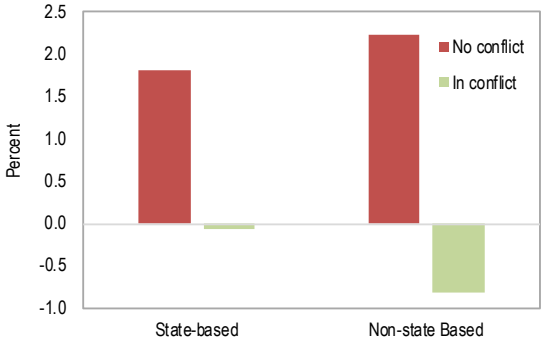
Source: United Nations High Commissioner for Refugees database.

Annex Figure 2.11. Internally Displaced Persons, 2017



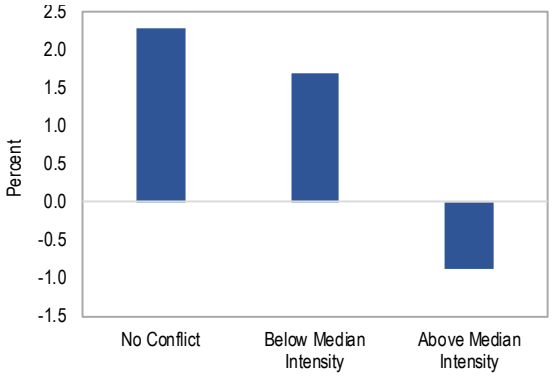
Source: United Nations High Commissioner for Refugees database.

Annex Figure 2.12: Sub-Saharan Africa: Average Growth Rate by Conflict Type



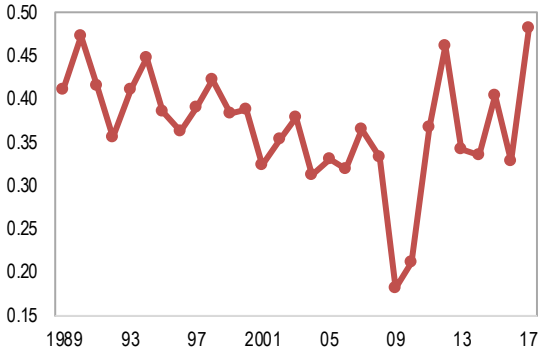
Sources: GED, PWT, and staff calculations.
Note: Country defined to be in conflict if number of deaths in that conflict exceeds 15.

Annex Figure 2.13: Sub-Saharan Africa: Average Growth Rate by Conflict Intensity



Sources: GED, PWT, and IMF staff calculations.
Note: Conflict intensity based on conflict-related deaths to lagged population ratio.

Annex Figure 2.14: Sub-Saharan Africa: Share of States in a Country with Conflict



Sources: Uppsala Event Level Dataset; and IMF staff calculations.
Note: Sample is restricted to countires that had at least 25 conflict-related deaths in a year.

Annex Figure 2.15: Night-light Intensity vs. Log GDP Per Capita, 1992-2013

Sources: National Oceanic and Atmospheric Administration database, and Penn World Tables 9.0.

Annex Table 2.3 Sub-Saharan Africa: Conflict Exit and Entry Probablity

	Conflict Exit Probablity		Conflict Entry Probablity	
	Pre-2000	Post-2000	Pre-2000	Post-2000
SSA	0.20	0.24	0.13	0.08
Oil exporters	0.17	0.13	0.24	0.09
Other resource intensive	0.20	0.27	0.12	0.08
Non-resource intensive	0.22	0.28	0.12	0.07
Non-Sahel	0.18	0.29	0.10	0.07
Sahel	0.29	0.09	0.44	0.15

Sources: Uppsala Event Level Dataset; and IMF staff calculations.
Note: Exit probability is the probabiliy of not being in conflict next year, conditional on being in conflict this year. Entry probability is the probability of being in conflict next year, conditional on not being in conflict this year.

2.1.3. CONFLICT AND ECONOMIC GROWTH

Conflicts can cause a devastating loss of human life and impose large economic and social costs. Focusing on sub-Saharan Africa, this section uses different techniques to analyze the impact of conflict on economic growth—including by constructing some simple counterfactuals to estimate the loss of output due to conflicts.[5]

Standard Growth Regressions

Following the existing literature (e.g., Blomberg, Hess, and Orphanides, 2004; Murdoch and Sandler, 2004; Cerra and Saxena, 2008), the impact of conflict on economic growth is estimated using standard growth regressions, as follows:

$$y_{i,t} - y_{i,t-1} = \beta_1 y_{i,t-1} + \beta_2 C_{i,t} + \gamma X_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t} \qquad (A.1)$$

where $y_{i,t}$ is (log) real per-capita GDP in country *i* at time *t*, $C_{i,t}$ is the conflict variable of interest, $X_{i,t}$ is a vector of other control variables (such as the investment rate, trade openness, and export-partner growth), and α_i and α_t are country-specific and time effects, respectively.[6] Standard errors are clustered at the country level.

The results for equation (A.1), using the conflict intensity variable constructed from GED (i.e., the percentile of conflict-related deaths as a share of lagged population), show that increased violence is robustly associated with lower economic growth (Annex Table 2.4). For sub-Saharan Africa, the results imply that increasing conflict intensity from zero (no conflict-related deaths) to the top quartile is associated with a decline in per capita growth rate of 3.2 percentage points (column 1). Conflict is also associated with lower growth in other (non-sub-Saharan African) emerging market and developing countries (column 2).[7]

While the coefficients on the conflict intensity variable in columns (1) and (2) suggest that the impact of conflicts on economic growth is larger for sub-Saharan Africa than for other countries, the difference is not statistically significant (as indicated by the coefficient on the interaction term between conflict intensity and a dummy variable for sub-Saharan Africa in column 3). Notably, however, the association between conflict and growth is conditional on institutional quality and fiscal fundamentals—an increase in conflict lowers growth by, on average, 1.5 percentage points in a country with relatively good institutions (75th percentile of the world distribution of the institutional quality index) at the time of the conflict onset, compared to 3 percentage points for countries with weaker institutions (25th percentile of world distribution; column 4). Similarly, a country with a fiscal deficit of 5 percent of GDP experiences, on average, a growth decline of 3.4 percentage points due to conflict, compared to a fall of 2.4 percentage points for countries with a balanced

[5] Several studies analyze the effect of conflict on poverty and inequality, generally finding that conflicts increase poverty and inequality (Baranti, Beaudet, and Locher 2011; Bircan, Brück, and Vothknecht 2017).

[6] Although the fixed-effect model with lagged dependent variable can produce biased estimates ("Nickell Bias" which is of the order 1/T), in our case the bias is likely small at about 4 percent (25 years of data). Given the small bias, we use the fixed effect model as the baseline but present robustness checks by using GMM methods which corrects for this source of bias.

[7] As the conflict intensity variable is the percentile of conflict-related deaths as a share of population (ranging from 0 to 1), the growth effects for an increase in conflict intensity to the 75th percentile is computed by multiplying the coefficient on conflict intensity by 0.75.

budget before the conflict onset (column 5). Countries with higher public debt levels (indicating less fiscal space to respond to conflicts) also experience a larger growth decline during conflicts (column 6).[8]

Furthermore, conflicts that occur in economic/urban hubs are likely to have a larger impact on aggregate growth as compared to conflicts occurring in peripheral regions in the country (column 7). Specifically, we create a measure of the "centrality" of conflicts within a country, by using night-lights data at the state level, that captures the extent to which violence in the country is taking place in regions with a larger share of economic activity, and add this measure along with its interaction with conflict intensity to equation (A.1).[9] Comparing two conflicts in the top quartile of the intensity distribution but with different degrees of centrality indicates that growth will be about 1 percentage point lower for a conflict where the centrality measure is one standard deviation above the mean compared to a conflict where the centrality measure is at the mean.[10]

The association between conflict and economic growth is robust to addressing potential endogeneity concerns by using lagged values of the conflict intensity variable (column 8), as well as by instrumenting for the contemporaneous conflict intensity variable with lagged values using the difference-GMM and system-GMM methodologies (as in columns 9 and 10, respectively). Among other factors, consistent with the earlier literature (e.g., IMF, 2018), investment and trade openness are strongly linked to growth in sub-Saharan Africa.

These results are also robust to considering an alternative conflict intensity variable based on the Uppsala Armed Conflict Dataset (ACD). The results from the ACD, reported in Annex Table 2.5, show that conflict intensity has a negative effect on growth: moving from no conflict to a high-intensity conflict is associated with about 2.3 percentage points lower growth in sub-Saharan Africa (column 1). The negative relation between conflict and growth also holds for non-sub-Saharan African countries, with the results being robust to using lags of the conflict variable (column 4), as well as to difference and system GMM (columns 5-6).

[8] The results also show that higher investment rates and trade openness are associated with higher growth rates in sub-Saharan Africa. An increase in investment from 21 percent of GDP (the median for the region) to 28 percent of GDP (the 75th percentile for the world distribution) would, on average, stimulate growth by about 0.6 percentage points, while increasing trade openness (in terms of the export and import volume) to the 75th percentile would boost growth by 1.5 percentage points.

[9] The measure is defined as: $Center\_periphery_{c,t} = \sum_s \frac{D_{s,c,t}}{D_{C,t}} \frac{NL_{s,c,t-1}}{NL_{C,t-1}}$, where $D_{s,c,t}$ is the number of conflict-related deaths in state 's' in country 'c' at time 't'; $D_{c,t}$ is the total number of conflict-related deaths in country 'c' at time 't'; $NL_{s,c,t}$ is total night-lights in state 's' in country 'c' at time 't'; and $NL_{c,t}$ is total night-lights in country 'c' at time 't'. This measure will take higher values if conflict-related deaths are concentrated in states that contribute more to economic activity. The variable is standardized to have mean zero and a standard deviation of one.

[10] The difference in growth rates for the two conflicts with intensity C but different centrality measures cp_1 and cp_2 is computed as $\gamma_1(cp_2 - cp_1) + \gamma_2 C(cp_2 - cp_1)$ where γ_1 and γ_2 are the coefficients on the centrality measure and the interaction term respectively.

Annex Table 2.4. Impact of Conflict on Growth, Uppsala GED, 1989-2014

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	SSA	Non-SSA EMs&LIDCs	All EMs & LIDCs	All EMs & LIDCs	All EMs & LIDCs	All EMs & LIDCs	All EMs & LIDCs	All EMs & LIDCs Lag	All EMs & LIDCs Diff GMM	All EMs & LIDCs Sys GMM
Per capita GDP (lagged)	-0.023**	-0.050***	-0.042***	-0.036***	-0.033***	-0.046***	-0.038***	-0.040***	-0.048***	-0.033***
	(0.009)	(0.014)	(0.011)	(0.010)	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)	(0.008)
Conflict intensity	-4.260***	-3.354*	-3.782*	-3.217***	-3.228***	-3.484***	-2.422***	-1.224*	-2.828**	-3.357**
	(0.872)	(1.780)	(1.912)	(1.159)	(0.906)	(0.868)	(0.741)	(0.720)	(1.232)	(1.324)
SSA x Conflict intensity			-0.961							
			(2.038)							
Institutional quality x Conflict				1.839***						
				(0.663)						
Fiscal balance x Conflict					0.270**					
					(0.120)					
Debt x Conflict						-0.029**				
						(0.014)				
Center-periphery x Conflict							-1.953***			
							(0.404)			
Investment/GDP	0.076	0.130***	0.078***	0.075***	0.098***	0.116***	0.095***	0.052	0.042	0.076
	(0.045)	(0.032)	(0.029)	(0.028)	(0.027)	(0.033)	(0.029)	(0.054)	(0.042)	(0.056)
Human capital		1.183	0.299	-0.838	0.717	1.161	1.163	-1.352	4.646	4.992**
		(3.749)	(2.236)	(2.471)	(1.921)	(2.400)	(1.999)	(1.894)	(3.174)	(2.129)
Trade openness (log)	3.770***	0.548	1.259*	1.364*	0.651	0.984	0.627	2.540***	1.627**	0.204
	(1.285)	(0.443)	(0.668)	(0.757)	(0.610)	(0.630)	(0.620)	(0.955)	(0.728)	(0.987)
Terms of trade (pct change)	0.001	-0.061	-0.031	-0.039	0.004	-0.010	0.006	0.031**	0.016	0.010
	(0.009)	(0.051)	(0.035)	(0.042)	(0.008)	(0.018)	(0.008)	(0.015)	(0.030)	(0.031)
Export partners growth	-0.073	0.398**	0.349**	0.343**	0.313**	0.429***	0.347**	0.191**	0.787***	0.447*
	(0.158)	(0.180)	(0.140)	(0.160)	(0.123)	(0.135)	(0.136)	(0.096)	(0.230)	(0.264)
Institutional quality				-0.917						
				(0.580)						
Fiscal balance/GDP					-0.022					
					(0.052)					
Public debt/GDP						0.016				
						(0.011)				
Center-periphery							0.395*			
							(0.209)			
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frequency	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	5 Year	5 Year
Observations	1,000	1,362	2,206	1,966	1,831	2,115	1,897	2,116	414	434
R-squared	0.287	0.285	0.243	0.263	0.273	0.269	0.281	0.233		
No. of countries	40	56	90	81	90	90	89	89	89	90
No. of Instruments									79	84
AR2 Test									0.273	0.287
Hansen Test									0.299	0.177

Note: Dependent variable is growth of per-capita GDP from Penn World Tables. The intensity of conflict variable is the percentile of conflict-related deaths as a share of population based on the Uppsala Georeferenced Event Dataset. See Annex Table 2.1 for details on other control variables. Columns 1 to 8 are estimated using OLS with country and year fixed effects. Column 9 and 10 are estimated using difference and system GMM with 5-year averaged data. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Non-linear Effects

Conflict may have a non-linear impact on economic growth with more severe conflicts having a larger effect. Annex Table 2.6 reports results where the conflict-related deaths to population ratio from the GED is split into different quartiles (the reference group is the non-conflict observations). Growth during low-intensity conflicts (where conflict-related deaths are in the bottom two quartiles) is not significantly different from the non-conflict cases in sub-Saharan Africa. However, for more intensive conflicts, the negative growth effects are significantly larger. Specifically, growth is 2 percentage points lower for conflict intensity in the third quartile relative to the non-conflict case, and about 4 percentage points lower for conflicts in the top quartile (column 1).

Annex Table 2.5. Impact of Conflict on Growth, Uppsala ACD, 1970-2014

	(1)	(2)	(3)	(4)	(5)	(6)
	SSA	Non-SSA EMs&LIDCs	All EMs & LIDCs	All EMs & LIDCs Lag Conflict	All EMs & LIDCs Diff GMM	All EMs & LIDCs Sys GMM
Per capita GDP (lagged)	-0.015*	-0.046***	-0.033***	-0.034***	-0.044***	-0.033***
	(0.008)	(0.010)	(0.007)	(0.008)	(0.010)	(0.009)
Conflict intensity	-1.124***	-1.045**	-1.094***	-0.702***	-1.391**	-1.062**
	(0.403)	(0.485)	(0.360)	(0.216)	(0.555)	(0.524)
Investment/GDP	0.124**	0.100***	0.075***	0.046	0.055	0.112**
	(0.055)	(0.034)	(0.028)	(0.049)	(0.042)	(0.054)
Human capital			-0.573	-0.401	2.031	5.328***
			(1.103)	(1.073)	(2.697)	(1.763)
Trade openness (log)	2.761***	0.657	1.210***	1.720***	2.294***	0.372
	(0.639)	(0.436)	(0.452)	(0.513)	(0.810)	(1.055)
Terms of trade (pct change)	0.006	-0.037	-0.016	0.023**	0.030	0.025
	(0.007)	(0.035)	(0.025)	(0.011)	(0.024)	(0.024)
Export partners growth	-0.060	0.182**	0.196**	0.157*	0.659***	0.415
	(0.142)	(0.089)	(0.085)	(0.089)	(0.213)	(0.272)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Frequency	Annual	Annual	Annual	Annual	5 Year	5 Year
Observations	1,312	1,959	2,868	2,778	538	628
R-squared	0.238	0.249	0.213	0.216		
No. of countries	40	64	90	89	89	90
No. of Instruments					85	80
AR2					0.769	0.899
Hansen					0.370	0.227

Note: Dependent variable is growth of per-capita GDP from Penn World Tables. The intensity of conflict variable is based on data from the Uppsala Armed Conflict Dataset (Annex Section I for details). See Annex Table 2.1 for details on other control variables. Columns 1 to 4 are estimated using OLS with country and year fixed effects. Column 5 and 6 are estimated using difference and system GMM with 5-year averaged data. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Annex Table 2.6. Non-linear Effect of Conflict on Growth, 1989-2014

	(1)	(2)	(3)
	SSA	Non-SSA EMs&LIDCs	EMs & LIDCs
Per capita GDP (lagged)	-0.023**	-0.052***	-0.034***
	(0.009)	(0.012)	(0.009)
Excluded group: No conflict			
Conflict: 1st Quartile	-0.829*	-0.252	-0.538*
	(0.484)	(0.501)	(0.320)
Conflict: 2nd Quartile	-0.779	-0.051	-0.475
	(0.596)	(0.540)	(0.414)
Conflict: 3rd Quartile	-2.097**	-1.116	-1.595**
	(0.805)	(0.799)	(0.615)
Conflict: 4th Quartile	-3.772***	-2.955**	-3.503***
	(0.781)	(1.426)	(0.865)
Country fixed effects	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
Frequency	Annual	Annual	Annual
Observations	1,000	1,531	2,531
R-squared	0.286	0.283	0.251
No. of countries	40	64	104

Note: Dependent variable is growth of per-capita GDP from Penn World Tables. The conflict variable of interest is the quartile of conflict-related deaths as a share of population with no conflict being the excluded group. Standard control variables (as in Annex Table 2.4) are included in all regressions although their coefficients have been suppressed to save space. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Nature of Conflict

As documented in the chapter (Figure 2.7), there has been a change in the nature of conflicts in sub-Saharan Africa since 2000, with traditional state-based conflicts being largely replaced by non-state and one-sided violence. Annex Table 2.7 shows that the growth impact of conflicts does not depend on the type of conflict per se, but it is the overall conflict intensity (conflict-related deaths as a share of population) that matters in determining growth outcomes. In particular, the negative effect of conflict on growth is not statistically different in the post-2000 period when state-based conflicts became less prevalent (column 1). Similarly, including conflict intensity variables for the three types of conflicts in the model indicates that they have a negative effect on growth of a statistically equivalent magnitude (columns 2-5).

Annex Table 2.7. Impact of Different Conflict Types on Growth, 1989-2014

	(1)	(2)	(3)	(4)	(5)
	Pre and post 2000	Different Conflict Types			
Per capita GDP (lagged)	-0.022**	-0.021**	-0.021**	-0.023**	-0.022**
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)
Overall conflict intensity	-4.722***				
	(1.125)				
Post-2000 x Conflict	1.144				
	(1.586)				
State based		-3.617***			-2.231*
		(1.109)			(1.139)
Non-state based			-3.997**		-2.823*
			(1.505)		(1.413)
One-sided				-3.808***	-1.798*
				(0.962)	(0.994)
Observations	1,000	1,000	1,000	1,000	1,000
R-squared	0.288	0.281	0.275	0.281	0.291
No. of Countries	40	40	40	40	40
Test: State = Non-State					0.707
Test: State = One-Sided					0.814
Test: Non-State = One-Sided					0.604

Note: Dependent variable is growth of per-capita GDP from Penn World Tables. In column 1, the intensity of conflict variable is the percentile of total conflict-related deaths as a share of population based on data from the Uppsala Georeferenced Event Dataset. In columns 2 through 5, the percentile (across all conflict types) of deaths to population for each conflict type is used as the independent variable. Standard control variables (as in Annex Table 2.4) are included in all regressions although their coefficients have been suppressed to save space. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Impulse Responses

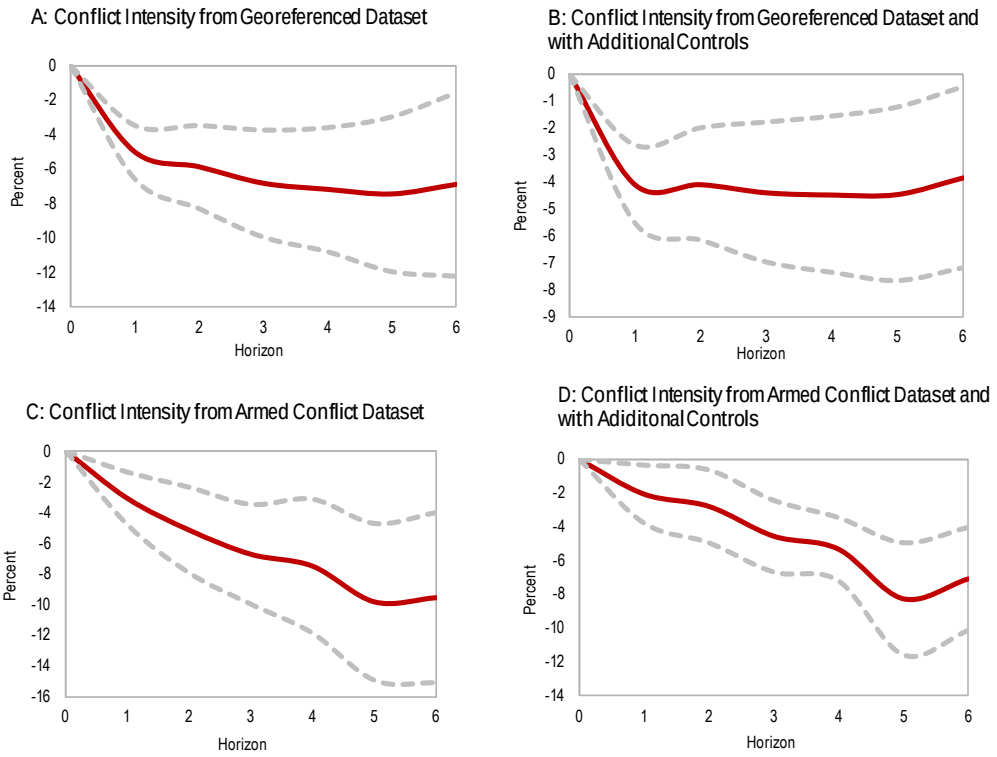
To assess the dynamic effects of conflicts on per-capita GDP, the chapter uses the local projection method, which involves estimating separate regressions for each time horizon (*h*) of the form:

$$y_{i,t+h} - y_{i,t-1} = \beta_1^h C_{i,t}^j + \sum_{j=1}^{l} \beta_{1,j}^h C_{i,t-j} + \sum_{j=1}^{l} \gamma_{1,j}^h \left(y_{i,t-j} - y_{i,t-j-1}\right) + \sum_{j=1}^{l} \theta_j^h X_{i,t-j}^j + \alpha_i^h + \alpha_t^h + \epsilon_{i,t}^h \qquad (A.2)$$

where $y_{i,t}$ is log of per-capita GDP, $C_{i,t}$ is the conflict variable, $X_{i,t}^j$ is other control variables, and *h* is the horizon for which the impulse response is to be computed. α_i^h and α_t^h are country and time fixed effects, respectively. The coefficient β_1^h directly estimates the impulse response of per-capita GDP for horizon *h* in response to a shock to the conflict variable. Two lags of GDP growth and the conflict variable are included in all estimations.

The results, presented in Annex Figure 2.16, panel 1, show that an increase in conflict intensity to the top quartile of the measure reduces per-capita GDP by almost 5 percent in the first year, with the negative effect growing to almost 7.5 percent over the next four years. Results are qualitatively similar when other control variables (investment as a share of GDP, openness, partner country growth, etc.) are included in the estimations (Panel 2), as well as when the conflict intensity variable based on the ACD is used (Panels 3 and 4).

Annex Figure 2.16: Sub-Saharan Africa: Impulse Response of Per-Capita GDP to a Conflict Intensity Shock



Note: Impulse response from estimation of equation A.2. Panels 1 and 2 (3 and 4) use the conflict intensity variable based on the GED (ACD) and plot the impact of a conflict shock from no conflict to intensive conflict (top quartile of the distribution). Dashed lines indicate the 90 percent confidence interval.

Transmission Channels

Conflict can impact growth through various channels. This section focuses on three transmission channels, namely investment, exports and productivity, which are considered to be important drivers of growth (Collier, 1999; Polachek, 1980), and estimates the following equation:

$$Chan_{i,t} - Chan_{i,t-1} = \beta_1 Chan_{i,t-1} + \beta_2 C_{i,t} + \gamma X_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t} \qquad (A.3)$$

where $Chan_{i,t}$ is a variable related to one of the channels (investment, exports, productivity, and private sector credit) through which conflict affects growth. The variable is measured in (log) real terms. All regressions include the lagged dependent variable to allow for dynamic effects. $C_{i,t}$ represents conflict intensity, $X_{i,t}$ is a vector of control variables, and α_i and α_t are country and time fixed-effects, respectively. As with the standard growth regressions, conflict intensity is measured as the percentile of conflict-related deaths as a share of population from the GED in the baseline regressions, while sensitivity checks are conducted using the alternative definition based on the ACD.

The results, presented in Annex Table 2.8, show that conflicts are associated with a decline in real investment growth (columns 1-2). Moving from no conflict to the 75th percentile of conflict intensity is associated with a fall in real investment growth by about 5 percentage points. The decline in investment is partly driven by fall in private sector credit growth (columns 7 and 8). Exports, in real terms, also decline during conflicts, with more intensive conflicts implying a drop in export growth of about 5 percentage points relative to a no-conflict scenario.[11] Finally, overall productivity also suffers during conflicts, with more intensive conflicts implying a decline in productivity growth of over 1 percentage point relative to non-conflict cases (columns 5-6).[12]

Annex Table 2.8: Impact of Conflict on Investment, Trade, Productivity and Credit Growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Investment Growth		Export Growth		Productivity Growth		Pvt Sector Credit Growth	
	Uppsala GED	Uppsala ACD	Uppsala GED	Uppsala ACD	Uppsala GED	Uppsala ACD	Uppsala GED	Uppsala ACD
Dependent variable (lagged)	-0.474***	-0.179**	-0.139**	-0.131***	-0.089***	-0.058***	-0.106***	-0.079***
	(0.136)	(0.079)	(0.055)	(0.036)	(0.013)	(0.014)	(0.017)	(0.015)
Conflict intensity	-6.221**	-1.742***	-7.194**	-3.693**	-1.658**	-0.404*	-9.569***	-4.734***
	(2.962)	(0.504)	(2.804)	(1.636)	(0.751)	(0.221)	(2.991)	(1.612)
GDP growth (lagged)	0.138	0.195	0.178	0.349**	0.063	0.051	0.416***	0.498***
	(0.209)	(0.135)	(0.190)	(0.144)	(0.038)	(0.036)	(0.146)	(0.114)
Per capita GDP (log)	-0.048**	-0.025	0.045	0.064*	0.023***	0.014**	0.036	0.046***
	(0.019)	(0.016)	(0.042)	(0.034)	(0.004)	(0.007)	(0.025)	(0.016)
Trade openness (log)	7.760***	4.104***			1.473	1.606***	5.896**	4.093**
	(2.753)	(1.256)			(0.902)	(0.581)	(2.868)	(1.873)
Price of investment	-24.325***	-12.006***						
	(4.863)	(3.032)						
Capital account openess	5.191	4.805	-2.391	1.137			-4.630	-2.188
	(3.439)	(3.535)	(5.915)	(6.754)			(3.615)	(2.684)
Terms of trade (pct change)			0.058*	0.003	-0.005	-0.001		
			(0.034)	(0.032)	(0.005)	(0.007)		
Natural resources rent			0.608**	0.528*			-0.134	-0.089
			(0.296)	(0.273)			(0.148)	(0.139)
Investment/GDP					-0.034	-0.020		
					(0.021)	(0.016)		
Export partners growth					-0.067	0.014		
					(0.135)	(0.126)		
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	991	1,483	959	1,395	934	1,199	918	1,125
R-squared	0.163	0.114	0.181	0.123	0.247	0.189	0.239	0.215
No. of countries	40	40	40	40	39	39	39	39

Note: Dependent variable is real investment growth in columns 1 and 2, real export growth in columns 3 and 4, productivity growth in columns 5 and 6, and private sector credit growth in columns 7 and 8. The intensity of conflict variable is the percentile of conflict-related deaths as a share of population based on data from the Uppsala Georeferenced Event Dataset in columns 1, 3 and 6, and total conflict intensity from the Uppsala Armed Conflict Dataset in columns 2, 4, and 6. See Annex Table 2.1 for details on other control variables. All regressions are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Permanent Output Losses

The widespread destruction of physical and human capital that accompanies conflicts can have persistent effects on the productive capacity of a country. This chapter uses specific, well-identified conflict episodes to compute the cumulative loss in output arising from conflicts, relative to a counterfactual where the conflict

[11] The results for export growth are sensitive to treatment of outliers.

[12] When analyzing the effects of conflict on inflation and the nominal effective exchange rate, we do not find a robust association between the variables.

had not occurred. The selected 11 conflict episodes are listed in Annex Table 2.9 and represent major conflicts where the two years preceding the conflict were relatively peaceful.[13]

Annex Table 2.9. Conflict Episodes

Country	Start Year	Event Description
Liberia	1990[1]	Civil war which lasted till 1997
Sierra Leone	1991	Civil war which lasted till 2002
Burundi	1993	Civil war which lasted till 2005
Democratic Republic of Congo	1996	First Congo War from 1996 to 1997, followed soon by the Second Congo War in 1998
Republic of Congo	1997	Civil war which lasted till 1999
Ethiopia	1998	Eritrean–Ethiopian War which lasted till 2000
Eritrea	1998	Eritrean–Ethiopian War which lasted till 2000
Guinea-Bissau	1998	Civil war which lasted till 1999
Côte d'Ivoire	2002	First Ivorian Civil War which lasted till 2004 but with continued tensions thereafter
Mali	2012	Northern Mali Conflict which is still ongoing
Central African Republic	2013	Civil war which is still ongoing

Note: List of all conflict episodes used in the counterfactual analysis using pre-conflict WEO growth projections and the synthetic control method. Liberia was excluded for the analysis using WEO projections as data on projections are only available after 1990. Eritrea was excluded from the synthetic control sample as other control variables were not available.

[1] The civil war in Liberia started on December 24, 1989. As the conflict started so late in the year, 1990 is used as the start date of the episode as the impact on growth only occurred in 1990.

Counterfactual Output Based on WEO Projection

Every year in October, the IMF projects economic growth for all member countries five years ahead. Data for these projections are available for all vintages going back to 1990. Comparing actual growth outcomes to projections made before the onset of conflict can help identify the deviation between actual output during conflict episodes and the counterfactual level of output in the absence of conflict.[14] Specifically, the counterfactual output is computed as:

$$\hat{y}_{i,T-1+h} = y_{i,T-1} \prod_{j=0}^{h-1} \left(1 + g_{T+j}^{WEO}\right) \qquad \forall\, h = 1,2 \ldots 5$$

where T is the year of conflict onset, h is the horizon at which counterfactual output is being computed, $y_{i,T-1}$ is per-capita GDP in the year preceding the conflict onset, and g_{T+j}^{WEO} is pre-conflict projected growth between time $T+j-1$ and $T+j$. Comparing $\hat{y}_{i,T-1+h}$ to the actual outcome of per-capita GDP provides an estimate of lost output due to conflict.

Counterfactual Output using Synthetic Control Method

Counterfactual output for the selected conflict episodes is also constructed using the synthetic control method, which involves creating a "synthetic" group for each "treated country" (where treatment is defined

[13] Countries like Nigeria, Chad and Rwanda are not included despite having experienced intensive conflicts because of the difficulty in clearly identifying conflict onset years (i.e. a relatively peaceful period followed by an uptick in conflict).

[14] Several studies point to over-optimism in growth projections, which can cause an upward bias in estimates of output loss due to conflict. To control for this bias, WEO projections for all time horizons are adjusted for an average bias (in sub-Saharan African countries) in non-conflict years.

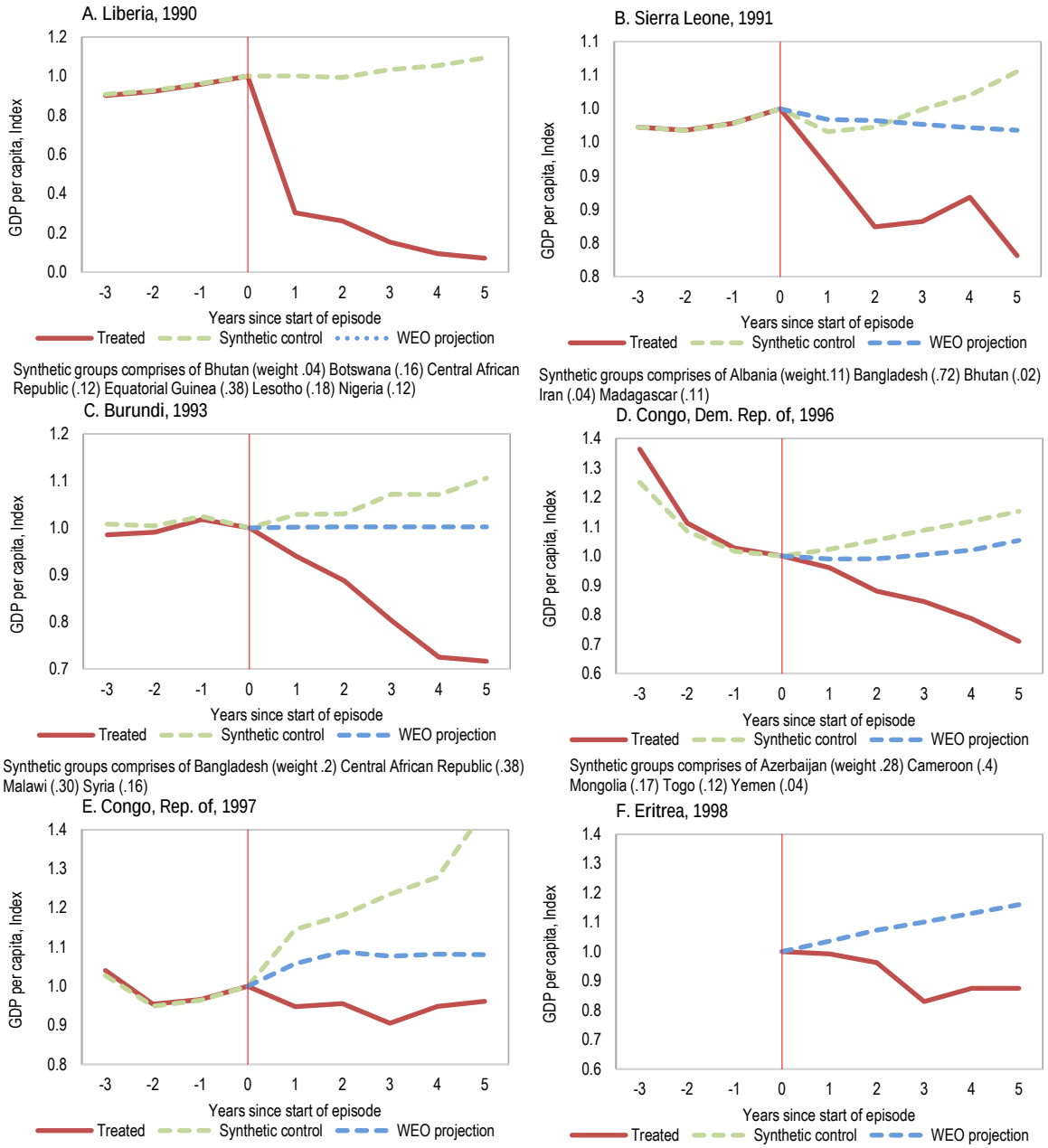
as the conflict episode listed in Annex Table 2.9). The "synthetic" control group is constructed as a weighted average of the available "donor pool" of countries—i.e., a weighted average of other countries which did not suffer from a major conflict in the same period. The idea is to recreate a synthetic country which matches the observables of the "treated" country that experienced conflict. The weights applied to countries in the donor pool are chosen such that the weighted average of key variables of the synthetic group closely matches the value of the same variables in the "treated" country prior to the outbreak of conflict.

Given the focus of the analysis on economic growth, weights are chosen to match the growth rates in the 4 years prior to the conflict outbreak, and the level of per-capita GDP (at purchasing power parity), investment rate, the level of openness of the economy, and partner country growth rate in the year prior to the conflict onset. Once the synthetic group has been constructed, the weighted average growth rate of the synthetic group is used to construct a measure of counterfactual output for the "treated" country. This is under the assumption that in the absence of conflict, the conflict-affected country would have experienced growth rates similar to the synthetic group as it had similar characteristics in the pre-conflict period.

Results

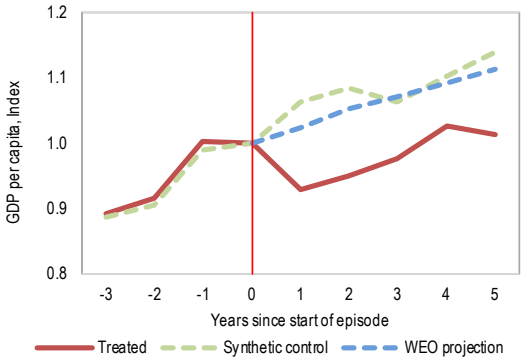
Figures 2.19 and 2.20 in the chapter compared the median level of per-capita GDP across the different conflict episodes to the counterfactual level of per-capita GDP constructed using the WEO projections as well as the synthetic control method. Annex Figure 2.17 provides the country-specific results, with the weights given to each country in the synthetic group noted below the figures. For all conflict cases, counterfactual per-capita GDP from both methods were well above the actual outcome.

Annex Figure 2.17: Per-capita GDP Around Conflict Episodes



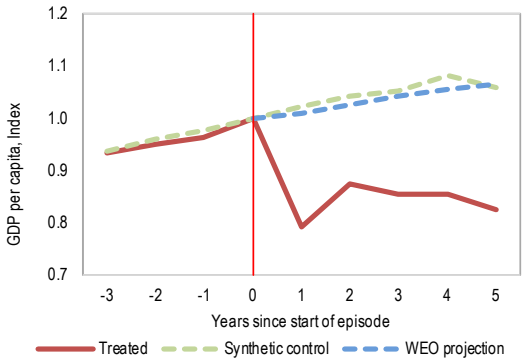
Synthetic groups comprise of Azerbaijan (weight .01) Belarus (.02) Equatorial Guinea (.20) Moldova (.13) Mongolia (.48) Ukraine (.16)

G. Ethiopia, 1998



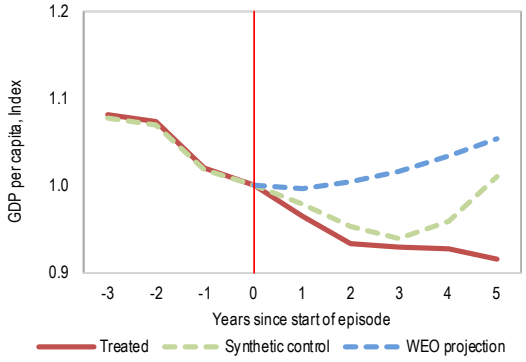
Synthetic groups comprises of Albania (weight .06) Burkina Faso (.04) India (.13) Malawi (.13) Mozambique (.29) Niger (.34) Yemen (.01)

H. Guinea-Bissau, 1998



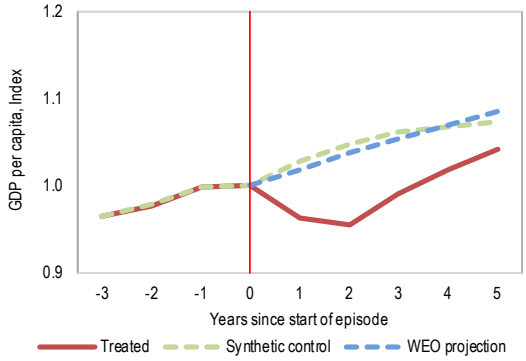
Synthetic groups comprises of Cameroon (.1) India (.18) Madagascar (.26) Mongolia (.34) Mozambique (.02) Suriname (.1)

I. Côte d'Ivoire, 2002



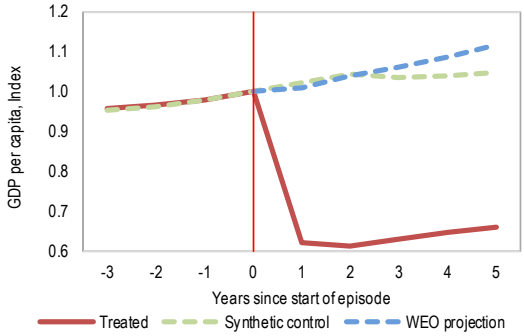
Synthetic groups comprises of Malawi (weight .12) Mauritania (.31) Niger (.11) Seychelles (.17) Zimbabwe (.29)

J. Mali, 2012



Synthetic groups comprises of Bangladesh (weight .18) Burkina Faso (.01) Burundi (.07) Comoros (.37) Gambia, The (.13) Haiti (.01) Malawi (.01) Niger (.13) Zimbabwe .(02)

K. Central African Republic, 2013



Synthetic groups comprises of Bangladesh (weight .29) Burundi (.41) Gambia, The (.02) Haiti (.03) Madagascar (.25)

Source: IMF, World Economic Outlook database, and IMF staff calculations.
Note: Compares the evolution of per-capita GDP around 11 conflict episodes listed in Annex Table 2.9 to WEO projections before the start of the conflict and to a synthetic control group (as per methodology in Annex Section III). WEO projections for per-capita GDP growth were unavailable for Sierra Leone and Eritrea. However, real GDP growth projections were available, and these were adjusted for population growth prevailing before the start of conflict. All countries that were given a weight of more than 1 percent in the synthetic group are noted below each figure.

2.1.4. SPATIAL IMPACTS OF CONFLICTS: THE VIEW FROM OUTER SPACE

Conflicts are often localized and concentrated in some regions within a country. The impact of conflicts is, thus, unlikely to be uniform across the country. However, lack of economic activity data at a spatially disaggregated level makes it difficult to investigate the impact of conflict at the local level, as well as its potential spillover effects to nearby regions within (or across) countries. To address this issue, the analysis considers satellite-based night-lights data at a highly spatially disaggregated level to capture economic activity. The granular coverage of night-lights data makes it possible to study the localized impact of conflict along with its potential spillovers to nearby regions.

Before turning to state-level analysis, a natural question to ask is whether night-lights are a suitable proxy for economic activity. A large literature has shown that night-lights and GDP are highly correlated at the country level (Henderson, Storeygard, and Weil, 2012; Pinkovskiy and Sala-i Martin, 2016). Annex Table 2.10 confirms that at the country level, the relation between night-lights and conflict is very similar to that between GDP and conflict. Specifically, columns 1 and 3 report results for simple growth regressions of country-level night-lights per-capita on the country-level conflict intensity variables (including country and year fixed effects and lagged level of night-lights) and compares the results to a similar regression using the standard GDP growth variable from Penn World Tables (columns 2 and 4). As expected, conflict intensity is associated with lower night-lights growth at the country level. Furthermore, the coefficient on conflict intensity is about 2.3 to 2.5 times larger when using night-lights as the dependent variable as compared to GDP, which is close to the estimated elasticity between night-lights and GDP for low-income countries in the literature (Hu and Yao, 2019).

Annex Table 2.10. Country-level Comparison: Night lights and GDP, 1992-2013

	(1)	(2)	(3)	(4)
	Night lights	PWT	Night lights	PWT
VARIABLES	GED	GED	ACD	ACD
Dependent variable (lagged)	-0.265***	-0.042***	-0.249***	-0.039***
	(0.042)	(0.011)	(0.047)	(0.011)
Conflict intensity	-16.778***	-6.692***	-6.244***	-2.697***
	(4.220)	(1.205)	(1.602)	(0.794)
Ratio of conflict coefficient: Night lights to PWT regressions	2.5		2.3	
Country fixed effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Frequency	Annual	Annual	Annual	Annual
Observations	861	861	861	861
R-squared	0.887	0.259	0.883	0.240
No. of countries	41	41	41	41

Note: Dependent variable is growth of per-capita night lights in columns 1 and 3, and growth rate of per-capita GDP from Penn World Tables in columns 2 and 4. Columns 1 and 2 use the percentile of conflict-related deaths as a share of population based on data from the Uppsala Georeferenced Event Level Dataset as the conflict intensity variable. Columns 3 and 4 use the intensity of conflict variable based on data from the Uppsala Armed Conflict Dataset. See Annex Section I for details. The row "Ratio of conflict coefficient" shows the ratio of the coefficient of the conflict intensity variable in columns 1 and 2, and columns 3 and 4. All regressions estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

To examine the spatial impacts of conflicts at the state level, the following regression is estimated:

$$z_{i,t} - z_{i,t-1} = \beta_1 z_{i,t-1} + \beta_2 c_{i,t} + \beta_3 s_{i,t}^1 + \beta_4 s_{i,t}^2 + \beta_5 s_{i,t}^3 + \mu_i + \alpha_t + \epsilon_{i,t} \qquad (A.4)$$

where $z_{i,t}$ is (log) night-lights activity in state i in year t; $c_{i,t}$ is the number of deaths resulting from conflict in region i at time t; $s_{i,t}^1, s_{i,t}^2,$ and $s_{i,t}^3$ are the death toll from conflicts in nearby regions within 500 kilometers, between 500 and1000 kilometers, and beyond 1000 kilometers, respectively; μ_i and α_t are state and time fixed effects; and $\epsilon_{i,t}$ is the error term. All variables are expressed in logarithms.[15] The parameter β_2 in equation A.4 measures the home effect, or the average effect of conflicts on local economic growth, while β_3, β_4, and β_5 measure the spillover effects from conflicts in nearby regions. Equation A.4 is estimated for the period 1993-2013 using the ordinary least squares method, with the standard errors clustered at the state level.

Results

The estimation results for equation A.4 for sub-Saharan Africa, presented in Annex Table 2.11, show that conflicts have a statistically strong effect on the home state. A conflict with a death toll of 100 people is associated with a reduction in night-lights growth of about 17 percentage points, equivalently to about a 7 percent reduction in local real GDP (column 1).[16] There is also evidence of spillover effects, which is smaller than the home effect, and generally declines with distance.[17]

The results are robust to including region-year fixed effects (columns 2 and 3) and country-level controls including per-capita GDP and population growth (column 4). The spillover results weaken when country-year fixed effects are included, though the home effect remains significant. This is not surprising as country-year effects absorb most of the local variation needed to identify spillovers.

Annex Table 2.12 presents the estimation results for equation A.4 for the world sample. Compared to sub-Saharan Africa, the average home effect of conflict for the world is less than half as strong (columns 1-3), while spillover effects are generally statistically stronger. The smaller spillover effects in sub-Saharan Africa may reflect the fact that poor infrastructure in the region implies less economic integration.

[15] For variables $c_{i,t}$ and $s_{i,t}^j$, the log transformation is $\log(1 + \text{conflict detahs})$.

[16] For a conflict that results in 100 deaths, $\widehat{\beta_2 c} = -0.037 \times \log(1 + 100) = -0.17$. The elasticity of night-lights with respect to real GDP is about 2.5 for low income countries.

[17] For Sub-Saharan Africa, the hypothesis that spillover effects are the same as home effects can be statistically rejected.

Annex Table 2.11. Sub-Saharan Africa: Impact of Conflict on Nightlights at State Level

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Night-lights growth				
Night-lights (lagged)	-0.490***	-0.490***	-0.502***	-0.496***	-0.551***
	(0.022)	(0.022)	(0.021)	(0.022)	(0.024)
Direct effect: Deaths in home state	-0.037***	-0.037***	-0.034***	-0.038***	-0.010*
	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)
Spillover 1: Deaths in states within 500 kms	-0.010***	-0.010***	-0.009***	-0.012***	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)
Spillover 2: Deaths in states between 500 and 1000 kms	-0.005	-0.005	-0.003	-0.006*	0.007
	(0.003)	(0.003)	(0.004)	(0.003)	(0.005)
Spillover 3: Deaths in states more than 1000 kms away	-0.001	-0.001	-0.003	-0.001	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)
Real GDP growth (country level)				0.228**	
				(0.112)	
Per capita GDP PPP (country level)				0.084***	
				(0.025)	
Population growth (country level)				-0.359	
				(0.516)	
State fixed effects	Yes	Yes	Yes	Yes	Yes
Other effects	Year	Continent times Year	Sub-region times Year	Year	Country times year
Observations	11,622	11,622	11,622	11,496	11,615
R-squared	0.611	0.611	0.624	0.614	0.699
No. of States	601	601	601	595	601

Note: Observations are at state-year level. Dependent variable is growth of night lights from NOOA. All columns include lagged value of log night lights. Direct effect variable is defined as log(1+deaths) in home state. Spillover variables are defined as log(1+deaths) in states within different distance ranges but restricted to countries which share a border with the home country. Columns have different levels of fixed effects as noted in the row "Other effects". All columns are estimated using OLS. Standard errors reported in parentheses are clustered at the state level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

Annex Table 2.12. World Sample: Impact of Conflict on Nightlights at State Level

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Night-lights growth				
Night-lights (lagged)	-0.477***	-0.487***	-0.495***	-0.482***	-0.569***
	(0.013)	(0.013)	(0.013)	(0.014)	(0.016)
Direct effect: Deaths in home state	-0.016***	-0.015***	-0.015***	-0.016***	-0.008***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Spillover 1: Deaths in states within 500 kms	-0.011***	-0.011***	-0.010***	-0.012***	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Spillover 2: Deaths in states between 500 and 1000 kms	-0.005***	-0.003*	-0.003*	-0.006***	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Spillover 3: Deaths in states more than 1000 kms away	-0.001	-0.002*	-0.001	0.001	0.005*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Real GDP growth (country level)				0.235***	
				(0.050)	
Per capita GDP PPP (country level)				0.161***	
				(0.014)	
Population growth (country level)				-0.529***	
				(0.161)	
State fixed effects	Yes	Yes	Yes	Yes	Yes
Other effects	Year	Continent times Year	Sub-region times Year	Year	Country times year
Observations	65,142	65,142	65,142	60,141	65,135
R-squared	0.642	0.655	0.675	0.661	0.756
No. of countries	3197	3197	3197	2963	3197

Note: Observations are at state-year level. Dependent variable is growth of night lights from NOOA. All columns include lagged value of log night lights. Direct effect variable is defined as log(1+deaths) in home state. Spillover variables are defined as log(1+deaths) in states within different distance ranges but restricted to countries which share a border with the home country. Columns have different levels of fixed effects as noted in the row "Other effects". All columns are estimated using OLS. Standard errors reported in parentheses are clustered at the state level. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level respectively.

2.1.5. FISCAL IMPLICATIONS

To examine the fiscal consequences of conflict, including the impact on revenue performance and the composition of government spending, the following model is estimated

$$Fis_{i,t} = \beta_1 Fis_{i,t-1} + \beta_2 C_{i,t} + \gamma X_{i,t} + \alpha_i + \alpha_t + + \varepsilon_{it} \qquad \text{(A.5)}$$

where the dependent variable Fis_{it} represents various fiscal indicators for country i at time t (such as total revenue, public spending, public military spending, and public investment spending), while $Fis_{i,t-1}$is the lagged dependent variable to capture the persistence in fiscal variables. $C_{i,t}$ is the conflict intensity variable, $X_{i,t}$ is a vector of control variables (including (log) real GDP per capita, (log) consumer price index, value added of agriculture sector, natural resources rents, trade openness, and a composite measure of democracy).[18] α_i and α_t are country and year fixed effects, respectively and ε_{it} is the error term.

Equation A.5 is estimated using OLS and standard errors are clustered at the country level. The dependent variables are measured in (log) real terms (Annex Table 2.13, 2.14, and 2.15), as well as in percent of GDP (Annex Table 2.16 and 2.17).

Estimation Results

The estimation results for the impact of conflict intensity (defined using the GED) on real revenue, military expenditure, capital expenditure, current expenditure, and total expenditure are reported in Annex Table 2.13. For revenues, the coefficient indicates that moving from no conflict to the 75th percentile of the conflict intensity variable implies a reduction in real revenue by around 12 percent (column 1). On the expenditure side, conflict intensity has a significant positive impact on military spending (columns 2-3). An increase in conflict intensity to the 75th percentile expands military spending by about 7-9 percent in real terms.[19] Notably, conflict intensity is associated with lower capital expenditure (column 4), and the magnitude of reduction in capital expenditure is comparable to the increase in military expense. Therefore, total expenditure does not appear to increase significantly in real terms (column 6), but the fiscal balance on average deteriorates by about 1.7 percent of GDP due to lower revenues (Annex Table 2.17, column 5).

Looking at debt, the results show that the public debt-to-GDP ratio, on average, jumps up by about 8-9 percent of GDP when the conflict intensity variable increases from zero to the top quartile (Annex Table 2.16, Panel A). Given that several sub-Saharan African countries received debt relief under the Heavily Indebted Poor Country (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI), a dummy variable for the disbursement years of HIPC or MDRI is also included in the regressions. As expected, the coefficient of the HIPC/MDRI dummy variable is negative and statistically significant.

These results remain similar when the conflict intensity variable based on the ACD is used (Annex Table 2.14). Conflict has a statistically significant negative impact on real total revenue (column 1). For expenditure, the intensity of conflict is positively associated with military expense (columns 2-3 and 5) and negatively

[18] In estimating military spending, (log) population and the average of neighboring countries' military spending are also included as additional controls (instead of inflation, agricultural value-added and natural resources rents).

[19] Military spending data is taken from the Stockholm International Peace Research Institute (SIPRI) and captures spending as recorded in the budget. To the extent that security related spending is executed off budget in conflict prone countries, the results may represent a lower bound on the effect of conflict on military spending.

associated with capital expenditure. Moreover, a major conflict is associated with around 2 percent of GDP deterioration in fiscal balance (Annex Table 2.17, column 10).

Non-linear Effects

As was the case for economic growth, the impact of conflict on fiscal variables can largely be attributed to more intensive conflicts (Annex Table 2.15). When conflict intensity is in the bottom two quartiles, fiscal performance is not significantly different from that in the non-conflict case. However, as conflict intensity moves to the third quartile, the impact becomes statistically significant. For revenues, when conflict intensity falls in the top two quartiles, real revenue decreases by about 10-11 percent (column 1), while on the expenditure side, real military spending increases by about 10-12 percent (columns 2-3), while real capital expenditure falls by about 15 percent (column 4).

Annex Table 2.13. Sub-Saharan Africa: Impact of Conflict on Fiscal Variables in Real Terms; Uppsala GED Data

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Revenue	Military Expenditure	Military Expenditure	Capital Expenditure	Current Expenditure	Total Expenditure
Dependent variable (lagged)	0.576***	0.740***	0.716***	0.657***	0.714***	0.727***
	(0.049)	(0.059)	(0.063)	(0.062)	(0.029)	(0.035)
Conflict intensity	-15.382***	9.216*	11.333**	-12.369*	-1.799	-3.614
	(3.867)	(4.792)	(4.642)	(6.210)	(2.986)	(3.212)
Per capita GDP (log)	0.185**	0.081*	0.047	0.276**	0.128**	0.122***
	(0.072)	(0.044)	(0.052)	(0.103)	(0.051)	(0.042)
Consumer price index (log)	0.018	0.009	0.011	-0.028	-0.009	-0.026
	(0.027)	(0.010)	(0.007)	(0.073)	(0.018)	(0.017)
Agriculture value added/GDP	-0.695	0.108		-0.747**	-0.144	-0.630**
	(0.430)	(0.483)		(0.367)	(0.265)	(0.278)
Natural resources rents/GDP	0.932***	0.555*		0.691*	0.456**	0.437***
	(0.199)	(0.321)		(0.396)	(0.188)	(0.152)
Trade openness (log)	0.149**	0.043	0.052	0.260**	0.074	0.098**
	(0.058)	(0.057)	(0.054)	(0.120)	(0.048)	(0.045)
Democracy index	0.150**	-0.019	-0.028	0.182**	0.040	0.052
	(0.059)	(0.055)	(0.058)	(0.074)	(0.039)	(0.041)
Population (log)			0.283			
			(0.214)			
Average military spending of neighbors			2.554**			
			(1.023)			
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	746	749	685	713	756	768
R-squared	0.992	0.991	0.991	0.978	0.994	0.995
No. of countries	38	37	34	38	38	38

Note: Dependent variables are the log of various fiscal indicators in real terms for SSA countries. The intensity of conflict variable is the percentile of conflict-related deaths as a share of population based on data from the Uppsala Georeferenced Event Dataset (GED). See Annex Table 2.1 for details on other control variables. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. *** , **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Annex Table 2.14. Sub-Saharan Africa: Impact of Conflict on Fiscal Variables in Real Terms; Uppsala ACD Data

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Revenue	Military Expenditure	Military Expenditure	Capital Expenditure	Current Expenditure	Total Expenditure
Dependent variable (lagged)	0.608***	0.751***	0.745***	0.619***	0.816***	0.735***
	(0.048)	(0.052)	(0.051)	(0.063)	(0.026)	(0.035)
Conflict intensity	-5.911**	3.407**	3.215	-11.887***	3.517**	-0.846
	(2.663)	(1.605)	(1.941)	(3.743)	(1.436)	(1.918)
Per capita GDP (log)	0.208**	0.115*	0.100	0.313**	0.121**	0.122**
	(0.093)	(0.059)	(0.065)	(0.130)	(0.045)	(0.049)
Consumer price index (log)	0.009	0.001	0.004	-0.006	-0.006	-0.026
	(0.026)	(0.007)	(0.005)	(0.063)	(0.017)	(0.018)
Agriculture value added/GDP	-0.703	0.008		-0.558	-0.352	-0.655**
	(0.428)	(0.324)		(0.402)	(0.221)	(0.277)
Natural resources rents/GDP	0.813***	0.416		0.551	0.358**	0.379**
	(0.197)	(0.256)		(0.417)	(0.152)	(0.152)
Trade openness (log)	0.144***	0.108**	0.102**	0.258**	0.125***	0.124***
	(0.051)	(0.041)	(0.037)	(0.123)	(0.043)	(0.040)
Democracy index	0.151**	-0.055	-0.049	0.210**	0.020	0.043
	(0.063)	(0.059)	(0.060)	(0.088)	(0.037)	(0.045)
Population (log)			0.083			
			(0.214)			
Average military spending of neighbors			2.499***			
			(0.640)			
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	691	870	890	635	694	711
R-squared	0.992	0.990	0.990	0.979	0.995	0.996
No. of countries	34	34	34	34	34	34

Note: Dependent variables are the log of various fiscal indicators in real terms for SSA countries. The intensity of conflict variable is based on data from the Uppsala Armed Conflict Dataset (ACD). See Annex Table 2.1 for details on other control variables. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. *** , **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Annex Table 2.15. Sub-Saharan Africa: Non-linear Impact of Conflict on Fiscal Variables; Uppsala GED Data

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Total Revenue	Military Expenditure	Military Expenditure	Capital Expenditure	Current Expenditure	Total Expenditure
Dependent variable (lagged)	0.580***	0.738***	0.714***	0.660***	0.714***	0.730***
	(0.049)	(0.058)	(0.061)	(0.062)	(0.029)	(0.035)
Excluded group: No conflict						
Conflict: 1st Quartile	0.016	3.195	4.151	3.568	-1.167	-0.035
	(2.417)	(3.278)	(3.022)	(5.545)	(3.015)	(2.959)
Conflict: 2nd Quartile	-3.616	-1.391	-1.305	-0.178	-0.675	-0.420
	(3.251)	(2.849)	(2.859)	(4.167)	(2.282)	(2.061)
Conflict: 3rd Quartile	-10.138***	2.487	3.898	-15.125***	-1.884	-4.835
	(3.362)	(3.451)	(3.623)	(5.065)	(2.719)	(2.916)
Conflict: 4th Quartile	-11.148***	9.802**	11.538**	-7.576	-0.388	-1.496
	(3.464)	(4.566)	(4.514)	(5.983)	(3.059)	(3.230)
			(1.094)			
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	746	749	685	713	756	768
R-squared	0.992	0.991	0.991	0.979	0.994	0.995
No. of countries	38	37	34	38	38	38

Note: Dependent variables are the log of various fiscal indicators in real terms for SSA countries. The intensity of conflict variable is the percentile of conflict-related deaths as a share of population based on data from the Uppsala's Georeferenced Event Dataset (GED). See Annex Table 2.1 for details on other control variables. Standard control variables (as in Annex Table 2.14) are included in all regressions although their coefficients have been suppressed to save space. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. *** , **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Annex Table 2.16. Sub-Saharan Africa: Impact of Conflict on Debt-to-GDP Ratio

	Panel A: GED				Panel B: ACD			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable (lagged)	0.890***	0.880***	0.883***	0.885***	0.884***	0.882***	0.885***	0.881***
	(0.038)	(0.050)	(0.048)	(0.054)	(0.026)	(0.042)	(0.040)	(0.056)
Conflict intensity	10.140**	12.170*	11.405*	12.310*	1.534	3.820*	4.238*	6.357**
	(4.861)	(6.337)	(6.647)	(7.060)	(1.005)	(1.891)	(2.126)	(3.008)
HIPC/MDRI dummy	-11.615**	-10.943**	-11.009**	-10.940**	-12.032**	-11.738**	-11.608**	-12.660**
	(4.383)	(4.809)	(5.022)	(5.052)	(4.817)	(5.216)	(5.488)	(5.815)
Fiscal balance/GDP		-0.705***	-0.724***	-0.772***		-0.678***	-0.694***	-0.806***
		(0.147)	(0.142)	(0.152)		(0.120)	(0.127)	(0.135)
Percent change in REER			-0.300***	-0.299***			-0.253***	-0.300***
			(0.066)	(0.072)			(0.052)	(0.063)
Per capita GDP (log)				1.995				0.198
				(2.461)				(2.761)
Observations	1,052	885	820	781	1,569	938	853	728
R-squared	0.919	0.924	0.926	0.926	0.919	0.927	0.928	0.929
No. of countries	41	41	39	39	39	39	36	35

Note: Dependent variables are debt-to-GDP ratios for SSA countries. The intensity of conflict variable in Panel A is the percentile of conflict-related deaths as a share of population based on data from the Uppsala Georeferenced Event Dataset (GED). The intensity of conflict variable in Panel B is based on data from the Uppsala Armed Conflict Dataset (ACD). See Annex Table 2.1 for details on other control variables. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. *** , **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Annex Table 2.17. Sub-Saharan Africa: Impact of Conflict on Fiscal Variables as a Share of GDP

	Panel A: GED					Panel B: ACD				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	Total Revenue	Military Expenditure	Military Expenditure	Capital Expenditure	Fiscal Balance	Total Revenue	Military Expenditure	Military Expenditure	Capital Expenditure	Fiscal Balance
Dependent variable (lagged)	0.410***	0.368	0.371	0.756***	0.323***	0.424***	0.419*	0.473**	0.713***	0.325***
	(0.069)	(0.267)	(0.255)	(0.063)	(0.078)	(0.075)	(0.238)	(0.205)	(0.138)	(0.086)
Conflict intensity	-2.279**	0.844**	0.885**	-0.850**	-2.201***	-0.599	0.427**	0.412**	-0.505***	-0.895***
	(0.860)	(0.367)	(0.375)	(0.376)	(0.709)	(0.554)	(0.197)	(0.183)	(0.159)	(0.266)
GDP per capita (lagged)	0.029	0.002	-0.084	0.526	1.246	0.487	-0.003	0.002	0.404	1.954**
	(0.994)	(0.141)	(0.097)	(0.754)	(0.811)	(1.198)	(0.139)	(0.142)	(0.835)	(0.868)
Consumer price index (log)	-0.468	-0.027	-0.068	-0.933**	0.151	-0.586	0.010	-0.002	-0.667**	0.105
	(0.353)	(0.044)	(0.075)	(0.433)	(0.476)	(0.403)	(0.016)	(0.033)	(0.260)	(0.439)
Agriculture value added/GDP	-0.047	-0.004		-0.028	0.052	-0.051	-0.007		-0.029	0.057
	(0.042)	(0.014)		(0.022)	(0.049)	(0.045)	(0.010)		(0.022)	(0.050)
Natural resources rents/GDP	0.116**	0.018*		-0.002	0.131*	0.104**	0.016*		-0.015	0.125*
	(0.047)	(0.010)		(0.028)	(0.069)	(0.046)	(0.009)		(0.031)	(0.066)
Trade openness (log)	2.373*	0.061	0.159	1.122*	-0.728	1.848	0.108	0.115	1.158*	-0.832
	(1.183)	(0.221)	(0.226)	(0.556)	(0.688)	(1.104)	(0.119)	(0.148)	(0.636)	(0.584)
Democracy index	0.019**	-0.000	-0.000	0.005	0.019**	0.023**	-0.002	-0.002	0.005	0.023**
	(0.008)	(0.002)	(0.002)	(0.004)	(0.009)	(0.009)	(0.003)	(0.003)	(0.004)	(0.009)
Population (log)			1.544*					0.570		
			(0.855)					(0.680)		
Average military spending of neighbors			0.044					0.034		
			(0.042)					(0.031)		
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	747	746	682	714	747	692	875	897	636	692
R-squared	0.847	0.693	0.679	0.774	0.446	0.856	0.721	0.727	0.785	0.449
No. of countries	38	37	34	38	38	34	34	34	34	34

Note: Dependent variables are various fiscal indicators in percent of GDP for SSA countries. The intensity of conflict variable in Panel A is the percentile of deaths as a share of population based on data from Uppsala's Georeferenced Event Dataset (GED). The intensity of conflict variable in Panel B is based on data from Uppsala's Armed Conflict Dataset (ACD). See Annex Table 2.1 for details on other control variables. All columns are estimated using OLS with country and year fixed effects. Standard errors reported in parentheses are clustered at the country level. *** , **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

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3. Opportunities and Challenges of the African Continental Free Trade Area

Online Annexes

3. Opportunities and Challenges of the African Continental Free Trade Area

Online Annexes

This collection of annexes presents background information and details on the data, econometric methodology as well as estimation results used in the chapter.

Annex 3.1. Objectives and Policy Levers of the AfCFTA

Annex authors: Reda Cherif, Russell Green, and Geremia Palomba

This annex provides background information about the African Continental Free Trade Agreement (AfCFTA). It summarizes its objectives, topics under negotiation, as well as the role of sub-regional economic communities (RECs) and complementing initiatives.

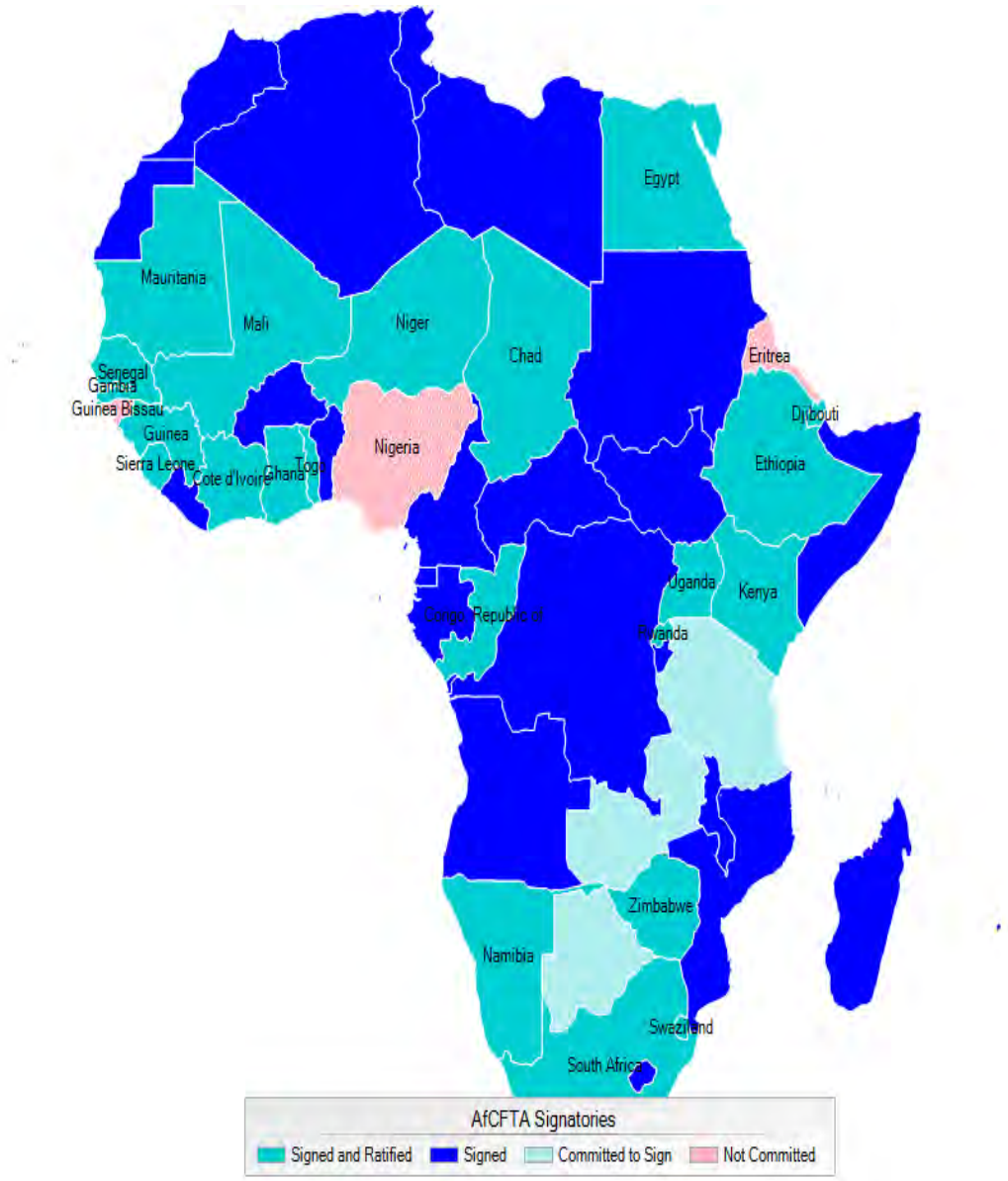
Background

In 2018, most African Union member states signed the AfCFTA along with a framework to negotiate key elements of trade liberation.[1] Member states (52 out of 55, 80 percent of Africa's GDP) have agreed on several provisions (Table A.3.1.1), [2] and they have left to future negotiations key items for trade liberalization, including tariff reductions for goods, liberation procedures of trade of services, rules of origin criteria, and national plans to reduce nontariff barriers (NTBs) (originally to be completed by early 2019). In addition, they committed to a later round of negotiations (by 2020), focusing on issues of intellectual property rights and competition policy. While further negotiations are needed on these specific issues, the AfCFTA sets some broad paraments. For trade in goods, the framework targets the elimination of tariffs on at least 90 percent of product categories. For services, the framework envisages liberalization on a request-and-offer approach for priority sectors. Importantly, members must also publish NTBs reduction plans, although these will not be a negotiated component of the treaty. As of April 2019, 22 countries ratified the AfCFTA fulfilling the requirement for the agreement to take effect (Figure A.3.1.1). A protocol on the free movement of people and a reform agenda to facilitate trade complement the agreement.

[1] The Pacific Alliance successfully followed a similar multi-step approach with a framework set in 2012, a negotiating goal settled in 2013, and a fully detailed agreement adopted in 2016.

[2] The provisions agreed include: a dispute settlement mechanism, a mechanism to identify and eliminate nontariff barriers (NTBs), and mechanisms to address customs cooperation, trade facilitation, technical barriers to trade, sanitary and phytosanitary measures and trade remedies.

Annex Figure A.3.1.1. Progress in Ratifying the AfCFTA



Annex Table A. 3.1.1. AfCFTA Completion Plan

Stages	Completed	Remaining Components	Target Dates
Phase I	Main framework	Tariff reduction commitments	Jan-19
	Customs cooperation	Rules of origin criteria	
	Trade facilitation	Services market access commitments	
	Dispute settlement	Non-tariff barrier reduction commitments	
	Trade remedies		
	Technical Barriers		
	Sanitary / Phytosanitary Measures		
	Non-tariff barrier elimination mechanism		
Phase II		Competition Policy	Jan-20
		Intellectual Property	
		Investment	
Future goals		Continental Customs Union	Undefined
		Continental Single Market	

Sources: Treaty documents.

Topics Still Under Negotiation Will Shape the Content of the Final Agreement

The effectiveness of the AfCFTA and its impact on the region critically depend on how tariffs on goods are reduced, services trade liberalized, and rules of origin determined. If these issues are correctly shaped, the final AfCFTA holds the potential to meet its objectives of creating an effective continent-wide free trade area covering goods and services trade, investment, competition policy, investment and intellectual property rights, ultimately paving the way for a common currency and free movement of people.

For trade in goods, the extent of actual tariff reductions depends on the ongoing negotiations, and the outcome can vary depending on the criteria used. The critical question is whether the objective of eliminating tariffs on 90 percent of product items is applied to tariff lines only or a combination of 90 percent of tariff lines and import value (i.e., double qualification). The impact on the extent of trade liberation would be quite different under the two criteria. Targeting tariff lines only could yield coverage as low as 15 percent of import value (UNECA, 2018). Another critical factor is the treatment of the remaining 10 percent of goods for which countries can implement tariff reductions over a longer period (e.g., sensitive goods) or maintain the current tariff (i.e., excluded products).

For services trade, the conditions of market access and qualifications of national treatment remain to be negotiated. The proposed market access provisions envisage a request-and-offer approach and focus on seven priority sectors.[3] How these procedures are shaped is however quite important. For instance, countries may require service providers to obtain local certification or may exclude the entire sectors, which would impact the scope of liberalization. Moreover, the AfCFTA covers all modes of service delivery, including establishment of a commercial presence in a foreign country and travel of the provider to supply the service in the foreign country. Covering these areas will require further commitments related to investment flows and movement of persons.

[3] The priority sectors are: logistics and transport, financial services, tourism, professional services, energy services, construction, and communications.

Administration procedures for rules of origin have been laid out, but the specific criteria by which goods qualify are still to be agreed. These criteria will have a significant impact on the potential trade flows. Criteria that are too complex and restrictive may induce countries not to claim preferences to avoid administrative hassles or may prevent imports of intermediate goods from third parties potentially undermining specialization and competitiveness.

In addition, negotiations also include eliminating NTBs, which is critical to the effectiveness of the AfCFTA. Each country is expected to identify and publish a time-bound matrix for the removal of NTBs. The individual matrices will possibly grow organically from the NTB recognition mechanism, which allows members to request other members to place NTBs on the removal matrix, but this process will take time. A dispute resolution procedure is also envisaged to resolve disagreements. Given the significant role of NTBs in restricting intra-African trade, the success of this mechanism will play a major role in shaping the impact of the AfCFTA.

Role of Regional Economic Communities and Complementing Initiatives

The agreement aims to build upon Africa's existing regional economic communities (RECs), although their role remains to be clarified. Questions remain about how the RECs will be integrated into the AfCFTA. The agreement contains references to the RECs persisting after the establishment of AfCFTA, in order to preserve areas where they entail deeper integration than what the AfCFTA achieves. At the same time, it includes the objective to "resolve the challenges of multiple and overlapping memberships and expedite the regional and continental integration processes." Both objectives deserve consideration.

Along with the AfCFTA, two additional initiatives would complement trade liberation supporting free movement of people and actions to boost intra-Africa trade.

- *Free movement of people.* The AfCFTA endorsed the free movement of people stated under the 1991 Abuja Treaty, but only about thirty countries have so far endorsed and applied the agreement. At present, many RECs promote visa-free entry, though few RECs have full participation of their members and the privilege does not extend beyond REC members. The free movement protocol would greatly expand options for free movement, although it retains border processing to preserve national security needs.
- *Action Plan on Boosting Intra-Africa Trade (BIAT).* The BIAT also accompanies the AfCFTA and contains seven priority action areas in which investments are required: trade policy, trade facilitation, productive capacity, trade related infrastructure, trade finance, trade information, and factor market integration. Much of the plan involves orienting traditional domestic development initiatives to take advantage of greater trade openness. For instance, prioritizing industrial development in competitive sectors; multi-country infrastructure projects; or gearing payments systems to facilitate cross-border transactions. The BIAT plan also reinforces the AfCFTA by including components of the treaty-like trade facilitation and harmonizing customs procedures.

Annex 3.2. Data Sources and Additional Stylized Facts
Annex author: Reda Cherif

This annex provides details on data sources used in the section "Regional Trade Integration in Africa: Key Patterns" and additional stylized facts.

Data sources

The primary data source for this chapter is the U.N.'s COMTRADE database at the SITC 4-digit industry level (Revision 2) for data on bilateral trade in goods over 1962-2017. Data are treated following Feenstra and Romalis (2014).[4] For each section of the chapter several other databases are also used. Table A.3.2.1 lists all data used in the chapter as well as their sources.

Following the U.N.'s classification, bilateral trade data on goods are classified into three categories as follows:

Category	SITC Industries Included	SITC Industries Excluded
Manufacture	5,6,7,8	68, 667
Food/Agricultural products	0,1,22,4	
Minerals	2,3,9,68,667	22

[4] See http://www.robertfeenstra.info/data/

Annex Table A.3.2.1. Data Sources

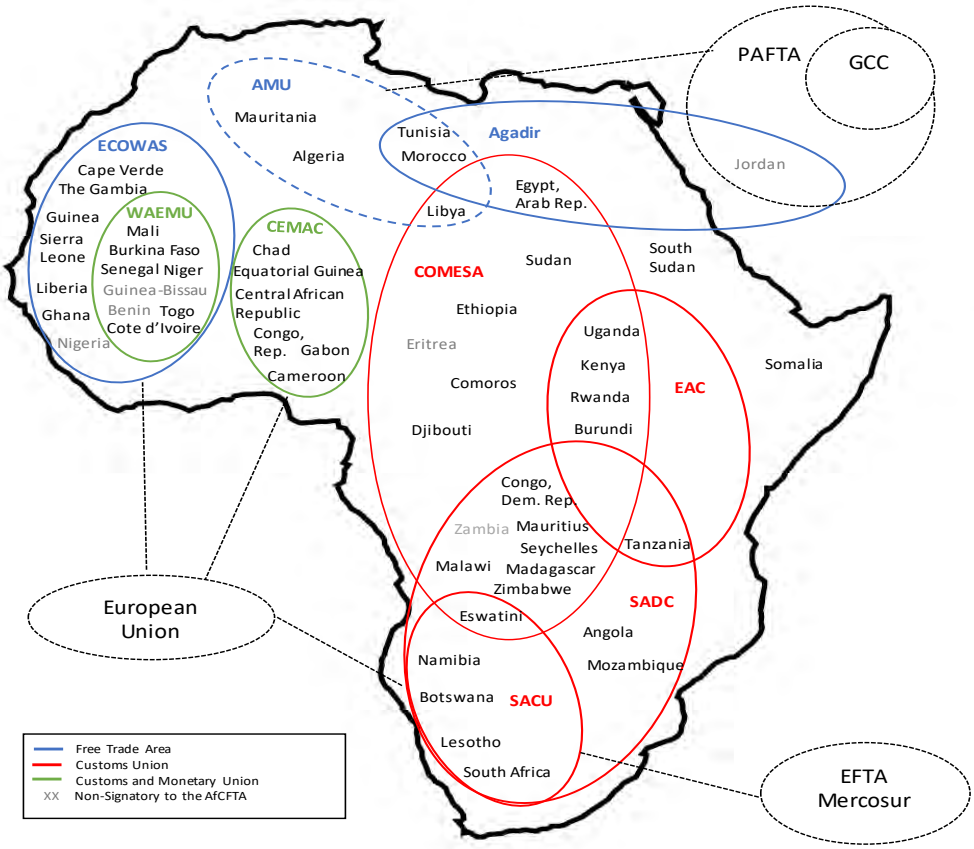
Variable	Description	Sources
Section I		
Imports and Exports of Goods and Services	In percent of GDP	World Bank, World Development Indicators database.
Bilateral Imports and Exports of Goods	SITC 4-digit industry level (revision 2) in current USD	United Nations Comtrade Database
Trade Openess	Exports plus Imports of Goods and Services	World Bank, World Development Indicators database
Tariff Rates	SITC 4-digit industry level tariff rates	United Nations Trade Analysis Information System
Nominal GDP	In billions (USD and national currency)	IMF, WEO database
Real GDP per capita	In PPP terms.	IMF, WEO database, Penn World Tables 9.0 database
Section II		
Bilateral Imports and Exports of Goods	SITC 1-digit industry level (revision 2) in current USD	United Nations Comtrade Database
Tariff Rates	SITC 4-digit industry level tariff rates	United Nations Trade Analysis Information System
Nominal GDP	In billions (USD)	IMF, WEO database
Population	millions	World Bank, World Development Indicators
Logistics performance	Overall logistics performance index (LPI) score	World Bank, LPI database
customs & border management	Customs index	World Bank, LPI database
Trucking, forwarding, and customs brokerage	logistics index	World Bank, LPI database
Education quality	Overall education quality score	UNESCO Institute for Statistics
Infrastructure quality	Overall infrastructure quality score	World Economic Forum, Global Competitiveness Index
Port quality	index	World Economic Forum, Global Competitiveness Index
Rail quality	index	World Economic Forum, Global Competitiveness Index
Airline seats	Available international airline seat km/week, millions	World Economic Forum, Global Competitiveness Index
Credit to the private sector	In billions (USD)	World Bank, World Development Indicators
Doing business	Overall Ease of Doing Business score	World Bank, Doing Business Indicators
International trade agreements	dyadic indicator variable	Design of Trade Agreements (DESTA) Database
Bilateral distance	kilometers	CEPII Gravity Database
Contiguous borders	dyadic indicator variable	CEPII Gravity Database
Common Official Language (COL)	dyadic indicator variable	CEPII Gravity Database
Language spoken by at least 9% of the population in both countries (comlang_ethno)	dyadic indicator variable	CEPII Gravity Database
common colonizer after 1945 (comcol)	dyadic indicator variable	CEPII Gravity Database
Non-tariff trade cost	Ad-valorem equivalent trade costs excluding tariff in percent: sigma=8	ESCAP-World Bank Trade Cost Database
Landlocked		???? from CC Codes spreadsheet
Regions	indicator variables	???? from CC Codes spreadsheet
SRECs	indicator variables	African Union
Section III		
Revenues from Costums and other duties	Revenues from Costums and other duties	IMF, Government Finance Statistics
Bilateral Imports	Aggregated Import data	IMF, Direction of Trade Statistics Database
Value Added Tax	In percent	IMF, Government Finance Statistics
Tarrif Rate	SITC 4-digit industry level (revision 2) in current USD	United Nations Trade Analysis Information System
Trade	(Goods exports + goods imports) as a share of GDP	IMF, WEO database
Tariff rate	100 - unweighted effectively applied (AHS) average import tariff rate	World Bank, World Integrated Trade Solution database
GDP per capita	GDP/total population	IMF, WEO database
Trade logistics (used in machine learning model)	Overall logistics performance index (LPI) score	World Bank
Education quality (used in machine learning model)	39 different indicators on education quality (human capital)	UNESCO Institute for Statistics, International Labor Organization, and UNHDR
Infrastructure quality (used in machine learning model)	9 different indicators on infrastructure quality	World Economic Forum, Global Competitiveness Index
private credit (used in machine learning model)	4 different indicators on credit to the private sector	World Bank, Doing Business database
business climate (used in machine learning model)	32 different indicators on business climate	World Economic Forum, Global Competitiveness Index
Trade logistics (used in threshold model)	Overall logistics performance index (LPI) score	World Bank
Education quality (used in threshold model)	Overall education quality score	UNESCO Institute for Statistics
Infrastructure quality (used in threshold model)	Overall infrastructure quality score	World Economic Forum, Global Competitiveness Index
private credit (used in threshold model)	Overall private credit score	World Bank, Doing Business database
business climate (used in threshold model)	Overall business climate score	World Economic Forum, Global Competitiveness Index
Inequality	Market Gini	Standardized World Income Inequality database
Informality	Shadow economy as a share of GDP	Medina and Cangul (2017)
Financial Openness	(External assets + external liabilities) as a share of GDP	External Wealth of Nations database
GDP Growth	Lagged (t-1) GDP growth	IMF, WEO database
Education quality (used in the inequality analysis)	Average years of schooling	UNDP, Human Development Indicators
Industrial Employment	Industrial employmet as a share of total employment	World Bank, World Development Indicators
Government Spending	Average of three government spending indices	Fraser Institute database
Income Quintiles	Quintile share of total income	UNU-WIDER database

Synthetic groups comprise of Azerbaijan (weight .01) Belarus (.02) Equatorial Guinea (.20) Moldova (.13) Mongolia (.48) Ukraine (.16)

Additional stylized facts

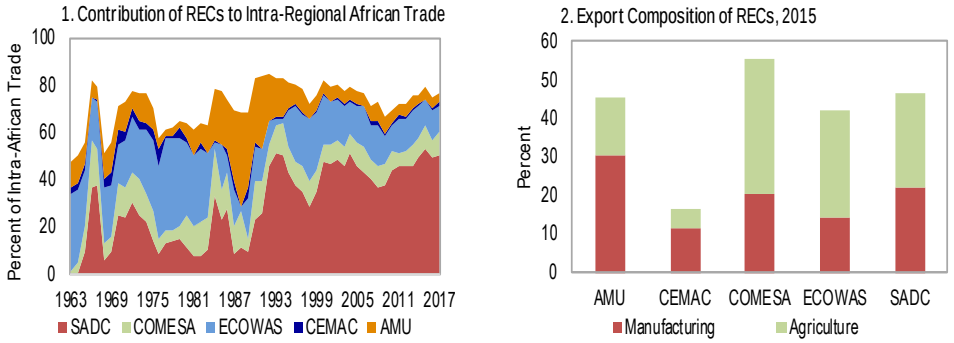
The rise in intra-African trade over the recent decades came on the back of greater trade integration following the establishment of free trade RECs (Figure A.3.2.1). In 2017, about 75 percent of African intra-regional trade took place within 5 RECs, with SADC alone representing half of it (Figure A.3.2.2). However, the establishment of trade agreements has had mixed results on the different RECs, with a surge of trade in some regions such as SADC and a more limited effect in other regions such as CEMAC (Figure A.3.2.3). The level of trade integration within the RECs reflects to some extent the level of diversification (Figure A.3.2.2). For example, CEMAC countries have on average low shares of non-mineral exports compared to other regions. However, AMU countries that are relatively more diversified on average seem relatively less integrated.

Annex Figure A.3.2.1. African Regional Economic Communities



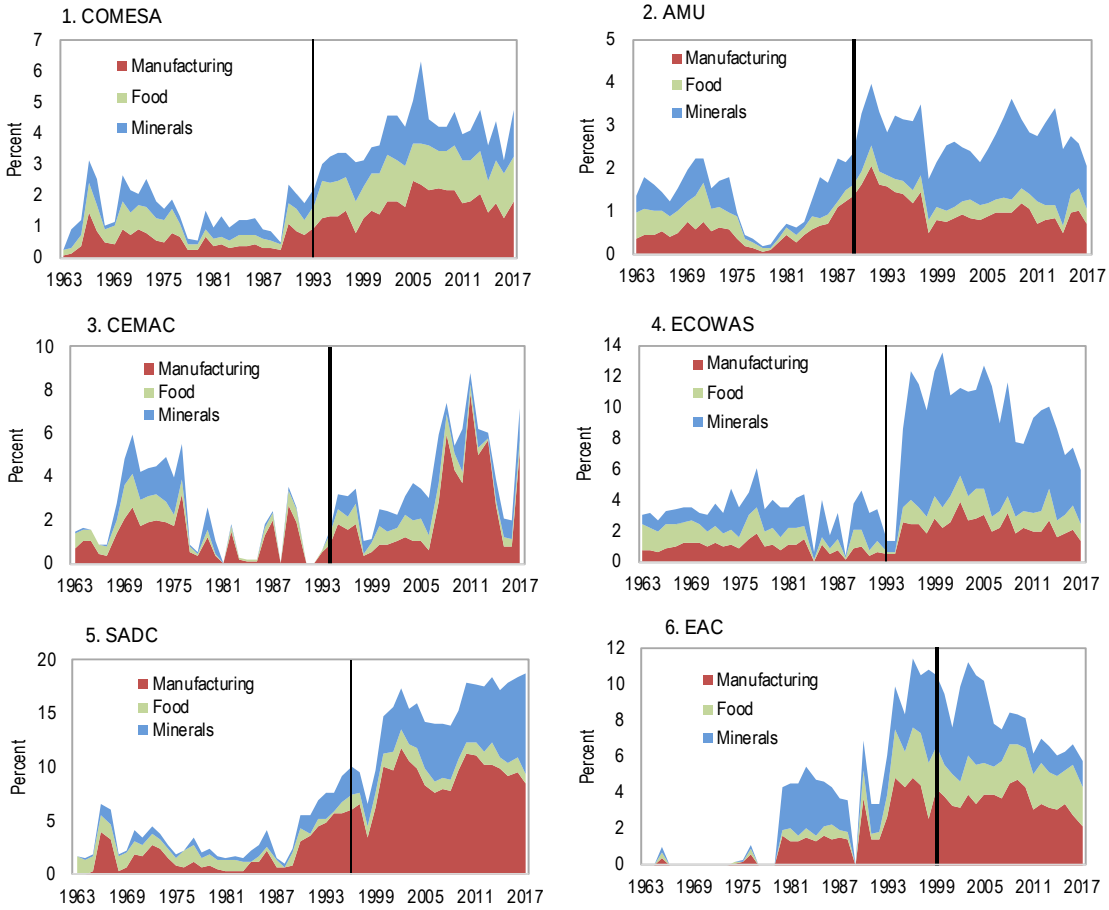
Note: Dotted border for AMU indicates the free trade area is not fully implemented. AMU, Arab Maghreb Union; CEMAC, Economic and Monetary Union of Central Africa; COMESA, Common Market for Eastern and Southern Africa; EAC, East African Community; ECOWAS, Economic Community of West African States; EFTA, European Free Trade Association; EU, European Union; GCC, Gulf Cooperation Council; Mecosur, Southern Cone Common Market; PAFTA, Pan-Arab Free Trade Area; SACU, Southern African Customs Union; SADC, Southern African Development Community; WAEMU, West African Economic and Monetary Union.

Annex Figure A.3.2.2 The Role of RECs in African Trade and their Export Composition



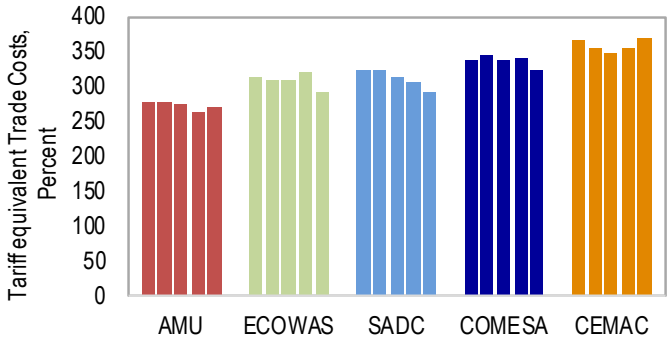
Source: United Nations COMTRADE Database and IMF staff calculations.
Note: AMU = Arab Maghreb Union; CEMAC = Central African Economic and Monetary Community; COMESA = Common Market for Eastern and Southern Africa; ECOWAS = Economic Community of West African States; SADC = Southern Africa Development Community.

Annex Figure A.3.2.3 Regional Trade Integration of African RECs



Source: United Nations COMTRADE Database and IMF staff calculations.
Note: Horizontal bars represent the year of establishment of the free trade area. The y axis represents REC's intra-regional trade as a share of total imports. AMU = Arab Maghreb Union; CEMAC = Central African Economic and Monetary Community; COMESA = Common Market for Eastern and Southern Africa; EAC = East African Community; ECOWAS = Economic Community of West African States; SADC = Southern Africa Development Community.

Annex Figure A.3.2.4. Africa: International Nontariff Trade Costs, 2011-15



Sources: The World Bank UNESCAP Trade costs Database; and IMF staff calculations.
Note: Figure shows tariff equivalent of nontariff trade costs. AMU = Arab Maghreb Union; CEMAC = Central African Economic and Monetary Community; COMESA = Common Market for Eastern and Southern Africa; ECOWAS = Economic Community of West African States; SADC = Southern Africa Development Community.

Grubel-Lloyd index of intra-industry trade

Chapter 3 shows that African countries have on average low levels of intra-industry trade compared to other regions, signaling low levels of value chain integration. The level of intra-industry trade is measured using the Grubel-Lloyd index (GL), which is defined as:

$$GL_i = 1 - |X_i - M_i| / (X_i + M_i)$$

The industry is indexed by *i*, and *X* and *M* represent exports and imports, respectively. GL is between 0 and 1. If $GL_i = 1$, then trade consists only of intra-industry trade. If $GL_i = 0$, it means that there is no intra-industry trade. The country under consideration only imports or exports good *i*.

Annex 3.3. Description of the Gravity Model
Annex author: Russell Green

This annex describes the gravity model used in the section "How Can the AfCFTA Support Regional Trade Integration in Africa?" and provides additional results.

The gravity model uses COMTRADE bilateral goods trade data at the 1-digit industry level at five-year intervals, 2000, 2005, 2010, and 2015 to account for the slow response to policy (Yotov et al, 2016). The dataset includes 148 countries, yielding almost 900,000 observations and 12,000 fixed effects.[5]

Our empirical specification can be summarized in the following equation:

$$X_{ijkt} = \exp\left(\pi_{ikt} + \chi_{jkt} + \beta b_{ijkt}\right) \times u_{ijkt}$$

where X_{ijkt} represents trade from country *i* to country *j* in industry *k* at time *t*. The π_{ikt} and χ_{jkt} terms are the exporter- and importer-industry-time fixed effects, respectively. The vector b_{ijkt} contains explanatory variables that vary across pairs and industries, and u_{ijkt} is the error term.

The explanatory bilateral variables b_{ijkt} include the standard gravity equation factors:

- Preferential trade agreement (PTA): indicating the presence of a trade agreement between two countries.
- Distance: the logarithm of the distance (in kilometers) between origin and destination.
- Contiguity: indicating common borders.
- Common language: indicating a common official language or if a language is spoken by at least 9 percent of the population in both countries.
- Common colonial history: indicating whether the pair had a common colonizer after 1945.

In line with recent literature, country-specific factors which impact a country's exports and imports (also called "multilateral resistance" terms, Anderson and van Wincoop, 2003) are represented through importer-industry-time and exporter-industry-time fixed effects (Egger and Nigao 2015; Agnosteva et al 2014; Baier and Bergstand 2007).[6] These absorb the effects of all country-level explanatory variables beyond the bilateral variables listed above. Use of the Poisson pseudo-maximum likelihood (PPML) estimation method addresses issues arising from zeroes in the data for country pairs that do not trade in certain industries (Santos Silva and Tenreyro 2011).[7]

[5] Faster computers and routines have allowed the use of much larger panel datasets, covering, for example, industry or commodity details over many years (Correia, Guimaraes and Zylkin 2018). We thank Tom Zylkin for sharing his "*ppmlhdfe"* code.

[6] Fixed effects can be thought of as allowing each unit in the fixed effects category—for instance, each industry for each exporter in each year—to have its own constant term.

[7] The more disaggregated the data is by commodity, the more common become zeroes among the country-commodity-time pairs.

The baseline gravity regression is regression (1) in Annex Table A.3.3.1, used to extract the regional fixed effect presented in the main text. In addition to the five variables listed above, it also includes regional dummy variables.[8] The coefficients of these variables capture distinct patterns among the bilateral trading pairs inside each region. The omitted variable in this regression—the counterfactual against which the region coefficients are measured—is trade between regions.

The high coefficient for the Africa region variable suggests that trade between African countries should be about 105 percent higher than inter-regional trade between two economies (with the same origin, destination and gravity characteristics) elsewhere. These results echo other studies of regional trade patterns (see, e.g. Bown et al. 2017). They reflect Africa's low starting point relative to other regions in terms of fixed effects.

[8] Regional grouping follows the standard World Bank country groups classification. The one exception is North African countries, which are placed in the Africa group comprising both Mideast/North and sub-Saharan Africa countries. Although not listed in the table, the regression also includes dummy variables for PTAs among other country pairs not included in the five regions listed, and for cross-region trade and PTAs.

Annex Table A.3.3.1. Baseline Gravity Regressions of Logged Trade

	(1)	(2)	(3)
Intra-Latin America and Carribean indicator	0.55715***	-0.220	
	(0.19584)	(0.246)	
Intra-Mideast indicator	0.71314**	1.216***	
	(0.33751)	(0.447)	
Intra-Developing Asia indicator	-0.39822***	-0.774***	
	(0.11780)	(0.258)	
Intra-Advanced Economies indicator	-0.18536**	-0.670***	
	(0.07953)	(0.237)	
Intra-other countries indicator	0.53903***	-0.039	
	(0.17520)	(0.354)	
Cross-region indicator		-0.486**	
		(0.204)	
Intra-Africa indicator	1.04943***		
	(0.16559)		
ECOWAS indicator		-0.920**	
		(0.369)	
COMESA indicator		-1.135***	
		(0.346)	
EAC indicator		2.218***	
		(0.419)	
CEMAC indicator		-1.142**	
		(0.574)	
AMU indicator		-2.055***	
		(0.427)	
Intra-Africa trade not within a SREC		-2.040***	
		(0.330)	
PTA within LAC		0.620*	
		(0.355)	
PTA within Mideast		-1.062**	
		(0.519)	
PTA within Developing Asia		0.199	
		(0.318)	
PTA within Advanced Economies		0.318	
		(0.290)	
PTA within other countries		0.411	
		(0.414)	
PTA across regions		0.317	
		(0.280)	
log(distance)	-0.65364***	-0.648***	-1.50071***
	(0.02812)	(0.029)	(0.12373)
PTA	0.45465***	0.142	
	(0.05252)	(0.279)	
Contiguous	0.40032***	0.405***	0.75665***
	(0.08943)	(0.089)	(0.18528)
Common language	0.28088***	0.290***	0.95009***
	(0.07112)	(0.071)	(0.14013)
Common colonizer	0.20622	0.223	-0.27141
	(0.15164)	(0.152)	(0.22347)
Constant	20.18092***	22.657***	21.70983***
	(0.25009)	(0.432)	(1.00905)
Country-Industry-Year FE	YES	YES	YES
Pair FE	NO	NO	NO
Industry-Year FE	NO	NO	NO
Data coverage	global	global	intra-AFR only
N	844758	844756	93796
Degrees of freedom	10584	10584	1224
Pseudo R2	0.936	0.937	0.883

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

An aggregation of regional fixed effects provides a sense of the starting point against which intra-regional trade coefficients are measured. In this case, we calculate the averaged fixed effect within a region, or

$$\frac{\sum_{i\in\text{region}}\sum_k \pi_{ikt} + \sum_{j\in\text{region}}\sum_k \chi_{jkt}}{2n},$$

where region refers to one of the regions listed in Annex Table A.3.3.1 and *n* is the number of *ijkt* observations inside each region. Strictly speaking, the region coefficients and the fixed effects are not comparable, because the former lie in *ijk* exporter-importer-industry space, while fixed effects lie in *ikt* and *jkt* exporter- and importer-industry-time space.

Regression (2) in Annex Table A.3.3.1 explores differences in trade among African RECs. To this purpose, it includes indicators for each region of intra-regional trade within a PTA (a multiplicative dummy).[9] The intra-Africa PTA indicator is broken down among six main sub-regional economic communities (RECs) that have substantial PTAs. The SADC is omitted to provide a reference point. Thus, the significant positive coefficient on intra-EAC trade indicates that the bilateral relationships among EAC members on average provide a boost to trade above that of SADC country pairs after controlling for origin, destination, and gravity effects.

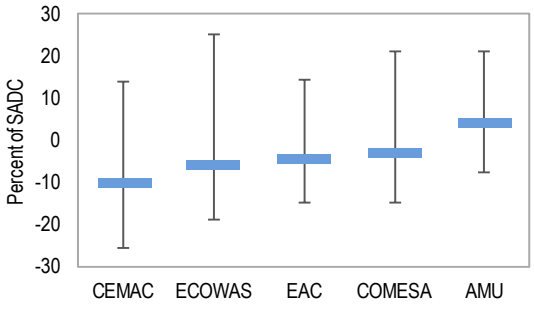
A similar exercise to that done for the fixed effects of the first regression demonstrates that EAC has a lower starting point than SADC for origin and destination effects (Annex Figure A.3.3.1).

Industry

Indicator variables can also provide industry-wise breakdowns of trade patterns in Africa. The first column in Annex Table A.3.3.2 provides the results of including indicators for the 10 industry groups in the 1-digit SITC revision 2 COMTRADE data. The omitted variables providing the counterfactual are the two miscellaneous categories, miscellaneous manufacturing and goods not specified elsewhere.[10] Industries with negative coefficients exhibit less trade within Africa than one would expect given African countries' origin, destination, and gravity characteristics.

Annex Figure A.3.3.1 Contribution of SREC Characteristics to Trade

Median and Inter-Quartile Range



Source: IMF staff estimates.

[9] As a result, the regional dummies now reflect intra-regional trade among countries without a PTA.

[10] The standard gravity variables are not listed in most regression output tables, but have the expected sign and, except for common colonial history, are always statistically significant. Also, not listed are the coefficient on indicators for trade and PTAs among other country pairs not among the five regions listed, the latter an indicator for cross-region trade.

Annex Table A.3.3.2 Gravity Regressions of Logged Trade on Industry and Tariffs

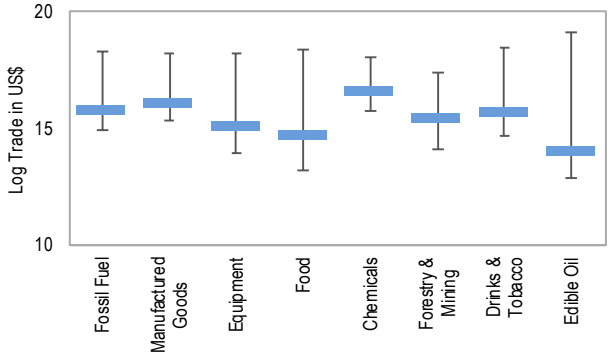
	(1)	(2)
AFR ≡ intra-Africa	1.42776***	
	(0.27147)	
AFR ≡ intra-Africa not within a SREC		-2.22863***
		(0.28318)
fossil fuel industry × AFR	-1.15792***	1.86822***
	(0.32282)	(0.35434)
manufacturing industry × AFR	-0.65286**	1.56267***
	(0.27879)	(0.32205)
equipment industry × AFR	0.54904**	-0.53512**
	(0.24047)	(0.26525)
food industry × AFR	-0.74595***	1.14956***
	(0.24678)	(0.26410)
chemical industry × AFR	0.69135***	-0.16151
	(0.25840)	(0.32107)
forestry & mining industry × AFR	-0.70778**	0.69105**
	(0.27993)	(0.33732)
beverages & tobacco industry × AFR	0.56393*	-0.17892
	(0.32384)	(0.41529)
edible oil industry × AFR	-0.30482	-0.17278
	(0.35915)	(0.50265)
log(tariff)		0.03263
		(0.03823)
fossil fuel industry × AFR × tariff		-0.46854***
		(0.09292)
manufacturing industry × AFR × tariff		-0.35478***
		(0.04370)
equipment industry × AFR × tariff		-0.19944***
		(0.05713)
food industry × AFR × tariff		-0.19964***
		(0.04517)
chemical industry × AFR × tariff		-0.16640***
		(0.04691)
forestry & mining industry × AFR × tariff		0.00503
		(0.05692)
beverages & tobacco industry × AFR × tariff		-0.09496*
		(0.04939)
edible oil industry × AFR × tariff		0.06561
		(0.08423)
log(distance)	-0.67230***	-0.69987***
	(0.02805)	(0.02926)
Country-Industry-Year FE	YES	YES
Industry-Year FE	NO	NO
data coverage	global	global
N	652714	652713
degrees of freedom	10452	10452
pseudo R2	0.939	0.939

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Here again, industries have different starting points. The gravity model estimates a different average value (fixed effect) for each importer- and exporter-industry-time unit after controlling for gravity forces. Again, pooling these across country and time for Africa provides the median fixed effect of each industry in Africa. In Annex Figure A.3.3.2 these appear in level form rather than as a share of another category because of the lack of a natural base category. Agricultural products—edible oil, food, beverages and tobacco—stand out as having a particularly low baseline of trade.

Annex Figure A.3.3.2 Contribution of Country Characteristics to Trade

Median and Inter-Quartile Range



Source: IMF staff estimates.
Note: The blue bars indicate the median of pooled importer- and exporter-industry-time fixed effects and the whisker lines indicate the 25 percent and 75 percent quartiles.

Tariffs and Distance

Tariffs are measured using TRAINS data, which reports four different measures of tariffs. As a baseline we use the tariff reported to be effectively applied. This captures non-preferential tariffs applied to goods which face a preferential tariff in theory but in practice may not meet the technical qualifications to receive the preference. Missing values are then filled in with preferential rates for country pairs with a PTA and most-favored nation (MFN) rates for others. Finally, remaining missing values are filled with bound rates for non-PTA country pairs. Some values are then filled from lag or lead values for a particular importer-industry.

As shown in Section 1 of the main text, the RECs have nearly zero applied tariffs on all goods. So, to measure the impact of tariffs on African trade, we only consider intra-Africa trade occurring outside of a REC. In our tariff elasticity regression (see Annex Table A.3.3.3), the Africa indicator variable only refers to this trade. The coefficient on the interaction term for tariffs applied in Africa is not significant, indicating Africa does not have a tariff elasticity significantly different from the global elasticity. The point estimate for the global elasticity is -0.175.

In the theoretical construct of the gravity model, the coefficient on tariffs represents the trade elasticity for any trade cost adjustor that applies in an ad valorem fashion. After converting to allow for the units of measurement, we find a trade elasticity of 17. Typical values fall closer to a range of 2 to 12 (Yotov et al, 2016). However, this elasticity implies a response of trade to reducing tariffs that is close to the outcomes found in the general equilibrium models reviewed in Annex 3.5. The second column of Annex Table A.3.3.2 presents tariff elasticities for industries at the 1-digit level.

Distance between two economies plays a central role in gravity analysis. Not only does distance reflect transportation-linked costs, but also the cost of obtaining information about faraway markets. Impediments to trade like administrative hurdles may reasonably be assumed to become more difficult to overcome the

farther one must travel to resolve them. As such, distance can be a proxy for the cost of trade (Head and Mayer 2013).

In the distance regression in the right column of Annex Table A.3.3.3 intra-Africa trade (this time not separating out trade within RECs) has a significant negative interaction with distance. Only Latin America and the Caribbean present a similar finding. This suggests that these two regions may face additional costs to trade that are not present in other regions. As before, these results speak to the bilateral features of the country pairs in the region, because the regression controls for origin, destination, and gravity forces.

Nontariff Bottlenecks

Most of the policy factors that influence trade present themselves at the country level. Identifying them in a gravity model requires dropping the country-level fixed effects in place of industry-time fixed effects. However, the industry-time fixed effects control for the unobservable multilateral resistances and dropping them can severely bias the estimates (Anderson and van Wincoop, 2003). Instead, Head and Mayer (2014) suggest performing a second-step regression of the fixed effects from the first stage on the augmented variables of interest.

To shift our focus to explaining the features of intra-African trade, we run the basic gravity model for intra-African trade only (column 3, Annex Table A.3.3.1). After obtaining the exporter- and importer-industry-time fixed effects from such a model, we run them on the "traditional" gravity variables: logged GDP and population, and an indicator for landlocked countries. Other traditional variables, like physical and cultural distance, are not included because they were included in the first stage. Presumably the fixed effects, generated while controlling for those factors, will not be influenced by them.

The literature suggests a few other standard country characteristics that may influence trade. Infrastructure and business climate are generally key inputs to economic activity that fairly directly relate to trade, and logistics captures features of both that are related to trade. Many studies also consider credit to GDP (also known as financial depth) and a measure of human capital, education quality, which are also key inputs to economic activity but touch trade less directly. The regression results are presented in the first column of Annex Table A.3.3.4.

Annex Table A.3.3.3 Gravity Regressions of Logged Trade on Distance and Tariffs

	(1)	(2)
log(tariff)	-0.17496**	-0.19566***
	(0.08508)	(0.02629)
AFR ≡ intra-Africa not within a SREC	-1.56051***	
	(0.22997)	
log(tariff) × AFR	-0.00692	
	(0.08701)	
AFR ≡ intra-Africa		4.93487***
		(0.96862)
Latin America and Carribean indicator		4.13487***
		(0.78581)
Mideast indicator		-3.55428**
		(1.75928)
Developing Asia indicator		-0.10821
		(1.43719)
Advanced Economies indicator		-0.62199
		(0.47260)
log(distance)	-0.70110***	-0.70230***
	(0.02880)	(0.04332)
log(distance) × AFR		-0.49694***
		(0.11670)
log(distance) × Mideast		0.57377**
		(0.24695)
log(distance) × Developing Asia		-0.05149
		(0.17947)
log(distance) × LAC		-0.47500***
		(0.09224)
log(distance) × Advanced Economies		0.06567
		(0.05730)
PTA	0.23856***	0.27052***
	(0.04772)	(0.04754)
contiguous	0.51237***	0.49012***
	(0.08732)	(0.09437)
common language	0.26486***	0.26378***
	(0.05462)	(0.05681)
common colonizer	0.14529	0.14260
	(0.15773)	(0.15672)
Constant	22.66089***	21.19367***
	(0.32287)	(0.36955)
Country-Industry-Year FE	YES	YES
Industry-Year FE	NO	NO
data coverage	global	global
N	652713	652712
degrees of freedom	10452	10452
pseudo R2	0.939	0.940

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

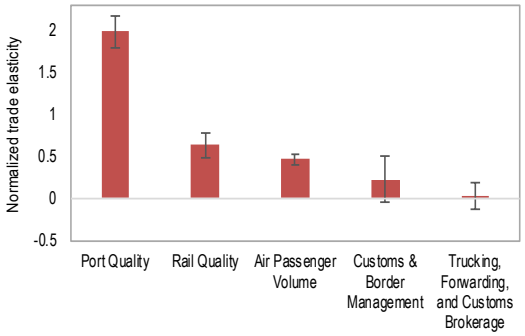
Annex Table A.3.3.4 Regressions of Gravity Fixed Effects on Country Characteristics

		(1)	(2)	(3)
	log(credit to pvt sector/GDP)	1.288***	1.235***	0.751***
		(0.060)	(0.061)	(0.034)
LPI	Logistics performance	0.630***		0.677***
		(0.083)		(0.066)
LPI	Trucking, forwarding, and customs brokerage		0.050	
			(0.120)	
LPI	Customs & border management		0.182*	
			(0.105)	
	Doing business	0.026***	0.030***	0.024***
		(0.006)	(0.005)	(0.004)
infrastructure	Infrastructure quality	0.181***		0.109***
		(0.062)		(0.040)
infrastructure	Port quality		0.950***	
			(0.047)	
infrastructure	Airline volume		0.749***	
			(0.049)	
infrastructure	Rail quality		0.358***	
			(0.039)	
	Education quality	0.034		0.085***
		(0.038)		(0.025)
	log(tariff)	-0.079***	-0.079***	-0.060***
		(0.022)	(0.020)	(0.016)
	log(GDP)	0.172***	0.082**	0.307***
		(0.047)	(0.038)	(0.034)
	log(population)	0.978***	0.957***	0.606***
		(0.040)	(0.043)	(0.029)
	Landlocked	-0.665***	-0.357***	-0.977***
		(0.073)	(0.073)	(0.050)
	Constant	-14.555***	-14.657***	-15.042***
		(0.217)	(0.184)	(0.178)
	Country-Industry-Year FE	NO	NO	NO
	Industry-Year FE	YES	YES	YES
	1st-stage data	intra-AFR only	intra-AFR only	global
	2nd-stage data	intra-AFR only	intra-AFR only	intra-AFR only
	N	20392	18758	20515
	degrees of freedom	933	913	933
	adjusted R2	0.558	0.587	0.610

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Two of the key variables of interest, infrastructure and logistics performance, can be broken down into their sub-components to obtain more finely-grained findings on factors associated with improved trade. The sub-indices exhibit a high degree of multi-collinearity, and the results are not as robust as for the general indices. Many different specifications were tried, resulting in a group of variables that appear theoretically consistent and remained robustly present in many different specifications. The results are presented in the second column of Annex Table A.3.3.4. Normalizing the coefficients by their standard deviation facilitates comparison of the results. These are presented in Annex Figure A.3.3.3.

Annex Figure A.3.3.3 Elasticity of Intra-African Trade to Infrastructure and Logistics Performance



Source: IMF staff estimates
Note: The bars indicate the normalized trade elasticity and the whisker lines indicate 95% confidence intervals.

Robustness checks

The results presented here are robust to different checks, including:

(1) Taking the data back to 1980.
(2) Changing the granularity of the industry data to the 2-digit industry level.
(3) Changing the regional definitions by including North Africa into the Middle East region.
(4) Removing the oil industry.
(5) Running the regressions in Annex Table A.3.3.4 to cover global data and using Africa dummies.
(6) Dropping the origin and destination fixed effects and running the regressions in Annex Table A.3.3.4 with the direct trade data.
(7) Including or not including tariffs in regressions where tariff is not one of the variables of interest.

As usual in augmented gravity models, results are not necessarily robust to reverse causality or omitted variable bias. For instance, a country with high productivity in easily tradable goods with strong external demand faces a high return to investment in infrastructure and policies to facilitate trade. This makes it hard to disentangle causality for the bottlenecks to trade in panel data. Omitted variable bias comes in as, for instance, there are many prerequisites for financial depth which may independently facilitate trade. Accordingly, to maximize tariff revenue a country may apply tariffs on inelastic goods with a high volume of trade. This would create a seemingly perverse positive correlation between tariffs and trade. For these reasons the results in the bottleneck analysis, in particular, should be seen as associations rather than attributing causality.

Annex 3.4. Description of the Machine-Learning and Threshold Models Used to Analyze Tariffs and Nontariff Bottlenecks

Annex authors: Thomas McGregor and Yunhui Zhao[11]

This annex provides additional details about the econometric models used for analyzing the nonlinear interrelations among tariffs, nontariff bottlenecks, and trade flows in the section "Benefits from the AfCFTA and Significant Scope for Policies to Foster Regional Trade Integration."

The models are used to investigate two questions:

1. What are the most important nontariff bottlenecks in explaining trade, after accounting for potentially nonlinear relationships and other factors relevant to trade? (Direct effects of nontariff bottlenecks)
2. How do nontariff bottlenecks affect the effectiveness of tariff reduction in promoting trade? (Indirect effects of nontariff bottlenecks via their interaction with tariff)

Consistent with the literature, we focus on five bottlenecks: (physical) infrastructure, trade logistics, education quality (human capital), business climate, and private credit.

Direct effects of nontariff bottlenecks on trade: the machine-learning model

Data

To answer the first question on the direct effects of nontariff bottlenecks on trade, we combine the overall trade flow data with various data sources on nontariff bottlenecks. We intentionally use a large number of different measures for the same nontariff bottleneck variable in order to reap the most benefits of the machine-learning model. A panel dataset covering 121 countries from 2007 to 2017 is used, the time constraint is mostly due to the fact that the trade logistics data are only available (in selective years) from 2007 onwards. A description of the data and sources is presented in Table A.3.4.1.

Annex Table A.3.4.1: Data Description and Sources for the Machine-Learning Model

Variable	Description	Source
Trade	(Goods exports + goods imports) as a share of GDP	IMF, WEO database
Tariff rate	100 - unweighted effectively applied (AHS) average import tariff rate	World Bank, World Integrated Trade Solution database
GDP per capita	GDP/total population	IMF, WEO database
Trade logistics	7 different indicators on trade logistics quality, including the overall logistics performance index (LPI) score	World Bank
Education quality	39 different indicators on education quality (human capital), including the overall score	UNESCO Institute for Statistics, International Labor Organization, and UNHI
Infrastructure quality	9 different indicators on infrastructure quality, including the overall score	World Economic Forum, Global Competitiveness Index
Private credit	4 different indicators on credit to the private sector, including the overall score	World Bank, Doing Business database
Business climate	32 different indicators on business climate, including the overall score	World Economic Forum, Global Competitiveness Index

[11] The authors are grateful to Aquiles Farias and Shuyi Liu for helpful conversations and coding support.

Methodology

There are two challenges while analyzing the direct effects of the selected five nontariff bottlenecks on trade. The first is the "curse of dimensionality" when using standard regression techniques: There is an overwhelmingly large number of potential indicators that measure the nontariff factors; for example, there are 39 different measures of education from different data sources. The second challenge is that it is not immediately clear how these individual bottleneck factors interact with each other to affect the final variable of interest, i.e., trade. Principle component analysis (PCA)[12] and machine learning techniques (particularly, random forest models) are well-suited to tackle these challenges.

The random forest model is used because, as other machine-learning models, it allows for highly nonlinear relationship between the nontariff factors and trade flows, as well as complex nonlinear interactions among nontariff factors. In addition, it corrects for the overfitting issue encountered in other machine-learning techniques (e.g., decision trees).

Specifically, the analysis follows the following steps:

- 1: conduct PCA for each of the nontariff bottlenecks. The PCA results are presented in Table A.3.4.3.
- 2: run a fixed-effect panel regression, where the dependent variable is (imports + exports)/GDP, and independent variables are: (1) important tariff; (2) some "fundamental variables" as listed below; (3) year dummies. Keep the coefficients of (1) and (2), and the residuals.
- 3: run a random forest model, where the "response" is the residuals obtained in Step 2, and the features are the five policy variables, i.e. the five nontariff bottleneck variables (each represented by its principal component). Calculate the importance score for each "feature".

Results

The main results are the following:

- Trade logistics turn out to have the highest "importance score" in terms of the direct effect on trade.[13] These findings are obtained after controlling for other "fundamental" variables that may affect a country's trade. These include: (1) the geographic feature of the country, represented by an indicator for whether the country is landlocked or coastal; (2) the economic structure, represented by the share of agriculture in GDP and the share of manufacturing; (3) whether the country is a commodity exporter or not; (4) the economic status of the country, proxied by its LIC status, the emerging and developing economy status, whether the country is "small" or not, and the country's per capita GDP. As a useful indication, "importance score" measures the increase in the model's prediction error after the variable's values are randomly changed, so a variable with the highest importance score has the highest prediction power on the dependent variable, which is the trade-to-GDP ratio in our case. This result highlights the importance of trade logistics as a "soft" infrastructure, which is crucial for trade facilitation.

[12] The PCA accounts for information from multiple data sources in a concise and statistically meaningful way.

[13] The measurement of trade logistics is the PCA index produced based on the World Bank's Logistics Performance Index data set. It is a synthetic measurement of five dimensions, including customs procedure, international shipments processing, logistics quality and competence, timeliness, and tracking and tracing.

- Physical infrastructure turns out to be the second most important nontariff factor. The measurement of physical infrastructure is a PCA index produced using eight indicators, including qualities of roads, railroads, ports, air transport, airline, electricity, mobile, and landlines.

Indirect effects of nontariff bottlenecks on trade: the threshold model

Data

To answer the second question on whether nontariff bottlenecks affect the effectiveness (i.e., the marginal effect) of tariff reductions (indirect effect), we again use the data on the overall trade flows as above, together with the overall scores on nontariff bottlenecks from the machine-learning analysis (instead of all the sub-indices due to the aforementioned "curse of dimensionality"). A panel dataset on 121 countries from 1990 to 2017 is used. A description of the data and sources is presented in Annex Table A.3.4.2.

Annex Table A.3.4.2: Data Description and Sources for the Threshold Model

Variable	Description	Source
Trade	(Goods exports + goods imports) as a share of GDP	IMF, WEO database
Tariff rate	100 - unweighted effectively applied (AHS) average import tariff rate	World Bank, World Integrated Trade Solution database
GDP per capita	GDP/total population	IMF, WEO database
Trade logistics	Overall logistics performance index (LPI) score	World Bank
Education quality	Overall education quality score	UNESCO Institute for Statistics
Infrastructure quality	Overall infrastructure quality score	World Economic Forum, Global Competitiveness Index
private credit	Overall private credit score	World Bank, Doing Business database
business climate	Overall business climate score	World Economic Forum, Global Competitiveness Index

Methodology

To study the indirect effects of nontariff bottlenecks, a panel threshold model is used. This allows us to investigate the existence of thresholds in the tariff-trade relationship while controlling for fixed effects using standard econometric techniques. Note that we focus on the total trade flows of a given country (imports) with all other countries, rather than the bilateral trade flows between each country, as in Section II. The main reason is that in order to estimate the panel threshold models, a strongly balanced panel data set without missing observations is required, which is widely violated in the pairwise bilateral trade flow dataset.

Following the presentation in Hansen (1999) we estimate the following threshold model to investigate non-linearities in the drivers of international trade:

$$t_{it} = \begin{cases} \mu + \beta_{11} y_{it} + \beta_{12} s_{it} + \delta_1 (s_{it} * m_{it}) + u_i + \varepsilon_{it} \\ \mu + \beta_{21} y_{it} + \beta_{22} s_{it} + \delta_2 (s_{it} * m_{it}) + u_i + \varepsilon_{it} \end{cases} \quad if \quad \begin{matrix} q_{it} < \gamma^n \\ q_{it} \geq \gamma^n \end{matrix}$$

where t_{it} is the level of trade of country i at time t (measured as imports); y_{it} is real GDP per capita in constant 2011 US$; s_{it} is a vector of nontariff trade related variables (including: educational quality, infrastructure quality, trade logistics, private credit depth, and the business climate); m_{it} is the simple mean tariff level imposed by a country on imports (i.e., not weighted by trade volumes); u_i is the individual country fixed effect; ε_{it} is the error term assumed to be distributed i.i.d; q_{it} is the specific threshold variable

(see discussion below); δ is the tariff elasticity of trade interacted with the threshold variable and is our primary object of interest, and γ^n is a set of thresholds to be estimated.

Or, in general form as

$$t_{it} = \mu + \beta \mathbf{X}_{it}(q_{it}, \gamma^n) + u_i + \varepsilon_{it}$$

where

$$\mathbf{X}_{it}(q_{it}, \gamma) = \begin{cases} \mathbf{X}_{it} I(q_{it} < \gamma) \\ \mathbf{X}_{it} I(q_{it} \geq \gamma) \end{cases}$$

We use the within-group deviations[14] of each variable to account for the panel fixed effect. Since γ is observable, the model is not different from the ordinary linear model[15]. We use the bootstrap method to estimate the model under the null (nonlinearity) and calculate the asymptotic p-value for F-statistic following Hansen (1996). Since we are estimating multiple thresholds, we follow Bai (1997) and Bai and Perron (1998) in using the sequential estimator.

Results

The main results from the threshold model are the following (Annex Tables A.3.4.4 and A.3.4.5):

- Overall, there is a strong negative relationship between tariff levels and trade. Reciprocity in effective tariffs is also evident—lower import tariffs are mirrored by more liberal market access conditions.
- Economies with better quality infrastructure and trade logistics, deeper credit markets, and a friendlier business environment have higher levels of trade Tariffs have a dampening effect on trade overall.
- Overall, tariff reductions have a much larger effect on trade when the hard infrastructure is above a certain threshold, suggesting that hard infrastructure constitutes a severe binding constraint for tariff reduction to promote trade. As shown in Table A.3.4.4 and Column 1 of Table A.3.4.5, after the quality of hard infrastructure reaches a certain threshold (i.e., after the bottleneck is lifted), the marginal effect of tariff reduction will be more than doubled in raising trade (0.06 versus 0.15). This result is based on the entire sample that contains both African and non-African countries.
- Moreover, both the existence of the threshold effect and the threshold level itself depend on the country's geographic characteristics and/or economic structure.
    - For *landlocked* economies: Both hard infrastructure and trade logistics display threshold effects. In fact, compared with the overall sample, the bottleneck effect of hard infrastructure is much stronger for landlocked economics: as shown in Annex Table A.3.4.4, tariff reduction effectively has no impact on trade before hard infrastructure reaches the threshold, and then it becomes much more effective after the threshold of hard infrastructure is reached (0.307 versus 0.142 for the overall sample). Interestingly, for landlocked economics, tariff reduction is more effective in increasing trade when trade logistics are initially below the threshold. However, trade logistics themselves still have an important role in directly increasing trade: for landlocked countries, improvement of trade logistics would enhance trade by much more compared with the overall sample (0.77 versus 0.47, see Table

[14] Within-group deviation of x is given by $x^* = x_{it} - \bar{x}_i$ where $\bar{x}_i = T^{-1} \sum_{t=1}^{T} x_{it}$

[15] If γ had been unobservable, we would have a "nuisance parameter" problem (Davies, 1987).

A.3.4.5, Columns 3 and 1). These results are consistent with the main message of the chapter that nontariff factors are more important than tariff reduction alone.

- For *LICs*: Besides physical infrastructure, education also displays a threshold effect and constitutes a severe bottleneck for tariff reduction. As shown in Table A.3.4.4, tariff reduction will become twice as effective when infrastructure and education exceed their respective thresholds. These results imply that improving infrastructure and education quality in LICs plays a key role in reaping the benefits of trade as they support the emergence of a more diversified economy as discussed in the main text of the chapter.

Annex Table A.3.4.3 Principal Component Analysis Results

Infrastructure		Trade logistics		Business climate		Education		Private credit	
Feature coefficients in the first principle component	Percentage of total variance explained by each principle component	Feature coefficients in the first principle component	Percentage of total variance explained by each principle component	Feature coefficients in the first principle component	Percentage of total variance explained by each principle component	Feature coefficients in the first principle component	Percentage of total variance explained by each principle component	Feature coefficients in the first principle component	Percentage of total variance explained by each principle component:
0.0001	99.9791	0.3766	92.1272	0.0343	65.6484	0.1469	50.7901	0.2879	78.2372
0.0001	0.0186	0.3817	2.5385	0.0343	23.6635	0.0015	27.3368	0.0247	16.9878
0.0002	0.0022	0.3635	2.5349	-0.0153	5.8479	0.1472	16.0519	0.6822	4.4007
0.0001	0.0000	0.3845	1.3736	-0.0149	1.6436	0.1471	2.3036	0.6717	0.3743
0.0001	0.0000	0.3657	0.7688	-0.0149	1.2299	0.1363	0.8548		
1.0000	0.0000	0.3791	0.6565	-0.0290	0.7178	0.1417	0.7346		
0.0001	0.0000	0.3938	0.0005	-0.0087	0.2822	0.1389	0.4790		
0.0009	0.0000			-0.0084	0.2314	0.2321	0.4324		
0.0016	0.0000			-0.0092	0.1868	0.2423	0.2154		
0.0001	0.0000			-0.0091	0.1780	0.2371	0.2079		
				0.9877	0.0946	0.2090	0.1730		
				0.0015	0.0894	0.2215	0.1505		
				0.0014	0.0757	0.2150	0.1056		
				0.0107	0.0548	0.0548	0.0570		
				0.0107	0.0316	0.0540	0.0369		
				0.0040	0.0151	0.0543	0.0164		
				-0.0049	0.0036	0.1697	0.0143		
				-0.0109	0.0022	0.1821	0.0089		
				0.1398	0.0018	0.1755	0.0078		
				0.0012	0.0005	0.0147	0.0048		
				-0.0074	0.0004	0.0141	0.0048		
				-0.0074	0.0003	0.0143	0.0035		
				-0.0087	0.0002	0.0003	0.0028		
				-0.0069	0.0001	0.0004	0.0024		
				0.0005	0.0000	0.0003	0.0019		
				0.0016	0.0000	0.0046	0.0014		
				-0.0074	0.0000	0.0045	0.0007		
				-0.0035	0.0000	0.0622	0.0004		
				0.0007	0.0000	0.0613	0.0002		
				-0.0041	0.0000	0.0617	0.0001		
				-0.0006	0.0000	0.2939	0.0001		
				0.0087	0.0000	0.2833	0.0000		
						0.2722	0.0000		
						0.1632	0.0000		
						0.1262	0.0000		
						0.2664	0.0000		
						0.2389	0.0000		
						0.2094	0.0000		
						0.0227	0.0000		

Source: IMF staff estimates.

Annex Table A.3.4.4 Threshold model results

Measure/group	Description	All	Africa	Landlocked	LIC
None		-0.101	-0.081	-0.193	-0.198
Education Quality	below threshold	-0.206	-	-	-0.165
	above threshold	-0.09	-	-	-0.363
	ratio	0.4			2.2
Infrastructure Quality	below threshold	-0.061	-	-0.142	-0.197
	above threshold	-0.148	-	-0.307	-0.414
	ratio	2.4		2.2	2.1
Trade Logistics	below threshold	-0.083	-0.123	-0.212	-0.218
	above threshold	-0.201	0.001	-0.093	-0.102
	ratio	2.4	0.0	0.4	0.5
Private Credit	below threshold	-	-	-	-
	above threshold	-	-	-	-
	ratio	-	-	-	-
Business Climate	below threshold	-	-	-0.149	-
	above threshold			-0.32	
	ratio	-	-	2.1	-

Note: "-" indicates insignificant or not applicable.
Source: IMF staff estimates.

Annex A.3.4.5. Panel Regressions with Threshold Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable	imports	imports	imports	imports	imports	imports	imports	imports	imports
Sample	all	all	landlocked	landlocked	landlocked	LICs	LICs	LICs	africa
Threshold variable	-	infr	-	infr	logistics	business	educ	infr	business
GDP per capita	1.067***	1.064***	0.879***	0.834***	0.869***	1.015***	1.017***	1.012***	1.025***
Education Quality	0.068	0.114***	-0.111	0.018	-0.399***	0.412***	0.782***	0.515***	-0.066
Infrastructure Quality	0.149***	0.292***	0.332***	0.808***	0.576***	0.054	0.065	0.146	-0.16
Trade Logistics	0.468***	0.317***	0.773***	0.816***	0.371***	-0.128	-0.200**	-0.234**	-0.146
Private Credit	0.093***	0.102***	0.246***	0.205***	0.214***	0.361***	0.389***	0.382***	0.252***
Business Climate	0.272***	0.327***	0.359***	0.399*	0.356***	0.777***	0.483***	0.638***	0.670***
Tariffs (M)	-0.101***	-	-0.193***	-	-	-	-	-	-
Coefficient of tariff									
Below threshold	-	-0.061***	-	-0.142***	-0.212***	-0.149***	-0.165***	-0.197***	-0.123***
Above threshold	-	-0.148***	-	-0.307***	-0.093***	-0.320***	-0.363***	-0.414***	-0.001
Observations	3,388	3,388	644	644	644	644	868	868	700
No. of countries	121	121	23	23	23	23	31	31	25

Source: IMF staff estimates.
Note: Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1); All variables enter in logs

Annex 3.5. Computational General Equilibrium Models Applied to the AfCFTA: Review of Results

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This annex reviews studies that use computable general equilibrium (CGE) models to examine the impact of intra-regional trade integration in Africa, as envisaged by the AfCFTA. It provides an overview of the key features of CGE models, summarizes results including the estimated impacts of tariff reductions on trade flows, GDP and welfare, and how the AfCFTA may have a different impact on different countries. It also reviews the role of nontariff barriers and other trade costs.

Using CGE models

Several papers have examined the economic impact of the African Continental Free Trade Area using Computable General Equilibrium (CGE) modeling. Most models rely on the Global Trade Analysis project (GTAP) database of the global economy.[16] These are *ex-ante* studies – simulating a future reduction in tariffs. Some of these studies also examine the effect of removing nontariff barriers (NTBs) or reducing trade-related transaction costs associated with timeliness (e.g., time goods spend in transit). Some studies elaborate further on the impact of introducing a customs union (as opposed to a Free Trade Agreement or FTA)[17], having goods exempted from tariff reductions, different speeds of trade integration, or modeling tariff reductions only in 'willing' countries.

Welfare effects of preferential trade agreements (PTAs) like the AfCFTA are theoretically ambiguous. The seminal contributions of Viner (1950) and Meade (1956) to the preferential trade literature show how welfare can actually worsen as trade gets diverted from a low-cost producer to a less competitive new regional partner as the latter gets preferential access to the regional market. In general, if partners in a Regional Trade Agreement (RTA) are close to international low-cost production standards in their production processes, welfare gains will be higher. Welfare results for each individual PTA need to be assessed empirically with the help of concepts such as trade creation and trade diversion.

CGE models have advantages and disadvantages when it comes to assessing the impact of trade agreements. Large and complicated CGE models strive to be realistic but they will make it difficult to understand the exact channels through which policy changes affect variables of interest. The various studies reviewed in this annex make various choices to balance advantages and disadvantages. AU, UNECA and AFDB (2017, p. 63-64) list the potential / expected benefits from a continental FTA. Results from the seven CGE studies discussed below are restricted to trade creation and diversion effects, plus access for producers to cheaper inputs and larger markets, and benefits to consumers that gain access to cheaper products. More recent papers try to capture effects related to access to a broader variety of products for consumers or model different market structures such as monopolistic competition. CGE models in general do not capture the potential for helping producers of food products better adapt to climate change or more dynamic effects such as exploiting economies of scale, extra gains from competition, increased innovation and potential for more diversified economic activities (including participation in global value chains). It should be noted that these 'dynamic' gains are by no means a given and adequate complementary policies are needed to reap these.

[16] https://www.gtap.agecon.purdue.edu/databases/default.asp

[17] The main difference between a customs union and a free trade area is that in a free trade area there is no common external tariff imposed.

Results from CGE models may vary substantially depending on the initial calibration and base-year data used for modelling. Most results show that "intra-Africa trade would intensify between countries which are already trade partners and new trade relations might not emerge significantly", while "in terms of trade by sector, the AfCFTA will increase exports in those products and services which are currently traded" (Chauvin et al, 2016, p31). This is a consequence of the set-up of the CGE as the base year calibration introduces initial trade relations between trade partners. Product categories for which there are initially no bilateral trade flows cannot be projected to become non-zero after the introduction of zero tariffs.

Impact of reducing tariffs on intra-African trade in goods

Results of seven key papers that estimate the impact of the AfCFTA are reported. Annex Table A.3.5.1 gives an overview of respective database and CGE model used in each of these studies and indicates how sectors and countries are aggregated. Annex Table A.3.5.2 shows the impact of a reduction in tariffs on intra-African goods trade on welfare, growth, trade flows, and tariff revenue loss (with the caveat that not all papers report the impact on all these variables). Results are not directly comparable because of different welfare measures, aggregation techniques, GTAP or other databases and CGE modeling choices. Further, some papers use dynamic CGE models, while others are static; the latter effectively implying that long-term equilibrium is attained immediately. All results in Annex Table A.3.5.2 essentially show 'level' effects, pushing the economy in a specific year above its original welfare/growth path. This is true even for those studies using dynamic CGEs, which allow for example for capital accumulation over time.[18]

Annex Table A.3.5.1. Overview of papers studying the impact of the AfCFTA

	Database (base-year)	CGE model	Closure of CGE model	Sectors (AGR, IND, SER)	Countries and Regions	
					Africa	Rest-of-world
Jensen and Sandrey (2015)	GTAP v9.2 (2011)	GTAP	Neo-classical closure with Investment endogenous. Extent to which labor is employed also endogenous.	22 (3 AGR, 17 IND, 1 SER)	21 countries + 3 regions	6 countries + 2 regions
Mevel and Karingi (2013)	GTAP v7 (2004)	MIRAGE (dynamic)	Closure maintains C.A. deficit of each region constant and fixed to initial value (i.e. investment is savings driven). Full employment of factor endowments (real exchange rate endogenous).	21 (12 AGR, 7 IND, 2 SER)	16 countries + 6 regions	1 country + 4 regions
Chauvin et al. (2016)	GTAP v8.1 (2007)	MIRAGE (dynamic)		21 (10 AGR, 5 IND, 6 SER)	17 countries + 3 regions	11
Vanzetti et al. (2018)	GTAP v10 (2014)	GTAP (static)	Fixed quantities of production factors within countries. Unemployment fixed.	43 (19 AGR, 22 IND, 2 SER)	25 countries + 6 regions	9 countries + 9 regions
Saygili et al. (2018)	GTAP v9 (2014)	GTAP (static)	Closure allows for change in employment of unskilled labor and int'l capital mobility.	22	27 countries + 5 regions	not specified
Abrego et al. (2019)	Eora (2015)	Costinot and Rodriguez-Clare (2014)	Trade is assmed to be balanced	26 (2 AGR, 13 IND, 11 SER)	46 countries	6 regions
AFDB (2019)	GTAP		Not reported.	Not reported.	26 countries + 6 regions	5 regions

[18] In the dynamic models, there is the possibility of growth, and as countries' income increases, part of it is saved, and capital accumulated. However, there is no immediate mechanism to lift growth itself beyond the playing out of these effects (i.e. there is no innovation or productivity increase that could help fuel growth once allocative efficiency gains are exhausted – *potential* growth does not increase).

Annex Table A.3.5.2. Overview of quantitative estimates of the impact of the AfCFTA.

	AfCFTA baseline scenario (=reduction of intra-African tariffs to zero) (all results reported are relative to baseline for year indicated in this column)	Impact on AFR welfare					Impact on exports (volume) 2/		AFR Tariff Revenue Loss	
		% of GDP	GDP growth	EV $ billion	EV % change	EV RoW ($ bn)	Total	Intra-AFR	% of GDP	% change
Jensen & Sandrey (2015)	Baseline from 2011-25. Results relative to baseline w/o liberalization in 2025.	+0.55%		$ 22.0 billion		$ -14.7 billion			-0.22%	-10.5%
Mevel & Karingi (2012)	Linear tariff phase out to 0 between 2012-17. Results shown relative to baseline w/o liberalization in 2022.	+0.01%		$ 0.3 billion	+0.20%		+4.0%	+52.3%		
Chauvin et al. (2016)	Baseline from 2007-30. Linear tariff phase out to 0 between 2017-27. Results shown for 2027.		+1.2%		+0.46%					
Vanzetti et al. (2018) 1/	All intra-African tariffs=0. Baseline year assumed to be 2014, for which results are shown.	+0.14%		$ 3.6 billion						
Saygili et al. (2018) 1/	All intra-African tariffs=0. Baseline year assumed to be 2014, for which results are shown.	+0.65%	+0.97%	$ 16.1 billion			+2.5%	+32.8%	-0.16%	-9.1%
Abrego et al. (2019)	All intra-African tariffs=0. Baseline year=2015, for which results are shown (perfect competition case).				+0.05%		+7.6%	+82%	-0.03%	
AFDB (2019)	All intra-African tariffs=0.			$ 2.8 billion	+0.1%		0.9%	14.6%		

1/ Papers cite 2017 as start of AfCFTA, but model data is calibrated for 2014. The latter year is assumed as the baseline against which scenarios are run. The main difference between the Vanzetti et al. (2018) and Saygili et al. (2018) papers is the closure rule (see table 1). If capital is not assumed to be mobile, then the gain in Saygili et al. (2018) drops from the reported $16.1 billion to $4.6 billion.

2/ The exception is Abrego et al. (2018) for which changes in export values are reported.

The seven retained studies use a variety of CGE data and models, with Jensen and Sandrey (2015) the most comprehensive study[19] – in terms of output reported, discussion of results and different scenarios considered. Annex Table 3,5.2 shows the main results from the seven retained studies and specifies the set-up of the baseline scenario. Jensen and Sandrey (2015) use the GTAP database based on 2011 trade flows and construct a baseline scenario up to 2025. It then shocks this baseline by setting intra-African tariffs to zero and reads off the impact between baseline and shock scenario for the year 2025 for the variables of interest. Chauvin et al (2016), using the MIRAGE CGE model, gradually phase out intra-African tariffs between 2017 and 2027, while also reporting the distributional impact at the household level using micro household surveys for six African countries. The study by Mevel and Karingi (2013), developed at UNECA, assumes fully liberalization of intra-African trade in 2017, with results reported for 2022. It also uses the MIRAGE CGE model and is thus more closely comparable to Chauvin et al (2016). UNECA is working on updating those studies as recent policy changes, such as the lowering of tariffs within regional economic communities, have affected growth and welfare results.[20] The two UNCTAD studies (Saygili et al, 2018, and Vanzetti et al. 2018) are static 'one-shot' models. This is also the case for the paper developed by Abrego at al. (2019), which is the only one modeling imperfect competition.

Results show intra-African trade increases substantially, but welfare and growth effects are limited. Positive welfare effects as measured by the equivalent variation (EV) concept are all below 1 percent, ranging from 0.053 percent (Abrego et al., 2019) to 0.46 percent (Chauvin et al., 2016). Results reported as an increase in GDP range from less than 0.01 percent (Mevel and Karingi, 2013), to 0.65 percent of GDP (Saygili et al., 2018). Mevel & Karingi (2013) find incomes have gone up by 0.2 percent. Chauvin et al. (2016) and Saygili et al. (2018) find that GDP growth is about 1 percentage point higher compared to their respective baselines. In

[19] Mureverwi (2016) is not discussed individually as results are very similar to Jensen and Sandrey (2015).

[20] For preliminary results, see https://www.uneca.org/sites/default/files/PublicationFiles/afcfta_modalities_key_messages_eng.pdf

other words: "the elimination of intra-Africa tariffs is not crucial to boost growth in the region" (Chauvin et al, 2016, p.16). Intra-African trade increases substantially in the studies that report this metric, including the widely cited 52 percent increase reported by Mevel & Karingi (2013) – however in the more recent UNECA work this number drops to 15-25 percent depending on the scenario. The most recent work by the AFDB (2019) gives similar results (around 15 percent). Even the upper bounds of these estimates are still below the AU's ex-ante target of a doubling of intra-African trade over a 10-year period. Tariff revenue losses are relatively small – going down by about 10 percent in the two studies reporting this (Table 2, final two columns).

Forces driving results at the country level

Results from CGE models vary greatly with respect to the effects across countries, with some countries worse off in absolute levels after regional trade integration. Annex Table A.3.5.3 shows country-by-country welfare results of the main papers discussed in Annex tables A.3.5.1 and A.3.5.2, demonstrating that not all countries win – as theoretically expected ex ante.[21] The results of Jensen and Sandrey (2012) show Madagascar and especially Zimbabwe to have lower welfare and GDP levels after liberalization. More countries lose out in the other papers: 7 countries and 4 regions in Mevel and Karingi (2013), and 4 countries and 1 region in Chauvin et al. (2016). In other words, results are not always robust across specifications. Abrego et al. (2019) gives a good overview of the characteristics of the winners in their model:

- Countries that are relatively more open and therefore more trade dependent than other African countries;
- Countries with initial import tariffs that are higher than in other countries;
- Countries that face higher initial export barriers than their peers in Africa;
- Countries which already have relatively strong initial trade ties with other countries in the AfCFTA.

The final output for a specific country is a combination of starting conditions and initial openness. In what follows, a couple of country examples are used to show the concrete impact of these forces. The results from Jensen and Sandrey's are the focus of this section with their main welfare results reproduced in Annex Tables A.3.5.3 and A.3.5.7, contribution to welfare by country shown in Annex Table A.3.5.5, and contribution to welfare by commodity in Annex Table A.3.5.4. Some of the channels described in the previous paragraph work in opposite directions than expected. Initial protection levels and trade patterns that are loaded into the CGE models play a large role in defining the models' outcomes. The main economic forces shaping trade and welfare outcomes at the country-level are outlined below, and countries are typically exposed to a combination of these. Countries with initially higher tariffs will gain more from liberalization but will also lose the most in terms of tariff revenues. Zimbabwe stands out here as it has high tariffs and would thus lose substantial tariff revenue (point 2 in paragraph 9 above), while the baseline data also has Zimbabwe having duty free access to the South African market. Hence, as its main trading partner, was already giving it good

[21] In Annex Table A.3.5.7 and A.3.5.8 at the end of this annex, more details are shown for the Jensen and Sandrey (2015) and Mevel and Karingi (2013) papers respectively. In Table A.3.5.7, a detailed country-by-country welfare decomposition showing EV to be the sum of (i) allocative efficiency, (ii) terms-of-trade, (iii) capital accumulation, and (iv) employment, with capital contributing most. Box A.3.5.1 gives more details on this decomposition.

access (point 3 in paragraph 9 above), the extra gains from liberalization are minor.[22] Another example, in the results reported by Chauvin et al (2016), is Mozambique's trade going up by 42 percent, but with substantial tariff revenue losses, while in Botswana (which has relatively low current levels of protection), welfare gains are minor (and negative in 3 out 4 reported studies in Table A.3.5.3), trade is reduced by 0.14 percent, but tariff revenues increase (Table A.3.5.7).[23]

Smaller economies are poised to gain more but will need to deal with competitive forces from larger economies. Small economies are poised to take relatively more advantage of liberalization, as the increase in trade flows will be relatively larger compared to the size of their economies (point 1 in paragraph 9 above). But larger economies typically have larger and more competitive industrial sectors and more trade links to other African economies (point 4 in paragraph 9 above), which could make it more difficult for smaller countries to remain competitive in those sectors. Results show that medium-sized countries with a relatively diversified economic base such as Côte d'Ivoire, Uganda, Tanzania, Namibia, Ghana and Senegal could make large gains. For smaller, less-diversified countries such as Rwanda, Madagascar, Malawi, Zambia and Mozambique results are ambiguous across the different studies. As the economic structure of large economies does not change substantially, gains are relatively small, but can be large in absolute terms, with spill-overs to smaller neighbors. Large economies like South Africa and Kenya gain from trade liberalization as they leverage their already large trade networks. Nigeria's relatively undiversified economy implies less potential for gains. Table 4 shows the contribution of own liberalization and of other countries' liberalization to a country's overall welfare gains. For example, South Africa loses from unilateral liberalization (-0.02%) but gains from Kenya's (+0.19%) and Zimbabwe's (+0.27%) liberalization. Kenya in turn makes large gains from its own liberalization (+0.38%). Nigeria's overall welfare goes up by only 0.28%, but other countries such as South Africa, Angola, Democratic Republic of Congo, Ghana and the rest of Africa gain from access to Nigeria's large market. Two papers show a slight decrease in Nigeria's welfare, but overall its economic structure would not change by much, and natural resource exports would still dominate. Senegal and Uganda gain a lot from increased access to rest-of-Africa (see penultimate row of table 4). South Africa looms large and its size enables it to gain a lot from the AfCFTA. The results on monopolistic competition from Abrego et al. (2019) are interesting in this case as they show that South Africa gains even more when the CGE model includes monopolistic competition, pointing to the sizeable economies of scale that South Africa would benefit from.

At the sectoral level, results once more reflect starting positions, which in turn reflect comparative advantage. Comparative advantage is not something set in stone, but the trade realities that a GTAP database reflect, shape the outcome of the CGE trade liberalization modeling exercise. A nice example on the forces at work comes from Jensen and Sandrey (2015, p.23) on the sugar sector. South Africa gains substantially from increased access to the sugar markets of Uganda and Kenya. The latter two countries in turn gain because they *reduce* production in a highly protected and inefficient sector. Looking at the combined textiles, clothing, footwear sectors—important for Africa's industrialization—the impact of the bigger countries that can take advantage from an existing industrial base is again very visible: notably South Africa, Kenya, Egypt (clothing),

[22] It should be noted that the trade data for Zimbabwe might suffer from quality concerns and results should be interpreted with caution. This is one of the reasons why Abrego et al. (2019) for example did not include Zimbabwe in its CGE model.

[23] Tariff revenues in SACU are actually going up as: (i) imports from SADC are already duty free, (ii) trade with other African countries is limited or already duty free (e.g. oil imports from Angola), (iii) South Africa imports more goods from outside Africa as its economy grows in response to the lowering of intra-regional tariffs (Jensen and Sandrey, 2015, p.28).

Nigeria (leather) (see table 5). Trade in natural resources does not move much as tariffs are in general already low or zero in those sectors, which also contributes to a slight reduction in real wages in this sector (Mevel and Karingi, 2013). Chauvin et al (2016) discuss in detail changes in sectoral economic activity for the 6 countries for which they also do detailed inequality work. Value added in agrofoods increases in Côte d'Ivoire, Burkina Faso, Ethiopia and Madagascar, but decreases in Nigeria and Cameroon, who are now importing more foodstuffs – in line with ex-ante expectations. Value added in Ethiopia's manufacturing sector decreases, while it increases in Côte d'Ivoire. Maybe slightly counter-intuitive, manufacturing value added increases also in Burkina Faso, but decreases in Cameroon (Chauvin et al, 2016, table 4, 2nd scenario).

Annex Table A.3.5.3. Welfare effects of elimination of all intra-African tariffs. 1/

	Jensen and Sandrey (2015) Welfare gain relative to baseline in 2025 (% of 2025 GDP)	Mevel and Karingi (2013) % change in welfare relative to baseline in 2022	Chauvin et al. (2016) % change in welfare relative to baseline in 2027	Abrego et al. (2019) 2/ % change in welfare relative to baseline in 2015 (static model)
Algeria				0.006%
Angola				0.060%
Benin			0.32%	0.152%
Botswana	0.30%	-0.4%	-0.08%	0.054%
Burkina Faso			0.04%	0.054%
Burundi				0.009%
Cameroon			0.22%	0.021%
Cape Verde				0.177%
Central African Republic				0.022%
Chad				0.003%
Congo				0.019%
Cote d'Ivoire			1.66%	0.019%
DR Congo				0.088%
Egypt	0.13%	0.3%		0.015%
Eritrea				0.005%
Ethiopia	0.22%	0.3%	1.19%	0.008%
Gabon				0.013%
Gambia				0.039%
Ghana	1.21%		0.24%	0.054%
Guinea			0.37%	0.018%
Kenya	1.01%			0.146%
Lesotho				0.061%
Liberia				0.006%
Madagascar	-0.01%	0.1%	0.01%	0.004%
Malawi	0.48%	-0.6%	-0.48%	0.232%
Mali				0.059%
Mauritania			0.46%	0.038%
Mauritius	0.43%	-0.8%		0.127%
Morocco	0.41%	0.0%		
Mozambique	0.07%	-0.5%	11.30%	0.163%
Namibia	2.82%			0.399%
Niger				0.090%
Nigeria	0.28%	-0.4%	-0.02%	0.012%
Rwanda	2.14%		-0.05%	0.034%
Sao Tome and Principe				0.064%
Senegal	3.46%	0.3%	0.76%	0.114%
Seychelles				0.141%
Sierra Leone				0.042%
Somalia				0.005%
South Africa	1.50%	0.7%	0.55%	0.104%
South Sudan				-0.002%
Sudan				0.000%
Swaziland				0.098%
Togo				0.147%
Tunisia	0.80%	0.6%		
Uganda	1.75%	0.4%	0.70%	0.104%
Tanzania	0.49%	0.3%	0.43%	0.052%
Zambia	1.59%	-0.2%		0.259%
Zimbabwe	-4.90%	-1.4%		
Angola+DRC	0.77%	-0.3%		
Lesotho+Swaziland	1.33%	1.1%		
Rest of East Africa		-0.2%		
Rest of North Africa		-0.1%		
Rest of Western Africa		0.6%		
Central Africa		-0.1%		
Maghreb and Egypt			0.03%	
Rest of Western Africa			-0.24%	
Rest of Africa			0.97%	
Average SSA				0.080%
Median SSA				0.054%
Average Weighted SSA				0.069%
Average Africa				0.072%
Median Africa				0.053%
Africa total	0.55%	0.2%	0.46%	0.053%

1/ Saygili et al. (2018) does not report individual country estimates.

2/ Perfect competition scenario without modeling of intermediate goods.

Annex Table A.3.5.4. Contribution to Welfare by Country (% of 2025 GDP, Jensen and Sandrey, 2015)

column indicates how a country gains from other countries' liberalization. Sum of column is total gains for that country

	S. Africa	Namibia	Kenya	Uganda	Egypt	Morocco	Nigeria	ANG-DRC	Zambia	Zimbabwe	Ghana	Senegal	Rest of Africa	Outside
S. Africa	-0.02%	-0.01%	0.05%	0.03%	0.03%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	10	-421
Botswana	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	-9
Namibia	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1	-5
Rest of SACU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4	-13
Kenya	0.19%	-0.01%	0.38%	-0.01%	-0.02%	0.00%	0.00%	0.00%	-0.01%	-0.02%	0.00%	0.00%	32	-517
Tanzania	0.12%	0.01%	-0.07%	-0.02%	0.02%	0.00%	0.00%	0.02%	0.03%	-0.02%	0.00%	0.00%	4	-504
Uganda	0.04%	0.00%	-0.04%	0.27%	0.00%	0.00%	0.00%	0.00%	-0.01%	0.00%	0.00%	0.00%	14	-42
Rwanda	0.01%	0.00%	-0.01%	-0.02%	0.00%	0.00%	0.00%	0.00%	-0.01%	0.00%	0.00%	0.00%	19	-9
Egypt	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	43	-107
Morocco	0.00%	0.00%	0.00%	0.00%	0.00%	-0.02%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	35	-37
Rest of E. Africa	0.06%	0.56%	0.01%	0.03%	0.00%	0.00%	0.03%	0.00%	0.00%	0.02%	0.00%	0.00%	20	-257
Nigeria	0.10%	0.06%	0.03%	0.01%	0.03%	0.03%	0.00%	0.11%	0.00%	-0.01%	1.10%	0.09%	756	-2,740
Angola-DRC	0.15%	1.67%	0.00%	0.00%	0.00%	0.04%	0.01%	0.14%	-0.01%	0.05%	0.01%	0.05%	257	-1,350
Ethiopia	0.01%	0.00%	0.09%	0.01%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0	-522
Madagascar	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	-11
Malawi	0.04%	0.01%	-0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	-0.02%	-0.02%	0.00%	0.00%	6	-3
Mauritius	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	-11
Mozambique	0.04%	-0.01%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-0.02%	0.00%	0.00%	2	-194
Zambia	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	-0.01%	0.00%	0.00%	14	-30
Zimbabwe	0.27%	0.06%	-0.02%	0.00%	0.00%	0.00%	0.01%	0.02%	-0.07%	-4.85%	0.00%	0.00%	45	4,479
Ghana	0.07%	0.01%	0.02%	0.01%	0.02%	0.02%	0.06%	0.03%	-0.01%	-0.01%	-0.22%	0.17%	412	-690
Tunisia	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	37	-71
Senegal	0.01%	0.01%	0.00%	0.00%	0.01%	0.04%	0.00%	0.00%	0.00%	0.00%	0.01%	0.07%	53	-239
Rest of AFR	0.39%	0.46%	0.58%	1.43%	0.00%	0.26%	0.15%	0.43%	1.66%	-0.01%	0.27%	3.04%	248	-6,470
Total	1.50%	2.82%	1.01%	1.74%	0.13%	0.41%	0.28%	0.77%	1.59%	-4.90%	1.21%	3.46%	2,012	-9,773

Note: cells in gray are effects of own liberalization only (diagonal). Cells where borders are shown are discussed in the main text.
Source: Jensen and Sandrey (2015): chapter 2, table 2.

Annex Table A.3.5.5. Contribution to Welfare by Commodity (% of 2025 GDP, Jensen and Sandrey, 2015)

	S. Africa	Namibia	Kenya	Uganda	Egypt	Morocco	Nigeria	ANG-DRC	Zimbabwe	Ghana	Senegal	Rest of Africa	Outside
Primary Sector													
Primary agriculture	0.09%	0.02%	0.03%	0.04%	0.00%	0.01%	0.00%	0.02%	0.03%	0.10%	0.03%	353	-797
Secondary agriculture	0.27%	1.45%	0.10%	0.13%	0.01%	0.20%	0.01%	-0.03%	-1.56%	0.04%	1.16%	229	-1,323
Sugar	0.15%	-0.01%	0.44%	0.26%	0.00%	0.00%	0.00%	0.02%	-0.03%	0.00%	0.03%	-10	-866
Secondary Sector													
Natural resource	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.04%	0.02%	0.02%	33	-210
Textiles	0.05%	0.19%	0.07%	0.10%	0.02%	0.01%	0.01%	0.05%	-0.59%	0.10%	0.06%	152	-410
Clothing	0.01%	0.02%	0.01%	-0.01%	0.03%	0.02%	0.00%	0.02%	-0.48%	-0.02%	0.01%	22	132
Leather goods	0.02%	0.03%	0.11%	0.12%	0.00%	0.00%	0.07%	-0.01%	-0.19%	0.06%	0.01%	-178	-501
Lumber	0.02%	0.26%	0.03%	0.11%	0.00%	0.00%	0.00%	0.02%	-0.27%	0.01%	0.06%	50	51
Paper products	0.05%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%	0.01%	-0.18%	0.01%	0.05%	3	-192
Petroleum, gas	0.06%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.10%	0.00%	0.02%	0.02%	155	-644
Chemical plastic rubber	0.16%	0.15%	0.08%	0.09%	0.02%	0.01%	0.05%	0.00%	0.09%	0.31%	0.31%	206	-2,018
Non-metal mineral	0.02%	0.05%	0.03%	0.26%	0.00%	0.00%	0.01%	0.00%	-0.04%	0.04%	1.11%	164	-1,190
Iron steel	0.04%	0.00%	0.02%	0.20%	0.00%	0.00%	0.00%	0.01%	0.04%	0.04%	0.13%	108	-535
Non ferrous	0.02%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.03%	0.04%	0.04%	-6	-261
Fabricated metal	0.12%	0.12%	0.01%	0.06%	0.02%	0.02%	0.01%	0.10%	-0.21%	0.03%	0.03%	43	-279
Vehicles	0.15%	0.18%	0.01%	0.22%	0.00%	0.01%	0.01%	0.03%	-1.02%	0.01%	0.06%	130	403
Other transport	0.01%	0.04%	0.00%	0.03%	0.00%	0.00%	0.02%	0.14%	-0.03%	0.00%	0.01%	183	-183
Electrical	0.03%	0.10%	0.01%	0.03%	0.00%	0.01%	0.02%	0.01%	-0.07%	0.04%	0.01%	17	-77
Other machinery	0.18%	0.07%	0.01%	0.05%	0.02%	0.07%	0.04%	0.25%	-0.24%	0.23%	0.23%	332	-649
Other manufacturing	0.03%	0.02%	0.01%	0.03%	0.00%	0.02%	0.00%	0.00%	-0.23%	0.14%	0.05%	28	-222
Total	1.50%	2.81%	1.01%	1.75%	0.13%	0.41%	0.28%	0.77%	-4.90%	1.21%	3.46%	2,014	-9,771

Source: Jensen and Sandrey (2015): chapter 2, table 3.

Estimating the impact of reducing nontariff barriers, trade costs, and the role of exemptions to tariff elimination

Reducing nontariff barriers and trade costs increase the continent-wide welfare effects substantially. Annex Table A.3.5.6 shows the extra benefits when complementary policies are enacted to reduce nontariff barriers and trade costs (e.g., related to time goods spend in transit).[24] Aggregate continent-wide welfare results more than double in Jensen and Stanley (2015, chapter 4). Adding nontariff measures to the continent-wide liberalization in the set-up of Chauvin et al (2016) would increase welfare effects from +0.46 percent to +1.66 percent, with growth also more than doubling. In Mevel and Karingi (2013), real income gains would increase from 0.2 to 1 percent. Jensen and Sandrey (2015, p.101) sum this up as follows: "our results have significant policy implications by adding further evidence to the theory that NTBs are a bigger problem in Africa than tariffs". AFDB (2019) reports that "extending the CFTA to removing the ad valorem equivalents of nontariff barriers on goods and services on an MFN basis (..) increases the total real income gains 13-fold, for a 1.25 percent increase in net real income, or $37 billion".

Annex Table A.3.5.6. Impact of reduction in NTBs.

	Impact on Africa's welfare from AfCFTA				NTB removal scenario	Results of NTB scenario			
	% of GDP	GDP growth	EV $ billion	EV % change		% of GDP	GDP growth	EV $ billion	EV % change
Mevel & Karingi (2013)	+0.01%	0.00	$ 0.3 billion	+0.20%	N/A	N/A			
Jensen & Sandrey (2015)	+0.55%		$ 22.0 billion		Additional. 50% reduction in NTBs.	+0.97%		$ 38.7 billion	
Chauvin et al. (2016)		+1.2%		+0.46%	Additional. 50% reduction in NTBs.				+1.66%
Vanzetti et al. (2018) 1/	+0.14%		$ 3.6 billion		Not additional. SPS and TBTs: -25%. Outright NTBs: -100%.	+0.83%		$ 21.0 billion	
Abrego et al. (2019)				+0.05%	Additional median tariff-equivalent NTB reduction of 45%				+3.81%
Saygili et al. (2018)	+0.65%	+0.97%	$ 16.1 billion		N/A	N/A			
AFDB (2019)			$ 2.8 billion	+0.1%	Removing ad valorem equivalents of NTBs on goods and services on an MFN basis.			$ 37.0 billion	1.25%

1/ NTBs are not country-specific (i.e. each country has the same value for a given product or sector).
Note: NTB = Non-Trade Barriers

Results from liberalization between only a 'coalition of the willing' are unimpressive. Jensen and Sandrey (2015, chapter 5) consider a scenario where only a coalition of willing countries introduces zero intra-African tariffs, which might be more realistic in political economy terms. These countries, representing about two thirds of Africa's GDP are: SACU, EAC (minus Burundi), Malawi, Zambia, Egypt, Morocco, Tunisia, Nigeria and Senegal. This partial integration derives less than 10 percent of the global gains from an Africa-wide scenario.

Regional trade agreements typically exclude certain products because of infant industry arguments or issues to do with national sovereignty. In this case, the results are unambiguous: the more products are exempt, the lower the gains from the liberalization (see for example Saygili et al., 2018).

[24] In the CGE trade literature, NTB's are typically modeled either as (i) treating the NTB's as a tariff-like barrier and using data on ad valorem tariff equivalents, or as (ii) a productivity shock, which is uses when regulatory measures such as for example Sanitary and Phytosanitary Measures (SPS) or Technical Barriers to Trade (TBT) create efficiency losses (Vanzetti et al., 2018, p.5).

Allowing for trade in intermediate goods improves welfare results. Not all models incorporate trade in intermediate goods, but the papers that make a distinction in their scenario's between allowing and not allowing for intermediate goods trade report sizeable gains (e.g. Abrego et al., 2019).

Summary

- Intra-African tariff reduction increases intra-African trade substantially, but welfare and growth effects are below 1 percent across the literature. Growth in overall trade volumes are also quite small (between 2.5 and 4%).
- Results vary greatly across countries, with some countries worse off even in absolute levels after regional trade integration (as expected from preferential trade literature).
- The interplay of a few key factors determines the final outcome (Abrego et al., 2019):
- Countries that are relatively more open and therefore more trade dependent than other African countries;
- Countries with initial import tariffs that are higher than in other countries;
- Countries that face higher initial export barriers than their peers in Africa;
- Countries which already have relatively strong initial trade ties with other countries in the AfCFTA.
- Countries with initially higher tariffs will gain more from trade integration but will also lose the most in terms of tariff revenues.
- Smaller economies are poised to gain more but will need to deal with competitive forces from larger economies. Medium-sized economies with a relatively diversified economic base are poised to make the biggest gains (e.g. Côte d'Ivoire, Uganda, Tanzania, Namibia, Ghana and Senegal).
- Reducing nontariff barriers and trade costs improve the continent-wide welfare effects substantially. Resources will need to be found to help make this happen. There is a trade-off as trade integration entails tariff revenue losses.
- Results assuming a trade integration among a limited 'coalition of the willing' are unimpressive.
- Sizeable gains are reported when trade in intermediate goods are included in the modeling (as in Abrego et al., 2019).
- The more products are exempt, the lower the gains from intra-African trade integration, but the lower tariff revenue losses.

Annex Table A.3.5.7. Welfare decomposition and country results from Jensen and Sandrey (2015).

Scenario: Baseline from2011-25. Results relative to baseline w/o liberalization in 2025.														Scenario: 50% decrease in NTBs	
	Allocative efficiency	Labor	Capital Accumul.	Terms-of-Trade	Total (in 2025)			Tariff Revenue Losses		ToT	GDP growth	Exports growth	Imports growth	Total (in 2025)	
	2011 $ mio	2011 $ mio	2011 $ mio	2011 $ mio	2011 $ mio	2025 $ mio	% of 2025 GDP	2011 $ mio	% of 2025 GDP	% change	%	%	%	2011 $ mio	% of 2025 GDP
Africa	5,278	2,025	8,204	1,563	17,070	21,995	0.55%	-6,889	-0.22%					18,060	0.58%
South Africa	1,449	904	2,261	1,127	5,741	7,398	1.50%			0.85	1.01	2.7	3.5	2,690	0.70%
Botswana	11	20	44	-7	68	88	0.30%	167	0.04%	0.23	0.36	1.1	1.8	12	0.05%
Namibia	23	50	286	104	463	597	2.82%			2.18	2.11	2.6	5	188	1.14%
Rest of SACU	17	18	50	16	101	130	1.33%			0.76	1.30	2.4	3.6	61	0.81%
Kenya	264	84	959	-18	1,289	1,661	1.01%	-416	-0.33%	-0.03	1.99	5.7	4.5	2,117	1.66%
Tanzania	204	26	132	15	377	486	0.49%	-445	-0.58%	0.15	0.62	3.7	3.2	1,024	1.34%
Uganda	147	40	403	93	683	880	1.75%	-85	-0.22%	1.42	2.15	4.3	6.4	471	1.20%
Rwanda	78	15	133	75	301	388	2.14%	-3	-0.02%	3.01	1.54	10.1	13.8	66	0.47%
Egypt	100	37	257	124	518	667	0.13%	-25	-0.01%	0.11	0.12	0.3	0.4	1,422	0.36%
Morocco	105	56	195	216	572	737	0.41%	-16	-0.01%	0.36	0.26	0.8	1.1	489	0.35%
Rest of East Africa	68	-19	6	-40	15	19		-273		-0.08	0.05	2	1.4	59	
Nigeria	506	445	933	148	2,032	2,618	0.28%	-681	-0.09%	0.11	0.32	1.7	2	1,399	0.19%
Angola-DRC	323	40	815	-9	1,169	1,506	0.77%	-602	-0.40%	-0.05	0.54	2.1	3.1	1,917	1.26%
Ethiopia	79	20	180	-24	255	329	0.22%	-165	-0.14%	-0.08	0.36	3.6	2.5	91	0.08%
Madagascar	1	0	-1	-2	-2	-3	-0.01%	-3	-0.02%	-0.04	0.00	0.2	0.2	22	0.14%
Malawi	20	2	26	-8	40	52	0.48%	-101	-1.21%	-0.2	0.52	4.2	3.5	100	1.20%
Mauritius	12	4	40	20	76	98	0.43%	-6	-0.03%	0.21	0.25	0.9	0.9	223	1.27%
Mozambique	7	6	36	-35	14	18	0.07%	-88	-0.46%	-0.24	0.18	1	0.7	44	0.23%
Zambia	123	65	129	137	454	585	1.59%	-20	-0.07%	1.07	0.96	-0.7	-0.9	232	0.81%
Zimbabwe	-203	-49	-480	-755	-1,487	-1,916	-4.90%	-1123	-3.70%	-5.97	-4.55	32.7	-2.4	174	0.57%
Ghana	264	47	257	245	813	1,048	1.21%	-382	-0.57%	0.97	0.82	9.1	7	485	0.72%
Tunisia	99	25	146	87	357	460	0.80%	-20	-0.05%	0.28	0.4	1	1.2	755	1.70%
Senegal	332	47	618	213	1,210	1,559	3.46%	-29	-0.08%	2.15	4.16	8.2	9.4	703	2.01%
Rest of Africa	1,249	142	779	-159	2,011	2,591		-2573		-0.07	0.45	2.8	2.8	3,316	

Source: Chapter 2, tables 1, 4, 6 and 7 and chapter 2, table 2 from Jensen and Sandrey (2015).
Countries that are more integrated in terms of tariff liberalization within RECs incur modest tariff revenue losses
Rest of SACU = Lesotho and Swaziland
Zimbabwe loses a lot of tariff revenue as its initial tariff protection is high.
Negative effect of allocative efficiency doesn't make any sense.

Box A.3.5.1 Decomposition of Equivalent Variation Welfare Effects

The GTAP model expresses the welfare implications of a modelled change in a country's policy as the Equivalent Variation (EV) in income. This measures the annual change in a country's income (gains or losses) from having implemented, for example, an FTA. The EV is defined as the difference between initial pre-FTA scenario income and post-FTA scenario income, with all prices set as fixed at pre-FTA levels. If a country's EV in income increases due to a policy change, the country can increase its consumption of goods equal to the increase in income and thereby improve the national welfare in the country. Total welfare gains/losses can be decomposed into contributions from improvements in allocative efficiency, capital accumulation, changes in the employment rate of the labor force, and terms of trade (Huff and Hertel, 2000).

Gains from allocative efficiency arise from improved reallocation of resources from less to more productive uses. For instance, when import tariffs are abolished, resources shift from previously protected industries towards sectors where the country has a comparative advantage, producing an increase in real GDP and economic welfare.

Terms of trade effects are the consequence of changing export and import prices facing a country. So, when a country experiences an increase in its export price relative to its import price (e.g. due to improved market access), it may finance a larger quantity of imports with the same quantity of exports, expanding supply of products available to consumers. While allocative efficiency increases global welfare, terms of trade (ToT) affect the distribution of welfare gains across countries; essentially, one country's ToT gain is another country's ToT loss. The global total must therefore add up to zero, and if a large proportion of the benefit to a country from an FTA is derived from ToT effects, this implies transfers to that country from the rest of the world. Note, however, that in our EV we are including a value for the changes in the price and levels of investments and savings (terms of trade on capital) in our ToT values.

Capital accumulation summarizes the long-run welfare consequences of changes in the stock of capital due to changes in net investment. A policy shock affects the global supply of savings for investment as well as the regional distribution of investments. If a trade agreement has a positive effect on income through improvements in efficiency and/or ToT, a part of that extra income will be saved by households, making possible an expansion in the capital stock. At the same time, rising income will increase demand for produced goods, pushing up factor returns and thus attracting more investments. Generally, economies with the highest growth will be prepared to pay the largest rate of return to capital and will obtain most of the new investments. Therefore long-run welfare gains from capital accumulation tend to reinforce the short-term welfare gains deriving from allocative efficiency and ToT.

The welfare effects of changed employment rates are the consequence of changes in the employment of the labour force due to changes in the real wage (see also Liu et al., 1998, for a technical discussion). In a situation where the demand for labour and thereby the real wage increases, the amount of labour employed increases, reducing the relative increase in the real wage, thereby increasing the competitiveness of the country's industries.

(Adapted from Jensen and Sandrey, 2015)

Annex Table A.3.5.8. Country results from Mevel and Karingi (2013)

Scenario: Linear tariff phase out to 0 between 2012-17. Results shown relative to baseline w/o liberalization in 2022.

	Real Income	Export Volume	Tariff Revenues	Terms-of Trade
Africa Total	0.2	4.0	N/A	N/A
Angola & DRC	-0.3		-15.2	-0.2
Ethiopia	0.3		-10.8	0.6
Madagascar	0.1		-7.5	0.1
Malawi	-0.6		-60.0	-1.5
Mauritius	-0.8		-18.6	0.6
Mozambique	-0.5		-54.0	-1.3
Tanzania	0.3		-36.2	0.2
Uganda	0.4		-13.1	0.7
Zambia	-0.2		-59.1	-1.4
Zimbabwe	-1.4		-70.5	-2.4
Rest of East Africa	-0.2		-14.7	-0.5
Botswana	-0.4		1.7	-0.6
South Africa	0.7		5.9	1.2
Rest of SACU	1.1		1.8	0.7
Egypt	0.3		0.1	0.5
Morocco	0.0		-5.9	0.0
Tunisia	0.6		-6.4	0.4
Rest of North Africa	-0.1		-7.8	0.0
Nigeria	-0.4		-16.7	-0.2
Senegal	0.3		-10.2	0.4
Rest of Western Africa	0.6		-11.7	0.7
Central Africa	-0.1		-23.8	-0.3

Source: Table 4 from Mevel and Karingi (2013).

Annex 3.6. Using a General Equilibrium Model to Assess the Impact of Structural Transformation Policies and the Income Distribution Effects of the AfCFTA

Annex author: Adrian Peralta-Alva

The model analysis presented in the section "Implications of the AfCFTA for African Countries: Welfare, Income Distribution and Fiscal Revenues" closely follows the framework of Peralta-Alva et al. (2018). They use a dynamic general equilibrium model with heterogeneous agents and multiple sectors that draws from the literature on structural transformation. This annex summarizes the key features of the model, the calibration to the prototypes of African economies described in the section, and its application to gauge (i) how structural policies may help countries benefit from deeper trade integration; and (ii) the possible impacts on income distribution.

The model

In line with the structural transformation literature, the model splits the production side of the economy into different sectors (agriculture, services, manufacturing, and commodities), with different production technologies. Sector-level productivities are different, as in the data, and frictions prevent factors of production (notably, labor) from moving freely across sectors. To evaluate the distributional implications, the model also incorporates heterogenous households subject to idiosyncratic productivity shocks. Annex Box A.3.6.1. Presents a detailed summary of the key elements of the model.

Box A.3.6.1. Key elements of the General Equilibrium Model

- A small open economy with five consumption goods: domestic food and imported food (which are imperfect substitutes), manufacturing (a tradable good), services (non tradables), and energy (tradable). Tariffs are imposed on imports of tradable goods.
- There are several types of households: (i) rural and urban, (ii) private sector and government employees, (iii) entrepreneurs (capital holders), and (iv) low-skilled and high-skilled workers. There is a continuum of households within each type, equal ex ante, but facing uninsurable idiosyncratic risk to their labor productivity. Households solve dynamic optimization problems taking prices and government policies as given.
- There are different productive sectors: (i) agriculture (employing land and low-skilled labor); (ii) manufacturing (using low-skilled labor and capital, and owned by entrepreneurs); (iii) services (produced either by urban households in family businesses- namely, the informal sector, with low-skilled labor; or by entrepreneurs in the industrial sector, with high skilled labor); and (iv) energy (with a technology exploiting high-skilled labor and capital, owned by entrepreneurs). Finally, entrepreneurs also export agricultural goods.
- The only financial assets available are one-period bonds. The interest rate on these bonds, wages, the price of domestic food, and the price of services are determined by supply and demand forces in equilibrium.
- The government collects tax revenues (on income, consumption, etc.) and royalties. Government outlays include infrastructure, which increases private sector productivity, and other government expenditures (including public sector wages, energy subsidies and pro-poor spending).

The model captures key features of the agricultural sector important for several African economies. The domestic supply of agricultural goods for domestic consumption is built from the bottom up. It comprises

the output from many households ranging from subsistence farms (that barely generate any surplus) to high-productivity farms active in domestic and international markets. Fluctuations in agricultural prices affect income distribution as higher prices distribute income towards surplus-producing farmers. Reductions in tariffs will affect these prices, as domestic agricultural goods are (imperfectly) substitutable for imported goods.

The model includes an energy producing sector, for economies for which this is important. This sector is assumed to be driven by large enterprises, using a capital-intensive technology. Energy (mainly oil and gas products) is sold on both domestic and international markets, although its price is determined in international markets. Firms in the oil and gas sector pay taxes and royalties to the government, which are also incorporated in our analysis. Manufacturing goods are produced using capital and labor, with a standard Cobb-Douglas production technology. The structure of the energy sector follows that of Bolivia's Article IV, IMF, 2016.

Finally, the model explicitly incorporates an informal sector. Its size is endogenous and driven by the tradeoff between working for a wage for the industrial sector (and paying taxes on such income) or working in household business (mostly producing services, and not paying taxes). Small farmers generate income that is not taxed (and could be considered part of overall informality).

Calibration and quantitative analysis

Our analysis is based on matching average macro and distributional data statistics of African countries, after splitting them into three illustrative groups: agricultural exporters, manufacturing exporters, and non-agricultural commodity exporters. The baseline economy (for each given type of exporter) is determined by matching the Gini coefficients, poverty rates, and key macro and sectoral aggregates (investment to GDP, consumption to GDP, sectoral employment, etc.) for each type of economy (taking averages of each time series data over the last decade). Import tariffs are set at the average effective rates for the corresponding type of country.

- Agricultural exporters are assumed to have 65 percent of their labor force in rural areas, and agriculture constitutes 37 percent of GDP (similar to levels in economies such as Ethiopia or Mali).
- Manufacturing exporters are assumed to have 40 percent of their labor force in rural areas, and manufacturing constitutes 15 percent of GDP (this is close to the levels of South Africa).
- Non-agricultural commodity exporters have 50 percent of their labor force in rural areas, and non-agricultural commodities constitute 15 percent of GDP (close to the level of Namibia).

The elasticity of exports to tariff reductions, and the elasticity of GDP to changes in export are in the ranges of the literature (Annexes 3.3 and 3.4).

The impact of AfCTA is analyzed by comparing the baseline versus the steady state of the model under changes implied by AfCTA. Hence, the numbers reported should be interpreted as medium-term effects (in simulations not reported here, the model reaches values close to steady state in about 7 years). AfCTA lowers tariffs among members, and this results in a lower overall average effective tariff rate on imports. In this analysis the impact on the overall average tariff rate is computed under the assumption that international trade among countries in the region is subject to a zero-tariff rate.

The effects of trade and structural reforms

To derive the effects of trade on GDP under the different types of structural reforms reported in the main text, a three-step approach is followed.

First, alternative scenarios are built based on a common change in tariffs (to a zero rate for AfCFTA members), and either no structural reform, small structural reform, or large structural reform assumptions. No structural reform keeps the sectoral productivity and labor force allocation as in the benchmark economy. Small structural reforms are defined as increases in sector level productivity of 1 percent in agriculture, and 0.5 percent in other sectors, with a simultaneous movement of 2.5 percent of the rural population to urban areas. Large reforms are defined as increases in agricultural productivity by 5 percent, and 1 percent for other sectors, together with movement of 5 percent of the rural population to urban areas.

Then, counterfactual experiments with no change in tariffs but the same type of structural reform as above (no, small or large) are computed.

The desired estimates (of the effects of increased trade only) are obtained as the GDP response of jointly changing tariffs and structural reforms, minus the GDP response of no changes in tariffs and the corresponding type of structural reform.

The effects of trade on inequality

To be able to obtain comparable estimates of the effects of trade on inequality, the model is fed with changes in tariffs (the magnitude would be different for each type of economy) that yield a one percent change in steady state total trade (exports + imports) to GDP ratio for each type of economy. These economies are in turn compared to the baseline to derive the desired estimates. Changes in Gini refer to percentage changes in the Gini coefficient of household income across steady states

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Annex 3.7. Distributional Impact of Trade: Empirical Analysis
Annex authors: Jason Weiss and Yunhui Zhao

This annex provides additional details about the empirical analysis of the relationship between trade expansion and income inequality carried out in the section "Implications of the AfCFTA for African Countries: Welfare, Income Distribution, and Fiscal Revenue." It first provides an overview of the data used for the empirical investigation and then examines the baseline specification utilized for the analysis, including comparisons with the existing literature. It also presents alternative specifications that assess the robustness of the main results.

Data

Cross-country panel regressions use an updated data set that covers up to 124 countries from 2000 to 2014. A description of the data and sources are presented in Annex Table A.3.7.1.

Annex Table A.3.7.1: Data Description and Sources

Variable	Description	Source
Inequality	Market Gini	Standardized World Income Inequality database
Trade Openness	(Goods exports + goods imports) as a share of GDP	IMF, WEO database
Tariff rate	100 - unweighted effectively applied (AHS) average tariff rate	World Bank, World Integrated Trade Solution database
Informality	Shadow economy as a share of GDP	Medina and Cangul (2017)
Financial Openness	(External assets + external liabilities) as a share of GDP	External Wealth of Nations database
GDP Growth	Lagged (t-1) GDP growth	IMF, WEO database
Education	Average years of schooling	UNDP, Human Development Indicators
Industrial Employment	Industrial employmet as a share of total employment	World Bank, World Development Indicators
Government Spending	Average of three government spending indices	Fraser Institute database
Income Quintiles	Quintile share of total income	UNU-WIDER database

Model and panel regressions

The empirical investigation used in the chapter extends previous studies by incorporating the dynamic effect of trade openness on inequality, examining the role played by informality, and testing whether the results are robust in the case of African countries. [25] We estimate the following model:

$$\begin{aligned} Inequality_{it} = {} & \beta_1(Trade\ liberalization)_{it} \\ & + \beta_2(Trade\ liberalization)_{it-5} \\ & + \beta 3(Informality)_{it} + \beta_4(Trade\ liberalization*Informality)_{it} \\ & + \beta_5(Trade\ liberalization*AFR)_{it} \\ & + \beta_6(Control\ variables)_{it} + \theta_t + \mu_i + \varepsilon_{it} \end{aligned}$$

where *Inequality* refers to either the Gini coefficient or the bottom income quintile's share of total income; *Trade liberalization* is represented by trade openness (measured by total goods exports and imports as a share of GDP) and/or the inverse of the effectively applied (AHS) average unweighted tariff rate; *Informality* is represented by the size of a country's shadow economy as a share of GDP; and *AFR* is a dummy for African countries. *Control variables* include lagged GDP growth and proxies for financial openness (international assets

[25] See, for example, Jaumotte, Lall, and Papageorgiou (2013), and Dabla-Norris et al. (2015).

and liabilities as a share of GDP); education (average years of schooling); level of industrialization (share of industrial employment in total employment); and size of government (government spending index). The terms θ_t and μ_i represent time and country dummies, respectively, while ε_{it} captures unobserved factors. We use the log of all variables, except for tariff rate, years of schooling, and government spending index.

Our main results are as follows (Annex Table A.3.7.2):

- In the baseline specification that regresses the market Gini coefficient on two measures of trade liberalization – trade openness (exports plus imports as a share of GDP) and the inverse of the tariff rate (Column 1 in the table), we find positive coefficients for the contemporaneous variables on both measures. This suggests that greater trade liberalization is associated with higher income inequality in the short term.
- As a robustness check, we then use specifications that include only one of the two measures of trade liberalization (Columns 2 and 3). While the magnitudes of the coefficients on the relevant variables are slightly different from those in the baseline specification, they remain positive and statistically significant. We find similar results when substituting the net Gini coefficient for the market Gini coefficient (Columns 10 through 12). As a final robustness check, we substitute the bottom income quintile's share of total income in a country for the Gini coefficient as the dependent variable (Columns 8 and 9). The result appears to confirm our conclusion, as the coefficients on both the trade openness and inverse tariff variables are negative – suggesting that trade liberalization reduces the bottom 20 percent's share of total income in the short term – although the coefficient on the inverse tariff variable is not statistically significant.
- The overall result – that trade liberalization is associated with an increase in income inequality in the short term – could be due to immediate disruptions of liberalization on import-competing industries. This result differs from that of some existing literature. This appears to be due to a difference in the time periods used. The analysis here uses a more recent time period (2000-2014) because we believe that this period, which captures a significant shift in the trading activities of the emerging and developed world since the turn of the century, is more relevant to the current discussion of trade and inequality; and also because our analysis includes the informality variable (which previous studies did not), the data for which is available only after 1991. We obtain results similar to those of the literature when examining a similar time period and dropping informality from the analysis.
- These results, which are derived from a large cross-country panel, do not appear to differ significantly for African countries specifically. We test this by including a contemporaneous trade liberalization-Africa dummy interaction term in each of our specifications, for both trade openness and inverse tariff when these variables appear in the specification. A sizeable and statistically significant coefficient on the interaction term would suggest that the short-term impact of trade liberalization on income inequality in African countries differs in a meaningful way from that of the broader sample. However, for the inverse tariff variable, the coefficient is either zero or very small and positive, and not statistically significant, in all cases (Columns 1, 3, 10, and 12). We get more mixed results with the trade openness variable: A positive coefficient in the baseline specification using market or net Gini coefficients (Columns 1 and 10) but a negative coefficient when trade openness is the only liberalization variable in the specification (Columns 2 and 11). However, none of these coefficients are statistically significant.

- The short-term inequality-increasing effect of trade liberalization does not hold over the medium term, consistent with the structural analysis. We test this by including five-year lags of the trade liberalization variables in the specifications.[26] In our baseline specification (Column 1), the positive coefficients on both the trade openness and inverse tariff variables become negative and zero, respectively. When separating the two trade liberalization variables into their own specifications, the coefficient on the lagged trade openness variable (Column 2) becomes negative (although not statistically significant) and the coefficient on the lagged inverse tariff variable is zero. We observe very similar results when substituting the net Gini coefficient for the market Gini coefficient (Columns 10 through 12).
- We get a more mixed result when substituting the bottom income quintile for the Gini coefficient: While the coefficient on the lagged inverse tariff variable (Column 9) becomes positive (albeit still not statistically significant), the coefficient on the lagged trade openness variable (Column 8) remains negative, although it is no longer statistically significant. The coefficients on the trade liberalization variables shift from positive to negative (or insignificant) when moving from contemporaneous to lagged. This suggests that, given time for the economy to adjust, the initial adverse distributional effect of trade openness fades as the positive spillover effects of trade liberalization materialize.
- We also attempt to assess the sectoral channels through which trade liberalization might impact inequality by restricting our sample to countries that are relatively strong on agriculture exports or manufacturing exports.
    - Restricting the sample to agriculture exporters (Column 4), we observe a positive and statistically significant coefficient on the contemporaneous trade openness term and a negative and statistically significant coefficient on the lagged trade term. Results using the inverse tariff variable (Column 6) are directionally similar, although the coefficient on the contemporaneous tariff variable, while still positive, is much weaker and not statistically significant. These results broadly agree with the structural analysis's finding that the medium-term inequality-reducing impact of trade liberalization is centered on the agriculture sector.
    - We observe more ambiguous results when restricting the sample to manufacturing exporters: The coefficient on the contemporaneous trade openness variable (Column 5) is positive but not significant (although, in line with the structural model, it remains positive in the medium term); and while the coefficient on the contemporaneous inverse tariff variable (Column 7) is positive and significant, in line with the structural model, the coefficient on its lagged term falls to zero. We observe similar results for all of the above when substituting the net Gini coefficient for the market Gini coefficient as the dependent variable (Columns 13 through 16).
- While a larger informal sector is associated with higher income inequality, the presence of a large informal sector may mitigate the short-term inequality-increasing effect of trade liberalization. We

[26] Similar results apply when three-to-seven-year lags are used. Starting from eight-year lags, the results are weak, but this is mainly due to data limitations as the sample size drops significantly when eight-year lags are taken. We only present the results for five-year lags because this is generally taken to be the threshold for the medium term.

test this by including a contemporaneous trade liberalization-informality interaction term in each of our specifications.

- When including the entire sample of countries, the coefficient on the interaction term is negative and significant across all estimations (Columns 1, 2, 3, and 10 through 12). This suggests that the short-term inequality-increasing impact of trade liberalization (as seen by the positive coefficients on the trade liberalization variables) is to some extent blunted by the presence of a large informal sector (as seen by the negative coefficients on the trade liberalization-informality interaction terms). Since the positive coefficients on the contemporaneous trade liberalization terms are larger than the negative coefficients on the interaction terms, the presence of a large informal sector does not fully eliminate the short-term inequality-increasing effects of trade liberalization, but it does serve to lessen the impact.
- The interaction term also has a positive coefficient in the specifications that use the bottom income quintile as the dependent variable (Columns 8 and 9), which is consistent with the results from the other specifications.
- As discussed in the text, overall this result reflects the fact that the informal sector in Africa mainly produces non-tradable goods and services, which are not affected by trade and thus "shield" the large fraction of population in this sector from the potential short-term adverse effects of trade liberalization.

Annex Table A.3.7.2: Trade Liberalization and Income Inequality, 2000-2014

Dependent Variable:	Market Gini							Bottom 20% Income Share	
	(1) Trade and Tariff	(2) Trade	(3) Tariff	(4) Trade: Ag. Exporters	(5) Trade: Manf. Exporters	(6) Tariff: Ag. Exporters	(7) Tariff: Manf. Exporters	(8) Trade	(9) Tariff
Trade	0.241***	0.188***		0.208***	0.017			-0.520***	
	(0.033)	(0.025)		(0.046)	(0.034)			(0.188)	
Trade (t-5)	-0.017**	-0.003		-0.013*	0.009			-0.036	
	(0.007)	(0.005)		(0.007)	(0.007)			(0.040)	
(100-Tariff)	0.009***		0.015***			0.003	0.015***		-0.039
	(0.003)		(0.003)			(0.004)	(0.004)		(0.029)
(100-Tariff) (t-5)	0.000		0.000			-0.003***	0.000		0.003
	(0.000)		(0.000)			(0.001)	(0.000)		(0.003)
Informality	0.633***	0.296***	0.501***	0.352***	0.022	0.193*	0.428***	-0.744***	-1.148
	(0.090)	(0.032)	(0.089)	(0.054)	(0.051)	(0.116)	(0.121)	(0.258)	(0.770)
Trade*Informality	-0.067***	-0.047***		-0.053***	0.009			0.149***	
	(0.010)	(0.007)		(0.012)	(0.010)			(0.056)	
(100-Tariff)*Informality	-0.003***		-0.004***			-0.001	-0.004***		0.012
	(0.001)		(0.001)			(0.001)	(0.001)		(0.008)
Trade*AFR	0.013	-0.014		0.013	-0.074***			-0.013	
	(0.016)	(0.010)		(0.011)	(0.019)			(0.139)	
(100-Tariff)*AFR	0.000		0.000			-0.001	0.000		-0.019*
	(0.001)		(0.001)			(0.001)	(0.001)		(0.011)
Financial Openness	0.009***	0.012***	0.014***	0.016***	0.004	0.022***	0.001	-0.072***	-0.069**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.025)	(0.028)
Education	-0.011***	-0.005**	-0.007***	-0.015***	-0.003	-0.026***	-0.009***	-0.015	0.022
	(0.003)	(0.002)	(0.003)	(0.004)	(0.002)	(0.005)	(0.003)	(0.017)	(0.020)
Industrial Employment	-0.023***	-0.033***	-0.031***	-0.049***	-0.032***	-0.050***	-0.024**	-0.016	-0.056
	(0.008)	(0.006)	(0.008)	(0.010)	(0.009)	(0.013)	(0.011)	(0.053)	(0.066)
Gov't Spending	0.005***	0.002***	0.006***	0.004***	-0.003**	0.008***	-0.003*	-0.003	-0.043***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.007)	(0.010)
Growth (t-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004**	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.002)
Constant	1.722***	2.797***	2.201***	2.704***	3.669***	3.541***	2.463***	5.025***	5.996**
	(0.314)	(0.123)	(0.306)	(0.209)	(0.183)	(0.414)	(0.408)	(0.932)	(2.745)
Country Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Time Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1,051	1,594	1,059	693	1,017	486	735	902	695
R-squared	0.272	0.189	0.223	0.378	0.153	0.541	0.094	0.121	0.205
Number of countries	113	124	114	65	83	60	78	119	98

Source: IMF staff estimates.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Annex Table A.3.7.2 (continued): Trade Liberalization and Income Inequality, 2000-2014

Dependent Variable: Net Gini	(10) Trade and Tariff	(11) Trade	(12) Tariff	(13) Trade Ag Exporters	(14) Trade Manf Exporters	(15) Tariff Ag Exporters	(16) Tariff Manf Exporters
Trade	0.280***	0.225***		0.265***	0.052		
	(0.035)	(0.026)		(0.047)	(0.035)		
Trade (t-5)	-0.018**	-0.007		-0.018**	0.007		
	(0.007)	(0.005)		(0.007)	(0.008)		
(100-Tariff)	0.007**		0.014***			0	0.013***
	(0.004)		(0.003)			(0.005)	(0.004)
(100-Tariff) (t-5)	0.001		0			-0.003***	0
	0.000		0.000			(0.001)	0.000
Informality	0.620***	0.324***	0.471***	0.414***	0.045	0.098	0.384***
	(0.096)	(0.033)	(0.095)	(0.055)	(0.053)	(0.121)	(0.126)
Trade*Informality	-0.079***	-0.057***		-0.069***	-0.001		
	(0.011)	(0.007)		(0.012)	(0.011)		
(100-Tariff)*Informality	-0.002*		-0.004***			0	-0.004***
	(0.001)		(0.001)			(0.001)	(0.001)
Trade*AFR	0.017	-0.004		0.026**	-0.068***		
	(0.017)	(0.010)		(0.012)	(0.020)		
(100-Tariff)*AFR	0.001		0.001			-0.001	0.001
	(0.001)		(0.001)			(0.001)	(0.001)
Financial Openness	0.006*	0.008***	0.011***	0.016***	-0.003	0.022***	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Education	-0.010***	-0.005**	-0.006**	-0.021***	-0.003	-0.026***	-0.008**
	(0.003)	(0.002)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)
Industrial Employment	-0.019**	-0.025***	-0.028***	-0.038***	-0.026***	-0.045***	-0.022*
	(0.009)	(0.006)	(0.009)	(0.010)	(0.009)	(0.014)	(0.012)
Gov't Spending	0.007***	0.004***	0.008***	0.006***	-0.001	0.012***	0
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Growth (t-1)	0	0	0	0	0	0	0
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Constant	1.527***	2.474***	2.053***	2.326***	3.321***	3.629***	2.355***
	(0.335)	(0.127)	(0.328)	(0.214)	(0.191)	(0.430)	(0.425)
Country FE	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y
Observations	1,051	1,594	1,059	693	1,017	486	735
R-squared	0.282	0.173	0.226	0.434	0.075	0.601	0.053
Number of country	113	124	114	65	83	60	78

Source: IMF staff estimates.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Annex 3.8. Assessing the Fiscal Revenue Impact of the AfCFTA

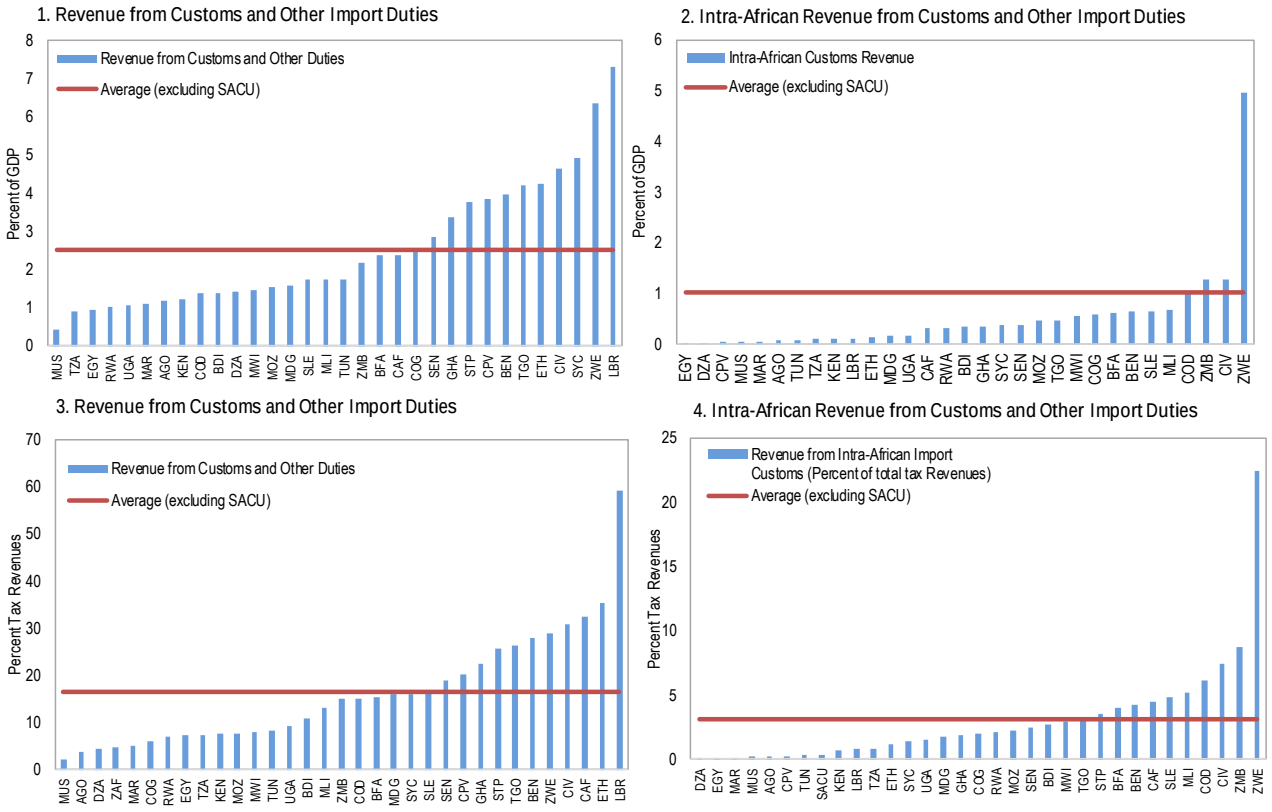
Annex authors: Adrian Peralta-Alva, Salifou Issoufou and Hilary Devine

This annex provides an overview of the data and methodology used to estimate the fiscal revenue impact of reducing tariffs, in the context of the AfCFTA presented in the section "Implications of the AfCFTA for African Countries: Welfare, Income Distribution, and Fiscal Revenue" in the main text of the chapter.

Data

Revenue data comes from two sources. Revenues from customs and other duties are from the IMF Government Finance Statistics (GFS), which measures levies collected on all goods and services imported into the country. In some cases, these data may differ from what authorities report under their own classifications. Intra-Africa imports are from the Direction of Trade Statistics (DOTS) database. Estimates for tariff revenue are also built using country-by-country and product-by-product (at a 4-digit Standard International Trade Classification) import tariff rates from the United Nations Trade Analysis Information System (TRAINS). Except otherwise explicitly stated, all figures refer to 2010-2016 averages (Annex Table 3.8.1)

Annex Figure A.3.8.1 Revenue from Customs and Other Import Duties



Source: GFS database; DOTS; and IMF staff estimates.

Notes: SACU countries excluded from the average because they pool and distribute their cost on revenues between members.

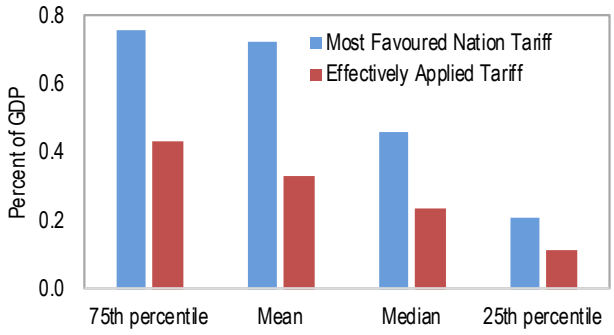
Methodology

Both the static (no change in import flows) and dynamic effects of reducing tariffs were estimated.

Static estimates of revenue losses based on the aforementioned data sources are obtained using an aggregate and a more detailed bottom-up approach. In aggregate, first an "average" effective rate for customs and other duties is obtained as the ratio of customs and other duties to total imports for each country. Then, applying this average rate to imports from countries outside of AfCFTA, and a zero rate to countries in AfCFTA, together with the corresponding VAT revenue loss, allows us to estimate the effect of the AfCFTA on revenues. On average, revenues are reduced by about 0.3 percent of GDP. Annex Figure A.3.8.1 shows country by country figures and averages.

These estimates are based on a common average tariff rate. To consider the differences in import tariff rates depending on the country of origin and type of good, it is necessary to use disaggregated data. An alternative bottom up approach is followed based on very fine product-country level data (4-digit classification, Standard International Trade Classification). Import and tariffs data from the United Nations Trade Analysis Information System (TRAINS), are used, and two alternative tariff definitions are employed: Effectively Applied (AHS) and the Most-Favored Nations (MFN), averaged over 2010-2017.[27] Product-country specific tariff rates are calculated, then added over all trading partners and imports of different products to yield an estimate for pre-AfCFTA import duty revenues.[28] Bottom-up static revenue losses are obtained by assuming tariffs among AfCFTA participants are reduced to zero. Since imports and tariffs affect the VAT base, the revenue loss is adjusted to account for possible losses in VAT revenue.[29,30]

Annex Figure A.3.8.2 Estimated Static Revenue Loss with Different Tariff Rates



Source: UNCTAD Trade Analysis Information System; and IMF staff estimates.
Notes: Revenue Loss includes the sum of Tariff revenues and Value Added Tax.

[27] AHS is equal to MFN in the absence of preferential tariffs. Most Favored Nation (MFN) tariffs are the highest rates imposed on other WTO members unless there is a preferential trade agreement between countries. The Effectively Applied (AHS) tariff is the lowest available tariff if a preferential tariff exists (WITS, World Bank 2010). Estimates based on MFN are thus upper bounds for the effects of AfCFTA on revenues.

[28] More specifically, for each country *i*, total tariff revenue from countries in the AfCFTA is the sum (over all types of products, and over all countries in AfCFTA) of weighted average of tariff imposed by country *i* to good Z, when imported from country *y*, multiplied by the value of imports of good Z from country *y* being imported by country *i*.

[29] There are in total 8 customs unions (CUs) in Africa (each with a common external tariff and no intra-union tariffs on trade), some of which with overlapping membership: Arab Maghreb Union - AMU (superseded by the Greater Arab Free Trade Area - GAFTA), Central African Economic and Monetary Community (CEMAC), Southern African Customs Union (SACU), East African Community (EAC), West African Economic and Monetary Union (WAEMU), Southern African Development Community (SADC – although progress in setting up a customs union in SADC are moving at a snail pace); Economic Community of West African States (ECOWAS,); Common Market for Eastern and Southern Africa (COMESA – launched its Customs Union in June 2009, but the CU is yet to be operational). Of the 8 CUs, only SACU has a customs revenues pool and a revenue sharing formula.

[30] These estimates also adjust for the fact that members of the SACU do not obtain tariff revenues directly. SACU is the only customs union in Africa where customs revenues are pooled and shared based on a specific formula.

Figure A.3.8.2 compares the static revenue loss for AHS and MFN calculated using the bottom-up approach. The average revenue loss using MFN rates is 0.7 percent of GDP (compared to 0.3 percent of GDP for AHS). This can be seen as an upper estimate as it assumes the removal of all tariffs at the higher MFN rate.

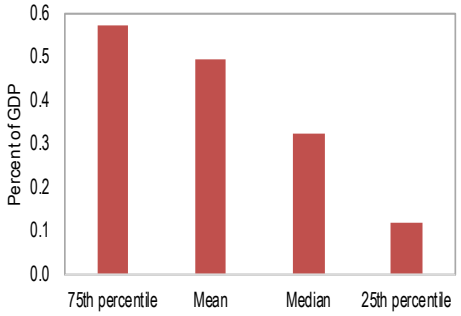
The above static revenue losses do not account for the possibility that lower tariffs on intra-regional trade may prompt higher imports from AfCFTA countries (at an assumed zero tariff rate) and less imports from other countries (with unchanged import tariffs). This effect, known as trade diversion, may result in additional revenue losses. A second possible effect is due to the higher GDP that may result from increased trade due to AfCFTA. A conservative estimate of the latter effect is that revenues increase in line with GDP. Since estimates reported below are reported as ratios to GDP, this effect is likely to be muted.[31]

To get an approximate idea of the impact of trade diversion on overall revenue losses from the AfCFTA, we use estimates from the literature on the elasticity of imports to changes in the ratio of tariffs between two countries.[32] Adding these results over all goods and countries, an estimate of the increase in intra-African imports (induced by the AfCFTA) is obtained. Making the additional assumption that total imports are unchanged, yields the reported -conservative- estimate of the revenue losses from trade diversion.

[31] Jalles (2017), for example, estimates taxes in Sub-Saharan Africa increase 1.22 percent per each one percent increase in GDP on average, which would result in more optimistic dynamic effects of AfCFTA on the tax revenue to GDP ratios.

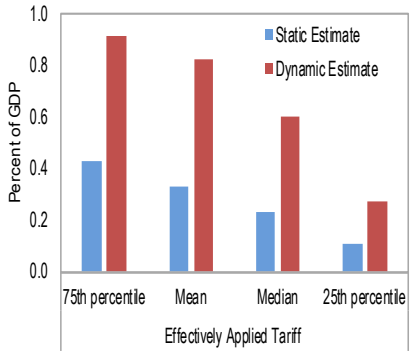
[32] An elasticity of 3.71 is used in the reported estimates, taken from Jean and Bureau (2016).

Annex Figure A.3.8.3 Estimated Revenue Loss from Trade Diversion



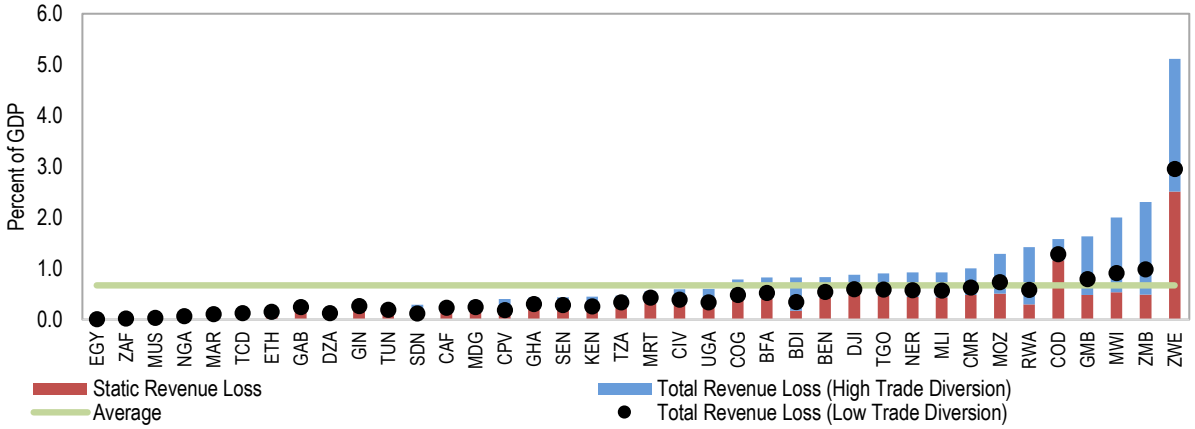
Source: UNCTAD Trade Analysis Information System; and IMF staff estimates.

Annex Figure A.3.8.4 Estimated Static and Dynamic Revenue Loss with Different Tariff Rates



Source: UNCTAD Trade Analysis Information System; and IMF staff estimates.
Notes: Static Revenue Loss includes the sum of Tariff revenues, Value Added Tax and Dynamic Revenue Loss also an estimate for Trade Diversion.

Annex Figure A.3.8.5. Bottom-up Estimates of Revenue Losses



Source: UNCTAD Trade Analysis Information System; and IMF staff calculations.
Note: Revenue Loss includes the sum of Tariff Revenue and Value Added Tax.

These estimates show that trade diversion is higher in countries with higher tariff differences between imports from within AfCFTA and imports from the rest of the world. This results in larger revenue losses compared to our static estimates – by 0.5 percent of GDP on average (0.8 percent of GDP in the case of larger elasticities). Figure A.3.8.5 presents estimates of total dynamic revenue losses for AfCFTA countries under two alternative values for the elasticity of trade to tariff differentials. The high trade diversion case uses an elasticity of 3.71 (in the upper range of available empirical estimates). The low trade diversion considers a value of 1.4 (in the low range of empirical estimates). As can be seen, under the low trade diversion assumption the revenue losses from trade diversion are reduced by almost a factor of three.

Annex 3.9. Integration of Financial Services in Africa
Annex author: Amadou Sy

Financial integration is part of the AfCFTA and, as the chapter shows, further financial deepening would support trade integration in Africa. How is financial integration progressing in Africa and what policies may support further integration?

Financial integration in the continent (through cross-border commercial payments) is progressing but at an uneven pace.[33] Data by SWIFT indicate that about 20 percent of the number of cross border commercial payments sent by African banks remained within the continent in 2017 compared to 16.7 percent in 2013. Although the Euro and the US dollar remain the most used currencies, regional African currencies are increasingly being used to support trade. The common currency of WAEMU countries, the CFA Franc (XOF) has overtaken the South Africa rand and the British pound to account for 7.3 percent of the number of payments in 2017 from 4.4 percent in 2013. Use of the rand for cross-border payments has also increased to 7.2 percent from 6.3 percent during the same period.[34] In contrast to the increasing use of regional currencies in the WAEMU and the SADC, there has been no progress in the use of regional currencies in the CEMAC (CFA Franc, XEF) and in the EAC.

The strengthening and harmonization of regional financial infrastructure appear to have supported the growth in intra-African cross-border payments. Properly functioning and cost-efficient payment and settlement systems help support intra-regional trade and finance exchanges as well as remittances. A well-functioning financial infrastructure can help reduce transaction costs associated with foreign currency clearing, settlements, currency risks and remittance transfers. About 30 percent of the number of cross-border payments of WAEMU countries are denominated in Franc CFA (XOF), supported by the BCEAO's clearing and settlement infrastructure for payments (STAR-UEMOA). The SADC Integrated Regional Electronic Settlement System (SIRESS) settles payments in South African rand and there are plans to include the US dollar as an additional settlement currency. This said, although the East African Regional Payment System (EAPS) allows clearing in local currencies, cross-border payments continue to be dominated by the US dollar. Meanwhile, a project to link the different RTGS systems in each country is still underway in the West African Monetary Zone (WAMZ). In addition to further developing regional payment systems, improved interconnection between them would further support the use of regional currencies eventually leading to the emergence of African multi-currency clearing centers (see SWIFT, 2018).

Despite these positive developments, leveraging Africa's trade integration for stronger and more inclusive economic growth would require addressing existing bottlenecks in financial integration:

- Low intra-African trade finance: Trade finance includes the financing of import and export transactions through loans, letters of credit, factoring, and export credit and insurance. According to the African Development Bank (AfDB), banks devoted only 20 percent of their trade finance to intra-African trade.

[33] For a review of financial integration through FDI, financial infrastructure, regional bond markets, and cross-border banking see IMF (2015a).

[34] For a review of African transaction flows, see SWIFT (2018).

- High currency risks: Costs from trading in more than 30 different regional currencies need to be reduced. High market volatility and administrative measures by central banks with occasionally low foreign-exchange (forex) reserves remain an issue. Furthermore, the number of countries adopting more flexible exchange-rate regimes has increased, resulting in increased market volatility as exchange rates are frequently used to absorb external shocks. Many countries rely on administrative measures in forex markets and ration foreign currencies when international reserves are low. Instruments to mitigate currency risks, such as swap arrangements, would help strengthen cross-border investments. And in the absence of private-sector involvement, multi-lateral solutions could be considered. The World Bank's private finance arm, the International Finance Corporation (IFC), for example, issues bonds in local currency but typically swaps its positions back to U.S. dollars. The IFC's efforts to kickstart local swap markets are laudable, but ultimately domestic banks and corporations should play a role, bolstered by banking and forex market regulations. Solutions such as swap arrangements or a multi-currency clearing center should also be considered. At the same time, innovation is proceeding rapidly, and mobile payments can now occur between some African countries with different currencies. Regulators will have to keep pace with such developments without unnecessarily stifling their benefits.
- Excessive cost of intra-regional remittances: Remittances can be an important source of foreign exchange for some countries. They have exceeded 10 percent of GDP in Togo, Cabo Verde, Senegal, Nigeria and Lesotho. However, transfer costs within Africa are the highest in the world. For instance, it costs about USD 19.50 to USD 21 to transfer USD 200 from South Africa to Malawi, Angola, Mozambique, Botswana or Zambia. World Bank data suggests these costs are up to 10 times higher than the cheapest transfers from Singapore, the United Arab Emirates or Saudi Arabia.

In addition to these bottlenecks, rapid developments in several areas should be monitored and policies to address them should be articulated:

Pan-African Banks: A recent IMF study shows how Africa's financial sector has changed over the past decade with the expansion of African banks.[35] Ten African banks now have a presence in at least 10 countries on the continent with one being present in more than 30 countries. These pan-African banks are at times replacing global banks that have cut their cross-border banking relationships. These pan-African banks can facilitate intra-African trade. At the same time, they raise new challenges for regulators as their cross-border operations span different regulatory regimes and different supervisory authorities. Work is underway to address these challenges with exchanges between supervisors and harmonized data and practices.

Africa-to-Africa Investment (A2A) and Global Value Chains[36]: Multinational companies themselves finance several operations through suppliers' credit. A recent AfDB study notes the emerging trend of Africa-to-Africa (A2A) investment. The A2A report features eight publicly-listed and privately-owned African companies operating in consumer services, finance, industry, media and diversified portfolios, and investment, with home bases in North Africa (Morocco), West Africa (Nigeria, Togo), East and Central Africa (Ethiopia, Kenya), and Southern Africa (Mauritius, South Africa). Identifying and addressing the obstacles to financing A2A investments and the value chains involved are critical for furthering African trade integration.

[35] See IMF (2015b).

[36] See AfDB (2018).

FinTech: Mobile payments could help reduce transaction costs. For instance, telecom operator Orange Money is present in 11 countries in sub-Saharan Africa, and mobile-to-mobile payments in CFA francs are possible between West African countries including Cote d'Ivoire, Mali and Senegal. Similarly, in East Africa, Togo offers cross-border mobile money transfers with automatic currency conversion between Tanzania and Rwanda. What's important is striking the right balance between regulatory objectives and the pace of innovation. Interoperability between different platforms in many different countries is increasingly connecting economic agents and allowing cross-border payments.

Informal Cross-Border Trade (ICBT): ICBT accounts for an important share of intra-Africa trade, reaching even 40 percent in the Common Market for Eastern and Southern Africa. ICBT is also high between Benin and Nigeria or Cote d'Ivoire and Ghana. Informal traders have developed their own mechanisms to finance their operations outside the formal financial sector. Understanding how informal trade is financed could help create jobs, especially for youth and women, reduce poverty and ultimately contribute to the formal sector. In addition to many e-commerce players identifying the informal sector as a crucial market, traditional financial institutions can contribute too. The African Export Import Bank (AFREXIMBANK)[37] expressed significant interest in extending trade finance and payment products to informal cross-border traders.

In conclusion, the plumbing of financial integration through stronger financial infrastructure should be strengthened to support trade integration.

[37] See Sommer and Nshimbi (2018).

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Statistical Appendix

Unless otherwise noted, data and projections presented in this Regional Economic Outlook are IMF staff estimates as of 30 March 2019, consistent with the projections underlying the April 2019 World Economic Outlook.

The data and projections cover 45 sub-Saharan African countries in the IMF's African Department. Data definitions follow established international statistical methodologies to the extent possible. However, in some cases, data limitations limit comparability across countries.

Country Groupings

Countries are aggregated into three (non-overlapping) groups: oil exporters, other resource-intensive countries, and non-resource-intensive countries (see country groupings table on the next page).

- The oil exporters are countries where net oil exports make up 30 percent or more of total exports.
- The other resource-intensive countries are those where non-renewable natural resources represent 25 percent or more of total exports.
- The non-resource-intensive countries refer to those that are not classified as either oil exporters or other resource-intensive countries.

Countries are also aggregated into four (overlapping) groups: oil exporters, middle-income, low-income, and countries in fragile situations (see country groupings table on the next page).

The membership of these groups reflects the most recent data on per capita gross national income (averaged over three years) and the World Bank, Country Policy and Institutional Assessment (CPIA) score, (averaged over three years).

- The middle-income countries had per capita gross national income in the years 2015–17 of more than US$995.00 (World Bank, using the Atlas method).
- The low-income countries had average per capita gross national income in the years 2015–17 equal to or lower than US$995.00 (World Bank, using the Atlas method).
- The countries in fragile situations had average CPIA scores of 3.2 or less in the years 2015–17 and/or had the presence of a peacekeeping or peacebuilding mission within the last three years.
- The membership of sub-Saharan African countries in the major regional cooperation bodies is shown on next page: CFA franc zone, comprising the West African Economic and Monetary Union (WAEMU) and CEMAC; the Common Market for Eastern and Southern Africa (COMESA); the East Africa Community (EAC-5); the Economic Community of West African States (ECOWAS); the Southern African Development Community (SADC); and the Southern Africa Customs Union (SACU). EAC-5 aggregates include data for Rwanda and Burundi, which joined the group only in 2007.

Methods of Aggregation

In Tables SA1–SA3, SA6–SA7, SA13, SA15–SA16, and SA22–SA23, country group composites are calculated as the arithmetic average of data for individual countries, weighted by GDP valued at purchasing power parity as a share of total group GDP. The source of purchasing power parity weights is the World Economic Outlook (WEO) database.

In Tables SA8–SA12, SA17–SA21, and SA24–SA26, country group composites are calculated as the arithmetic average of data for individual countries, weighted by GDP in US dollars at market exchange rates as a share of total group GDP.

In Tables SA4–SA5 and SA14, country group composites are calculated as the geometric average of data for individual countries, weighted by GDP valued at purchasing power parity as a share of total group GDP. The source of purchasing power parity weights is the WEO database.

In Tables SA27–SA28, country group composites are calculated as the unweighted arithmetic average of data for individual countries.

Sub-Saharan Africa: Member Countries of Groupings

Oil exporters	Other resource-intensive countries	Non-resource-intensive countries	Middle-income countries	Low-income countries		Countries in fragile situations
Angola	Botswana	Benin	Angola	Benin	Malawi	Burundi
Cameroon	Burkina Faso	Burundi	Botswana	Burkina Faso	Mali	Central African Rep.
Chad	Central African Rep.	Cabo Verde	Cabo Verde	Burundi	Mozambique	Chad
Congo, Republic of	Congo, Dem. Rep. of	Comoros	Cameroon	Central African Rep.	Niger	Comoros
Equatorial Guinea	Ghana	Côte d'Ivoire	Congo, Republic of	Chad	Rwanda	Congo, Dem. Rep. of
Gabon	Guinea	Eritrea	Côte d'Ivoire	Comoros	Sierra Leone	Congo, Republic of
Nigeria	Liberia	Eswatini	Equatorial Guinea	Congo, Dem. Rep. of	South Sudan	Côte d'Ivoire
South Sudan	Mali	Ethiopia	Eswatini	Eritrea	Tanzania	Eritrea
	Namibia	Gambia, The	Gabon	Ethiopia	Togo	Gambia, The
	Niger	Guinea-Bissau	Ghana	Gambia, The	Uganda	Guinea
	Sierra Leone	Kenya	Kenya	Guinea	Zimbabwe	Guinea-Bissau
	South Africa	Lesotho	Lesotho	Guinea-Bissau		Liberia
	Tanzania	Madagascar	Mauritius	Liberia		Malawi
	Zambia	Malawi	Namibia	Madagascar		Mali
	Zimbabwe	Mauritius	Nigeria			São Tomé & Príncipe
		Mozambique	São Tomé & Príncipe			South Sudan
		Rwanda	Senegal			Togo
		São Tomé & Príncipe	Seychelles			Zimbabwe
		Senegal	South Africa			
		Seychelles	Zambia			
		Togo				
		Uganda				

Sub-Saharan Africa: Member Countries of Regional Groupings

The West African Economic and Monetary Union (WAEMU)	Economic and Monetary Community of Central African States (CEMAC)	Common Market for Eastern and Southern Africa (COMESA)	East Africa Community (EAC-5)	Southern African Development Community (SADC)	Southern Africa Customs Union (SACU)	Economic Community of West African States (ECOWAS)
Benin	Cameroon	Burundi	Burundi	Angola	Botswana	Benin
Burkina Faso	Central African Rep.	Comoros	Kenya	Botswana	Eswatini	Burkina Faso
Côte d'Ivoire	Chad	Congo, Dem. Rep. of	Rwanda	Congo, Dem. Rep. of	Lesotho	Cabo Verde
Guinea-Bissau	Congo, Republic of	Eritrea	Tanzania	Eswatini	Namibia	Côte d'Ivoire
Mali	Equatorial Guinea	Eswatini	Uganda	Lesotho	South Africa	Gambia, The
Niger	Gabon	Ethiopia		Madagascar		Ghana
Senegal		Kenya		Malawi		Guinea
Togo		Madagascar		Mauritius		Guinea-Bissau
		Malawi		Mozambique		Liberia
		Mauritius		Namibia		Mali
		Rwanda		Seychelles		Niger
		Seychelles		South Africa		Nigeria
		Uganda		Tanzania		Senegal
		Zambia		Zambia		Sierra Leone
		Zimbabwe		Zimbabwe		Togo

List of Sources and Footnotes for Statistical Appendix Tables SA1—SA28:

Tables SA1–SA3, SA6–SA19, SA21, SA24–25

Source: IMF, Common Surveillance database and IMF, World Economic Outlook database, October 2018.

[1] Fiscal year data.

[2] In constant 2009 US dollars. The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in US dollars. Staff estimates of US dollar values may differ from authorities' estimates.

Note: "..." denotes data not available.

Tables SA4–SA5

Sources: IMF, World Economic Outlook database, October 2018.

[1] In constant 2009 US dollars. The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in US dollars. Staff estimates of US dollar values may differ from authorities' estimates.

Note: "..." denotes data not available.

Table SA20

Source: IMF, World Economic Outlook database, October 2018.

[1] Including grants.

[2] Fiscal year data.

[3] In constant 2009 US dollars. The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in US dollars. Staff estimates of US dollar values may differ from authorities' estimates.

Note: "..." denotes data not available.

Tables SA22–SA23

Source: IMF, Information Notice System.

[1] An increase indicates appreciation. Note: "..." denotes data not available.

Table SA26

Sources: IMF, Common Surveillance database, and IMF, World Economic Outlook database, October 2018

[1] As a member of the West African Economic and Monetary Union (WAEMU), see WAEMU aggregate for reserves data.

[2] As a member of the Central African Economic and Monetary Community (CEMAC), see CEMAC aggregate for reserves data.

[3] Fiscal year data.

[4] In constant 2009 US dollars. The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in US dollars. Staff estimates of US dollar values may differ from authorities' estimates.

Note: "..." denotes data not available.

Table SA27

Source: IMF, International Financial Statistics.

[1] Includes offshore banking assets. Note: "..." denotes data not available.

Table SA28

Source: IMF, International Financial Statistics.

[1] Loan-to-deposit ratio includes deposits and loans of commercial banks to the public sector.

Note: "..." denotes data not available.

List of Statistical Appendix Tables:

Table SA1. Real GDP Growth
(Percent)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	12.5	4.9	3.5	8.5	5.0	4.8	0.9	–2.6	–0.2	–1.7	0.44	2.9
Benin	4.2	2.1	3.0	4.8	7.2	6.4	2.1	4.0	5.8	6.5	6.45	6.5
Botswana	6.0	8.6	6.0	4.5	11.3	4.1	–1.7	4.3	2.9	4.6	3.91	4.1
Burkina Faso	5.9	8.4	6.6	6.5	5.8	4.3	3.9	5.9	6.3	6.0	5.99	6.0
Burundi	4.4	5.1	4.0	4.4	5.9	4.5	–4.0	–1.0	0.0	0.1	0.42	0.5
Cabo Verde	7.1	1.5	4.0	1.1	0.8	0.6	1.0	4.7	4.0	4.7	5.02	5.0
Cameroon	4.1	3.4	4.1	4.5	5.4	5.9	5.7	4.6	3.5	4.0	4.30	4.7
Central African Rep.	3.3	3.0	3.3	4.1	–36.7	1.0	4.8	4.5	4.3	4.3	5.04	5.0
Chad	9.8	13.6	0.1	8.8	5.8	6.9	1.8	–6.4	–3.1	3.1	4.46	6.0
Comoros	1.3	2.1	2.2	3.0	3.5	2.0	1.0	2.2	2.7	2.8	2.80	2.9
Congo, Dem. Rep. of	6.1	7.1	6.9	7.1	8.5	9.5	6.9	2.4	3.4	3.9	4.34	4.4
Congo, Rep. of	4.3	8.7	3.4	3.8	3.3	6.8	2.6	–2.8	–3.1	0.8	5.45	1.5
Côte d'Ivoire	1.8	2.0	–4.9	10.9	9.3	8.8	8.8	8.0	7.7	7.4	7.48	7.2
Equatorial Guinea	15.6	–8.9	6.5	8.3	–4.1	0.4	–9.1	–8.8	–4.7	–5.7	-3.97	-4.7
Eritrea	–1.1	2.2	8.7	7.0	4.6	2.9	2.6	1.9	5.0	4.2	3.77	4.1
Eswatini	4.2	3.8	2.2	4.7	6.4	1.9	0.4	3.2	1.9	0.2	-0.44	0.2
Ethiopia[1]	11.8	10.6	11.4	8.7	9.9	10.3	10.4	8.0	10.1	7.7	7.72	7.5
Gabon	1.3	6.3	7.1	5.3	5.5	4.4	3.9	2.1	0.5	1.2	3.15	3.9
Gambia, The	3.3	6.5	–4.3	5.6	4.8	–0.9	5.9	0.4	4.6	6.6	5.40	5.2
Ghana	6.2	7.9	17.4	9.0	7.9	2.9	2.2	3.4	8.1	5.6	8.79	5.8
Guinea	3.7	4.2	5.6	5.9	3.9	3.7	3.8	10.5	9.9	5.8	5.92	6.0
Guinea-Bissau	3.2	4.6	8.1	–1.7	3.3	1.0	6.1	6.3	5.9	3.8	5.00	5.0
Kenya	4.6	8.4	6.1	4.6	5.9	5.4	5.7	5.9	4.9	6.0	5.84	5.9
Lesotho	4.1	6.3	6.7	4.9	2.2	3.0	2.5	3.1	–1.6	1.5	3.87	0.3
Liberia	7.5	6.4	7.7	8.4	8.8	0.7	0.0	–1.6	2.5	1.2	0.44	1.6
Madagascar	5.7	0.3	1.4	3.0	2.2	3.3	3.1	4.2	4.3	5.2	5.19	5.3
Malawi	6.1	6.9	4.9	1.9	5.2	5.7	2.9	2.3	4.0	3.2	4.00	5.0
Mali	4.2	5.4	3.2	–0.8	2.3	7.1	6.2	5.8	5.4	4.9	5.00	4.9
Mauritius	4.3	4.4	4.1	3.5	3.4	3.7	3.6	3.8	3.8	3.8	3.86	3.9
Mozambique	8.1	6.7	7.1	7.2	7.1	7.4	6.6	3.8	3.7	3.3	4.00	4.0
Namibia	4.3	6.0	5.1	5.1	5.6	6.4	6.1	0.6	–0.9	–0.1	1.38	2.0
Niger	5.2	8.4	2.2	11.8	5.3	7.5	4.3	4.9	4.9	5.2	6.53	6.0
Nigeria	7.7	11.3	4.9	4.3	5.4	6.3	2.7	–1.6	0.8	1.9	2.15	2.5
Rwanda	9.0	7.3	7.8	8.8	4.7	7.6	8.9	6.0	6.2	8.6	7.80	8.1
São Tomé & Príncipe	6.3	6.7	4.4	3.1	4.8	6.5	3.8	4.2	3.9	3.0	4.00	4.5
Senegal	4.6	3.6	1.5	5.1	2.8	6.6	6.4	6.2	7.2	6.2	6.93	7.5
Seychelles	4.8	5.9	5.4	3.7	6.0	4.5	4.9	4.5	5.3	3.6	3.43	3.3
Sierra Leone	5.8	5.3	6.3	15.2	20.7	4.6	–20.5	6.4	3.8	3.7	5.43	5.4
South Africa	4.8	3.0	3.3	2.2	2.5	1.8	1.2	0.4	1.4	0.8	1.20	1.5
South Sudan	...	...	...	–52.4	29.3	2.9	–0.2	–16.7	–5.5	–1.2	8.78	5.2
Tanzania	7.0	6.4	7.9	5.1	6.8	6.7	6.2	6.9	6.8	6.6	4.00	4.2
Togo	–0.0	6.1	6.4	6.5	6.1	5.9	5.7	5.6	4.4	4.7	5.05	5.3
Uganda	8.3	7.7	6.8	2.2	4.7	4.6	5.7	2.3	5.0	6.2	6.29	6.2
Zambia	7.7	10.3	5.6	7.6	5.1	4.7	2.9	3.8	3.4	3.5	3.09	2.9
Zimbabwe[2]	–7.4	19.7	14.2	16.7	2.0	2.4	1.8	0.7	4.7	3.4	-5.25	3.3
Sub-Saharan Africa	**6.4**	**7.1**	**5.3**	**4.7**	**5.2**	**5.1**	**3.2**	**1.4**	**2.9**	**3.0**	**3.5**	**3.7**
Median	4.8	6.2	5.2	5.1	5.3	4.6	3.6	3.8	4.0	3.8	4.3	4.7
Excluding Nigeria and South Africa	6.5	6.4	6.4	6.0	6.3	5.6	4.3	3.4	4.7	4.5	5.0	5.1
Oil-exporting countries	**8.2**	**9.3**	**4.6**	**4.3**	**5.4**	**5.9**	**2.3**	**–1.8**	**0.5**	**1.4**	**2.2**	**2.7**
Excluding Nigeria	9.3	4.2	4.0	4.4	5.6	4.8	1.4	–2.2	–0.3	0.0	2.3	3.2
Oil-importing countries	**5.3**	**5.5**	**5.7**	**4.9**	**5.1**	**4.5**	**3.8**	**3.5**	**4.6**	**4.1**	**4.3**	**4.3**
Excluding South Africa	5.6	7.1	7.2	6.6	6.5	5.9	5.2	5.1	6.1	5.6	5.7	5.5
Middle-income countries	**6.4**	**7.0**	**4.8**	**4.6**	**4.7**	**4.6**	**2.5**	**0.4**	**2.0**	**2.2**	**2.9**	**3.1**
Excluding Nigeria and South Africa	6.6	5.4	6.0	6.9	5.6	4.9	3.2	2.7	3.7	3.4	4.7	4.6
Low-income countries	**6.3**	**7.7**	**7.1**	**5.0**	**7.1**	**6.6**	**5.5**	**4.4**	**5.9**	**5.7**	**5.3**	**5.6**
Excluding low-income countries in fragile situations	7.9	7.2	7.6	6.3	7.2	7.1	6.4	5.9	7.0	6.6	6.0	6.0
Countries in fragile situations	**3.0**	**7.2**	**3.6**	**4.2**	**7.0**	**6.3**	**4.7**	**2.3**	**3.9**	**4.4**	**4.6**	**5.1**
CFA franc zone	5.0	4.0	2.7	6.3	4.4	6.0	4.3	3.4	3.8	4.4	5.2	5.2
CEMAC	6.6	3.6	4.4	5.9	2.8	4.9	2.0	–0.3	0.1	1.7	3.3	3.3
WAEMU	3.6	4.3	1.1	6.6	5.9	7.0	6.3	6.4	6.6	6.3	6.6	6.5
COMESA (SSA members)	6.1	8.4	7.3	6.4	6.2	6.3	6.0	4.8	5.8	5.6	5.3	5.7
EAC-5	6.4	7.4	6.9	4.5	5.9	5.8	5.8	5.4	5.6	6.3	5.3	5.4
ECOWAS	6.7	9.6	5.5	5.2	5.8	6.0	3.1	0.5	2.8	3.2	3.8	3.8
SACU	4.8	3.4	3.5	2.4	3.0	2.1	1.2	0.6	1.4	0.9	1.3	1.6
SADC	5.8	4.7	4.4	4.4	4.0	3.6	2.2	1.3	2.3	1.8	1.9	2.6

See sources and footnotes on page 91.

Table SA2. Real Non-Oil GDP Growth
(Percent)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	9.3	7.6	8.7	8.6	9.0	8.9	–3.0	–2.5	–0.3	0.3	1.5	2.5
Benin	4.2	2.1	3.0	4.8	7.2	6.4	2.1	4.0	5.8	6.5	6.5	6.5
Botswana	6.0	8.6	6.0	4.5	11.3	4.1	–1.7	4.3	2.9	4.6	3.9	4.1
Burkina Faso	5.9	8.4	6.6	6.5	5.8	4.3	3.9	5.9	6.3	6.0	6.0	6.0
Burundi	4.4	5.1	4.0	4.4	5.9	4.5	–4.0	–1.0	0.0	0.1	0.4	0.5
Cabo Verde	7.1	1.5	4.0	1.1	0.8	0.6	1.0	4.7	4.0	4.7	5.0	5.0
Cameroon	4.2	4.4	4.9	4.6	5.2	5.4	4.4	5.3	5.0	4.5	4.8	5.2
Central African Rep.	3.3	3.0	3.3	4.1	–36.7	1.0	4.8	4.5	4.3	4.3	5.0	5.0
Chad	6.3	17.3	0.2	11.5	8.1	7.1	–2.9	–6.0	–0.5	1.0	2.8	3.7
Comoros	1.3	2.1	2.2	3.0	3.5	2.0	1.0	2.2	2.7	2.8	2.8	2.9
Congo, Dem. Rep. of	5.9	7.2	7.0	7.2	8.6	9.5	7.1	2.4	3.6	4.2	4.0	4.4
Congo, Rep. of	5.7	6.4	7.5	9.7	8.2	7.9	5.3	–3.2	–7.9	–6.7	1.0	2.5
Côte d'Ivoire	1.8	2.6	–5.5	13.3	9.0	9.4	8.4	7.7	8.3	7.8	7.6	6.9
Equatorial Guinea	29.0	–10.2	15.9	6.8	1.5	–0.5	–9.7	–4.7	1.5	–3.8	-3.1	-2.0
Eritrea	–1.1	2.2	8.7	7.0	4.6	2.9	2.6	1.9	5.0	4.2	3.8	4.1
Eswatini	4.2	3.8	2.2	4.7	6.4	1.9	0.4	3.2	1.9	0.2	-0.4	0.2
Ethiopia[1]	11.8	10.6	11.4	8.7	9.9	10.3	10.4	8.0	10.1	7.7	7.7	7.5
Gabon	5.0	13.1	10.5	7.1	7.7	5.1	3.8	3.3	1.7	1.9	3.5	4.6
Gambia, The	3.3	6.5	–4.3	5.6	4.8	–0.9	5.9	0.4	4.6	6.6	5.4	5.2
Ghana	6.2	7.9	12.1	8.4	7.4	2.7	2.2	4.6	4.6	5.0	6.0	6.0
Guinea	3.7	4.2	5.6	5.9	3.9	3.7	3.8	10.5	9.9	5.8	5.9	6.0
Guinea-Bissau	3.2	4.6	8.1	–1.7	3.3	1.0	6.1	6.3	5.9	3.8	5.0	5.0
Kenya	4.6	8.4	6.1	4.6	5.9	5.4	5.7	5.9	4.9	6.0	5.8	5.9
Lesotho	4.1	6.3	6.7	4.9	2.2	3.0	2.5	3.1	–1.6	1.5	3.9	0.3
Liberia	7.5	6.4	7.7	8.4	8.8	0.7	0.0	–1.6	2.5	1.2	0.4	1.6
Madagascar	5.7	0.3	1.4	3.0	2.2	3.3	3.1	4.2	4.3	5.2	5.2	5.3
Malawi	6.1	6.9	4.9	1.9	5.2	5.7	2.9	2.3	4.0	3.2	4.0	5.0
Mali	4.2	5.4	3.2	–0.8	2.3	7.1	6.2	5.8	5.4	4.9	5.0	4.9
Mauritius	4.3	4.4	4.1	3.5	3.4	3.7	3.6	3.8	3.8	3.8	3.9	3.9
Mozambique	8.1	6.7	7.1	7.2	7.1	7.4	6.6	3.8	3.7	3.5	4.0	4.0
Namibia	4.3	6.0	5.1	5.1	5.6	6.4	6.1	0.6	–0.9	–0.1	1.4	2.0
Niger	5.2	8.4	1.3	4.2	3.2	8.9	5.5	4.5	4.5	5.8	6.0	6.6
Nigeria	10.8	12.4	5.3	5.9	8.3	7.3	3.6	–0.3	0.5	2.0	1.9	2.2
Rwanda	9.0	7.3	7.8	8.8	4.7	7.6	8.9	6.0	6.2	8.6	7.8	8.1
São Tomé & Príncipe	6.3	6.7	4.4	3.1	4.8	6.5	3.8	4.2	3.9	3.0	4.0	4.5
Senegal	4.6	3.6	1.5	5.1	2.8	6.6	6.4	6.2	7.2	6.2	6.9	7.5
Seychelles	4.8	5.9	5.4	3.7	6.0	4.5	4.9	4.5	5.3	3.6	3.4	3.3
Sierra Leone	5.8	5.3	6.3	15.2	20.7	4.6	–20.5	6.4	3.8	3.7	5.4	5.4
South Africa	4.8	3.0	3.3	2.2	2.5	1.8	1.2	0.4	1.4	0.8	1.2	1.5
South Sudan	...	...	...	–0.8	4.1	–17.5	–1.2	–10.2	–6.3	–6.0	2.0	3.9
Tanzania	7.0	6.4	7.9	5.1	6.8	6.7	6.2	6.9	6.8	6.6	4.0	4.2
Togo	–0.0	6.1	6.4	6.5	6.1	5.9	5.7	5.6	4.4	4.7	5.0	5.3
Uganda	8.3	7.7	6.8	2.2	4.7	4.6	5.7	2.3	5.0	6.2	6.3	6.2
Zambia	7.7	10.3	5.6	7.6	5.1	4.7	2.9	3.8	3.4	3.5	3.1	2.9
Zimbabwe[2]	–7.4	15.4	16.3	13.6	5.3	2.8	1.4	0.7	3.7	3.6	4.2	4.7
Sub-Saharan Africa	**7.3**	**7.7**	**5.7**	**5.5**	**6.3**	**5.5**	**3.2**	**1.9**	**2.7**	**3.1**	**3.4**	**3.6**
Median	5.1	6.3	5.6	5.1	5.3	4.6	3.8	3.8	4.0	3.8	4.0	4.6
Excluding Nigeria and South Africa	6.6	6.9	7.0	6.7	6.7	5.8	3.7	3.7	4.5	4.5	4.9	5.1
Oil-exporting countries	**10.5**	**10.7**	**6.1**	**6.3**	**7.9**	**6.7**	**2.3**	**–0.6**	**0.4**	**1.6**	**2.0**	**2.5**
Excluding Nigeria	5.1	6.2	8.2	7.4	7.1	5.5	–0.9	–1.3	0.3	0.4	2.2	3.2
Oil-importing countries	**5.3**	**5.5**	**5.4**	**4.9**	**5.1**	**4.5**	**3.8**	**3.6**	**4.3**	**4.1**	**4.2**	**4.4**
Excluding South Africa	5.6	7.1	6.6	6.4	6.5	6.0	5.2	5.2	5.7	5.6	5.5	5.6
Middle-income countries	**7.6**	**7.7**	**5.3**	**5.3**	**6.2**	**5.3**	**2.5**	**1.1**	**1.7**	**2.3**	**2.7**	**3.0**
Excluding Nigeria and South Africa	6.9	6.2	6.9	7.2	6.8	5.7	2.3	3.0	3.3	3.6	4.4	4.7
Low-income countries	**6.1**	**7.6**	**7.1**	**6.1**	**6.5**	**6.0**	**5.3**	**4.5**	**5.9**	**5.6**	**5.4**	**5.6**
Excluding low-income countries in fragile situations	7.9	7.2	7.6	6.0	7.1	7.1	6.5	5.9	7.0	6.6	6.0	6.0
Countries in fragile situations	**2.9**	**7.1**	**4.1**	**7.8**	**6.3**	**5.2**	**4.4**	**2.6**	**3.8**	**3.7**	**4.7**	**5.0**
CFA franc zone	6.5	4.7	4.1	6.9	5.4	6.1	3.9	3.8	4.5	4.2	5.0	5.4
CEMAC	9.7	4.9	7.6	7.1	5.1	4.8	1.1	0.8	1.5	1.0	2.8	3.7
WAEMU	3.6	4.5	0.8	6.8	5.7	7.3	6.2	6.3	6.7	6.4	6.6	6.5
COMESA (SSA members)	6.0	8.2	7.5	6.2	6.4	6.4	6.0	4.8	5.8	5.7	5.7	5.7
EAC-5	6.4	7.4	6.9	4.5	5.9	5.8	5.8	5.4	5.6	6.3	5.3	5.4
ECOWAS	8.9	10.5	5.3	6.3	7.8	6.7	3.7	1.6	2.2	3.3	3.4	3.6
SACU	4.8	3.4	3.5	2.4	3.0	2.1	1.2	0.6	1.4	0.9	1.3	1.6
SADC	5.5	4.9	5.1	4.3	4.7	4.2	1.7	1.3	2.2	2.1	2.2	2.6

See sources and footnotes on page 91.

Table SA3. Real Per Capita GDP Growth
(Percent)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	9.3	1.8	0.5	5.4	1.9	1.8	–2.0	–5.5	–3.2	–4.6	-2.5	-0.1
Benin	1.2	–0.7	0.1	1.9	4.3	3.5	–0.6	1.2	3.1	3.8	3.7	3.8
Botswana	4.6	7.2	3.8	2.6	9.3	2.2	–3.5	2.4	1.0	2.7	2.0	2.2
Burkina Faso	2.7	5.2	3.5	3.3	2.7	1.3	0.9	2.9	3.3	4.6	3.1	3.2
Burundi	1.8	1.9	0.9	1.3	2.8	1.5	–6.8	–4.1	–3.1	–2.8	-2.5	-2.4
Cabo Verde	5.7	0.4	2.8	–0.1	–0.4	–0.6	–0.2	3.4	2.7	3.5	3.8	3.7
Cameroon	1.3	0.9	1.6	2.0	2.8	3.3	3.1	2.1	1.0	1.5	1.8	2.2
Central African Rep.	1.5	1.1	1.3	2.1	–37.9	–0.9	2.8	2.5	2.3	2.3	3.0	2.9
Chad	7.1	10.8	–2.3	6.2	3.2	4.3	–0.7	–8.7	–5.8	0.6	1.9	3.5
Comoros	–1.2	–0.5	–0.5	0.3	0.8	–0.7	–1.6	–0.5	0.0	0.1	0.1	0.2
Congo, Dem. Rep. of	1.5	3.8	3.6	4.0	5.3	6.3	3.8	–0.6	0.4	0.9	1.3	1.4
Congo, Rep. of	1.7	6.1	0.9	1.3	0.8	4.2	0.1	–5.2	–5.5	–1.7	2.9	-0.9
Côte d'Ivoire	–0.8	–0.6	–7.3	8.1	6.5	6.0	6.1	5.2	5.0	4.7	4.8	4.5
Equatorial Guinea	10.6	–12.9	1.9	3.7	–8.1	–3.6	–12.7	–12.3	–8.2	–9.0	-7.2	-7.8
Eritrea	–3.7	–0.3	6.2	4.5	2.3	0.7	0.4	–0.2	3.0	2.2	1.9	2.2
Eswatini	3.3	3.0	1.5	4.0	5.7	1.2	–0.3	2.5	1.2	–0.5	-1.1	-0.5
Ethiopia[1]	9.1	8.9	9.6	7.0	8.2	8.6	8.7	6.3	8.4	6.0	6.0	5.8
Gabon	–1.5	2.4	3.2	1.4	1.5	0.8	0.6	–0.5	–1.8	–0.2	1.8	2.5
Gambia, The	0.0	3.2	–7.3	2.4	1.6	–4.0	2.7	–2.6	1.4	3.3	2.2	2.0
Ghana	3.7	2.5	14.6	6.4	5.4	0.6	–0.1	1.2	5.8	3.4	6.6	3.7
Guinea	1.4	1.5	2.9	3.2	1.3	1.1	1.3	7.8	7.2	3.2	3.3	3.4
Guinea-Bissau	1.0	3.8	5.8	–3.8	1.0	–1.2	3.8	4.0	3.6	1.6	2.7	2.7
Kenya	1.8	6.1	3.4	1.5	3.1	2.4	2.8	3.0	2.0	3.1	3.0	3.1
Lesotho	3.8	5.6	5.9	4.2	1.5	2.3	1.8	2.4	–2.2	0.8	3.2	-0.4
Liberia	4.1	2.7	4.5	5.5	6.2	–1.7	–2.4	–4.1	–0.1	–1.3	-2.1	-1.0
Madagascar	2.6	–2.5	–1.4	0.2	–0.6	0.5	0.3	1.3	1.5	2.3	2.4	2.4
Malawi	3.5	3.9	1.9	–1.0	2.3	2.7	0.1	–0.6	1.1	0.3	1.1	2.1
Mali	0.9	2.0	0.0	–3.8	–0.7	4.0	3.1	2.7	2.3	1.8	2.0	1.9
Mauritius	3.8	4.1	3.9	3.2	3.1	3.5	3.4	3.8	3.7	3.7	3.8	3.9
Mozambique	5.0	3.7	4.1	4.2	4.2	4.5	3.7	1.0	1.0	0.6	1.3	1.3
Namibia	2.9	4.5	3.5	3.1	3.7	4.4	4.1	–1.2	–2.8	–2.0	-0.5	0.1
Niger	1.5	5.1	–0.9	8.5	2.1	4.3	1.2	1.8	1.7	2.0	3.3	2.8
Nigeria	4.9	8.3	2.1	1.5	2.6	3.5	–0.1	–4.2	–1.9	–0.8	-0.6	-0.2
Rwanda	6.8	4.1	5.7	5.7	2.4	5.0	6.4	3.5	3.7	6.7	5.3	5.6
São Tomé & Príncipe	3.5	3.7	1.6	0.4	2.2	3.9	1.3	1.7	1.5	0.7	1.7	2.3
Senegal	1.8	0.6	–1.5	2.0	–0.2	3.5	3.3	3.2	4.2	3.2	4.0	4.5
Seychelles	3.7	3.0	8.2	2.7	4.1	2.9	2.9	3.8	4.6	2.5	2.5	2.4
Sierra Leone	2.3	3.0	3.9	12.6	18.0	1.3	–22.2	4.1	1.5	1.5	3.2	3.1
South Africa	3.5	1.6	1.8	0.7	1.0	0.3	–0.4	–1.2	–0.2	–1.3	-0.4	-0.1
South Sudan	...	...	...	–54.1	25.2	–0.2	–3.1	–19.1	–8.2	–4.2	5.5	2.0
Tanzania	4.1	3.8	5.3	2.7	4.7	4.6	4.1	4.7	3.9	4.5	2.0	2.2
Togo	–3.4	3.3	3.6	3.7	3.3	3.2	3.1	2.9	1.8	2.2	2.5	2.7
Uganda	4.7	4.2	3.4	–0.9	1.7	1.6	2.6	–0.7	1.9	3.0	3.1	3.1
Zambia	4.7	7.1	2.4	4.4	1.9	1.5	–0.2	0.6	0.3	0.4	0.0	-0.2
Zimbabwe[2]	–8.1	18.6	13.1	11.3	–0.8	–0.2	–0.8	–1.8	2.1	0.8	-7.6	0.7
Sub-Saharan Africa	**3.9**	**4.5**	**2.8**	**2.2**	**2.8**	**2.6**	**0.7**	**–1.0**	**0.5**	**0.6**	**1.1**	**1.3**
Median	2.8	3.2	2.9	2.7	2.4	2.2	0.9	1.3	1.5	1.6	2.2	2.2
Excluding Nigeria and South Africa	3.7	3.5	3.8	3.2	3.6	3.0	1.7	0.9	2.1	2.0	2.5	2.6
Oil-exporting countries	**5.2**	**6.3**	**1.8**	**1.4**	**2.5**	**3.0**	**–0.5**	**–4.4**	**–2.2**	**–1.3**	**-0.5**	**0.0**
Excluding Nigeria	6.1	1.1	0.9	1.3	2.4	1.7	–1.5	–4.9	–3.1	–2.6	-0.4	0.5
Oil-importing countries	**3.1**	**3.3**	**3.6**	**2.7**	**2.9**	**2.3**	**1.6**	**1.3**	**2.3**	**1.8**	**2.1**	**2.2**
Excluding South Africa	2.9	4.3	4.7	3.9	4.0	3.4	2.7	2.6	3.5	3.2	3.2	3.1
Middle-income countries	**4.1**	**4.4**	**2.4**	**2.2**	**2.3**	**2.2**	**0.1**	**–1.9**	**–0.4**	**–0.3**	**0.5**	**0.7**
Excluding Nigeria and South Africa	3.9	2.4	3.2	4.1	2.9	2.1	0.6	0.1	1.1	0.9	2.2	2.1
Low-income countries	**3.3**	**5.0**	**4.4**	**2.2**	**4.5**	**4.0**	**3.0**	**1.9**	**3.2**	**3.3**	**2.8**	**3.2**
Excluding low-income countries in fragile situations	4.9	4.6	5.0	3.7	4.8	4.7	4.1	3.6	4.5	4.3	3.7	3.7
Countries in fragile situations	**0.2**	**4.5**	**1.0**	**1.1**	**4.1**	**3.5**	**1.9**	**–0.4**	**1.2**	**1.6**	**1.9**	**2.3**
CFA franc zone	1.9	1.0	–0.3	3.2	1.4	3.0	1.4	0.6	1.1	1.8	2.5	2.6
CEMAC	3.4	0.5	1.3	2.7	–0.3	1.9	–0.9	–2.9	–2.5	–0.7	0.9	0.9
WAEMU	0.6	1.4	–1.8	3.7	3.0	4.1	3.4	3.5	3.7	3.6	3.7	3.7
COMESA (SSA members)	3.3	6.0	4.9	3.6	3.7	3.8	3.5	2.3	3.4	3.2	2.8	3.2
EAC-5	3.4	4.7	4.1	1.6	3.3	3.1	3.2	2.7	2.7	3.7	2.7	2.8
ECOWAS	3.9	6.5	2.7	2.4	3.0	3.2	0.3	–2.1	0.1	0.6	1.2	1.1
SACU	3.5	2.0	2.0	1.0	1.5	0.6	–0.3	–0.9	–0.2	–1.1	-0.3	0.0
SADC	3.9	2.7	2.4	2.3	2.0	1.5	0.2	–0.7	0.1	–0.5	-0.2	0.5

See sources and footnotes on page 91.

Table SA4. Consumer Prices
(Annual average, percent change)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	20.9	14.5	13.5	10.3	8.8	7.3	9.2	30.7	29.8	19.6	17.5	11.1
Benin	3.9	2.2	2.7	6.7	1.0	–1.1	0.3	–0.8	0.1	1.0	2.0	2.0
Botswana	9.4	6.9	8.5	7.5	5.9	4.4	3.1	2.8	3.3	3.2	3.6	3.8
Burkina Faso	3.8	–0.6	2.8	3.8	0.5	–0.3	0.9	–0.2	0.4	2.0	2.0	2.0
Burundi	11.4	6.5	9.6	18.2	7.9	4.4	5.6	5.5	16.6	1.2	7.3	9.0
Cabo Verde	2.9	2.1	4.5	2.5	1.5	–0.2	0.1	–1.4	0.8	1.3	1.6	2.0
Cameroon	2.7	1.3	2.9	2.4	2.1	1.9	2.7	0.9	0.6	0.9	1.2	1.5
Central African Rep.	3.5	1.5	1.2	5.9	6.6	11.6	4.5	4.6	4.1	3.0	3.0	2.5
Chad	1.5	–2.1	1.9	7.7	0.2	1.7	6.8	–1.1	–0.9	2.5	2.9	3.0
Comoros	4.0	3.9	2.2	5.9	1.6	1.3	2.0	1.8	1.0	2.0	2.0	2.0
Congo, Dem. Rep. of	14.6	23.5	14.9	0.9	0.9	1.2	1.0	18.2	41.5	29.3	8.4	6.7
Congo, Rep. of	3.7	0.4	1.8	5.0	4.6	0.9	3.2	3.2	0.4	1.2	1.5	1.8
Côte d'Ivoire	3.2	1.4	4.9	1.3	2.6	0.4	1.2	0.7	0.8	0.3	2.0	2.0
Equatorial Guinea	4.4	5.3	4.8	3.4	3.2	4.3	1.7	1.4	0.7	1.3	2.6	2.7
Eritrea	16.4	11.2	3.9	6.0	6.5	10.0	9.0	9.0	9.0	9.0	9.0	9.0
Eswatini	6.9	4.5	6.1	8.9	5.6	5.7	5.0	7.8	6.2	4.8	5.6	5.5
Ethiopia	18.0	8.1	33.2	24.1	8.1	7.4	9.6	6.6	10.7	13.8	9.3	8.0
Gabon	0.9	1.4	1.3	2.7	0.5	4.5	–0.1	2.1	2.7	4.8	3.0	2.5
Gambia, The	6.2	5.0	4.8	4.6	5.2	6.3	6.8	7.2	8.0	6.5	6.3	6.0
Ghana	13.3	6.7	7.7	7.1	11.7	15.5	17.2	17.5	12.4	9.8	9.1	8.4
Guinea	25.0	15.5	21.4	15.2	11.9	9.7	8.2	8.2	8.9	9.7	8.9	8.3
Guinea-Bissau	4.2	1.1	5.1	2.1	0.8	–1.0	1.5	1.5	1.1	1.4	2.0	2.1
Kenya	8.3	4.3	14.0	9.4	5.7	6.9	6.6	6.3	8.0	4.7	4.4	5.0
Lesotho	6.9	3.3	6.0	5.5	5.0	4.6	4.3	6.2	4.5	5.2	5.4	5.6
Liberia	9.8	7.3	8.5	6.8	7.6	9.9	7.7	8.8	12.4	23.4	22.3	20.5
Madagascar	12.5	9.2	9.5	5.7	5.8	6.1	7.4	6.7	8.3	7.3	6.7	6.3
Malawi	8.3	7.4	7.6	21.3	28.3	23.8	21.9	21.7	11.5	9.2	8.7	8.2
Mali	3.1	1.3	3.1	5.3	–2.4	2.7	1.4	–1.8	1.8	1.7	1.7	2.2
Mauritius	7.4	2.9	6.5	3.9	3.5	3.2	1.3	1.0	3.7	3.2	2.1	3.7
Mozambique	11.0	12.4	11.2	2.6	4.3	2.6	3.6	19.9	15.1	3.9	4.2	5.5
Namibia	5.4	4.9	5.0	6.7	5.6	5.3	3.4	6.7	6.1	4.3	5.2	5.5
Niger	4.0	–2.8	2.9	0.5	2.3	–0.9	1.0	0.2	2.4	3.0	2.4	2.1
Nigeria	11.6	13.7	10.8	12.2	8.5	8.0	9.0	15.7	16.5	12.1	11.7	11.7
Rwanda	10.9	2.3	5.7	6.3	4.2	1.8	2.5	5.7	4.8	1.4	3.5	5.0
São Tomé & Príncipe	20.8	13.3	14.3	10.6	8.1	7.0	5.2	5.4	5.7	7.9	7.8	5.5
Senegal	3.3	1.2	3.4	1.4	0.7	–1.1	0.1	0.8	1.3	0.5	1.3	1.5
Seychelles	9.0	–2.4	2.6	7.1	4.3	1.4	4.0	–1.0	2.9	3.7	3.4	3.0
Sierra Leone	12.5	7.2	6.8	6.6	5.5	4.6	6.7	10.9	18.2	16.9	15.8	13.0
South Africa	5.5	4.3	5.0	5.6	5.8	6.1	4.6	6.3	5.3	4.6	5.0	5.4
South Sudan	...	...	...	45.1	–0.0	1.7	52.8	379.8	187.9	83.5	24.5	16.9
Tanzania	6.6	7.2	12.7	16.0	7.9	6.1	5.6	5.2	5.3	3.5	3.5	4.5
Togo	3.8	1.4	3.6	2.6	1.8	0.2	1.8	0.9	–0.7	0.7	1.8	2.0
Uganda	7.5	3.7	15.0	12.7	4.9	3.1	5.4	5.5	5.6	2.6	3.6	4.4
Zambia	13.7	8.5	8.7	6.6	7.0	7.8	10.1	17.9	6.6	7.0	10.7	12.0
Zimbabwe[1]	39.9	3.0	3.5	3.7	1.6	–0.2	–2.4	–1.6	0.9	10.6	73.4	9.4
Sub-Saharan Africa	**9.0**	**8.1**	**9.3**	**9.2**	**6.6**	**6.4**	**7.0**	**11.2**	**11.0**	**8.5**	**8.1**	**7.4**
Median	7.2	4.3	5.4	6.0	4.9	4.4	4.3	5.5	5.3	3.9	4.2	5.0
Excluding Nigeria and South Africa	9.4	6.4	10.5	8.9	5.7	5.5	6.7	10.6	10.3	8.0	7.4	6.0
Oil-exporting countries	**11.1**	**12.0**	**10.0**	**11.1**	**7.5**	**7.1**	**8.7**	**17.5**	**17.1**	**12.2**	**11.1**	**10.3**
Excluding Nigeria	10.0	7.5	7.7	8.4	5.0	4.7	7.9	22.4	18.6	12.4	9.6	6.7
Oil-importing countries	**7.7**	**5.4**	**8.9**	**7.8**	**5.9**	**5.9**	**5.7**	**7.0**	**7.2**	**6.2**	**6.3**	**5.7**
Excluding South Africa	9.3	6.1	11.3	9.1	6.0	5.8	6.3	7.3	8.1	6.9	6.9	5.8
Middle-income countries	**8.8**	**8.4**	**8.3**	**8.4**	**6.9**	**6.9**	**7.1**	**11.6**	**11.0**	**8.2**	**8.1**	**7.9**
Excluding Nigeria and South Africa	9.3	6.2	8.3	6.5	6.2	6.3	6.8	11.1	9.6	6.9	6.8	5.9
Low-income countries	**9.8**	**6.8**	**13.2**	**12.0**	**5.2**	**4.5**	**6.5**	**10.0**	**11.0**	**9.2**	**8.1**	**6.0**
Excluding low-income countries in fragile situations	9.8	6.1	15.9	13.6	6.0	4.7	6.0	5.9	7.3	6.7	5.6	5.6
Countries in fragile situations	**7.7**	**6.0**	**6.8**	**7.3**	**3.6**	**3.2**	**5.9**	**13.4**	**13.5**	**10.4**	**10.1**	**5.4**
CFA franc zone	3.1	1.1	3.2	3.2	1.6	1.3	1.8	0.6	0.9	1.4	1.9	2.0
CEMAC	2.7	1.5	2.7	3.8	2.2	2.7	2.7	1.3	0.8	1.9	2.0	2.1
WAEMU	3.4	0.8	3.6	2.7	1.0	0.1	0.9	0.1	1.0	1.0	1.8	1.9
COMESA (SSA members)	11.4	7.3	15.3	11.2	6.1	5.8	6.5	8.1	10.4	9.3	9.2	6.8
EAC-5	7.8	5.1	13.2	12.3	6.3	5.5	5.7	5.7	6.5	3.6	3.9	4.8
ECOWAS	10.3	10.8	9.5	10.1	7.6	7.4	8.4	12.8	12.9	9.7	9.4	9.3
SACU	5.7	4.4	5.1	5.8	5.8	6.0	4.5	6.2	5.2	4.6	4.9	5.3
SADC	8.2	7.0	7.6	7.1	6.3	6.0	5.3	10.3	9.9	7.7	8.0	6.5

See sources and footnotes on page 91.

Table SA5. Consumer Prices
(End of period, percent change)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	17.3	15.3	11.4	9.0	7.7	7.5	12.1	41.1	23.7	18.6	15.0	9.0
Benin	4.1	4.0	1.8	6.8	–1.8	–0.8	2.3	–2.7	3.0	1.0	2.0	1.9
Botswana	9.9	7.4	9.2	7.4	4.1	3.8	3.1	3.0	3.2	3.5	3.7	3.8
Burkina Faso	4.1	–0.3	5.1	1.7	0.1	–0.1	1.3	–1.6	2.1	2.0	2.0	2.0
Burundi	12.5	4.1	14.9	11.8	9.0	3.7	7.1	9.5	10.5	5.3	9.0	9.0
Cabo Verde	3.5	3.4	3.6	4.1	0.1	–0.4	–0.5	–0.3	0.3	1.5	1.6	2.0
Cameroon	3.1	2.6	2.7	2.5	1.7	2.6	1.5	0.3	0.8	1.1	1.2	1.5
Central African Rep.	4.7	2.3	4.3	5.9	5.9	9.7	4.8	4.7	4.2	2.5	2.3	2.7
Chad	3.3	–2.2	10.7	2.1	0.9	3.7	4.1	–4.9	5.4	3.5	-1.2	5.0
Comoros	4.4	6.7	4.9	1.0	3.5	0.0	2.0	0.8	2.9	2.0	1.8	2.2
Congo, Dem. Rep. of	17.2	9.8	8.7	2.8	1.1	1.0	0.9	23.6	55.0	7.2	7.1	7.0
Congo, Rep. of	6.0	2.6	1.8	7.5	2.1	0.5	4.1	–0.0	1.8	0.9	2.0	2.5
Côte d'Ivoire	3.9	5.1	2.0	3.4	0.4	0.9	1.4	–0.2	1.1	1.1	2.0	2.0
Equatorial Guinea	4.3	5.4	4.9	2.6	4.9	2.6	1.6	2.0	–0.2	2.6	2.6	2.7
Eritrea	17.5	14.2	12.3	2.9	9.5	10.0	9.0	9.0	9.0	9.0	9.0	9.0
Eswatini	7.7	4.5	7.8	8.3	4.4	6.2	4.9	8.7	4.7	5.3	5.2	5.8
Ethiopia	19.3	14.6	35.9	15.0	7.7	7.1	9.4	6.2	16.5	10.4	8.0	8.0
Gabon	1.1	0.7	2.3	2.2	3.3	1.7	–1.2	4.1	1.1	6.3	3.0	2.5
Gambia, The	5.2	5.8	4.4	4.9	5.6	6.9	6.7	7.9	6.9	6.4	6.5	5.5
Ghana	13.7	6.9	8.4	8.1	13.5	17.0	17.7	15.4	11.8	9.4	8.7	8.0
Guinea	24.6	20.8	19.0	12.8	10.5	9.0	7.3	8.7	9.5	9.6	8.6	8.1
Guinea-Bissau	4.9	5.7	3.4	1.6	–0.1	–0.1	2.4	1.6	–1.3	5.4	2.1	2.3
Kenya	9.0	5.8	18.9	3.2	7.1	6.0	8.0	6.3	4.5	5.7	4.7	5.0
Lesotho	7.2	3.6	7.2	5.0	5.5	2.0	7.5	4.4	4.9	5.2	5.4	5.6
Liberia	9.5	6.6	11.4	7.7	8.5	7.7	8.0	12.5	13.9	27.2	21.8	19.0
Madagascar	13.6	10.2	6.9	5.8	6.3	6.0	7.6	7.0	9.0	6.1	6.4	6.0
Malawi	11.6	6.3	9.8	34.6	23.5	24.2	24.9	20.0	7.1	9.9	8.3	7.7
Mali	3.7	1.9	5.3	2.4	0.0	1.2	1.0	–0.8	1.1	1.0	2.2	2.2
Mauritius	7.4	6.2	4.8	3.2	4.1	0.2	1.3	2.3	4.3	1.8	4.1	3.6
Mozambique	10.3	17.4	6.1	2.0	3.5	1.9	10.6	23.7	5.6	3.5	5.5	5.5
Namibia	6.1	3.1	7.4	6.4	4.9	4.6	3.7	7.3	5.2	5.1	5.2	5.4
Niger	5.3	1.4	1.4	0.7	1.1	–0.6	2.2	–2.2	4.8	1.6	2.2	2.0
Nigeria	10.3	11.8	10.3	12.0	8.0	8.0	9.6	18.5	15.4	11.4	12.1	11.7
Rwanda	11.4	0.2	8.3	3.9	3.6	2.1	4.5	7.3	0.7	1.1	5.0	5.0
São Tomé & Príncipe	21.9	12.9	11.9	10.4	7.1	6.4	4.0	5.1	7.7	9.0	6.0	5.0
Senegal	3.8	4.3	2.7	1.1	–0.1	–0.8	0.4	2.1	–0.7	1.3	1.9	1.5
Seychelles	16.1	0.4	5.5	5.8	3.4	0.5	3.2	–0.2	3.5	3.4	3.9	3.2
Sierra Leone	11.8	7.4	6.6	6.2	5.4	4.6	8.4	17.4	15.3	17.5	14.0	12.0
South Africa	6.4	3.5	6.2	5.7	5.4	5.3	5.3	6.7	4.7	4.9	5.3	5.5
South Sudan	...	...	...	25.2	–8.8	9.9	109.9	479.7	117.7	40.1	35.9	10.8
Tanzania	7.1	5.6	19.8	12.1	5.6	4.8	6.8	5.0	4.0	3.3	4.1	4.9
Togo	4.9	3.8	1.5	2.8	–0.4	1.8	1.6	0.5	–1.6	2.0	2.8	1.4
Uganda	8.4	1.5	23.7	4.3	5.5	2.1	8.4	5.7	3.3	2.2	4.0	4.8
Zambia	13.4	7.9	7.2	7.3	7.1	7.9	21.1	7.5	6.1	8.0	13.5	10.5
Zimbabwe[1]	...	3.2	4.9	2.9	0.3	–0.8	–2.5	–0.9	3.4	42.1	40.1	4.8
Sub-Saharan Africa	**9.0**	**7.7**	**10.0**	**8.1**	**6.1**	**6.1**	**8.1**	**12.4**	**10.2**	**8.0**	**8.0**	**7.3**
Median	7.4	5.3	6.8	5.0	4.4	3.7	4.5	5.1	4.7	5.1	5.0	5.0
Excluding Nigeria and South Africa	9.8	7.1	11.6	6.9	5.4	5.4	8.3	11.3	9.6	7.3	6.9	5.6
Oil-exporting countries	**10.0**	**10.8**	**9.5**	**10.4**	**6.8**	**7.1**	**9.9**	**21.0**	**15.2**	**11.3**	**11.1**	**10.0**
Excluding Nigeria	9.1	8.3	7.5	6.7	4.1	5.1	10.7	27.4	14.9	11.0	8.7	5.7
Oil-importing countries	**8.5**	**5.4**	**10.3**	**6.5**	**5.6**	**5.4**	**6.8**	**6.9**	**7.1**	**5.9**	**6.1**	**5.6**
Excluding South Africa	10.1	6.7	12.9	6.9	5.8	5.5	7.6	7.0	8.2	6.4	6.4	5.6
Middle-income countries	**8.6**	**7.9**	**8.5**	**8.0**	**6.6**	**6.7**	**8.0**	**12.9**	**9.8**	**8.2**	**8.3**	**7.8**
Excluding Nigeria and South Africa	9.1	7.2	8.4	5.7	6.2	6.3	8.3	11.7	7.8	7.1	6.7	5.4
Low-income countries	**10.7**	**6.9**	**15.7**	**8.4**	**4.4**	**4.3**	**8.3**	**10.8**	**11.7**	**7.5**	**7.1**	**5.8**
Excluding low-income countries in fragile situations	10.5	7.4	19.3	8.8	5.2	4.1	7.3	5.9	8.0	5.4	5.5	5.7
Countries in fragile situations	**8.7**	**5.6**	**6.7**	**6.8**	**2.3**	**3.6**	**7.9**	**14.8**	**14.3**	**8.8**	**8.2**	**4.9**
CFA franc zone	3.7	2.8	3.5	2.9	1.2	1.2	1.6	–0.0	1.3	1.8	1.8	2.1
CEMAC	3.4	2.2	4.0	3.2	2.5	2.4	1.9	0.5	1.5	2.5	1.5	2.4
WAEMU	4.0	3.4	3.0	2.6	0.0	0.2	1.3	–0.4	1.2	1.3	2.1	1.9
COMESA (SSA members)	12.5	7.5	17.5	7.3	6.3	5.3	8.2	7.7	11.5	8.3	8.1	6.6
EAC-5	8.4	4.4	19.6	6.6	6.1	4.5	7.5	5.9	4.0	3.8	4.4	5.0
ECOWAS	9.6	10.0	9.0	10.0	7.2	7.5	8.9	14.5	12.2	9.3	9.7	9.2
SACU	6.5	3.6	6.3	5.8	5.3	5.2	5.1	6.6	4.7	4.9	5.2	5.4
SADC	8.6	6.2	8.2	6.9	5.6	5.4	6.9	11.6	9.0	7.5	7.6	6.1

See sources and footnotes on page 91.

Table SA6. Total Investment
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	27.7	28.2	26.4	26.7	26.1	27.5	34.2	27.2	24.1	20.6	19.8	20.0
Benin	20.7	23.1	24.1	22.6	27.8	28.6	25.6	21.0	25.5	25.5	26.2	27.1
Botswana	30.3	41.4	38.6	38.8	29.4	28.2	32.6	28.6	28.2	26.8	27.9	28.7
Burkina Faso	18.5	18.0	15.4	14.9	18.7	21.5	13.8	16.5	17.3	16.6	16.3	16.6
Burundi	14.6	15.1	14.7	14.3	15.4	15.9	11.0	9.0	7.0	6.0	5.0	5.0
Cabo Verde	40.8	47.6	47.5	37.2	31.6	37.0	38.8	37.1	38.2	34.9	37.0	36.3
Cameroon	20.9	28.0	28.0	27.9	28.3	29.3	27.7	28.4	28.1	30.1	30.1	30.5
Central African Rep.	10.1	14.3	12.2	15.0	8.7	17.5	13.9	13.7	13.8	15.9	16.6	16.8
Chad	22.5	34.4	28.4	31.4	27.4	30.4	26.9	16.7	21.1	23.9	26.0	24.1
Comoros	10.7	15.4	14.9	16.8	20.4	18.5	18.6	21.1	21.5	22.4	22.7	23.0
Congo, Dem. Rep. of	11.0	13.7	10.1	14.2	16.8	22.8	20.2	11.8	12.0	12.4	14.5	15.0
Congo, Rep. of	24.4	22.4	25.9	32.2	34.4	49.9	57.3	50.9	29.6	18.3	22.6	22.1
Côte d'Ivoire	10.0	13.4	4.0	16.1	20.7	19.7	20.1	17.7	19.5	21.6	22.7	23.8
Equatorial Guinea	29.5	38.1	32.0	41.1	30.3	28.7	24.7	16.7	12.6	10.3	11.7	12.3
Eritrea	15.9	9.3	10.0	9.5	9.3	8.5	8.1	8.1	7.8	7.2	7.0	6.9
Eswatini	17.0	14.5	12.9	12.3	12.1	12.3	11.4	12.1	11.7	11.2	10.1	9.7
Ethiopia[1]	22.7	25.5	32.1	37.1	34.1	38.0	39.4	38.0	39.0	39.1	37.5	37.6
Gabon	25.4	26.1	23.8	29.1	33.3	35.9	34.8	34.2	30.5	30.4	32.4	32.8
Gambia, The	13.0	13.1	13.0	18.2	14.0	14.6	13.4	13.0	19.9	19.8	20.0	19.7
Ghana	42.7	51.2	24.7	33.2	26.5	29.3	29.8	27.6	22.0	21.8	25.1	26.3
Guinea	12.0	5.5	9.1	14.7	11.6	6.4	7.3	24.8	11.9	19.6	15.9	20.0
Guinea-Bissau	11.0	10.8	9.9	6.7	7.2	11.4	8.6	8.8	9.0	10.9	10.5	10.8
Kenya	18.9	20.7	21.7	21.5	20.1	22.4	21.5	16.2	16.2	17.2	19.0	19.7
Lesotho	22.6	26.8	25.2	31.4	30.2	30.7	28.7	27.9	23.4	24.1	31.7	21.7
Liberia	...	...	...	...	...	...	...	...	...	...	...	...
Madagascar	29.7	23.4	17.6	17.6	15.9	15.6	16.8	18.6	18.9	19.7	20.8	22.0
Malawi	19.4	22.8	12.4	12.0	12.7	12.0	12.2	10.7	13.4	10.9	12.4	12.9
Mali	22.4	24.0	19.7	17.2	19.3	20.2	20.8	22.7	22.1	18.9	20.9	21.4
Mauritius	24.4	27.1	23.9	24.4	22.0	19.7	18.1	17.9	18.3	18.4	21.1	22.0
Mozambique	15.1	18.3	25.7	47.4	54.5	55.4	45.3	38.1	39.2	49.2	65.2	83.1
Namibia	23.7	22.9	18.9	25.6	21.2	34.8	32.2	23.7	17.6	16.6	18.5	19.5
Niger	23.2	49.5	43.9	39.5	40.2	39.2	42.4	38.4	40.0	40.2	45.7	48.2
Nigeria	16.5	17.3	16.2	14.9	14.9	15.8	15.5	15.4	15.5	13.7	14.1	14.1
Rwanda	18.1	23.0	23.5	25.8	26.5	25.3	26.5	25.9	23.8	24.3	27.8	28.5
São Tomé & Príncipe	42.2	55.9	44.6	35.6	28.2	25.2	32.3	27.5	26.9	21.2	20.7	20.9
Senegal	20.5	19.1	20.2	25.0	24.7	25.9	26.1	25.3	27.5	26.3	27.7	28.7
Seychelles	28.6	36.6	35.4	38.1	38.5	37.7	33.8	30.2	28.9	26.4	27.9	28.8
Sierra Leone	10.2	31.1	41.9	27.9	12.7	13.1	13.8	12.3	18.8	17.5	16.4	17.6
South Africa	20.2	19.5	19.7	20.0	21.2	20.5	20.9	19.2	18.8	17.9	17.8	17.8
South Sudan	...	...	5.5	10.7	12.8	20.6	14.6	18.1	9.0	5.8	7.0	9.5
Tanzania	26.3	27.3	33.2	34.8	37.5	37.7	32.8	32.2	34.0	34.6	35.1	34.6
Togo	21.3	21.6	25.7	23.3	29.6	27.9	32.2	26.5	27.7	28.2	28.2	29.7
Uganda	29.3	26.7	28.7	28.3	27.5	25.7	25.4	24.2	25.1	26.5	27.9	28.9
Zambia	33.2	29.9	33.6	31.8	34.0	34.0	42.8	38.2	41.0	42.2	39.7	38.5
Zimbabwe[2]	...	18.8	17.4	9.9	9.2	9.6	10.1	12.1	12.5	6.8	4.7	4.6
Sub-Saharan Africa	**21.0**	**22.2**	**20.8**	**21.9**	**21.8**	**22.8**	**23.0**	**21.4**	**21.0**	**20.4**	**21.2**	**21.7**
Median	21.1	23.0	23.6	24.7	23.4	25.2	25.1	21.9	21.3	20.2	21.0	21.8
Excluding Nigeria and South Africa	24.1	26.8	24.2	27.1	26.3	28.1	28.4	25.8	25.0	25.0	26.1	26.9
Oil-exporting countries	**19.2**	**20.5**	**18.8**	**18.8**	**18.5**	**19.8**	**20.2**	**18.8**	**17.9**	**16.0**	**16.5**	**16.5**
Excluding Nigeria	25.6	29.0	25.1	28.5	27.4	30.0	32.3	27.8	24.2	22.2	22.7	22.9
Oil-importing countries	**22.1**	**23.5**	**22.3**	**24.2**	**24.2**	**25.0**	**25.0**	**23.2**	**23.1**	**23.2**	**24.2**	**24.9**
Excluding South Africa	23.6	26.0	23.9	26.7	26.0	27.5	27.2	25.2	25.2	25.7	27.0	27.9
Middle-income countries	**20.8**	**21.9**	**20.0**	**20.7**	**20.4**	**21.2**	**21.8**	**20.0**	**19.2**	**18.1**	**18.8**	**19.0**
Excluding Nigeria and South Africa	25.8	29.2	24.5	27.7	26.0	27.9	29.7	25.7	23.5	22.9	24.1	24.7
Low-income countries	**21.7**	**23.6**	**23.9**	**26.4**	**26.7**	**28.3**	**26.9**	**25.9**	**26.6**	**27.3**	**28.3**	**29.4**
Excluding low-income countries in fragile situations	24.0	25.9	29.3	31.9	32.1	33.3	31.8	30.6	32.0	32.9	34.0	35.2
Countries in fragile situations	**15.6**	**18.1**	**13.5**	**17.2**	**18.5**	**21.2**	**20.9**	**18.9**	**17.0**	**16.4**	**17.5**	**18.2**
CFA franc zone	20.3	24.8	22.2	25.8	26.5	28.2	27.4	25.0	24.3	24.0	25.4	26.1
CEMAC	23.6	29.4	27.5	31.5	29.9	33.1	32.3	28.9	25.4	24.9	26.5	26.6
WAEMU	17.3	20.6	17.1	20.5	23.4	23.8	23.2	21.8	23.4	23.4	24.7	25.7
COMESA (SSA members)	22.4	22.9	23.9	24.7	24.0	25.7	26.5	24.0	24.9	25.2	25.6	26.1
EAC-5	23.3	24.2	27.1	27.6	27.9	28.4	26.3	23.9	24.7	25.6	26.8	27.1
ECOWAS	18.9	20.8	17.3	17.8	17.4	18.3	18.1	17.9	17.6	16.6	17.5	18.0
SACU	20.7	20.5	20.4	20.9	21.5	21.3	21.7	19.7	19.1	18.3	18.4	18.3
SADC	22.3	22.4	22.4	23.3	24.1	24.5	25.3	22.5	22.3	21.6	22.1	22.6

See sources and footnotes on page 91.

Table SA7. Gross National Savings
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	39.1	34.8	37.9	37.2	32.0	29.8	28.5	24.5	23.4	21.9	15.9	18.1
Benin	14.0	14.9	16.8	15.1	19.4	18.7	15.5	11.6	15.6	16.6	17.8	19.7
Botswana	40.6	38.2	41.8	40.6	39.0	43.5	41.2	38.8	40.6	36.3	36.6	36.6
Burkina Faso	8.1	15.8	11.5	7.8	7.4	13.4	5.2	8.9	8.0	9.1	10.6	11.8
Burundi	1.5	3.7	1.0	–3.8	–4.3	–3.4	–6.7	–4.1	–5.3	–7.4	-7.6	-6.9
Cabo Verde	31.3	35.2	31.2	24.6	26.8	27.9	35.6	34.7	32.0	27.9	29.8	29.9
Cameroon	19.5	25.5	25.2	24.6	24.8	25.3	23.9	25.2	25.5	26.1	26.4	27.1
Central African Rep.	4.6	4.1	4.6	8.5	5.4	2.7	4.2	8.2	5.5	7.3	10.5	10.8
Chad	23.0	25.9	22.6	23.6	18.2	21.5	13.3	7.5	15.5	19.0	19.9	19.9
Comoros	4.4	15.0	8.9	11.3	13.4	12.2	18.2	14.6	17.5	13.3	13.7	14.2
Congo, Dem. Rep. of	7.0	12.5	8.0	6.2	11.8	18.2	16.5	8.7	11.5	12.0	12.7	12.1
Congo, Rep. of	27.7	29.7	39.8	49.9	48.2	51.2	3.1	4.7	25.7	23.8	27.2	28.0
Côte d'Ivoire	11.1	15.3	14.4	14.9	19.4	21.2	19.5	16.1	16.4	18.2	19.7	21.0
Equatorial Guinea	33.6	17.8	26.4	40.0	27.9	24.5	8.3	3.7	6.8	6.7	7.0	6.5
Eritrea	12.8	3.2	13.2	12.2	12.9	12.5	6.8	6.0	5.5	5.6	5.0	4.8
Eswatini	13.1	1.7	8.1	18.0	22.7	23.1	23.3	26.3	24.2	21.1	20.1	21.3
Ethiopia[1]	19.6	24.4	33.1	31.1	28.1	30.7	32.4	31.4	29.2	32.5	31.5	32.2
Gabon	41.7	41.0	47.8	47.0	40.5	43.5	29.2	24.3	26.1	28.5	28.8	31.6
Gambia, The	8.0	3.6	5.5	13.8	7.3	7.4	3.7	3.6	12.8	8.4	10.2	7.0
Ghana	24.9	26.9	16.8	18.3	17.4	20.7	23.5	24.6	20.7	20.4	21.9	22.2
Guinea	8.1	–0.9	–9.3	–5.2	–0.9	–6.5	–5.7	–6.8	5.2	3.4	-4.2	2.7
Guinea-Bissau	7.5	2.5	8.7	–1.7	2.6	12.0	10.5	10.1	8.4	9.3	6.7	7.5
Kenya	16.3	14.8	12.5	13.1	11.3	12.0	14.7	11.0	9.9	11.8	13.9	14.8
Lesotho	37.6	17.9	11.7	23.0	25.1	25.9	24.7	19.6	18.8	18.3	19.1	17.4
Liberia	...	...	...	...	...	...	...	...	...	...	...	...
Madagascar	16.6	12.9	10.0	8.9	9.6	15.3	14.9	19.1	18.4	20.0	19.4	18.5
Malawi	12.8	26.2	3.8	2.8	4.3	3.8	3.2	–2.3	2.3	1.6	5.6	5.3
Mali	15.6	13.3	14.7	15.0	16.4	15.5	15.4	15.5	16.2	11.6	15.2	15.3
Mauritius	22.5	14.8	13.2	18.1	19.0	16.8	16.8	17.3	17.9	16.8	17.1	16.9
Mozambique	9.4	8.1	4.4	14.9	11.5	17.2	5.0	–1.2	19.0	14.8	14.0	19.3
Namibia	30.4	19.4	15.7	19.9	17.2	24.1	20.8	10.9	11.4	12.4	14.6	16.3
Niger	13.4	24.9	18.3	22.9	23.0	23.0	21.3	22.1	23.4	22.9	23.7	24.1
Nigeria	30.6	20.8	18.8	18.7	18.6	16.0	12.3	16.0	18.2	15.8	13.8	13.9
Rwanda	3.5	5.8	5.7	9.6	11.9	8.5	6.7	5.9	12.1	13.0	14.9	16.5
São Tomé & Príncipe	14.1	33.0	16.9	13.7	13.1	3.1	19.9	21.8	14.2	10.6	11.3	12.7
Senegal	12.9	15.6	13.7	16.3	16.5	19.0	20.4	21.3	20.3	19.1	20.4	18.5
Seychelles	14.8	17.2	12.4	17.0	26.5	14.6	15.2	10.2	8.5	10.2	11.9	13.1
Sierra Leone	4.5	9.6	–16.9	–4.0	–4.8	1.7	–4.0	7.9	10.0	5.4	7.3	7.9
South Africa	16.0	18.0	17.5	14.8	15.4	15.4	16.3	16.4	16.4	14.6	14.4	14.1
South Sudan	...	...	23.3	–5.2	9.0	19.0	7.4	18.1	2.4	–6.7	-5.0	-9.7
Tanzania	20.9	21.2	21.6	22.1	23.3	24.4	25.4	30.0	30.3	30.8	30.9	30.2
Togo	13.2	15.8	17.9	15.7	16.4	17.9	21.2	16.8	19.9	20.3	22.0	24.4
Uganda	26.6	18.8	18.8	21.6	20.4	17.6	18.1	20.8	20.2	19.7	19.7	19.8
Zambia	32.1	37.4	38.3	37.1	33.5	36.2	38.9	33.7	37.1	37.1	36.7	35.8
Zimbabwe[2]	...	17.7	18.8	5.3	4.5	5.9	6.4	14.8	15.0	7.6	5.3	4.9
Sub-Saharan Africa	**22.8**	**20.7**	**19.9**	**19.5**	**19.1**	**19.0**	**17.3**	**18.0**	**19.0**	**18.0**	**17.5**	**17.8**
Median	15.2	17.2	15.2	15.4	16.9	17.7	15.9	15.8	16.4	15.3	15.1	16.7
Excluding Nigeria and South Africa	22.0	22.0	21.6	22.1	21.0	22.4	20.7	19.8	20.5	20.5	20.5	21.2
Oil-exporting countries	**31.2**	**23.6**	**23.0**	**23.1**	**21.8**	**19.9**	**15.1**	**17.2**	**19.2**	**17.3**	**15.2**	**15.6**
Excluding Nigeria	32.7	30.8	33.1	34.0	29.9	29.9	22.1	20.2	21.5	21.0	18.9	20.1
Oil-importing countries	**17.3**	**18.7**	**17.6**	**16.9**	**17.1**	**18.4**	**18.9**	**18.5**	**18.9**	**18.5**	**18.9**	**19.2**
Excluding South Africa	18.4	19.1	17.6	18.1	18.1	20.0	20.2	19.7	20.2	20.4	21.0	21.4
Middle-income countries	**24.4**	**21.6**	**20.6**	**20.4**	**19.8**	**19.1**	**17.1**	**17.9**	**18.7**	**17.4**	**16.6**	**16.8**
Excluding Nigeria and South Africa	26.3	25.6	25.3	26.8	24.5	25.5	23.2	20.9	21.0	20.9	20.9	21.6
Low-income countries	**16.0**	**17.3**	**17.3**	**16.3**	**16.7**	**18.7**	**17.7**	**18.4**	**19.9**	**20.1**	**20.2**	**20.7**
Excluding low-income countries in fragile situations	17.9	18.9	20.0	20.9	20.3	22.1	21.5	23.1	24.1	25.1	25.0	25.5
Countries in fragile situations	**13.1**	**15.7**	**15.1**	**12.4**	**14.6**	**17.1**	**11.3**	**10.0**	**13.1**	**12.0**	**12.8**	**13.4**
CFA franc zone	19.3	20.8	22.1	24.1	23.1	24.4	17.3	16.2	18.6	19.0	20.3	21.0
CEMAC	27.1	26.5	30.2	34.1	29.9	30.8	17.5	16.4	21.4	22.4	23.4	24.4
WAEMU	12.3	15.6	14.6	14.8	16.8	18.6	17.1	16.1	16.6	16.5	18.2	18.8
COMESA (SSA members)	18.2	18.8	19.2	18.6	17.9	19.4	20.5	19.3	19.4	20.3	20.7	21.0
EAC-5	19.0	17.1	16.4	17.5	17.0	17.0	18.3	19.2	19.2	20.0	20.9	21.0
ECOWAS	26.0	20.1	17.3	17.5	17.7	16.4	13.8	16.5	17.9	16.2	15.2	15.6
SACU	17.4	18.6	18.3	16.1	16.6	17.1	17.7	17.4	17.5	15.7	15.6	15.4
SADC	20.3	21.2	20.8	19.4	19.2	19.9	19.9	19.2	20.0	18.6	17.9	18.0

See sources and footnotes on page 91.

Table SA8. Overall Fiscal Balance, Including Grants
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	3.6	3.4	8.1	4.1	–0.3	–5.7	–2.9	–4.5	–6.3	2.4	0.1	-0.1
Benin	–0.6	–0.4	–1.3	–0.3	–1.9	–2.3	–7.6	–5.9	–5.8	–4.7	-2.7	-1.8
Botswana	4.5	–7.8	–0.1	0.9	5.6	3.7	–4.6	0.7	–1.0	–3.1	-3.5	-2.6
Burkina Faso	–0.8	–4.6	–2.3	–3.1	–4.0	–2.0	–2.4	–3.6	–7.9	–4.7	-3.0	-3.0
Burundi	–8.2	–3.6	–3.5	–3.8	–1.8	–3.6	–5.3	–6.2	–7.8	–8.6	-9.1	-10.0
Cabo Verde	–3.4	–10.5	–7.7	–10.3	–9.3	–7.6	–4.6	–3.0	–3.1	–2.7	-2.3	-2.6
Cameroon	7.9	–1.0	–2.4	–1.4	–3.7	–4.2	–4.4	–6.1	–4.9	–2.7	-2.2	-1.7
Central African Rep.	0.5	–1.5	–2.4	–0.0	–6.5	–4.3	–0.6	1.6	–1.1	0.7	0.7	-0.1
Chad	1.2	–4.2	2.4	0.5	–2.1	–4.2	–4.4	–2.0	–0.1	1.4	-0.2	1.5
Comoros	–1.7	7.0	1.4	3.3	17.8	–0.6	4.3	–7.4	0.6	–1.8	-2.6	-2.8
Congo, Dem. Rep. of	0.1	–0.9	–0.9	2.0	2.0	0.1	–0.2	–1.0	–1.5	–0.5	-0.5	-0.5
Congo, Rep. of	14.6	16.6	17.0	9.4	–3.6	–13.6	–24.8	–20.4	–7.5	5.4	7.2	9.6
Côte d'Ivoire	–1.0	–1.8	–4.0	–3.1	–2.2	–2.2	–2.8	–4.0	–4.5	–4.0	-3.0	-3.0
Equatorial Guinea	16.3	–4.5	0.8	–7.2	–4.4	–7.5	–15.1	–10.9	–2.6	2.8	2.1	2.2
Eritrea	–17.9	–16.9	–16.1	–15.7	–15.5	–14.8	–14.8	–14.7	–14.5	–13.2	-13.0	-14.4
Eswatini	1.4	–9.1	–3.8	3.3	0.6	–1.5	–5.7	–10.8	–6.5	–10.1	-8.8	-5.1
Ethiopia[1]	–3.4	–1.3	–1.6	–1.2	–1.9	–2.6	–1.9	–2.3	–3.3	–3.0	-3.0	-3.0
Gabon	8.5	2.7	1.7	6.2	–3.1	6.0	–1.1	–4.7	–1.7	1.5	0.3	0.0
Gambia, The	–1.6	–2.8	–3.0	–2.8	–5.6	–3.8	–5.3	–6.5	–5.4	–6.6	-0.2	-3.5
Ghana	–3.8	–7.5	–5.5	–8.4	–9.1	–8.0	–4.1	–6.9	–4.1	–7.0	-5.6	-4.4
Guinea	–1.1	–9.6	–0.9	–2.5	–3.9	–3.2	–6.9	–0.1	–2.0	–2.0	-2.3	-1.7
Guinea-Bissau	–5.4	–0.2	–1.4	–2.3	–1.8	–2.6	–3.5	–5.6	–1.4	–5.1	-2.8	-3.1
Kenya	–1.9	–4.4	–4.1	–5.0	–5.7	–7.4	–8.1	–8.3	–7.8	–7.3	-5.2	-4.0
Lesotho	7.6	–3.8	–8.9	4.5	–1.7	3.1	–1.0	–6.3	–3.1	–4.9	-5.4	-5.2
Liberia	0.5	1.1	–4.3	–2.8	–6.0	–3.1	–4.4	–3.7	–5.1	–5.6	-6.0	-6.5
Madagascar	–2.6	–0.9	–2.4	–2.6	–4.0	–2.3	–3.3	–1.3	–2.4	–2.2	-2.5	-4.1
Malawi	–2.3	1.8	–4.1	–1.8	–6.4	–4.8	–6.3	–7.3	–7.3	–5.1	-0.9	-2.7
Mali	3.6	–2.6	–3.4	–1.0	–2.4	–2.9	–1.8	–3.9	–2.9	–4.7	-3.0	-3.0
Mauritius	–3.6	–3.1	–3.1	–1.8	–3.4	–3.2	–3.6	–3.5	–2.4	–2.4	-2.8	-2.7
Mozambique	–2.9	–3.8	–4.8	–3.9	–2.7	–10.7	–7.2	–6.3	–3.4	–5.3	-5.4	-6.0
Namibia	1.9	–4.9	–6.8	–3.0	–4.3	–6.1	–7.9	–8.7	–4.8	–5.9	-8.0	-7.2
Niger	7.1	–2.4	–1.5	–1.1	–2.6	–8.0	–9.0	–6.1	–5.7	–4.9	-4.5	-3.0
Nigeria	4.7	–4.2	0.4	0.2	–2.3	–2.1	–3.5	–4.0	–5.4	–4.5	-5.1	-4.6
Rwanda	0.6	–0.7	–0.9	–2.5	–1.3	–4.0	–2.8	–2.3	–2.5	–2.6	-3.2	-3.4
São Tomé & Príncipe	31.5	–11.7	–12.5	–11.2	1.9	–5.3	–6.3	–4.2	–2.6	–2.1	-1.9	-1.8
Senegal	–2.0	–3.9	–4.9	–4.1	–4.3	–3.9	–3.7	–3.3	–2.9	–3.4	-3.0	-3.0
Seychelles	–0.7	0.5	3.4	2.9	0.4	3.7	1.9	0.2	0.4	0.5	0.6	1.2
Sierra Leone	2.2	–5.0	–4.5	–5.2	–2.4	–3.6	–4.5	–8.5	–8.7	–6.8	-4.3	-5.0
South Africa	0.1	–5.0	–4.1	–4.4	–4.3	–4.3	–4.8	–4.1	–4.4	–4.4	-5.1	-5.1
South Sudan	...	...	4.6	–14.8	–3.5	–9.2	–20.3	–22.0	3.9	–1.0	0.0	-6.9
Tanzania	–2.5	–4.8	–3.6	–4.1	–3.8	–2.9	–3.2	–2.1	–1.2	–1.8	-2.6	-3.1
Togo	–1.5	–2.3	–6.3	–6.5	–5.2	–6.8	–8.8	–9.5	–0.3	–3.1	-1.5	-1.2
Uganda	–0.8	–5.7	–2.7	–3.0	–4.0	–4.7	–4.7	–4.8	–3.8	–4.8	-6.7	-8.4
Zambia	2.1	–2.4	–1.8	–2.8	–6.2	–5.7	–9.3	–5.8	–7.7	–6.5	-5.0	-5.9
Zimbabwe[2]	–3.0	0.2	–2.5	0.0	–1.3	–1.1	–1.8	–6.5	–8.4	–3.8	-2.0	-2.5
Sub-Saharan Africa	**1.7**	**–3.5**	**–1.2**	**–1.8**	**–3.1**	**–3.7**	**–4.4**	**–4.5**	**–4.7**	**–3.7**	**-4.0**	**-3.8**
Median	–0.7	–2.9	–2.5	–2.5	–3.4	–3.8	–4.4	–4.8	–3.4	–3.8	-2.8	-3.0
Excluding Nigeria and South Africa	1.1	–2.0	–0.4	–1.6	–3.1	–4.5	–4.8	–4.9	–4.5	–3.1	-3.0	-2.9
Oil-exporting countries	**5.3**	**–2.2**	**2.2**	**0.7**	**–2.1**	**–3.2**	**–4.2**	**–4.6**	**–5.3**	**–2.5**	**-3.5**	**-3.3**
Excluding Nigeria	6.6	2.3	5.5	1.7	–1.8	–5.4	–5.8	–6.0	–5.1	1.4	0.2	0.3
Oil-importing countries	**–0.5**	**–4.4**	**–3.7**	**–3.7**	**–3.9**	**–4.2**	**–4.5**	**–4.4**	**–4.3**	**–4.4**	**-4.3**	**-4.1**
Excluding South Africa	–1.2	–3.8	–3.4	–3.1	–3.7	–4.1	–4.4	–4.6	–4.3	–4.4	-3.8	-3.7
Middle-income countries	**2.2**	**–3.6**	**–1.0**	**–1.6**	**–3.2**	**–3.7**	**–4.4**	**–4.7**	**–5.1**	**–3.9**	**-4.3**	**-4.0**
Excluding Nigeria and South Africa	2.5	–1.4	0.6	–1.0	–3.4	–5.1	–5.3	–6.0	–5.3	–3.0	-3.0	-2.5
Low-income countries	**–1.3**	**–2.9**	**–2.0**	**–2.5**	**–2.6**	**–3.6**	**–4.1**	**–3.6**	**–3.5**	**–3.2**	**-3.0**	**-3.4**
Excluding low-income countries in fragile situations	–1.6	–3.3	–2.6	–2.7	–3.0	–3.9	–3.6	–3.2	–3.3	–3.3	-3.5	-3.9
Countries in fragile situations	**0.6**	**–0.3**	**0.1**	**–1.3**	**–2.2**	**–3.9**	**–5.4**	**–5.0**	**–4.1**	**–2.7**	**-1.9**	**-1.9**
CFA franc zone	4.7	–0.7	–0.3	–1.1	–3.3	–3.8	–5.7	–5.6	–4.0	–2.2	-1.7	-1.3
CEMAC	9.3	1.2	2.6	0.4	–3.6	–4.4	–7.7	–7.3	–3.6	0.4	0.3	0.9
WAEMU	–0.1	–2.6	–3.5	–2.7	–3.0	–3.2	–4.0	–4.4	–4.3	–4.2	-3.0	-2.8
COMESA (SSA members)	–1.6	–2.7	–2.7	–2.2	–3.2	–4.0	–4.4	–4.8	–5.1	–4.5	-3.9	-3.9
EAC-5	–1.9	–4.5	–3.4	–4.1	–4.4	–5.1	–5.6	–5.4	–4.8	–5.0	-4.6	-4.5
ECOWAS	2.8	–4.3	–0.9	–1.1	–3.1	–2.7	–3.7	–4.3	–5.0	–4.7	-4.7	-4.2
SACU	0.3	–5.1	–4.0	–4.0	–3.8	–3.9	–4.9	–4.1	–4.3	–4.5	-5.1	-5.0
SADC	0.3	–3.4	–1.8	–2.1	–2.9	–4.1	–4.2	–3.9	–4.4	–3.0	-3.7	-3.8

See sources and footnotes on page 91.

Table SA9. Overall Fiscal Balance, Excluding Grants
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	3.4	3.4	8.1	4.1	–0.3	–5.7	–2.9	–4.5	–6.3	2.4	0.1	-0.1
Benin	–2.7	–1.8	–3.7	–2.1	–2.8	–3.2	–8.2	–6.6	–6.8	–5.6	-4.2	-3.1
Botswana	3.8	–8.2	–0.6	0.8	5.3	3.4	–4.7	0.6	–1.3	–3.2	-3.6	-2.7
Burkina Faso	–10.2	–9.0	–7.3	–8.0	–9.5	–6.1	–6.1	–6.4	–10.6	–8.8	-5.9	-5.7
Burundi	–24.2	–26.3	–25.3	–21.9	–19.2	–17.3	–14.9	–9.1	–10.6	–11.4	-11.8	-12.7
Cabo Verde	–9.1	–17.3	–10.6	–13.1	–11.9	–9.4	–7.0	–5.8	–6.6	–4.6	-5.1	-4.6
Cameroon	2.1	–1.5	–2.8	–1.8	–4.0	–4.4	–4.5	–6.4	–5.2	–2.9	-2.5	-2.0
Central African Rep.	–5.5	–7.0	–4.9	–4.9	–9.3	–15.1	–7.8	–4.4	–6.5	–7.6	-7.4	-7.4
Chad	–0.7	–5.5	0.8	–2.2	–4.3	–6.1	–7.8	–4.9	–4.2	–2.5	-3.3	-1.5
Comoros	–7.8	–7.8	–6.0	–6.0	–9.7	–9.9	–10.9	–16.3	–11.1	–12.4	-13.2	-13.4
Congo, Dem. Rep. of	–1.0	–4.4	–2.8	–0.1	0.2	–4.2	–3.4	–3.5	–3.4	–2.3	-2.5	-2.6
Congo, Rep. of	14.2	16.5	16.5	9.2	–4.0	–14.1	–25.6	–21.3	–8.0	5.2	6.8	9.2
Côte d'Ivoire	–2.1	–2.3	–4.3	–3.7	–3.5	–3.9	–4.3	–5.4	–5.7	–5.0	-4.2	-4.1
Equatorial Guinea	16.3	–4.5	0.8	–7.2	–4.4	–7.5	–15.1	–10.9	–2.6	2.8	2.1	2.2
Eritrea	–24.8	–21.7	–19.1	–16.8	–16.8	–15.8	–15.6	–15.8	–15.5	–14.1	-13.8	-15.1
Eswatini	0.8	–9.1	–3.8	3.2	0.1	–3.1	–6.4	–11.7	–7.4	–10.8	-9.4	-6.0
Ethiopia[1]	–7.5	–4.5	–4.8	–2.9	–3.4	–3.7	–3.0	–3.2	–4.0	–3.8	-4.4	-3.7
Gabon	8.5	2.7	1.7	6.2	–3.1	6.0	–1.1	–4.7	–1.7	1.5	0.3	0.0
Gambia, The	–2.6	–5.1	–6.3	–8.5	–7.1	–6.3	–6.5	–7.6	–13.2	–9.9	-9.9	-10.6
Ghana	–6.2	–9.3	–7.0	–9.5	–9.4	–8.5	–5.6	–7.4	–4.7	–7.3	-5.9	-4.7
Guinea	–1.7	–9.9	–3.5	–4.6	–5.0	–6.3	–8.0	–1.3	–3.6	–3.8	-3.4	-2.7
Guinea-Bissau	–14.2	–9.8	–8.1	–4.7	–5.2	–12.1	–10.0	–9.6	–6.9	–9.9	-8.1	-8.6
Kenya	–2.9	–5.0	–4.6	–5.5	–6.2	–7.9	–8.5	–8.7	–8.1	–7.7	-5.7	-4.4
Lesotho	6.1	–10.4	–15.8	–3.0	–5.8	1.5	–4.0	–8.9	–5.3	–7.1	-7.5	-7.3
Liberia	0.3	–2.7	–8.0	–8.2	–12.8	–17.9	–22.2	–21.5	–19.9	–19.4	-20.8	-21.0
Madagascar	–9.2	–2.8	–4.3	–3.8	–5.3	–4.6	–4.8	–4.8	–5.3	–5.1	-5.9	-6.4
Malawi	–12.3	–8.2	–7.7	–10.6	–13.1	–8.0	–10.0	–10.2	–10.9	–6.4	-5.0	-5.6
Mali	–6.2	–5.1	–6.6	–1.2	–5.2	–5.1	–4.5	–5.5	–4.5	–5.9	-5.0	-5.0
Mauritius	–3.9	–3.8	–3.8	–2.5	–3.8	–3.3	–3.7	–4.1	–3.0	–3.8	-4.0	-3.9
Mozambique	–9.7	–12.0	–12.3	–8.9	–7.9	–15.0	–10.2	–8.4	–5.4	–7.3	-7.6	-7.9
Namibia	1.8	–5.0	–6.9	–3.1	–4.5	–6.2	–8.0	–8.7	–4.8	–5.9	-8.0	-7.2
Niger	–7.6	–7.0	–5.2	–7.2	–10.6	–13.5	–14.4	–12.1	–12.4	–9.3	-12.6	-11.0
Nigeria	4.7	–4.2	0.4	0.2	–2.3	–2.1	–3.5	–4.0	–5.4	–4.5	-5.1	-4.6
Rwanda	–9.8	–12.5	–12.3	–10.2	–10.6	–11.7	–9.0	–7.4	–7.3	–7.5	-8.1	-7.7
São Tomé & Príncipe	–8.0	–31.4	–32.0	–29.4	–11.0	–15.3	–17.8	–17.4	–12.6	–10.4	-9.4	-9.2
Senegal	–3.6	–5.9	–6.7	–6.4	–6.3	–6.5	–5.9	–5.5	–5.1	–5.4	-5.0	-4.9
Seychelles	–1.8	–0.3	0.9	–1.9	–3.9	0.5	1.1	–1.1	–0.5	–0.8	-0.3	-0.3
Sierra Leone	–7.5	–10.3	–10.1	–9.0	–5.0	–7.8	–9.9	–11.5	–11.2	–9.9	-6.6	-6.8
South Africa	0.1	–5.0	–4.1	–4.4	–4.3	–4.3	–4.8	–4.1	–4.4	–4.4	-5.1	-5.1
South Sudan	...	...	1.7	–20.9	–9.9	–15.6	–26.8	–22.1	3.8	–1.0	0.0	-6.9
Tanzania	–7.2	–8.2	–6.9	–6.9	–6.1	–4.5	–4.0	–2.8	–2.0	–2.6	-3.4	-3.8
Togo	–2.5	–4.2	–9.3	–8.9	–8.6	–9.2	–11.1	–12.3	–3.5	–7.0	-5.6	-5.3
Uganda	–6.0	–8.2	–4.4	–4.9	–5.1	–5.8	–6.1	–5.9	–4.6	–5.9	-8.0	-9.2
Zambia	–5.7	–3.9	–2.4	–4.5	–7.6	–6.5	–9.5	–6.0	–7.9	–6.7	-5.6	-6.1
Zimbabwe[2]	–3.0	0.2	–2.5	0.0	–1.3	–1.1	–1.8	–6.5	–8.4	–3.8	-2.0	-2.5
Sub-Saharan Africa	**0.4**	**–4.3**	**–1.9**	**–2.4**	**–3.8**	**–4.4**	**–5.0**	**–5.0**	**–5.2**	**–4.3**	**-4.6**	**-4.4**
Median	–3.3	–5.3	–4.8	–4.7	–5.2	–6.3	–7.0	–6.5	–5.4	–5.9	-5.1	-5.1
Excluding Nigeria and South Africa	–1.8	–3.9	–2.0	–3.1	–4.5	–6.0	–6.1	–6.0	–5.5	–4.1	-4.2	-3.9
Oil-exporting countries	**4.9**	**–2.3**	**2.0**	**0.6**	**–2.3**	**–3.3**	**–4.4**	**–4.7**	**–5.4**	**–2.6**	**-3.6**	**-3.3**
Excluding Nigeria	5.3	2.2	5.1	1.2	–2.3	–5.9	–6.4	–6.3	–5.4	1.2	-0.1	0.0
Oil-importing countries	**–2.3**	**–5.7**	**–4.9**	**–4.8**	**–5.0**	**–5.3**	**–5.5**	**–5.3**	**–5.1**	**–5.2**	**-5.2**	**-5.0**
Excluding South Africa	–4.7	–6.4	–5.7	–5.1	–5.6	–6.0	–6.0	–5.9	–5.6	–5.6	-5.3	-4.9
Middle-income countries	**1.7**	**–3.8**	**–1.2**	**–1.8**	**–3.4**	**–3.9**	**–4.6**	**–4.9**	**–5.3**	**–4.1**	**-4.5**	**-4.1**
Excluding Nigeria and South Africa	0.9	–2.1	0.1	–1.6	–3.9	–5.6	–5.9	–6.4	–5.8	–3.4	-3.5	-3.0
Low-income countries	**–6.3**	**–6.7**	**–5.3**	**–5.4**	**–5.5**	**–6.5**	**–6.5**	**–5.4**	**–5.2**	**–4.9**	**-5.1**	**-5.1**
Excluding low-income countries in fragile situations	–7.6	–7.2	–6.5	–5.7	–5.8	–6.1	–5.4	–4.7	–4.8	–4.9	-5.4	-5.3
Countries in fragile situations	**–2.1**	**–2.9**	**–2.0**	**–3.6**	**–4.7**	**–7.0**	**–8.2**	**–7.1**	**–6.0**	**–4.4**	**-3.9**	**-3.8**
CFA franc zone	1.3	–1.9	–1.6	–2.4	–4.9	–5.4	–7.3	–7.1	–5.6	–3.7	-3.4	-3.0
CEMAC	6.8	0.7	2.1	–0.2	–4.1	–5.0	–8.4	–8.0	–4.4	–0.4	-0.5	0.1
WAEMU	–4.4	–4.7	–5.8	–4.8	–5.8	–5.8	–6.3	–6.5	–6.5	–6.2	-5.4	-5.1
COMESA (SSA members)	–5.3	–5.4	–4.7	–4.0	–4.8	–5.6	–5.8	–5.9	–6.1	–5.6	-5.2	-4.9
EAC-5	–5.6	–7.5	–6.2	–6.4	–6.4	–6.8	–6.8	–6.3	–5.7	–5.9	-5.6	-5.3
ECOWAS	1.7	–4.9	–1.4	–1.6	–3.6	–3.3	–4.3	–4.8	–5.7	–5.3	-5.3	-4.8
SACU	0.3	–5.2	–4.1	–4.1	–3.9	–4.0	–4.9	–4.1	–4.3	–4.5	-5.2	-5.0
SADC	–0.5	–4.1	–2.4	–2.7	–3.4	–4.7	–4.6	–4.3	–4.7	–3.3	-4.1	-4.1

See sources and footnotes on page 91.

Table SA10. Government Revenue, Excluding Grants
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	39.0	42.8	45.5	41.3	36.7	30.7	24.1	17.5	17.5	22.1	19.0	19.8
Benin	16.6	17.5	16.4	17.4	17.6	16.3	16.7	14.7	17.5	17.7	17.7	18.1
Botswana	41.5	33.8	35.8	36.6	37.3	38.1	31.1	33.1	30.6	28.7	27.8	27.7
Burkina Faso	13.1	15.3	15.7	17.5	18.9	17.4	17.0	19.1	19.4	18.7	19.9	20.4
Burundi	13.9	14.5	16.9	15.6	14.0	14.4	12.3	12.1	11.2	11.0	10.9	10.8
Cabo Verde	22.7	21.8	22.7	21.6	21.9	21.1	24.4	23.9	24.9	26.4	28.4	26.5
Cameroon	16.6	14.4	15.8	15.9	16.0	16.4	16.4	14.5	14.6	15.6	15.5	15.5
Central African Rep.	9.4	11.6	10.8	11.5	5.6	4.9	7.1	8.2	8.3	9.3	10.7	10.9
Chad	14.1	18.9	23.2	21.7	18.5	15.8	10.5	9.6	11.0	12.1	11.5	12.7
Comoros	14.1	14.3	16.1	19.3	15.5	14.5	16.7	14.5	16.9	17.7	17.9	18.0
Congo, Dem. Rep. of	8.6	12.1	11.8	14.4	12.9	14.3	13.6	9.3	8.5	10.3	10.9	11.5
Congo, Rep. of	42.2	41.1	45.9	49.0	50.2	47.6	31.8	33.2	27.1	30.2	32.3	33.5
Côte d'Ivoire	17.5	17.7	14.0	18.6	18.4	17.1	18.5	18.6	19.2	18.7	18.9	19.1
Equatorial Guinea	33.7	26.6	28.3	28.0	24.9	24.1	26.6	17.0	17.3	19.0	17.9	17.0
Eritrea	22.3	13.3	14.8	14.2	14.1	14.1	14.0	13.8	13.7	14.2	14.1	12.6
Eswatini	30.2	21.1	20.7	29.8	28.3	28.8	26.9	24.2	27.2	24.3	24.6	25.4
Ethiopia[1]	13.9	14.0	13.4	13.8	14.3	13.8	14.4	15.0	14.3	12.2	12.3	12.4
Gabon	28.7	25.8	23.5	30.2	31.6	29.7	21.1	17.1	16.4	18.2	17.9	18.7
Gambia, The	9.5	8.7	10.4	10.5	10.7	12.2	12.8	12.3	11.4	11.4	12.4	12.7
Ghana	9.8	10.7	12.6	12.6	12.3	12.9	13.4	12.9	13.3	14.3	15.8	15.1
Guinea	9.5	10.6	12.5	15.5	13.7	13.8	13.7	14.6	13.6	13.7	14.5	15.3
Guinea-Bissau	9.4	10.8	10.1	9.1	8.0	12.6	13.7	12.1	12.8	11.9	13.2	13.6
Kenya	18.7	19.2	19.0	18.7	19.2	19.3	18.7	18.3	17.6	17.9	18.2	19.3
Lesotho	48.0	40.5	39.6	50.6	48.2	48.1	44.2	38.4	41.3	39.2	39.6	39.9
Liberia	15.1	21.9	21.4	22.1	20.3	14.5	14.0	14.0	13.5	13.4	14.2	14.7
Madagascar	11.7	11.2	9.7	9.6	9.6	10.1	10.4	11.3	11.9	12.0	12.5	12.7
Malawi	16.4	21.8	18.4	18.3	21.6	21.8	21.1	20.7	21.7	22.2	22.9	22.4
Mali	15.0	15.2	14.0	14.4	14.5	14.9	16.4	16.7	18.4	14.2	18.5	19.0
Mauritius	17.8	20.6	20.2	20.4	20.6	20.2	20.7	20.4	20.9	21.1	20.9	20.8
Mozambique	12.7	17.9	19.8	21.9	26.2	27.5	25.0	24.1	26.2	24.0	23.9	24.1
Namibia	28.5	27.8	29.8	30.6	30.9	33.6	33.4	30.3	31.8	30.5	29.7	30.8
Niger	13.7	13.6	14.2	15.3	16.6	17.6	17.9	14.3	14.4	17.0	16.0	17.0
Nigeria	20.9	12.4	17.7	14.3	11.0	10.5	7.6	5.5	6.2	8.0	7.0	7.3
Rwanda	12.7	12.8	13.9	15.5	16.2	16.5	18.4	18.4	18.1	19.3	18.6	18.9
São Tomé & Príncipe	33.2	18.5	20.2	16.8	20.6	15.1	16.7	14.4	13.8	14.4	13.1	13.2
Senegal	16.4	15.6	16.5	16.4	15.7	16.6	17.1	18.6	17.2	16.6	17.0	17.5
Seychelles	36.5	34.2	37.2	36.7	33.8	34.3	33.4	36.6	35.6	36.5	37.3	35.6
Sierra Leone	8.8	9.9	11.4	11.3	10.7	9.8	10.8	11.9	12.1	13.8	14.4	14.7
South Africa	27.5	26.4	26.8	26.9	27.3	27.6	28.2	28.6	28.3	29.1	29.5	29.7
South Sudan	...	...	22.7	10.8	15.4	20.8	14.6	34.8	42.9	43.9	42.7	48.0
Tanzania	10.8	12.0	12.3	12.6	12.8	12.8	13.2	14.1	14.6	14.3	14.7	14.9
Togo	15.1	16.7	16.2	17.8	18.1	18.3	19.5	18.6	18.2	20.4	19.9	19.9
Uganda	12.2	10.6	12.8	11.6	11.7	12.3	13.8	13.8	14.3	14.6	14.8	15.4
Zambia	15.2	14.2	17.1	17.0	16.2	18.1	18.6	18.0	17.3	18.1	17.5	17.3
Zimbabwe[2]	5.3	18.3	20.7	20.4	19.6	19.3	18.7	16.8	14.1	10.3	8.8	11.7
Sub-Saharan Africa	**22.7**	**20.2**	**22.5**	**21.3**	**19.5**	**18.7**	**17.0**	**16.1**	**16.8**	**17.7**	**17.1**	**17.2**
Median	15.2	16.2	16.9	17.4	17.6	16.6	17.0	16.8	17.2	17.7	17.7	17.5
Excluding Nigeria and South Africa	20.4	21.1	22.8	22.6	21.5	20.6	18.5	16.8	16.8	17.3	17.0	17.4
Oil-exporting countries	**24.5**	**18.9**	**23.9**	**20.9**	**17.6**	**16.0**	**11.8**	**9.2**	**10.1**	**12.3**	**10.5**	**10.7**
Excluding Nigeria	31.6	33.5	35.3	34.0	31.2	27.7	21.9	17.4	17.4	20.6	18.8	19.4
Oil-importing countries	**21.6**	**21.1**	**21.5**	**21.5**	**21.2**	**21.2**	**21.2**	**20.8**	**20.8**	**20.8**	**21.0**	**21.1**
Excluding South Africa	15.7	15.9	16.4	17.1	16.9	17.2	17.1	16.6	16.6	16.3	16.6	16.9
Middle-income countries	**24.8**	**21.4**	**24.0**	**22.6**	**20.5**	**19.5**	**17.5**	**16.5**	**17.4**	**18.7**	**17.9**	**18.0**
Excluding Nigeria and South Africa	25.3	25.5	27.5	27.4	25.7	24.2	21.1	18.5	18.3	19.6	19.1	19.5
Low-income countries	**12.2**	**14.1**	**15.2**	**15.0**	**15.2**	**15.4**	**15.1**	**14.7**	**14.7**	**14.3**	**14.5**	**14.9**
Excluding low-income countries in fragile situations	12.5	13.2	13.7	14.2	14.9	14.8	15.1	15.2	15.4	14.8	14.9	15.2
Countries in fragile situations	**15.8**	**18.5**	**19.4**	**19.6**	**19.0**	**18.9**	**16.5**	**15.7**	**15.4**	**15.5**	**15.9**	**16.5**
CFA franc zone	20.4	19.9	20.5	21.9	21.4	20.5	18.5	17.1	17.3	17.6	18.0	18.3
CEMAC	24.6	23.4	25.3	26.5	25.6	24.2	19.6	16.4	16.1	17.8	17.6	17.9
WAEMU	15.9	16.2	15.0	16.9	17.1	16.7	17.6	17.6	18.1	17.5	18.3	18.6
COMESA (SSA members)	14.8	15.6	16.0	16.3	16.2	16.5	16.5	15.8	15.2	15.0	15.0	15.5
EAC-5	14.5	14.7	15.2	15.1	15.4	15.6	16.0	16.1	16.0	16.2	16.5	17.2
ECOWAS	18.6	12.9	16.8	14.6	12.1	11.6	9.6	8.6	9.5	10.8	10.4	10.5
SACU	28.2	26.7	27.2	27.6	28.0	28.4	28.5	28.9	28.6	29.2	29.5	29.6
SADC	26.7	26.6	27.8	27.6	26.8	25.9	24.5	23.1	23.0	24.1	23.9	24.1

See sources and footnotes on page 91.

Table SA11. Government Expenditure
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	35.5	39.4	37.4	37.2	37.0	36.5	27.1	22.0	23.8	19.7	18.9	20.0
Benin	19.4	19.2	20.1	19.5	20.4	19.4	24.9	21.3	24.4	23.3	22.0	21.2
Botswana	37.6	42.0	36.4	35.8	32.0	34.7	35.8	32.5	31.8	31.9	31.4	30.5
Burkina Faso	23.4	24.4	23.0	25.5	28.4	23.5	23.1	25.5	30.0	27.5	25.8	26.0
Burundi	38.1	40.8	42.2	37.5	33.2	31.8	27.2	21.2	21.8	22.3	22.7	23.5
Cabo Verde	31.8	39.2	33.3	34.7	33.8	30.5	31.4	29.6	31.6	30.9	33.5	31.1
Cameroon	14.5	16.0	18.6	17.8	20.0	20.8	20.9	20.9	19.8	18.5	18.0	17.5
Central African Rep.	14.9	18.6	15.7	16.4	14.9	20.0	14.9	12.6	14.8	16.8	18.1	18.4
Chad	14.8	24.4	22.4	23.9	22.8	22.0	18.3	14.5	15.2	14.6	14.9	14.3
Comoros	21.9	22.1	22.1	25.3	25.2	24.4	27.6	30.9	28.0	30.1	31.2	31.4
Congo, Dem. Rep. of	9.6	16.5	14.6	14.5	12.7	18.5	17.0	12.7	11.9	12.7	13.4	14.1
Congo, Rep. of	28.0	24.6	29.5	39.7	54.3	61.7	57.4	54.5	35.1	25.0	25.5	24.4
Côte d'Ivoire	19.6	20.0	18.2	22.3	21.9	21.0	22.8	24.0	24.9	23.7	23.1	23.2
Equatorial Guinea	17.4	31.2	27.5	35.2	29.3	31.6	41.6	27.8	19.9	16.2	15.7	14.8
Eritrea	47.1	35.1	33.9	31.0	30.8	30.0	29.6	29.6	29.2	28.3	27.9	27.7
Eswatini	29.4	30.2	24.5	26.6	28.2	31.9	33.3	35.9	34.6	35.1	34.1	31.4
Ethiopia[1]	21.5	18.5	18.2	16.6	17.8	17.5	17.3	18.2	18.2	16.1	16.8	16.1
Gabon	20.2	23.1	21.7	23.9	34.7	23.8	22.3	21.8	18.1	16.7	17.6	18.7
Gambia, The	12.1	13.8	16.7	19.0	17.8	18.5	19.4	19.9	24.5	21.4	22.3	23.3
Ghana	16.0	20.0	19.6	22.1	21.7	21.4	18.9	20.3	18.0	21.6	21.7	19.8
Guinea	11.2	20.5	16.0	20.0	18.6	20.2	21.7	16.0	17.2	17.5	17.9	18.1
Guinea-Bissau	23.6	20.5	18.2	13.8	13.2	24.7	23.6	21.7	19.7	21.8	21.3	22.2
Kenya	21.6	24.2	23.6	24.2	25.4	27.2	27.2	27.0	25.7	25.6	23.9	23.7
Lesotho	41.9	51.0	55.4	53.6	54.0	46.7	48.2	47.3	46.6	46.3	47.1	47.2
Liberia	14.2	24.7	29.4	30.2	33.0	32.3	36.2	35.5	33.4	32.8	35.0	35.7
Madagascar	20.9	14.0	14.1	13.4	14.9	14.7	15.2	16.1	17.2	17.1	18.4	19.1
Malawi	28.6	30.0	26.1	28.9	34.7	29.8	31.1	31.0	32.6	28.6	27.9	28.0
Mali	21.2	20.3	20.6	15.5	19.8	20.0	20.9	22.3	22.9	20.2	23.5	23.9
Mauritius	21.7	24.4	24.1	22.8	24.4	23.5	24.4	24.6	23.9	24.9	24.9	24.7
Mozambique	22.5	29.9	32.2	30.8	34.1	42.5	35.2	32.5	31.6	31.3	31.5	32.1
Namibia	26.7	32.7	36.8	33.8	35.5	39.8	41.4	39.1	36.7	36.3	37.7	38.0
Niger	21.3	20.6	19.4	22.5	27.2	31.1	32.4	26.3	26.8	26.3	28.6	28.1
Nigeria	16.2	16.6	17.4	14.1	13.4	12.6	11.1	9.5	11.6	12.5	12.1	11.9
Rwanda	22.5	25.3	26.2	25.7	26.8	28.3	27.4	25.8	25.4	26.7	26.7	26.7
São Tomé & Príncipe	41.2	49.9	52.2	46.2	31.5	30.4	34.5	31.8	26.4	24.7	22.6	22.4
Senegal	20.0	21.6	23.1	22.8	22.0	23.1	23.0	24.0	22.3	22.1	22.0	22.4
Seychelles	38.3	34.6	36.3	38.6	37.8	33.8	32.4	37.7	36.1	37.3	37.6	35.9
Sierra Leone	16.4	20.2	21.5	20.3	15.7	17.6	20.7	23.3	23.3	23.6	20.9	21.5
South Africa	27.4	31.4	30.9	31.4	31.6	31.9	32.9	32.7	32.6	33.6	34.6	34.7
South Sudan	...	...	21.0	31.6	25.3	36.4	41.3	56.9	39.1	44.9	42.7	54.9
Tanzania	18.0	20.2	19.1	19.5	18.8	17.3	17.2	16.9	16.6	16.9	18.1	18.7
Togo	17.7	20.9	25.5	26.7	26.7	27.5	30.7	31.0	21.7	27.4	25.4	25.2
Uganda	18.1	18.8	17.2	16.5	16.7	18.1	19.8	19.7	18.9	20.4	22.8	24.6
Zambia	21.0	18.1	19.5	21.5	23.8	24.6	28.1	24.0	25.2	24.9	23.1	23.4
Zimbabwe[2]	8.4	18.1	23.2	20.4	20.9	20.4	20.5	23.4	22.5	14.1	10.9	14.2
Sub-Saharan Africa	**22.3**	**24.5**	**24.4**	**23.7**	**23.3**	**23.1**	**22.0**	**21.1**	**22.0**	**21.9**	**21.8**	**21.6**
Median	21.2	22.6	23.0	23.9	25.3	24.6	27.1	24.0	24.4	23.7	23.1	23.5
Excluding Nigeria and South Africa	22.2	25.0	24.8	25.6	26.0	26.6	24.6	22.8	22.3	21.3	21.3	21.3
Oil-exporting countries	**19.6**	**21.1**	**21.9**	**20.4**	**20.0**	**19.3**	**16.2**	**13.9**	**15.5**	**14.9**	**14.1**	**14.0**
Excluding Nigeria	26.3	31.3	30.2	32.8	33.5	33.7	28.4	23.7	22.8	19.5	18.9	19.4
Oil-importing countries	**23.9**	**26.8**	**26.3**	**26.3**	**26.2**	**26.6**	**26.8**	**26.0**	**25.9**	**26.0**	**26.2**	**26.1**
Excluding South Africa	20.4	22.3	22.0	22.2	22.5	23.2	23.1	22.5	22.2	21.9	21.9	21.8
Middle-income countries	**23.1**	**25.2**	**25.2**	**24.4**	**23.9**	**23.4**	**22.1**	**21.4**	**22.7**	**22.8**	**22.4**	**22.1**
Excluding Nigeria and South Africa	24.5	27.6	27.5	29.0	29.6	29.9	27.0	25.0	24.1	23.0	22.6	22.5
Low-income countries	**18.4**	**20.8**	**20.5**	**20.4**	**20.7**	**21.9**	**21.5**	**20.1**	**20.0**	**19.2**	**19.6**	**20.0**
Excluding low-income countries in fragile situations	20.1	20.5	20.2	19.8	20.6	20.9	20.5	20.0	20.2	19.7	20.4	20.5
Countries in fragile situations	**17.9**	**21.4**	**21.4**	**23.2**	**23.7**	**25.9**	**24.8**	**22.7**	**21.4**	**19.9**	**19.7**	**20.3**
CFA franc zone	19.1	21.8	22.0	24.3	26.3	25.9	25.8	24.3	22.8	21.3	21.4	21.3
CEMAC	17.8	22.7	23.2	26.7	29.7	29.2	28.0	24.4	20.5	18.1	18.1	17.8
WAEMU	20.3	20.9	20.8	21.7	22.8	22.5	23.9	24.1	24.6	23.6	23.6	23.7
COMESA (SSA members)	20.1	21.0	20.7	20.3	21.0	22.2	22.3	21.7	21.4	20.5	20.2	20.4
EAC-5	20.2	22.3	21.4	21.5	21.8	22.4	22.8	22.5	21.7	22.1	22.1	22.5
ECOWAS	16.8	17.8	18.2	16.1	15.7	14.9	13.9	13.5	15.2	16.1	15.7	15.3
SACU	27.9	31.9	31.3	31.7	31.8	32.3	33.4	33.0	32.9	33.7	34.6	34.7
SADC	27.2	30.7	30.2	30.3	30.2	30.6	29.1	27.4	27.7	27.4	28.0	28.3

See sources and footnotes on page 91.

Table SA12. Government Debt
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	30.5	37.2	29.6	26.7	33.1	39.8	57.1	75.7	68.5	88.1	90.5	82.8
Benin	24.4	28.7	29.9	26.7	25.3	30.5	42.4	49.7	54.4	54.6	54.0	51.5
Botswana	7.4	20.4	20.4	19.2	17.4	17.3	17.2	15.6	14.1	12.9	12.8	13.4
Burkina Faso	32.8	31.2	27.6	28.4	29.1	29.9	35.6	39.2	38.4	43.0	42.5	42.1
Burundi	134.4	46.9	42.7	41.4	36.1	35.8	45.3	48.4	51.7	58.4	63.5	69.1
Cabo Verde	73.8	72.4	78.8	91.1	102.5	115.9	126.0	127.6	124.6	127.7	125.3	120.8
Cameroon	29.9	14.7	15.7	15.4	18.2	21.5	32.0	32.5	36.9	37.7	38.1	37.4
Central African Rep.	69.6	21.4	21.8	23.5	38.5	69.2	64.0	56.0	52.9	48.5	42.2	39.2
Chad	25.8	30.1	30.6	28.8	30.5	41.5	43.3	51.8	52.4	46.6	42.9	38.4
Comoros	65.1	50.7	45.7	42.6	18.2	21.7	24.1	27.8	31.8	31.2	35.1	36.3
Congo, Dem. Rep. of	105.0	31.9	26.3	23.2	19.1	16.8	16.8	19.3	18.1	15.7	14.0	13.2
Congo, Rep. of	119.1	53.4	42.3	45.1	49.5	59.8	111.4	127.8	125.4	98.5	90.2	83.7
Côte d'Ivoire	76.6	63.0	69.2	45.0	43.4	44.8	47.3	48.4	49.8	52.2	50.9	49.1
Equatorial Guinea	2.0	7.9	7.2	7.1	6.3	12.6	33.6	43.4	38.0	35.9	37.5	37.0
Eritrea	158.4	143.8	132.4	128.3	127.5	128.7	132.5	132.8	131.2	129.4	127.3	136.2
Eswatini	14.4	13.8	14.2	14.6	14.8	14.0	19.2	26.0	29.2	34.9	41.1	43.1
Ethiopia[1]	67.9	40.5	45.3	42.2	47.5	47.9	54.5	56.1	59.0	61.1	57.4	56.3
Gabon	41.7	21.3	21.4	21.4	31.1	34.1	44.7	64.2	62.6	58.2	58.5	55.7
Gambia, The	63.8	40.7	49.7	49.2	58.6	69.4	68.6	82.3	87.9	83.2	78.7	75.2
Ghana	28.3	34.6	31.4	35.6	43.2	51.2	54.8	57.1	57.3	59.6	62.0	60.0
Guinea	79.9	68.8	58.1	27.2	34.0	35.1	41.9	42.0	40.4	38.7	46.0	45.3
Guinea-Bissau	197.5	68.3	45.8	46.5	48.9	57.4	56.0	57.9	53.9	56.1	54.9	51.8
Kenya	45.2	44.4	43.0	43.9	44.0	48.6	51.4	53.2	54.8	57.2	55.5	52.8
Lesotho	48.2	31.8	33.7	37.0	38.5	39.2	43.3	37.2	36.8	39.0	37.9	37.3
Liberia	357.8	21.8	19.3	17.6	17.9	21.7	25.9	28.3	34.1	40.5	46.7	52.6
Madagascar	56.9	34.7	35.0	35.5	36.1	34.7	35.7	41.9	40.3	39.7	41.0	42.1
Malawi	62.9	29.6	30.6	43.9	59.2	54.7	61.2	61.3	61.9	61.3	59.0	58.5
Mali	29.2	25.3	24.0	25.4	26.4	27.4	30.7	35.9	35.4	36.6	36.9	37.6
Mauritius	56.8	57.1	57.2	56.6	59.1	62.0	65.4	66.2	63.7	65.2	67.5	67.8
Mozambique	49.7	43.3	38.0	40.1	53.1	62.4	88.1	121.6	103.2	100.4	124.5	119.9
Namibia	23.3	16.0	26.2	23.7	24.2	24.7	38.7	39.5	41.5	47.1	51.6	55.9
Niger	39.3	20.7	25.9	24.9	24.7	30.6	39.7	43.7	49.0	55.1	55.6	54.1
Nigeria	15.8	9.6	17.6	17.7	18.6	17.5	20.3	23.4	25.3	28.4	30.1	31.4
Rwanda	45.2	19.3	16.7	18.9	20.8	26.6	29.7	32.9	36.5	40.7	50.0	51.3
São Tomé & Príncipe	215.0	79.5	78.0	81.0	71.1	69.5	86.5	92.0	88.6	81.3	74.1	67.3
Senegal	25.7	28.3	32.7	34.2	36.8	42.4	44.5	47.7	60.6	64.4	62.0	60.4
Seychelles	155.7	82.2	82.5	80.1	68.2	72.7	67.3	69.0	63.6	58.2	54.5	49.5
Sierra Leone	94.1	46.8	44.8	36.8	30.5	35.0	44.9	55.5	57.6	71.3	72.4	72.0
South Africa	30.5	34.7	38.2	41.0	44.1	47.0	49.3	51.5	53.0	56.7	57.8	59.8
South Sudan	...	...	0.0	8.9	17.6	38.3	69.3	89.3	65.2	43.8	37.8	34.2
Tanzania	33.5	27.3	27.8	28.7	30.0	32.6	35.9	36.4	36.6	36.0	36.6	37.2
Togo	92.7	46.3	47.3	48.0	57.2	62.8	72.1	81.1	75.6	74.6	70.4	65.8
Uganda	39.4	22.4	23.4	24.5	27.8	30.7	34.3	37.1	39.7	42.2	44.8	48.1
Zambia	54.4	18.9	20.8	25.4	27.1	36.1	62.3	60.7	62.7	72.4	80.5	83.5
Zimbabwe[2]	44.6	49.6	41.4	37.2	38.6	40.3	41.8	54.2	52.9	29.8	21.0	20.5
Sub-Saharan Africa	**33.2**	**27.4**	**29.6**	**29.6**	**31.6**	**33.6**	**39.5**	**44.4**	**46.4**	**49.2**	**49.2**	**48.9**
Median	49.0	33.3	31.4	34.2	34.0	38.3	44.7	51.5	52.9	54.6	54.0	51.8
Excluding Nigeria and South Africa	45.9	34.4	31.7	31.0	34.4	39.0	48.1	53.0	53.1	55.4	55.2	53.4
Oil-exporting countries	**22.1**	**15.9**	**19.7**	**19.6**	**21.9**	**23.3**	**30.0**	**36.5**	**38.5**	**42.4**	**41.6**	**40.6**
Excluding Nigeria	34.7	30.0	23.6	23.4	28.6	35.8	53.2	66.1	62.6	69.9	69.2	64.2
Oil-importing countries	**40.1**	**35.5**	**37.0**	**37.5**	**40.0**	**43.0**	**47.3**	**49.8**	**51.1**	**53.0**	**53.7**	**53.7**
Excluding South Africa	50.4	36.2	35.8	34.7	37.2	40.4	46.1	48.9	50.0	51.0	51.5	50.7
Middle-income countries	**28.4**	**26.0**	**29.2**	**29.2**	**31.1**	**32.6**	**38.3**	**43.5**	**45.9**	**49.9**	**49.9**	**49.5**
Excluding Nigeria and South Africa	38.6	34.1	31.8	30.6	34.5	39.9	51.2	57.4	57.1	62.0	61.7	59.0
Low-income countries	**58.1**	**34.9**	**31.4**	**31.7**	**34.2**	**37.6**	**44.1**	**47.5**	**47.8**	**46.9**	**47.2**	**46.8**
Excluding low-income countries in fragile situations	45.6	31.4	32.3	32.4	35.6	38.5	45.9	49.2	50.2	51.9	53.1	52.8
Countries in fragile situations	**80.8**	**46.4**	**38.1**	**34.7**	**35.7**	**39.8**	**46.1**	**49.4**	**49.2**	**45.1**	**43.0**	**41.6**
CFA franc zone	43.6	31.0	30.6	27.4	29.8	34.6	44.2	49.3	51.6	51.5	50.4	48.6
CEMAC	38.6	22.5	20.9	20.6	24.1	30.5	45.3	52.4	53.5	49.7	48.6	46.2
WAEMU	49.0	40.0	41.6	34.8	35.6	38.7	43.4	46.9	50.1	52.8	51.7	50.3
COMESA (SSA members)	60.0	37.0	36.4	36.7	38.2	40.8	46.5	49.3	50.8	51.3	50.6	50.0
EAC-5	42.1	33.2	32.6	33.7	34.8	38.6	42.3	44.2	45.8	47.6	48.1	47.7
ECOWAS	26.4	17.8	23.4	22.3	23.8	23.6	27.1	31.6	34.5	37.7	38.6	38.8
SACU	29.4	33.5	37.0	39.3	42.1	44.6	47.3	49.0	50.5	54.0	55.1	57.1
SADC	34.7	34.0	34.9	35.7	38.5	41.7	48.0	52.8	52.4	56.1	56.7	56.5

See sources and footnotes on page 91.

Table SA13. Broad Money
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	19.0	34.8	35.0	31.5	33.3	35.7	40.9	39.5	32.2	29.9	31.4	31.5
Benin	24.8	34.9	35.8	34.0	36.7	40.9	42.4	41.0	39.2	39.0	39.0	43.7
Botswana	46.7	49.3	42.6	44.8	42.7	38.3	45.8	41.4	40.2	40.9	41.4	41.7
Burkina Faso	20.3	27.2	27.4	28.3	30.3	32.0	37.9	40.4	44.2	46.1	48.8	51.7
Burundi	22.3	27.5	25.7	25.4	23.5	23.0	22.4	21.7	22.9	25.8	26.4	26.3
Cabo Verde	75.1	80.1	78.5	82.1	89.4	95.6	98.9	102.6	104.5	103.5	103.5	102.8
Cameroon	17.7	21.2	21.9	20.7	21.3	21.8	22.5	22.5	22.6	23.3	23.4	23.3
Central African Rep.	15.9	17.8	19.2	18.3	28.5	29.1	27.5	26.2	26.7	25.5	28.4	29.2
Chad	8.9	11.4	12.0	12.4	13.3	15.6	15.9	15.8	15.8	15.7	16.1	16.0
Comoros	26.0	34.1	34.9	38.3	36.9	38.2	44.1	46.1	45.2	45.2	45.2	45.2
Congo, Dem. Rep. of	6.6	10.5	10.6	11.6	11.5	11.8	12.1	12.5	11.4	13.2	13.4	13.3
Congo, Rep. of	17.1	23.3	27.2	33.1	33.5	37.7	46.1	42.7	33.8	28.6	28.8	29.2
Côte d'Ivoire	11.0	15.7	18.7	14.8	14.5	14.6	15.2	14.6	13.6	13.7	16.4	16.4
Equatorial Guinea	6.4	12.3	10.6	14.8	16.7	14.5	17.8	17.4	16.4	14.3	15.2	15.9
Eritrea	130.2	123.2	114.6	111.8	113.3	113.5	96.1	100.8	101.4	101.7	101.6	110.7
Eswatini	19.6	25.6	25.1	24.4	25.4	24.5	25.8	29.8	29.3	28.9	28.9	28.7
Ethiopia[1]	34.6	27.0	27.6	25.3	27.1	28.1	28.6	28.9	31.7	33.6	34.3	35.8
Gabon	17.0	19.5	20.5	23.2	24.8	24.4	25.4	24.7	22.7	23.8	26.9	29.5
Gambia, The	23.5	29.1	35.8	34.8	37.2	38.8	34.1	36.7	40.5	43.1	44.5	44.9
Ghana	16.5	22.3	22.4	22.3	21.8	23.7	25.8	26.4	25.8	26.1	27.0	27.7
Guinea	13.6	26.4	25.1	22.2	22.6	23.8	26.8	24.9	23.8	22.9	22.4	22.1
Guinea-Bissau	18.3	26.6	31.4	30.5	31.3	46.3	49.4	47.9	44.7	44.2	44.6	45.5
Kenya	35.7	40.1	40.6	40.5	42.3	43.2	42.4	38.4	36.9	36.9	37.2	37.6
Lesotho	28.6	36.3	32.2	31.6	34.1	30.8	31.3	31.1	35.3	35.1	33.4	32.4
Liberia	13.0	22.7	26.8	23.3	22.3	22.2	22.4	20.5	19.9	22.5	23.6	24.5
Madagascar	23.6	24.7	26.1	25.7	25.2	25.4	26.4	28.5	29.7	29.3	30.4	30.2
Malawi	15.8	22.1	25.1	25.7	26.0	24.5	24.3	22.8	23.6	23.6	23.6	23.6
Mali	25.6	24.5	24.4	27.0	28.2	27.9	28.9	28.9	29.0	29.0	29.1	30.0
Mauritius	94.5	97.5	96.6	98.6	98.2	101.4	106.9	109.9	114.1	113.7	113.7	113.7
Mozambique	17.0	24.7	27.7	30.6	33.4	38.5	42.1	37.1	35.8	34.2	34.2	34.2
Namibia	40.8	63.6	65.2	57.2	56.2	53.6	54.6	51.8	53.4	54.1	54.1	54.1
Niger	13.7	19.5	19.5	21.9	22.6	26.2	26.0	26.8	24.4	22.0	21.6	21.6
Nigeria	16.0	20.8	18.8	21.3	19.3	20.9	22.1	25.4	24.7	25.4	26.2	27.1
Rwanda	16.6	18.3	20.0	19.8	20.9	22.4	24.8	23.9	23.6	25.3	25.6	25.9
São Tomé & Príncipe	34.3	38.7	38.0	39.0	38.3	38.8	40.6	34.3	31.4	32.9	32.8	32.8
Senegal	22.9	28.0	28.8	28.3	29.8	31.8	35.2	37.4	37.5	36.5	37.7	37.7
Seychelles	84.6	62.1	60.2	52.0	58.3	69.1	66.4	71.8	77.7	78.1	77.4	77.9
Sierra Leone	16.7	23.5	23.1	21.9	19.8	21.7	24.0	25.1	23.6	23.9	24.4	24.0
South Africa	72.5	75.8	74.6	72.9	71.0	70.8	73.5	72.4	72.4	72.4	72.4	72.4
South Sudan	...	...	9.5	19.8	14.6	17.6	38.2	29.8	16.6	16.1	13.7	13.2
Tanzania	21.8	25.1	24.7	23.5	22.1	22.5	23.4	21.4	20.7	20.2	20.7	21.0
Togo	29.2	39.5	43.1	43.8	47.2	46.2	51.0	53.4	56.1	56.1	56.1	56.1
Uganda	18.5	21.7	19.8	19.7	20.0	21.0	21.4	21.7	22.3	21.9	19.3	19.7
Zambia	18.0	18.4	19.1	19.6	20.5	20.9	25.8	20.6	22.0	22.1	22.4	22.6
Zimbabwe[2]	9.4	18.5	20.7	21.7	20.4	22.5	23.7	27.1	29.6	18.9	15.1	15.3
Sub-Saharan Africa	**33.8**	**36.7**	**35.5**	**35.6**	**34.5**	**35.2**	**37.0**	**37.3**	**36.6**	**36.5**	**36.8**	**37.2**
Median	19.3	25.4	26.1	25.7	27.1	27.9	28.6	28.9	29.6	28.9	28.9	29.5
Excluding Nigeria and South Africa	23.2	28.1	27.9	27.6	28.2	29.2	31.4	30.5	29.6	29.3	29.8	30.3
Oil-exporting countries	**16.1**	**22.2**	**20.6**	**22.5**	**21.4**	**23.0**	**25.1**	**27.1**	**25.3**	**25.4**	**26.2**	**26.9**
Excluding Nigeria	16.4	26.1	24.8	25.5	26.6	28.2	32.9	31.3	26.6	25.2	26.1	26.4
Oil-importing countries	**45.1**	**47.2**	**46.4**	**45.0**	**44.1**	**44.2**	**45.7**	**44.4**	**44.1**	**43.7**	**43.5**	**43.6**
Excluding South Africa	25.4	28.8	29.0	28.3	28.7	29.6	30.9	30.2	30.4	30.3	30.7	31.3
Middle-income countries	**36.9**	**40.0**	**38.8**	**38.7**	**37.4**	**37.9**	**39.9**	**40.6**	**39.6**	**39.5**	**40.0**	**40.3**
Excluding Nigeria and South Africa	24.2	31.1	31.3	30.4	31.2	32.2	34.9	33.6	31.6	31.1	32.0	32.3
Low-income countries	**21.8**	**24.4**	**23.9**	**24.2**	**24.5**	**25.7**	**27.2**	**26.9**	**27.3**	**27.3**	**27.4**	**28.2**
Excluding low-income countries in fragile situations	23.4	25.1	25.2	24.5	25.0	26.4	27.7	27.3	28.1	28.4	28.7	29.7
Countries in fragile situations	**17.1**	**21.5**	**21.6**	**22.8**	**22.6**	**23.5**	**25.5**	**24.8**	**23.4**	**22.4**	**22.7**	**22.9**
CFA franc zone	16.7	21.2	22.3	22.7	23.8	24.8	27.0	27.0	26.3	26.1	27.3	28.1
CEMAC	14.2	18.1	18.8	20.4	21.7	22.4	24.7	24.1	22.4	21.9	22.8	23.4
WAEMU	18.9	24.1	25.6	24.8	25.8	27.1	29.0	29.4	29.2	29.1	30.4	31.3
COMESA (SSA members)	29.5	30.3	30.5	30.0	30.7	31.5	32.1	31.4	32.3	32.4	32.3	33.0
EAC-5	26.3	29.7	29.3	28.8	29.1	29.8	30.0	27.9	27.1	27.0	26.9	27.2
ECOWAS	16.8	21.7	20.6	22.2	20.9	22.4	23.8	26.4	25.9	26.3	27.3	28.1
SACU	69.7	73.5	72.1	70.4	68.4	67.9	70.7	69.4	69.4	69.4	69.4	69.4
SADC	52.2	55.9	55.0	53.1	51.8	51.8	54.4	52.9	51.9	51.0	51.1	50.9

See sources and footnotes on page 91.

Table SA14. Broad Money Growth
(Percent)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	64.6	5.3	37.1	4.9	14.1	16.2	11.8	14.3	–0.1	24.4
Benin	15.3	9.7	9.8	7.2	17.2	18.2	6.0	0.3	1.0	6.9
Botswana	17.4	10.7	4.4	10.0	8.4	4.6	19.9	5.4	2.7	9.4
Burkina Faso	13.7	18.6	14.3	16.6	10.9	9.3	19.3	11.8	21.6	14.4
Burundi	21.1	29.4	5.7	18.0	9.7	11.2	1.3	6.6	19.2	18.6
Cabo Verde	12.5	5.4	4.6	6.3	11.4	7.4	6.2	8.4	6.5	5.1
Cameroon	10.5	11.3	10.6	1.4	10.8	10.8	9.2	5.5	5.9	8.1
Central African Rep.	7.5	16.1	13.8	1.6	5.6	14.6	5.3	5.8	10.3	2.3
Chad	23.6	25.3	14.2	13.4	8.6	26.5	–4.7	–7.7	–4.3	5.0
Comoros	7.6	19.4	9.6	16.0	2.8	8.1	17.1	10.3	1.8	5.1
Congo, Dem. Rep. of	52.5	30.9	22.9	21.8	18.6	12.6	10.5	22.2	26.2	36.8
Congo, Rep. of	30.1	37.6	34.5	21.1	0.7	13.1	–11.2	–15.4	–10.4	0.7
Côte d'Ivoire	11.9	19.7	17.3	–10.5	10.8	13.8	16.3	2.5	–1.0	8.8
Equatorial Guinea	30.7	33.5	7.7	57.8	7.3	–14.1	–10.9	–16.4	1.0	–6.9
Eritrea	11.2	15.6	14.6	14.3	16.5	12.9	–5.1	18.2	16.8	15.9
Eswatini	15.7	7.9	5.5	10.0	15.9	3.9	13.6	26.4	3.8	3.7
Ethiopia[1]	18.1	24.4	36.5	32.9	24.2	26.9	24.8	19.9	28.8	29.2
Gabon	14.2	19.2	26.5	15.7	6.1	1.6	–1.4	–5.2	–3.9	14.4
Gambia, The	16.5	13.7	11.0	7.8	15.1	11.2	–0.9	15.3	20.9	20.0
Ghana	31.3	34.4	32.2	24.3	19.1	36.8	26.1	22.0	16.7	18.1
Guinea	35.5	74.4	9.4	1.0	14.1	12.3	20.3	9.9	15.8	12.0
Guinea-Bissau	24.3	19.5	45.6	–5.4	5.0	49.1	26.9	9.3	4.7	2.1
Kenya	14.9	21.6	19.1	14.1	16.2	16.4	14.1	3.7	9.5	10.2
Lesotho	16.8	14.5	1.0	7.3	21.2	4.0	12.6	5.5	17.4	6.7
Liberia	33.5	27.4	41.4	–1.4	7.8	2.1	1.7	–5.2	–2.5	11.8
Madagascar	17.2	9.6	16.4	6.9	5.3	11.1	14.6	20.1	17.8	11.2
Malawi	27.6	33.9	35.7	22.9	35.1	20.7	23.7	15.2	19.7	11.5
Mali	5.6	9.0	15.3	15.2	7.4	7.1	13.2	7.3	7.9	6.9
Mauritius	13.0	6.9	6.4	8.2	5.8	8.7	10.2	9.1	9.3	5.7
Mozambique	22.2	17.6	23.9	25.6	21.2	27.3	21.7	2.4	12.9	4.2
Namibia	17.3	10.5	11.7	4.1	12.8	7.8	10.2	4.9	9.5	5.6
Niger	16.1	23.4	6.8	31.3	10.2	24.5	4.6	8.7	–4.9	–2.1
Nigeria	37.2	6.9	4.0	29.1	1.0	20.4	11.7	24.0	9.1	15.4
Rwanda	23.6	16.9	26.7	14.1	15.8	18.8	21.1	7.6	12.3	15.7
São Tomé & Príncipe	29.8	25.1	10.4	20.3	13.9	16.8	13.1	–4.8	–0.4	14.3
Senegal	11.6	11.5	7.9	6.2	8.2	11.3	19.3	13.8	9.2	5.8
Seychelles	7.9	13.5	4.5	–0.6	23.7	26.6	2.9	12.1	16.4	7.7
Sierra Leone	24.5	28.5	22.6	22.5	16.7	16.6	4.9	17.9	7.0	16.2
South Africa	18.9	6.9	8.3	5.2	5.8	7.2	10.5	6.1	6.8	4.7
South Sudan	...	...	17.1	34.0	–1.7	21.5	117.4	142.5	34.6	61.0
Tanzania	22.0	25.4	18.2	12.5	10.0	15.6	18.8	4.9	6.0	8.3
Togo	17.0	15.3	17.2	10.1	16.4	3.7	20.7	12.6	10.0	6.8
Uganda	19.1	41.5	10.5	14.9	9.5	15.2	11.7	11.1	12.8	7.7
Zambia	25.6	29.9	21.7	17.9	20.8	12.6	35.2	–5.7	21.4	14.6
Zimbabwe[2]	1.4	61.1	31.2	27.5	4.6	12.6	8.2	19.0	43.8	23.8
Sub-Saharan Africa	**25.6**	**13.6**	**13.0**	**16.7**	**8.0**	**15.5**	**13.4**	**13.2**	**9.7**	**12.7**
Median	17.4	18.9	14.3	14.1	10.8	12.6	11.8	8.7	9.3	8.8
Excluding Nigeria and South Africa	23.2	21.7	21.3	14.7	13.5	16.1	15.6	10.1	11.1	14.3
Oil-exporting countries	**37.1**	**8.8**	**9.7**	**24.1**	**3.5**	**17.8**	**11.0**	**19.3**	**6.9**	**15.5**
Excluding Nigeria	37.5	13.8	24.8	12.5	10.0	11.7	9.2	8.2	1.2	15.8
Oil-importing countries	**18.9**	**17.3**	**15.4**	**11.6**	**11.4**	**13.8**	**15.2**	**9.1**	**11.6**	**10.9**
Excluding South Africa	19.0	24.4	20.1	15.5	14.7	17.6	17.8	10.7	14.0	13.9
Middle-income countries	**27.3**	**10.5**	**10.9**	**16.1**	**6.4**	**14.9**	**12.2**	**13.0**	**7.6**	**11.6**
Excluding Nigeria and South Africa	26.2	18.1	21.9	11.7	13.4	14.9	14.1	7.1	6.6	12.6
Low-income countries	**19.5**	**26.6**	**20.6**	**18.6**	**13.7**	**17.5**	**17.5**	**13.7**	**16.4**	**16.2**
Excluding low-income countries in fragile situations	19.0	24.3	21.0	19.3	14.7	19.2	18.1	11.5	15.2	14.6
Countries in fragile situations	**19.0**	**29.4**	**20.6**	**11.8**	**10.6**	**14.1**	**13.9**	**11.7**	**11.8**	**15.9**
CFA franc zone	14.8	18.5	14.7	11.1	9.1	9.9	7.4	1.7	2.9	6.6
CEMAC	18.5	22.1	16.0	17.7	7.6	6.7	–1.1	–4.6	–0.1	5.5
WAEMU	11.7	15.3	13.5	5.2	10.5	12.8	15.2	7.1	5.1	7.5
COMESA (SSA members)	18.8	26.4	22.0	19.3	16.4	16.9	17.3	11.9	19.6	18.0
EAC-5	18.6	26.9	16.9	13.8	12.4	15.9	15.3	5.8	9.2	9.5
ECOWAS	31.2	11.4	8.2	23.8	4.6	20.4	13.6	20.3	9.3	14.1
SACU	18.7	7.2	8.1	5.5	6.4	7.1	10.9	6.3	6.7	5.0
SADC	24.0	11.6	14.9	8.3	9.4	10.5	13.1	8.0	8.7	10.1

See sources and footnotes on page 91.

Table SA15. Claims on Nonfinancial Private Sector
(Percent change)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	71.9	19.2	28.8	24.2	15.0	1.1	17.6	–1.8	–0.2	29.3
Benin	18.8	7.8	11.8	6.6	14.3	7.9	2.6	8.7	–0.2	1.4
Botswana	21.1	11.2	21.9	21.6	13.8	13.7	9.0	9.0	5.3	6.2
Burkina Faso	16.3	9.4	11.9	22.0	29.5	16.5	8.7	12.1	14.4	12.3
Burundi	8.4	39.1	35.5	11.9	9.5	7.4	–3.8	–0.3	–4.0	–20.9
Cabo Verde	20.3	9.0	13.3	–0.6	2.0	–0.9	0.4	3.6	6.5	5.2
Cameroon	8.2	8.2	28.3	2.6	14.9	14.4	11.4	7.2	2.3	5.1
Central African Rep.	8.7	30.2	19.2	31.0	–18.1	5.4	–2.1	13.2	1.1	12.9
Chad	17.3	30.2	24.4	32.1	2.7	40.2	2.3	–5.1	–3.2	3.3
Comoros	11.4	25.9	8.9	22.4	12.6	9.6	16.8	7.2	6.3	5.1
Congo, Dem. Rep. of	91.1	18.0	17.1	25.2	26.5	23.0	17.4	29.3	4.3	11.1
Congo, Rep. of	19.1	50.4	40.6	44.2	17.0	26.3	9.3	7.1	–7.6	–9.9
Côte d'Ivoire	10.8	13.5	–0.4	10.1	18.2	19.2	28.5	13.3	15.3	11.3
Equatorial Guinea	50.1	30.6	30.7	–13.6	34.3	18.4	14.1	4.2	1.3	1.0
Eritrea	6.3	1.8	14.7	19.8	131.0	35.8	–65.6	7.6	13.1	13.8
Eswatini	21.4	–0.5	26.0	–1.7	20.2	9.8	4.2	11.6	3.9	4.7
Ethiopia[1]	42.1	28.1	25.0	37.7	10.8	19.9	31.0	23.0	30.4	22.6
Gabon	10.0	1.9	42.0	24.1	23.6	–2.0	–9.8	–5.6	–3.0	6.1
Gambia, The	13.2	14.8	8.8	4.3	20.5	–7.5	–7.9	–12.3	–1.2	32.9
Ghana	44.1	24.8	29.0	32.9	29.0	41.8	24.5	15.4	13.7	11.2
Guinea	19.2	43.8	93.4	–3.2	35.0	44.0	27.1	5.9	2.3	17.7
Guinea-Bissau	61.4	59.5	60.1	38.3	0.3	14.6	–29.6	–2.5	105.1	–6.1
Kenya	19.9	20.3	30.9	10.4	20.1	22.2	16.0	4.1	2.4	3.9
Lesotho	28.3	28.8	25.1	42.2	10.3	11.8	8.2	5.8	8.3	6.2
Liberia	36.0	40.1	32.4	11.2	27.2	5.6	8.1	2.3	14.7	4.6
Madagascar	24.8	11.2	7.0	4.8	16.2	18.4	16.5	8.2	18.4	19.0
Malawi	41.2	52.4	20.5	25.4	14.4	20.0	29.9	4.6	0.4	12.5
Mali	7.2	13.5	24.1	4.8	11.7	18.7	19.9	17.6	7.4	9.2
Mauritius	15.4	12.5	12.3	17.4	14.2	–2.2	8.7	–0.6	11.8	5.2
Mozambique	27.5	29.3	6.4	19.9	15.4	25.2	22.1	14.5	–15.3	–0.4
Namibia	14.7	12.4	9.5	16.9	14.5	16.5	13.8	8.6	5.0	4.8
Niger	28.7	14.2	16.9	17.0	10.1	8.4	12.7	9.6	4.8	–1.9
Nigeria	47.0	–5.6	2.6	6.6	9.4	18.0	4.6	23.4	–4.2	–4.8
Rwanda	30.2	10.3	27.5	34.8	11.3	19.3	30.0	9.1	13.9	10.8
São Tomé & Príncipe	53.5	35.8	15.4	11.0	–3.3	–1.4	9.0	6.6	1.3	–4.3
Senegal	16.7	15.3	17.9	9.9	11.6	8.6	7.5	9.3	15.3	3.4
Seychelles	21.9	23.6	5.2	8.5	4.5	26.2	7.8	10.3	17.8	11.5
Sierra Leone	35.5	31.5	21.8	–6.9	11.9	5.4	9.1	16.7	4.9	17.9
South Africa	19.4	3.1	6.7	9.3	7.1	7.2	8.0	4.7	4.3	4.8
South Sudan	...	...	–34.0	125.7	45.4	49.8	51.2	221.5	32.9	29.3
Tanzania	35.8	20.0	27.2	18.2	15.3	19.4	24.8	8.2	2.6	6.3
Togo	13.0	17.2	39.1	17.8	34.0	–0.8	23.4	10.2	0.5	12.8
Uganda	27.5	41.8	28.3	11.8	6.2	14.1	15.1	6.4	5.8	11.1
Zambia	43.2	15.4	28.2	37.0	12.6	26.4	29.3	–9.4	5.2	10.7
Zimbabwe[2]	5.8	135.7	64.1	28.8	3.7	4.7	–2.4	–3.9	5.9	4.0
Sub-Saharan Africa	**31.0**	**8.8**	**13.1**	**13.5**	**12.7**	**15.6**	**11.4**	**12.3**	**3.5**	**5.0**
Median	20.7	18.6	21.9	17.4	14.3	14.6	9.3	7.6	4.9	6.2
Excluding Nigeria and South Africa	29.4	22.2	23.5	20.0	17.3	17.8	17.2	9.4	7.7	10.9
Oil-exporting countries	**44.4**	**0.8**	**8.0**	**10.5**	**11.8**	**16.0**	**7.0**	**18.3**	**–2.8**	**0.2**
Excluding Nigeria	39.1	19.5	22.0	20.7	18.1	11.1	13.6	6.2	0.7	14.8
Oil-importing countries	**23.3**	**14.9**	**17.1**	**15.8**	**13.3**	**15.3**	**14.7**	**8.4**	**7.9**	**8.3**
Excluding South Africa	26.4	23.1	24.0	19.8	17.1	20.1	18.4	10.3	9.6	9.9
Middle-income countries	**32.1**	**4.3**	**11.0**	**11.2**	**11.9**	**14.6**	**9.5**	**11.6**	**1.5**	**2.9**
Excluding Nigeria and South Africa	31.3	18.1	25.6	18.3	18.8	16.6	16.5	5.0	5.6	10.3
Low-income countries	**27.1**	**27.7**	**21.0**	**22.2**	**15.6**	**19.2**	**18.1**	**14.7**	**10.0**	**11.7**
Excluding low-income countries in fragile situations	30.0	23.5	21.8	20.7	13.0	17.6	21.9	13.0	11.9	12.4
Countries in fragile situations	**20.7**	**32.6**	**17.4**	**23.4**	**19.9**	**22.1**	**14.3**	**16.2**	**7.0**	**8.9**
CFA franc zone	15.6	16.5	21.8	11.4	17.2	15.4	11.4	7.8	6.2	5.4
CEMAC	18.0	20.0	31.8	11.3	17.6	17.1	6.2	2.8	–0.9	2.5
WAEMU	13.9	13.5	13.1	11.6	16.8	13.8	16.0	12.0	11.8	7.6
COMESA (SSA members)	28.1	27.3	26.3	21.8	15.0	18.5	17.8	9.4	11.6	11.7
EAC-5	26.7	24.5	29.0	14.6	14.7	19.0	19.1	6.2	3.7	6.1
ECOWAS	39.1	0.8	7.8	9.5	12.9	19.5	8.5	19.9	0.6	–0.3
SACU	19.4	3.8	7.7	10.0	7.8	7.8	8.1	5.1	4.4	4.9
SADC	27.9	11.4	14.4	15.1	10.8	9.8	12.7	4.7	3.6	8.8

See sources and footnotes on page 91.

Table SA16. Claims on Nonfinancial Private Sector
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	7.5	19.9	18.8	20.1	21.4	19.9	24.0	19.9	16.2	15.7	15.8	15.4
Benin	14.3	21.6	22.7	21.4	22.5	22.9	23.0	24.1	22.7	21.4	22.3	20.8
Botswana	22.0	27.1	27.3	31.8	31.7	31.0	33.7	31.5	31.4	31.0	31.0	31.0
Burkina Faso	15.5	17.6	17.3	18.7	23.4	26.3	28.4	30.4	31.3	32.0	33.1	34.1
Burundi	14.1	16.6	20.0	18.7	17.2	16.3	15.1	13.7	11.6	8.7	8.8	8.2
Cabo Verde	41.4	61.9	65.7	64.3	64.2	63.3	61.8	61.3	62.4	61.9	61.7	60.9
Cameroon	8.6	9.9	11.9	11.4	12.2	12.9	13.5	13.7	13.4	13.3	13.5	13.7
Central African Rep.	6.9	8.9	10.1	12.3	14.9	14.0	12.3	12.5	11.7	12.3	12.4	12.5
Chad	2.6	4.2	4.8	5.8	5.9	7.6	8.4	8.6	8.6	8.5	8.1	7.6
Comoros	8.9	17.5	17.8	20.6	21.7	22.8	26.3	26.7	27.3	27.3	27.5	27.5
Congo, Dem. Rep. of	2.1	4.1	4.0	4.5	4.8	5.3	5.8	6.4	4.8	4.5	4.0	3.9
Congo, Rep. of	2.8	5.4	6.6	9.6	11.3	14.2	21.3	25.0	20.4	15.5	15.2	15.6
Côte d'Ivoire	16.0	19.7	20.0	19.5	20.4	21.5	24.6	26.1	28.4	29.3	30.6	31.8
Equatorial Guinea	2.7	6.7	7.0	5.3	7.5	9.0	14.2	17.3	16.3	15.5	17.0	18.4
Eritrea	24.5	14.8	13.8	14.1	28.3	34.1	10.4	10.0	9.7	9.6	9.5	9.5
Eswatini	18.6	19.1	22.4	19.4	21.0	21.4	20.6	21.0	20.8	20.7	20.5	20.1
Ethiopia[1]	10.9	10.4	9.8	9.3	8.8	8.7	9.3	9.6	10.7	10.8	12.9	13.4
Gabon	9.1	8.3	9.8	11.9	14.8	14.0	13.4	12.9	12.0	11.7	12.4	13.2
Gambia, The	7.6	9.3	11.2	10.5	11.8	10.2	8.3	6.8	6.2	7.3	7.3	7.6
Ghana	8.5	11.5	11.3	12.0	12.7	14.3	15.4	14.9	14.2	13.5	13.3	13.9
Guinea	3.9	4.2	7.0	5.9	7.2	9.7	11.5	10.3	8.7	8.8	8.9	9.1
Guinea-Bissau	2.9	7.0	9.1	13.0	12.7	14.5	8.6	7.4	13.5	12.3	12.5	12.7
Kenya	23.5	28.0	31.2	30.1	32.5	34.9	34.8	31.6	28.4	26.8	25.8	26.4
Lesotho	8.2	12.8	14.1	18.3	18.0	17.4	17.0	17.0	17.8	17.6	17.4	17.4
Liberia	4.6	9.6	10.6	10.3	11.7	12.1	12.9	12.8	14.6	15.5	15.9	16.3
Madagascar	10.1	11.5	11.2	10.8	11.7	12.6	13.3	12.9	13.6	14.3	14.5	14.3
Malawi	6.7	13.8	13.9	14.6	12.5	11.7	12.2	10.4	9.0	9.1	9.2	9.3
Mali	15.9	16.0	17.1	17.3	18.8	20.6	22.6	24.7	24.7	25.2	24.7	24.7
Mauritius	72.0	85.4	89.3	98.8	106.3	98.8	102.7	96.3	102.3	101.5	96.2	91.0
Mozambique	12.4	26.8	25.7	27.2	28.2	32.0	35.1	34.6	25.1	22.9	22.8	22.7
Namibia	48.0	49.1	49.3	48.6	48.4	49.9	52.5	51.6	51.0	51.3	50.8	50.3
Niger	7.3	12.4	13.6	13.5	13.9	14.1	15.0	15.7	15.7	14.2	14.1	14.2
Nigeria	12.0	15.9	14.2	13.3	13.0	13.8	13.7	15.7	13.4	11.3	10.5	9.6
Rwanda	9.9	11.8	13.0	15.2	15.4	16.6	19.7	19.3	19.3	19.8	19.3	19.0
São Tomé & Príncipe	25.7	39.5	40.6	38.4	32.0	27.4	27.6	26.1	24.3	21.3	19.7	18.5
Senegal	16.0	21.2	23.8	24.2	26.3	27.3	27.3	27.9	29.5	28.0	28.2	29.9
Seychelles	25.1	24.4	23.9	22.5	21.3	25.2	25.3	26.9	29.5	30.7	31.8	32.9
Sierra Leone	4.0	7.7	7.5	5.4	4.7	4.7	5.3	5.5	5.1	5.3	5.2	4.4
South Africa	68.3	68.0	65.9	66.9	65.9	65.7	66.6	64.8	63.3	63.4	62.7	61.9
South Sudan	...	...	0.2	0.6	0.7	1.0	1.5	1.6	0.9	0.7	0.4	0.5
Tanzania	10.4	13.7	14.4	14.5	14.2	15.0	16.4	15.5	14.5	13.9	14.0	14.1
Togo	17.0	21.7	28.1	30.6	38.0	35.6	40.2	41.2	39.5	41.7	44.2	46.8
Uganda	9.2	12.9	13.7	13.2	13.0	13.5	14.2	13.8	13.3	13.5	10.9	10.7
Zambia	8.8	9.2	10.0	12.0	11.7	13.4	15.7	12.1	11.2	10.8	10.6	10.1
Zimbabwe[2]	3.3	13.5	19.0	20.1	18.7	19.2	18.3	16.9	13.6	7.3	4.9	5.3
Sub-Saharan Africa	**26.7**	**28.1**	**26.9**	**27.0**	**26.8**	**27.0**	**27.7**	**27.5**	**26.0**	**24.9**	**24.4**	**24.0**
Median	10.0	13.7	14.1	14.6	15.4	16.3	16.4	16.9	15.7	15.5	15.2	15.4
Excluding Nigeria and South Africa	12.6	16.7	16.9	17.5	18.4	19.0	20.5	19.7	18.7	18.2	18.2	18.4
Oil-exporting countries	**10.4**	**15.2**	**13.6**	**13.4**	**13.6**	**14.1**	**14.9**	**15.9**	**13.7**	**12.0**	**11.4**	**10.7**
Excluding Nigeria	6.7	13.5	12.3	13.8	15.0	14.9	17.9	16.6	14.4	13.6	13.8	13.8
Oil-importing countries	**37.0**	**37.4**	**36.6**	**36.7**	**36.4**	**36.5**	**37.0**	**35.5**	**34.1**	**33.3**	**32.7**	**32.2**
Excluding South Africa	14.5	17.7	18.5	18.8	19.5	20.4	21.3	20.6	19.9	19.4	19.3	19.6
Middle-income countries	**31.1**	**32.2**	**31.0**	**30.9**	**30.7**	**30.8**	**31.6**	**31.5**	**29.8**	**28.7**	**28.0**	**27.5**
Excluding Nigeria and South Africa	15.0	20.0	20.7	21.3	22.7	23.2	25.5	24.1	22.9	22.3	22.2	22.5
Low-income countries	**9.5**	**12.5**	**12.4**	**12.9**	**13.2**	**14.0**	**14.7**	**14.7**	**14.0**	**13.6**	**13.8**	**14.0**
Excluding low-income countries in fragile situations	10.7	13.7	13.8	13.7	13.9	14.6	15.7	15.6	15.0	14.8	15.2	15.3
Countries in fragile situations	**8.9**	**11.7**	**11.5**	**12.9**	**13.6**	**14.6**	**15.8**	**16.7**	**16.3**	**15.7**	**15.9**	**16.4**
CFA franc zone	10.7	13.4	14.6	14.9	16.7	17.8	19.9	21.3	21.6	21.4	22.0	22.8
CEMAC	6.0	7.6	8.9	9.3	10.7	11.8	14.0	15.0	13.9	13.0	13.3	13.5
WAEMU	15.0	18.7	19.9	20.1	22.1	23.2	24.9	26.3	27.3	27.4	28.1	29.0
COMESA (SSA members)	15.3	17.9	19.0	19.2	19.8	20.2	20.4	19.1	18.3	17.6	17.3	17.3
EAC-5	15.3	18.8	20.5	20.1	20.8	22.1	22.9	21.3	19.6	18.8	17.9	18.1
ECOWAS	12.1	15.8	14.8	14.2	14.3	15.3	15.7	17.3	15.9	14.6	14.2	13.9
SACU	64.9	64.8	63.0	64.0	62.9	62.7	63.7	61.9	60.5	60.5	59.8	59.1
SADC	45.2	46.4	45.1	45.7	45.0	44.4	45.8	43.6	41.7	41.1	40.5	39.7

See sources and footnotes on page 91.

Table SA17. Exports of Goods and Services
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	65.8	61.4	60.9	56.1	50.9	41.8	29.6	28.0	29.4	39.2	35.3	36.9
Benin	13.7	17.9	16.0	13.2	15.5	15.8	17.6	16.7	19.6	21.6	23.6	24.3
Botswana	50.9	43.6	49.8	44.2	61.5	60.8	52.1	52.7	40.0	39.5	40.0	40.2
Burkina Faso	10.6	21.0	23.8	23.8	26.4	25.9	26.5	30.0	28.6	27.7	28.1	27.1
Burundi	7.8	8.9	10.1	9.4	8.8	7.2	5.6	5.5	5.1	5.1	5.2	5.4
Cabo Verde	35.8	38.3	42.2	45.0	47.0	48.1	41.3	44.2	47.4	50.7	51.7	53.1
Cameroon	25.3	22.0	25.4	25.4	24.8	24.6	21.8	19.2	18.7	18.0	16.8	16.4
Central African Rep.	13.2	11.8	13.5	13.4	16.7	18.5	18.2	18.7	17.0	16.9	16.9	16.7
Chad	45.5	37.8	40.6	38.2	33.4	31.5	26.5	24.4	27.5	33.1	30.0	32.0
Comoros	14.8	15.7	16.6	14.9	15.6	18.2	16.7	17.9	19.3	18.3	18.5	18.5
Congo, Dem. Rep. of	29.5	43.0	41.6	32.8	38.4	35.4	27.4	25.5	31.6	29.9	23.7	24.6
Congo, Rep. of	80.2	73.3	77.8	75.3	67.8	67.5	59.4	59.1	73.6	82.9	83.1	81.3
Côte d'Ivoire	48.6	50.6	53.2	48.9	41.5	39.3	37.7	33.4	33.7	35.4	34.9	34.6
Equatorial Guinea	79.7	81.2	76.3	74.3	64.9	58.9	45.3	39.5	40.4	42.1	37.3	34.2
Eritrea	5.8	4.8	26.3	20.8	19.5	21.8	13.6	9.5	9.2	10.0	8.3	8.1
Eswatini	59.6	46.5	34.8	37.2	40.9	44.3	43.5	44.0	43.3	42.7	41.1	41.5
Ethiopia[1]	14.6	15.5	18.2	14.2	12.7	11.9	10.0	8.6	8.2	8.8	8.8	9.1
Gabon	59.0	59.2	64.1	64.8	61.5	54.5	43.5	36.2	41.7	43.0	40.7	41.6
Gambia, The	18.3	13.9	17.0	19.7	19.3	19.4	16.1	16.7	22.8	22.1	22.0	22.7
Ghana	17.2	21.9	27.2	29.8	25.6	28.7	34.0	31.8	34.6	34.4	34.6	34.0
Guinea	22.0	22.3	25.5	28.2	23.0	22.3	21.1	28.4	39.3	37.2	35.5	36.9
Guinea-Bissau	17.0	20.1	25.7	15.5	18.3	20.2	27.5	26.5	27.8	25.0	24.1	24.5
Kenya	23.5	22.5	24.0	22.2	19.9	18.3	16.6	14.0	13.2	13.5	13.3	13.5
Lesotho	46.9	39.6	41.1	38.7	34.0	34.2	42.0	39.3	42.8	44.2	46.0	47.6
Liberia	38.4	32.0	36.5	42.6	37.1	33.1	25.8	23.5	22.4	20.2	20.9	22.2
Madagascar	26.9	24.3	26.7	28.3	30.0	32.8	32.2	33.6	35.5	35.5	35.4	35.3
Malawi	17.1	19.6	17.6	23.8	30.6	29.1	25.5	29.2	26.8	26.7	26.7	26.9
Mali	24.0	22.9	21.6	26.9	24.9	22.6	24.0	23.5	23.1	23.1	22.6	21.1
Mauritius	53.3	49.4	50.6	51.9	46.5	46.9	46.1	42.5	40.7	40.1	40.1	39.6
Mozambique	29.0	24.7	26.5	30.6	29.8	27.5	27.9	34.6	42.9	37.9	37.7	38.5
Namibia	38.5	41.7	41.4	42.0	43.7	44.3	42.2	35.8	33.0	34.4	34.4	33.9
Niger	17.6	22.2	20.9	21.9	22.6	21.0	18.2	16.2	17.6	17.2	16.8	17.0
Nigeria	28.4	22.4	24.7	21.4	19.3	14.8	10.1	9.5	13.5	16.5	13.5	12.8
Rwanda	12.3	22.2	14.5	15.1	15.4	16.4	18.3	18.8	22.4	21.4	21.6	22.2
São Tomé & Príncipe	11.6	12.3	12.6	13.1	16.4	25.0	28.5	27.3	21.9	21.6	21.7	21.2
Senegal	20.8	19.8	21.2	22.3	22.2	21.7	22.4	21.5	21.7	22.0	22.2	22.4
Seychelles	85.8	93.8	100.2	105.2	94.7	102.2	94.2	94.8	102.4	104.1	102.0	103.0
Sierra Leone	15.0	16.2	18.3	32.4	35.9	30.2	17.8	24.7	26.1	25.9	31.7	32.3
South Africa	29.6	28.6	30.5	29.7	31.0	31.5	30.2	30.6	29.8	29.8	30.1	30.0
South Sudan	...	...	72.4	9.3	28.0	34.0	21.0	55.2	67.2	72.0	82.3	100.3
Tanzania	18.2	20.6	22.4	20.6	18.8	17.8	18.9	17.8	16.3	15.2	15.1	15.4
Togo	34.6	37.9	43.6	45.2	46.5	39.7	35.8	35.2	33.3	32.4	32.4	32.7
Uganda	16.3	17.2	20.4	20.1	19.2	18.4	20.6	19.5	19.5	19.6	19.3	19.1
Zambia	35.1	39.7	40.1	41.2	41.4	40.8	38.7	35.3	35.1	40.6	42.4	42.8
Zimbabwe[2]	23.9	29.6	34.8	25.3	22.0	20.9	20.0	20.2	21.6	20.4	22.7	20.3
Sub-Saharan Africa	**31.8**	**30.1**	**32.9**	**30.3**	**28.9**	**26.1**	**22.2**	**21.8**	**23.9**	**25.4**	**23.7**	**23.3**
Median	24.7	22.7	26.5	28.2	28.0	28.7	26.5	27.3	27.8	27.7	28.1	27.1
Excluding Nigeria and South Africa	35.7	36.1	39.6	36.3	34.2	31.7	26.8	25.1	26.1	27.5	26.1	26.1
Oil-exporting countries	**38.2**	**32.8**	**36.7**	**31.9**	**28.8**	**23.4**	**16.3**	**15.6**	**19.9**	**23.9**	**19.9**	**19.3**
Excluding Nigeria	58.1	56.2	58.9	52.6	48.2	42.2	31.0	29.3	31.5	38.4	35.3	35.9
Oil-importing countries	**28.0**	**28.1**	**30.1**	**29.0**	**29.0**	**28.6**	**27.0**	**26.1**	**26.3**	**26.2**	**25.9**	**25.7**
Excluding South Africa	26.6	27.7	29.7	28.4	27.6	26.8	25.2	23.7	24.3	24.3	23.7	23.6
Middle-income countries	**33.8**	**31.3**	**33.8**	**31.8**	**30.1**	**27.0**	**22.7**	**22.4**	**24.6**	**26.7**	**24.8**	**24.3**
Excluding Nigeria and South Africa	44.4	44.0	46.5	44.7	41.2	38.0	32.0	29.2	29.7	32.6	31.0	30.8
Low-income countries	**21.5**	**23.5**	**28.6**	**23.1**	**23.7**	**22.6**	**20.2**	**19.8**	**21.4**	**21.1**	**20.2**	**20.4**
Excluding low-income countries in fragile situations	17.8	19.4	21.1	20.2	19.7	18.7	17.8	17.2	17.7	17.5	17.4	17.6
Countries in fragile situations	**36.4**	**38.7**	**44.6**	**35.5**	**35.0**	**33.7**	**28.2**	**27.9**	**31.2**	**32.1**	**30.4**	**30.2**
CFA franc zone	39.7	40.7	43.1	42.2	38.5	35.9	31.0	28.1	29.5	31.0	29.9	29.4
CEMAC	50.3	49.8	53.2	52.1	47.0	43.5	34.2	29.9	33.0	35.6	33.4	32.6
WAEMU	29.0	31.0	31.6	31.3	29.7	28.4	28.3	26.7	26.9	27.5	27.5	27.2
COMESA (SSA members)	26.1	27.4	29.0	26.2	25.8	24.5	21.5	19.5	20.3	20.3	19.3	19.3
EAC-5	19.5	20.5	21.9	20.6	19.0	17.8	17.8	16.1	15.5	15.2	15.0	15.2
ECOWAS	27.2	23.7	26.1	23.8	21.7	18.0	14.9	15.2	19.0	21.3	19.1	18.4
SACU	31.0	29.7	31.5	30.8	32.6	33.3	31.7	32.1	30.6	30.7	30.9	30.9
SADC	34.8	34.5	36.6	35.4	35.8	34.2	30.2	29.9	29.8	31.2	30.3	30.4

See sources and footnotes on page 91.

Table SA18. Imports of Goods and Services
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	41.2	42.3	39.3	35.8	36.0	36.7	32.7	27.1	23.1	29.8	31.4	30.5
Benin	24.9	29.2	26.1	25.2	28.3	31.0	29.7	28.7	32.0	32.9	33.9	34.1
Botswana	40.3	51.2	53.5	55.0	61.4	53.9	53.4	42.6	33.9	35.2	35.7	36.5
Burkina Faso	25.5	28.5	33.0	34.7	39.8	34.9	36.3	37.3	37.9	36.2	34.1	32.3
Burundi	34.3	43.4	43.5	46.7	41.5	37.3	32.9	24.9	23.4	25.4	24.9	24.6
Cabo Verde	64.5	66.8	73.8	68.1	62.8	66.4	56.7	60.0	66.9	68.0	69.0	70.0
Cameroon	25.8	24.8	28.0	28.0	27.3	27.7	25.2	21.7	20.6	21.4	20.3	19.7
Central African Rep.	22.1	26.5	24.4	24.9	26.1	40.5	38.6	35.7	34.6	35.6	32.4	31.4
Chad	44.3	48.6	48.1	48.0	43.1	43.9	42.9	39.4	41.4	43.9	42.2	41.3
Comoros	39.5	50.3	52.0	53.1	50.6	48.9	45.9	43.9	46.7	48.6	48.5	48.5
Congo, Dem. Rep. of	34.9	51.9	48.0	39.9	38.6	44.0	33.2	30.1	33.1	30.9	25.4	26.9
Congo, Rep. of	57.7	59.4	53.9	51.0	51.3	64.9	111.2	93.6	64.8	62.2	63.7	61.8
Côte d'Ivoire	41.3	43.3	36.9	44.7	38.6	34.4	34.2	30.3	31.1	34.8	34.3	33.6
Equatorial Guinea	35.9	58.9	43.4	41.3	41.9	41.6	44.3	36.2	30.2	29.5	26.9	25.5
Eritrea	41.6	23.3	32.3	24.2	21.3	22.8	19.8	16.9	16.3	15.6	13.9	13.7
Eswatini	68.9	59.1	41.1	40.2	41.2	43.9	42.1	41.5	43.4	44.0	42.0	41.3
Ethiopia[1]	36.3	33.1	36.5	33.5	29.5	28.9	31.1	28.4	25.3	24.0	23.7	22.8
Gabon	27.5	29.5	23.7	36.2	43.7	41.3	38.9	34.4	34.2	31.7	32.5	31.6
Gambia, The	27.2	24.9	26.0	27.7	27.1	32.1	32.8	32.1	39.6	41.9	44.6	45.0
Ghana	28.9	32.5	36.4	38.9	35.6	36.2	42.7	37.3	37.7	35.5	35.1	35.0
Guinea	24.2	25.4	43.2	44.4	31.6	33.0	30.7	59.1	46.8	48.8	48.9	48.0
Guinea-Bissau	28.7	35.2	30.9	25.7	25.8	31.4	32.2	31.3	33.1	30.7	32.3	31.7
Kenya	31.9	33.9	39.4	35.5	33.2	33.0	27.6	22.8	24.1	23.7	22.7	23.0
Lesotho	105.8	99.1	96.2	98.3	85.6	82.0	85.0	79.8	84.0	82.9	91.8	85.3
Liberia	128.1	82.8	87.0	90.0	73.7	92.0	88.4	72.4	59.0	50.9	48.6	48.7
Madagascar	43.8	39.3	38.9	39.9	39.0	37.2	35.7	35.9	39.3	39.8	40.9	41.7
Malawi	35.0	34.9	28.0	38.2	42.4	39.7	36.6	45.6	41.6	39.0	37.6	37.8
Mali	33.7	37.9	29.7	31.8	39.9	38.1	39.6	40.3	38.9	39.1	37.4	36.3
Mauritius	61.5	61.2	64.1	64.7	60.6	58.5	56.2	52.8	54.2	53.8	55.1	53.5
Mozambique	38.6	45.2	58.0	81.7	81.2	72.6	71.7	72.3	65.4	69.9	84.9	97.6
Namibia	41.8	52.1	50.6	55.7	59.3	66.7	67.0	56.3	45.7	46.2	45.6	45.7
Niger	31.2	49.0	47.7	39.3	39.1	39.2	40.6	33.2	36.1	35.7	40.4	42.7
Nigeria	17.7	19.2	21.9	17.5	14.9	15.1	14.9	11.6	13.5	16.6	16.1	14.8
Rwanda	29.4	40.0	33.3	32.4	32.0	33.2	35.6	36.7	32.3	32.7	33.9	33.4
São Tomé & Príncipe	57.2	61.0	63.1	54.0	58.9	65.7	59.0	52.2	49.2	44.0	42.0	39.4
Senegal	35.6	32.1	35.9	39.1	38.6	36.7	35.4	32.5	35.3	35.7	36.4	39.0
Seychelles	95.4	108.1	116.6	122.5	101.5	118.0	103.2	105.0	114.1	109.2	107.9	109.0
Sierra Leone	24.4	43.9	84.4	65.7	46.2	57.4	43.8	36.8	45.6	44.2	46.0	46.2
South Africa	30.6	27.4	29.7	31.2	33.3	33.0	31.5	30.0	28.3	29.5	30.0	30.2
South Sudan	...	...	30.4	34.1	29.9	31.6	28.9	62.5	81.8	81.2	93.8	120.0
Tanzania	26.8	29.5	34.2	32.6	29.4	27.3	26.1	21.2	18.6	17.8	17.8	18.3
Togo	50.7	53.4	64.5	59.2	66.3	57.7	57.8	53.5	50.3	48.8	46.7	46.0
Uganda	27.0	30.6	35.3	31.5	28.8	29.1	31.9	26.4	27.6	29.5	30.3	30.3
Zambia	30.4	27.6	32.2	36.3	39.3	37.7	41.7	37.9	36.3	42.7	42.4	42.6
Zimbabwe[2]	32.0	53.5	65.8	49.0	45.1	42.0	37.6	32.0	29.9	30.3	31.0	29.3
Sub-Saharan Africa	**29.6**	**30.3**	**32.2**	**31.2**	**30.0**	**29.7**	**28.9**	**26.4**	**26.4**	**28.0**	**27.7**	**27.2**
Median	34.9	41.2	39.3	39.3	39.3	38.1	37.6	36.7	36.3	35.7	36.4	36.5
Excluding Nigeria and South Africa	36.1	39.6	40.2	39.9	38.5	38.4	37.1	33.0	31.5	32.6	32.4	32.4
Oil-exporting countries	**24.3**	**26.1**	**27.5**	**24.0**	**22.1**	**22.3**	**21.2**	**17.7**	**18.5**	**21.8**	**21.0**	**19.6**
Excluding Nigeria	37.3	41.7	37.7	36.8	36.8	37.9	36.3	31.4	27.5	31.9	32.5	31.7
Oil-importing countries	**33.0**	**33.1**	**35.7**	**36.8**	**36.9**	**36.4**	**35.2**	**32.3**	**31.2**	**31.6**	**31.6**	**31.7**
Excluding South Africa	35.6	38.7	41.4	41.4	39.4	38.7	37.4	33.5	32.8	32.8	32.4	32.5
Middle-income countries	**28.9**	**28.7**	**30.4**	**29.3**	**28.3**	**27.9**	**27.2**	**24.5**	**24.8**	**26.9**	**26.5**	**25.8**
Excluding Nigeria and South Africa	37.8	40.5	39.8	40.0	39.2	39.3	38.5	33.1	31.1	33.2	33.2	32.8
Low-income countries	**33.3**	**38.1**	**40.8**	**39.8**	**37.5**	**37.1**	**35.3**	**33.0**	**31.9**	**31.8**	**31.5**	**31.8**
Excluding low-income countries in fragile situations	31.1	33.9	38.4	38.3	35.9	34.4	34.3	30.3	29.0	28.9	29.9	30.4
Countries in fragile situations	**39.5**	**46.0**	**43.6**	**43.3**	**40.6**	**41.9**	**40.0**	**38.6**	**37.1**	**37.6**	**35.8**	**35.5**
CFA franc zone	32.1	36.9	33.7	36.1	36.6	36.3	36.9	32.6	31.4	32.2	31.7	31.3
CEMAC	34.1	40.8	36.9	38.3	38.8	40.3	42.8	35.9	32.1	32.3	31.6	30.5
WAEMU	30.0	32.9	30.0	33.6	34.5	32.2	32.0	29.9	31.0	32.1	31.7	31.9
COMESA (SSA members)	36.4	39.0	41.7	38.4	36.5	36.4	33.8	30.2	30.1	29.8	28.6	28.4
EAC-5	29.3	32.4	36.6	33.8	31.2	30.5	28.4	23.7	23.4	23.3	23.0	23.3
ECOWAS	22.8	23.9	26.4	23.6	21.0	20.6	21.0	19.3	21.6	23.9	23.2	22.1
SACU	32.1	29.6	31.6	33.3	35.6	35.4	34.0	32.0	29.7	30.8	31.4	31.5
SADC	33.8	33.6	35.4	36.3	37.5	37.3	35.0	31.9	29.7	31.7	32.3	32.5

See sources and footnotes on page 91.

Table SA19. Trade Balance on Goods
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	42.9	40.5	42.1	37.0	30.7	21.0	10.7	13.9	16.7	22.4	17.5	19.7
Benin	–10.7	–10.2	–9.9	–11.1	–10.1	–11.0	–7.4	–7.4	–7.4	–5.9	-4.7	-3.9
Botswana	9.5	–7.8	–4.5	–12.3	–2.3	3.3	–5.6	9.5	5.3	3.7	3.6	3.0
Burkina Faso	–9.5	–1.6	–2.5	–3.8	–5.6	–2.1	–2.3	–0.0	–2.4	–2.0	-0.2	0.0
Burundi	–16.4	–30.2	–29.0	–32.2	–29.1	–24.4	–21.7	–14.9	–14.6	–17.2	-16.6	-16.0
Cabo Verde	–39.0	–40.9	–45.1	–36.6	–33.6	–32.5	–29.6	–31.7	–35.9	–36.5	-37.6	-38.3
Cameroon	1.7	–0.8	–2.2	–0.9	–0.6	–1.3	–1.2	–0.7	–0.6	–2.1	-2.2	-2.0
Central African Rep.	–4.0	–8.8	–5.7	–5.5	–5.4	–20.3	–20.1	–16.5	–15.1	–17.0	-15.1	-14.7
Chad	24.4	8.0	10.8	7.7	6.6	2.8	0.5	2.2	3.1	7.8	5.6	8.3
Comoros	–22.9	–29.2	–30.3	–32.2	–30.5	–31.3	–28.9	–25.1	–26.3	–28.6	-28.5	-28.4
Congo, Dem. Rep. of	0.2	2.1	2.3	0.2	6.9	–0.9	–0.6	–0.5	2.3	3.8	2.1	1.3
Congo, Rep. of	47.1	37.1	45.5	43.1	33.1	24.6	–13.0	–9.2	29.0	43.2	43.5	42.2
Côte d'Ivoire	15.0	14.6	23.3	11.4	9.6	11.0	9.6	8.7	8.8	6.9	6.8	6.8
Equatorial Guinea	54.8	37.8	48.2	47.5	37.8	32.9	16.5	16.3	21.3	24.4	20.7	18.0
Eritrea	–33.9	–19.6	–8.6	–5.3	–3.3	–2.4	–7.4	–8.8	–8.1	–7.4	-6.8	-6.9
Eswatini	–3.6	–3.3	–4.1	–1.1	4.2	5.0	4.5	6.5	5.2	4.1	4.3	5.2
Ethiopia[1]	–20.6	–16.3	–16.6	–17.3	–18.0	–18.3	–21.3	–19.5	–17.0	–15.5	-15.0	-14.1
Gabon	41.6	38.7	49.4	42.3	32.2	28.1	15.5	13.3	19.1	21.9	19.3	21.0
Gambia, The	–12.8	–13.3	–13.6	–14.1	–12.6	–16.8	–19.1	–15.3	–18.5	–22.7	-25.3	-25.6
Ghana	–10.8	–6.9	–5.7	–7.5	–6.1	–2.6	–6.4	–3.2	2.0	2.7	2.6	2.0
Guinea	2.2	1.8	–9.3	–3.5	–0.4	–5.0	–4.7	–23.2	–0.7	–5.0	-7.1	-4.9
Guinea-Bissau	–6.0	–8.2	–0.2	–5.1	–2.9	–4.6	4.3	3.9	3.6	4.1	1.2	1.6
Kenya	–12.2	–15.6	–20.1	–18.5	–18.6	–17.4	–13.1	–10.8	–12.9	–12.4	-11.6	-11.7
Lesotho	–38.4	–43.1	–39.3	–45.1	–39.0	–36.0	–32.2	–29.9	–29.1	–26.6	-31.4	-25.8
Liberia	–26.4	–13.3	–21.3	–24.8	–17.0	–40.4	–40.4	–28.2	–20.2	–17.7	-17.0	-16.0
Madagascar	–13.5	–12.0	–10.1	–11.2	–8.0	–5.1	–3.4	–2.7	–3.9	–3.9	-5.2	-6.0
Malawi	–12.8	–10.7	–7.9	–10.9	–7.8	–7.4	–7.6	–10.8	–10.4	–8.6	-7.6	-7.6
Mali	–4.4	–8.6	–2.6	0.9	–1.9	–3.5	–3.6	–4.1	–4.0	–4.4	-3.8	-4.5
Mauritius	–14.6	–18.9	–20.4	–21.1	–18.7	–17.7	–16.0	–16.6	–19.8	–21.1	-22.5	-21.7
Mozambique	–5.5	–11.3	–17.1	–26.7	–31.1	–27.7	–28.1	–12.9	–4.0	–12.2	-14.6	-15.5
Namibia	–4.0	–9.9	–8.8	–16.4	–15.6	–21.5	–24.6	–19.1	–12.3	–12.1	-11.6	-12.2
Niger	–6.9	–14.2	–14.4	–6.6	–5.6	–9.0	–12.2	–9.0	–9.2	–9.8	-13.4	-15.0
Nigeria	15.3	8.2	7.9	8.5	8.2	3.7	–1.3	–0.1	3.5	4.8	2.4	2.4
Rwanda	–12.6	–17.6	–17.0	–17.4	–15.1	–15.8	–14.9	–15.3	–9.5	–9.5	-10.2	-10.0
São Tomé & Príncipe	–36.6	–43.2	–44.9	–38.2	–38.2	–36.5	–34.1	–29.8	–28.6	–26.0	-24.3	-22.2
Senegal	–14.5	–11.8	–14.0	–16.2	–15.8	–14.3	–12.4	–10.4	–12.6	–12.7	-12.0	-13.0
Seychelles	–29.8	–39.3	–43.0	–38.5	–29.7	–40.3	–34.3	–37.3	–41.4	–39.1	-38.7	-37.9
Sierra Leone	–7.5	–20.2	–56.9	–24.1	–0.6	–6.8	–18.0	–7.6	–14.6	–15.9	-10.0	-9.6
South Africa	–0.6	2.2	1.6	–1.1	–2.0	–1.4	–1.1	0.8	1.6	0.6	0.3	0.0
South Sudan	...	...	49.1	–19.6	1.9	9.5	–1.3	12.3	5.9	8.0	9.2	5.6
Tanzania	–9.8	–9.5	–12.2	–12.8	–11.8	–11.0	–9.1	–6.1	–5.6	–5.6	-5.8	-6.1
Togo	–13.2	–13.2	–21.7	–14.4	–20.1	–19.4	–24.7	–21.5	–20.1	–19.5	-17.3	-16.6
Uganda	–8.9	–10.9	–11.7	–10.0	–8.3	–8.9	–10.0	–6.5	–6.8	–7.9	-8.4	-8.5
Zambia	4.7	13.7	9.8	6.3	5.9	6.0	–0.3	–0.2	1.4	0.8	2.3	2.4
Zimbabwe[2]	–6.4	–14.9	–20.5	–15.3	–15.0	–12.9	–11.9	–7.5	–5.2	–8.5	-6.8	-5.3
Sub-Saharan Africa	**5.8**	**4.4**	**5.5**	**3.4**	**2.9**	**0.7**	**–3.2**	**–1.7**	**0.5**	**0.8**	**-0.5**	**-0.5**
Median	–8.2	–10.5	–9.3	–11.1	–6.1	–7.4	–9.1	–7.6	–5.6	–7.4	-6.8	-6.1
Excluding Nigeria and South Africa	5.1	3.4	6.5	2.6	1.7	–0.4	–5.2	–3.6	–1.3	–1.0	-2.3	-2.2
Oil-exporting countries	**21.9**	**15.2**	**18.0**	**15.7**	**13.5**	**8.2**	**1.2**	**2.9**	**7.2**	**9.3**	**6.0**	**6.1**
Excluding Nigeria	35.0	31.1	36.6	29.7	24.5	18.1	7.4	9.7	14.0	17.9	14.4	15.4
Oil-importing countries	**–3.9**	**–3.1**	**–3.8**	**–6.3**	**–6.2**	**–6.1**	**–6.8**	**–4.9**	**–3.6**	**–4.1**	**-4.3**	**-4.5**
Excluding South Africa	–7.2	–8.2	–8.9	–10.5	–9.1	–9.1	–10.1	–7.8	–6.4	–6.6	-6.6	-6.7
Middle-income countries	**8.4**	**7.1**	**8.0**	**6.5**	**5.6**	**3.3**	**–1.0**	**0.5**	**2.8**	**3.3**	**1.7**	**1.6**
Excluding Nigeria and South Africa	12.7	11.4	14.7	11.4	8.8	6.2	–0.6	1.0	3.2	4.0	2.1	2.1
Low-income countries	**–7.5**	**–9.3**	**–6.5**	**–11.2**	**–9.0**	**–9.8**	**–11.2**	**–9.4**	**–7.4**	**–7.4**	**-7.6**	**-7.4**
Excluding low-income countries in fragile situations	–11.5	–11.9	–13.8	–14.2	–13.4	–13.2	–14.4	–11.2	–9.8	–9.8	-9.9	-9.8
Countries in fragile situations	**6.2**	**3.1**	**10.4**	**1.0**	**2.7**	**0.6**	**–3.6**	**–3.3**	**0.8**	**1.4**	**1.2**	**1.2**
CFA franc zone	12.6	9.6	14.6	12.0	8.1	6.1	0.2	0.5	2.8	3.6	2.9	2.6
CEMAC	26.9	20.5	27.1	25.1	19.1	14.6	3.3	3.5	9.5	12.4	10.8	10.7
WAEMU	–1.9	–1.8	0.4	–2.4	–3.3	–2.3	–2.3	–1.7	–2.3	–2.9	-2.6	-2.9
COMESA (SSA members)	–9.8	–9.9	–11.3	–11.6	–10.1	–10.9	–11.5	–10.2	–9.5	–9.3	-9.2	-9.1
EAC-5	–10.9	–13.1	–15.9	–15.2	–14.4	–13.8	–11.6	–9.0	–9.5	–9.6	-9.4	-9.5
ECOWAS	8.8	4.8	4.6	4.8	4.9	1.9	–2.3	–1.4	1.7	2.4	0.9	0.9
SACU	–0.6	1.2	0.8	–2.3	–2.6	–2.1	–2.3	0.4	1.1	0.2	-0.2	-0.4
SADC	3.7	5.2	5.7	3.2	2.6	1.0	–1.5	0.9	2.4	2.0	0.7	0.7

See sources and footnotes on page 91.

Table SA20. External Current Account[1]
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	12.3	9.0	11.7	10.8	6.1	–2.6	–8.8	–4.8	–0.3	1.3	-3.8	-1.9
Benin	–6.7	–8.2	–7.3	–7.4	–8.4	–9.9	–10.0	–9.4	–9.9	–8.9	-8.4	-7.4
Botswana	10.7	–2.8	3.1	0.3	8.9	15.4	7.8	13.7	12.3	9.6	8.6	8.0
Burkina Faso	–10.4	–2.2	–4.0	–7.1	–11.3	–8.1	–8.6	–7.6	–9.4	–7.5	-5.8	-4.8
Burundi	–7.8	–12.2	–14.4	–18.6	–19.3	–18.5	–17.7	–13.1	–12.3	–13.4	-12.6	-11.9
Cabo Verde	–9.5	–12.4	–16.3	–12.6	–4.9	–9.1	–3.2	–2.4	–6.2	–7.1	-7.3	-6.5
Cameroon	–0.9	–2.5	–2.7	–3.3	–3.6	–4.0	–3.8	–3.2	–2.7	–4.0	-3.7	-3.4
Central African Rep.	–5.5	–10.2	–7.6	–6.5	–3.3	–14.8	–9.7	–5.5	–8.3	–8.6	-6.1	-6.0
Chad	0.4	–8.5	–5.8	–7.8	–9.1	–8.9	–13.6	–9.2	–5.7	–4.8	-6.1	-4.3
Comoros	–6.3	–0.4	–6.0	–5.5	–7.0	–6.3	–0.4	–6.5	–4.0	–9.1	-8.9	-8.8
Congo, Dem. Rep. of	–0.2	–10.5	–5.2	–4.6	–5.0	–4.6	–3.7	–3.1	–0.5	–0.5	-1.8	-2.9
Congo, Rep. of	3.2	7.3	13.9	17.7	13.8	1.3	–54.2	–46.2	–3.9	5.5	4.7	5.9
Côte d'Ivoire	1.1	1.9	10.4	–1.2	–1.4	1.4	–0.6	–1.2	–2.8	–3.4	-3.0	-2.8
Equatorial Guinea	13.6	–20.2	–5.7	–1.1	–2.4	–4.3	–16.4	–13.0	–5.8	–3.6	-4.7	-5.7
Eritrea	–3.1	–6.1	3.2	2.7	3.6	4.0	–1.4	–2.1	–2.4	–1.6	-2.0	-2.0
Eswatini	–3.1	–8.7	1.0	12.2	17.0	17.5	18.0	14.3	12.5	9.9	10.0	11.6
Ethiopia[2]	–8.4	–1.4	–2.5	–7.1	–6.1	–6.6	–10.4	–9.3	–8.6	–6.5	-6.0	-5.4
Gabon	17.2	14.9	24.0	17.9	7.3	7.6	–5.6	–9.9	–4.4	–1.9	-3.6	-1.2
Gambia, The	–5.1	–9.5	–7.5	–4.5	–6.8	–7.2	–9.8	–9.4	–7.1	–11.5	-9.8	-12.7
Ghana	–5.9	–6.4	–6.6	–8.7	–9.0	–7.0	–5.8	–5.2	–3.4	–3.2	-3.0	-3.5
Guinea	–3.9	–6.4	–18.4	–19.9	–12.5	–12.9	–12.9	–31.6	–6.8	–16.1	-20.1	-17.3
Guinea-Bissau	–3.6	–8.3	–1.3	–8.4	–4.6	0.5	1.9	1.3	–0.6	–1.6	-3.9	-3.3
Kenya	–2.6	–5.9	–9.2	–8.4	–8.8	–10.4	–6.7	–5.2	–6.3	–5.4	-5.0	-4.9
Lesotho	15.1	–8.9	–13.4	–8.4	–5.1	–4.8	–3.9	–8.4	–4.6	–5.8	-12.6	-4.3
Liberia	–9.0	–20.7	–17.6	–17.3	–21.7	–26.4	–26.7	–18.6	–23.4	–23.3	-23.4	-23.6
Madagascar	–13.1	–10.4	–7.7	–8.9	–6.3	–0.3	–1.9	0.6	–0.5	0.3	-1.4	-3.5
Malawi	–12.9	–8.6	–8.6	–9.2	–8.4	–8.2	–8.9	–12.9	–11.0	–9.2	-6.8	-7.6
Mali	–7.3	–10.7	–5.1	–2.2	–2.9	–4.7	–5.3	–7.2	–5.9	–7.3	-5.6	-6.1
Mauritius	–6.0	–10.0	–13.5	–7.1	–6.2	–5.4	–3.6	–4.0	–5.6	–6.2	-7.4	-6.7
Mozambique	–8.9	–16.1	–25.3	–44.7	–42.9	–38.2	–40.3	–39.3	–20.2	–34.4	-51.1	-63.8
Namibia	6.7	–3.5	–3.0	–5.7	–4.0	–10.8	–12.4	–12.8	–6.2	–4.3	-3.9	-3.2
Niger	–9.2	–19.8	–22.3	–14.7	–15.0	–15.8	–20.5	–15.5	–15.7	–16.3	-21.0	-23.1
Nigeria	14.0	3.6	2.6	3.8	3.7	0.2	–3.2	0.7	2.8	2.1	-0.4	-0.2
Rwanda	–5.6	–7.2	–7.5	–10.0	–8.7	–11.8	–13.3	–14.3	–6.8	–7.8	-9.2	-8.7
São Tomé & Príncipe	–28.1	–22.9	–27.7	–21.9	–15.2	–22.1	–12.3	–6.5	–12.7	–10.6	-9.4	-8.2
Senegal	–7.6	–3.5	–6.5	–8.7	–8.2	–7.0	–5.6	–4.0	–7.3	–7.2	-7.3	-10.2
Seychelles	–13.8	–19.4	–23.0	–21.1	–11.9	–23.1	–18.6	–20.1	–20.5	–16.3	-16.0	-15.7
Sierra Leone	–6.9	–22.7	–65.0	–31.8	–17.5	–9.3	–15.5	–2.3	–10.9	–13.8	-10.9	-9.7
South Africa	–4.3	–1.5	–2.2	–5.1	–5.8	–5.1	–4.6	–2.8	–2.4	–3.4	-3.4	-3.7
South Sudan	...	...	18.2	–15.9	–3.9	–1.5	–7.1	0.1	–6.6	–12.5	-12.0	-19.3
Tanzania	–6.5	–7.7	–10.8	–11.5	–10.3	–9.7	–8.1	–4.4	–3.3	–3.7	-3.9	-4.2
Togo	–8.1	–5.8	–7.8	–7.6	–13.2	–10.0	–11.0	–9.7	–7.9	–7.9	-6.2	-5.2
Uganda	–2.7	–8.0	–9.9	–6.7	–7.2	–8.1	–7.3	–3.4	–5.0	–6.8	-8.2	-9.1
Zambia	–1.1	7.5	4.7	5.4	–0.6	2.1	–3.9	–4.5	–3.9	–5.0	-2.9	-2.7
Zimbabwe[3]	0.3	–12.0	–17.2	–10.7	–13.2	–11.6	–7.6	–3.6	–1.3	–4.0	-3.0	-4.6
Sub-Saharan Africa	**2.1**	**–0.8**	**–0.6**	**–1.7**	**–2.2**	**–3.6**	**–5.9**	**–3.7**	**–2.1**	**–2.6**	**-3.7**	**-3.7**
Median	–5.3	–8.1	–6.6	–7.4	–6.3	–7.0	–7.6	–5.5	–5.8	–6.2	-6.0	-5.2
Excluding Nigeria and South Africa	–0.1	–3.2	–1.5	–3.3	–4.3	–5.6	–8.3	–6.4	–4.3	–4.4	-5.5	-5.5
Oil-exporting countries	**12.4**	**3.5**	**4.8**	**4.7**	**3.5**	**–0.6**	**–5.3**	**–1.8**	**1.1**	**1.2**	**-1.3**	**-0.8**
Excluding Nigeria	9.0	3.5	8.9	6.6	3.2	–2.3	–10.4	–7.4	–1.8	–0.7	-3.6	-2.3
Oil-importing countries	**–4.1**	**–3.8**	**–4.6**	**–6.8**	**–7.0**	**–6.4**	**–6.5**	**–5.0**	**–4.1**	**–4.8**	**-5.1**	**-5.5**
Excluding South Africa	–3.9	–6.1	–6.9	–8.1	–7.9	–7.2	–7.6	–6.1	–5.1	–5.5	-5.9	-6.3
Middle-income countries	**3.6**	**0.7**	**0.9**	**0.3**	**–0.3**	**–2.2**	**–4.8**	**–2.4**	**–0.9**	**–1.2**	**-2.4**	**-2.2**
Excluding Nigeria and South Africa	3.3	0.0	2.5	1.6	–0.5	–3.0	–6.9	–5.0	–2.8	–2.3	-3.4	-3.1
Low-income countries	**–5.8**	**–8.5**	**–8.0**	**–11.0**	**–10.1**	**–9.4**	**–10.2**	**–8.3**	**–6.3**	**–7.1**	**-7.9**	**-8.5**
Excluding low-income countries in fragile situations	–7.4	–7.6	–10.7	–12.6	–11.7	–10.8	–11.8	–8.7	–7.5	–7.9	-9.1	-9.8
Countries in fragile situations	**–1.7**	**–5.7**	**–0.2**	**–5.0**	**–4.8**	**–5.0**	**–8.6**	**–8.0**	**–3.9**	**–4.6**	**-4.7**	**-4.8**
CFA franc zone	0.4	–3.4	0.9	–1.0	–3.0	–3.6	–9.1	–7.8	–5.5	–5.0	-5.1	-5.1
CEMAC	5.7	–2.5	3.6	3.3	0.3	–2.2	–13.1	–11.0	–4.0	–2.6	-3.2	-2.4
WAEMU	–5.0	–4.4	–2.2	–5.6	–6.4	–5.0	–5.8	–5.4	–6.6	–6.7	-6.5	-6.9
COMESA (SSA members)	–4.1	–5.6	–6.5	–5.8	–6.3	–6.4	–6.7	–5.6	–5.2	–4.9	-4.8	-5.0
EAC-5	–4.1	–7.1	–9.9	–9.3	–9.2	–10.0	–7.9	–5.3	–5.3	–5.3	-5.5	-5.7
ECOWAS	7.9	1.0	0.2	0.7	0.6	–1.4	–4.1	–1.6	–0.2	–0.9	-2.4	-2.4
SACU	–3.3	–1.7	–2.1	–4.8	–4.9	–4.1	–4.1	–2.2	–1.7	–2.7	-2.8	-3.0
SADC	–1.7	–1.4	–1.3	–3.1	–4.1	–5.0	–6.2	–3.8	–2.1	–2.9	-4.1	-4.5

See sources and footnotes on page 91.

Table SA21. Net Foreign Direct Investment
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	–0.5	–5.5	–4.6	–7.5	–9.6	–1.6	7.1	–0.4	–3.3	–2.9	1.7	1.7
Benin	2.1	2.8	1.3	2.6	3.3	4.0	1.4	1.3	1.7	1.9	1.9	1.9
Botswana	4.2	1.7	9.0	5.3	5.3	2.5	2.1	–1.2	0.4	–0.5	-0.8	-0.7
Burkina Faso	1.6	0.4	0.4	2.3	3.6	2.3	2.1	3.1	3.0	3.0	2.9	2.8
Burundi	0.1	0.0	0.2	0.0	2.6	2.4	1.5	1.2	1.1	1.2	1.2	1.2
Cabo Verde	9.4	6.7	5.6	3.8	3.5	6.8	7.0	6.8	5.4	7.1	7.0	7.1
Cameroon	1.7	1.6	1.6	2.8	2.7	2.6	1.9	1.7	2.3	1.6	2.0	2.2
Central African Rep.	3.3	3.1	1.7	2.2	0.1	3.5	0.0	0.4	0.4	0.8	1.1	1.4
Chad	8.5	5.2	4.5	4.7	4.0	5.2	5.1	2.4	3.7	4.4	5.1	4.5
Comoros	0.6	1.5	3.8	1.7	1.4	0.7	0.8	0.4	0.6	1.1	1.1	1.1
Congo, Dem. Rep. of	5.3	13.3	6.5	10.5	5.2	5.1	3.0	2.4	2.6	1.9	2.5	2.9
Congo, Rep. of	11.2	7.6	1.3	–2.1	4.3	11.6	44.3	7.9	3.7	3.1	4.1	4.2
Côte d'Ivoire	1.9	1.3	1.1	1.2	1.3	1.2	1.4	1.6	1.6	1.6	1.6	1.7
Equatorial Guinea	9.3	20.4	12.8	15.7	9.8	5.2	9.0	2.9	5.0	4.6	3.3	4.8
Eritrea	1.4	4.3	1.5	1.4	1.2	1.2	1.1	1.0	1.0	0.9	0.9	0.9
Eswatini	1.9	3.0	2.2	0.8	2.0	0.6	1.0	0.7	–2.8	–0.0	0.5	0.5
Ethiopia[1]	1.4	1.0	2.0	0.7	2.6	2.7	3.5	4.6	5.5	4.6	4.6	4.9
Gabon	4.2	3.5	4.1	3.9	5.1	5.8	6.9	8.9	9.1	9.3	10.7	9.1
Gambia, The	5.8	5.3	4.3	7.1	6.3	6.1	5.3	5.0	5.6	7.0	6.7	6.5
Ghana	2.1	5.9	6.0	5.8	5.1	6.3	6.1	6.3	5.5	4.5	5.0	4.2
Guinea	4.0	2.2	5.6	8.8	1.6	0.7	3.0	18.4	12.6	13.2	9.5	13.6
Guinea-Bissau	1.2	3.3	2.2	0.7	1.9	2.5	1.5	2.0	1.1	2.5	2.9	3.0
Kenya	0.5	0.4	3.3	2.3	1.7	1.2	0.6	0.3	0.5	0.7	0.7	0.6
Lesotho	2.2	0.9	2.2	2.1	1.9	4.2	4.6	2.7	1.6	1.5	1.6	1.6
Liberia	3.7	16.2	17.0	16.6	17.6	11.0	9.1	7.1	7.4	8.8	10.6	12.0
Madagascar	3.7	3.9	7.8	7.8	5.2	2.9	4.5	4.5	3.1	3.9	2.7	2.8
Malawi	1.8	2.3	0.8	1.4	1.7	0.8	1.8	3.1	2.1	1.9	2.1	2.1
Mali	1.8	3.7	4.2	3.1	2.3	1.0	1.5	1.9	2.8	2.8	2.8	2.8
Mauritius	1.5	124.0	–8.8	48.5	9.9	159.0	38.4	66.0	38.6	36.6	35.6	35.8
Mozambique	3.8	9.8	27.1	37.1	38.6	29.1	26.1	28.4	18.2	13.6	19.5	22.8
Namibia	6.3	7.0	7.0	8.6	6.5	4.7	7.9	3.2	5.3	5.7	3.3	3.2
Niger	2.3	17.5	16.5	12.1	8.1	8.9	6.8	3.4	3.8	5.4	7.0	9.2
Nigeria	2.1	1.4	1.9	1.2	0.8	0.5	0.3	0.8	0.6	0.3	0.5	0.5
Rwanda	1.2	0.7	1.6	2.2	3.4	3.9	2.7	2.9	2.7	3.0	3.2	3.3
São Tomé & Príncipe	17.1	25.6	13.5	8.6	1.5	6.5	8.2	5.8	10.6	6.3	6.5	6.5
Senegal	1.3	1.6	1.6	1.2	1.5	1.9	2.1	1.3	2.4	2.0	3.1	4.1
Seychelles	11.9	19.2	19.5	23.8	12.2	16.1	10.8	12.8	18.0	9.6	10.6	10.6
Sierra Leone	3.9	9.2	32.3	19.0	7.3	7.7	6.2	4.2	3.9	7.6	7.7	7.6
South Africa	1.1	1.0	1.1	0.4	0.5	–0.5	–1.3	–0.8	–1.7	–0.7	-0.2	-0.1
South Sudan	...	...	–0.4	–0.5	–3.8	–0.0	0.2	–1.1	0.7	–0.0	-0.7	5.1
Tanzania	3.5	4.0	4.5	4.4	4.4	3.7	3.3	2.4	1.8	1.8	1.7	1.7
Togo	2.8	1.4	–13.9	–7.7	4.7	–6.7	–2.2	–6.8	–3.1	–2.6	-1.6	-0.2
Uganda	4.7	2.5	4.3	4.7	4.4	3.9	3.2	2.5	2.6	3.4	4.8	5.7
Zambia	5.9	3.1	4.7	9.5	6.0	11.8	5.5	7.3	4.1	2.3	2.7	2.8
Zimbabwe[2]	0.6	1.0	2.4	2.0	2.0	2.4	2.0	1.7	1.4	1.4	1.0	0.9
Sub-Saharan Africa	**2.0**	**2.8**	**2.2**	**2.2**	**1.4**	**2.8**	**2.4**	**2.2**	**1.3**	**1.5**	**2.0**	**2.2**
Median	2.3	3.1	3.3	2.8	3.4	3.5	3.0	2.5	2.6	2.5	2.8	2.9
Excluding Nigeria and South Africa	2.7	5.1	3.0	3.8	2.3	5.8	5.3	4.1	3.0	2.9	3.7	3.9
Oil-exporting countries	**2.3**	**1.2**	**1.2**	**0.2**	**–0.6**	**0.7**	**2.4**	**1.0**	**0.3**	**0.3**	**1.2**	**1.2**
Excluding Nigeria	2.7	0.7	–0.2	–1.9	–3.5	1.2	7.4	1.4	–0.3	0.3	3.0	3.1
Oil-importing countries	**1.9**	**4.0**	**2.9**	**3.8**	**3.1**	**4.7**	**2.4**	**3.0**	**2.0**	**2.2**	**2.5**	**2.7**
Excluding South Africa	2.8	6.9	4.7	6.6	5.0	8.0	4.5	4.9	4.1	3.7	3.9	4.1
Middle-income countries	**1.8**	**2.5**	**1.6**	**1.4**	**0.5**	**2.4**	**2.0**	**1.6**	**0.6**	**0.8**	**1.4**	**1.4**
Excluding Nigeria and South Africa	2.4	5.4	1.7	2.4	0.2	6.7	6.3	4.1	2.4	2.4	3.5	3.4
Low-income countries	**3.3**	**4.5**	**5.1**	**6.1**	**5.3**	**4.6**	**4.1**	**4.1**	**3.9**	**3.7**	**4.0**	**4.5**
Excluding low-income countries in fragile situations	2.9	3.8	6.7	7.0	7.0	5.8	5.1	4.7	4.4	4.1	4.6	5.1
Countries in fragile situations	**4.0**	**5.1**	**2.6**	**3.5**	**2.7**	**3.1**	**4.3**	**2.9**	**2.7**	**2.7**	**2.7**	**3.2**
CFA franc zone	3.8	5.1	3.5	3.9	3.8	3.6	5.1	2.5	3.0	2.9	3.3	3.5
CEMAC	5.7	7.1	4.8	5.5	5.0	5.3	9.0	3.9	4.2	3.9	4.4	4.3
WAEMU	1.8	2.9	2.1	2.2	2.6	2.0	1.9	1.5	2.0	2.1	2.5	2.9
COMESA (SSA members)	2.6	9.7	3.1	6.5	3.7	10.9	4.2	5.5	4.2	3.8	3.9	4.1
EAC-5	2.3	2.0	3.7	3.4	3.2	2.7	2.0	1.5	1.4	1.6	1.7	1.9
ECOWAS	2.1	2.1	2.6	2.0	1.6	1.3	1.1	1.8	1.7	1.5	1.6	1.7
SACU	1.3	1.2	1.5	0.8	0.9	–0.2	–0.7	–0.6	–1.4	–0.5	-0.1	0.0
SADC	1.5	3.1	1.4	1.9	0.6	4.2	3.0	2.3	0.3	0.8	1.9	2.0

See sources and footnotes on page 91.

Table SA22. Real Effective Exchange Rates[1]
(Annual average; index, 2010 = 100)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	79.0	100.0	103.1	113.7	119.9	125.1	124.4	121.8	152.8	117.8
Benin	103.1	100.0	99.4	97.7	98.9	97.3	87.5	87.8	88.2	90.2
Botswana	91.9	100.0	100.1	109.0	92.6	89.8	89.6	87.6	92.1	93.0
Burkina Faso	102.1	100.0	100.3	98.8	100.4	101.7	96.0	95.5	95.1	97.5
Burundi	86.6	100.0	100.8	102.5	100.5	104.2	117.6	119.0	129.8	118.4
Cabo Verde	97.4	100.0	101.6	99.1	101.6	100.9	97.2	96.2	96.4	97.3
Cameroon	102.3	100.0	100.2	96.4	98.9	99.7	93.5	95.6	96.6	98.0
Central African Rep.	97.0	100.0	98.4	97.8	105.1	116.4	113.0	119.2	123.3	129.0
Chad	98.4	100.0	93.6	100.0	100.5	101.0	95.7	92.8	88.6	84.8
Comoros	101.6	100.0	101.4	100.7	101.8	100.6	93.0	95.4	93.2	96.3
Congo, Dem. Rep. of	147.8	100.0	105.8	115.8	116.3	117.8	131.1	127.2	101.4	111.1
Congo, Rep. of	99.7	100.0	98.5	93.3	99.4	100.6	95.3	99.3	98.8	101.4
Côte d'Ivoire	102.5	100.0	102.2	97.4	100.7	101.2	94.5	95.7	95.1	97.2
Equatorial Guinea	91.5	100.0	102.3	99.4	102.7	106.1	99.3	101.7	102.3	104.1
Eritrea	58.6	100.0	110.7	131.2	153.4	180.0	226.7	269.7	311.0	357.3
Eswatini	93.5	100.0	100.5	99.6	93.0	88.9	87.5	85.9	92.6	93.6
Ethiopia	104.5	100.0	105.1	124.6	125.5	128.2	143.7	148.3	146.3	139.1
Gabon	101.8	100.0	98.1	94.8	96.1	100.3	93.6	95.7	97.7	103.0
Gambia, The	102.5	100.0	92.5	89.0	81.6	73.7	73.3	88.9	90.4	89.0
Ghana	104.4	100.0	95.2	86.5	86.2	66.4	64.7	74.2	73.6	73.8
Guinea	96.0	100.0	96.2	106.1	117.7	127.8	140.8	128.4	134.7	144.5
Guinea-Bissau	99.8	100.0	102.7	99.5	101.3	100.2	95.4	97.3	97.7	100.0
Kenya	93.8	100.0	95.1	108.7	111.8	115.6	117.4	122.7	128.1	132.6
Lesotho	92.2	100.0	99.6	95.4	85.7	80.2	76.3	71.5	79.5	80.6
Liberia	95.9	100.0	99.6	107.8	106.9	107.0	127.4	128.4	117.0	108.5
Madagascar	86.6	100.0	104.4	103.1	106.6	102.9	100.0	99.7	106.9	103.4
Malawi	97.9	100.0	96.8	78.5	65.3	70.6	79.6	68.4	71.4	77.3
Mali	98.7	100.0	100.2	100.4	100.5	101.6	97.0	95.1	95.6	98.1
Mauritius	98.8	100.0	109.9	111.2	110.9	114.3	110.8	112.1	116.2	117.9
Mozambique	119.8	100.0	121.2	129.6	128.8	127.7	115.7	88.7	94.0	100.3
Namibia	93.8	100.0	98.7	95.4	87.4	82.6	79.5	76.5	83.9	85.0
Niger	102.5	100.0	99.6	93.8	96.8	95.7	90.8	91.6	93.0	97.8
Nigeria	89.4	100.0	100.5	110.5	117.4	124.5	119.0	110.2	100.8	109.1
Rwanda	86.7	100.0	94.8	97.6	96.8	92.6	97.6	97.9	99.5	93.1
São Tomé & Príncipe	83.6	100.0	111.5	116.6	127.2	136.1	136.9	144.7	151.9	165.2
Senegal	105.6	100.0	100.9	96.1	97.3	96.2	88.2	90.2	90.6	92.1
Seychelles	133.7	100.0	92.1	90.9	105.9	102.3	112.5	112.4	108.8	106.6
Sierra Leone	95.7	100.0	102.0	118.1	126.8	131.5	142.6	129.7	112.3	102.4
South Africa	95.7	100.0	98.3	92.4	82.0	77.0	75.1	70.4	79.3	80.7
South Sudan	...	...	...	...	...	...	...	...	...	...
Tanzania	100.9	100.0	93.0	107.1	113.2	115.0	107.9	104.9	105.3	104.0
Togo	100.6	100.0	100.6	96.5	98.4	98.8	93.2	95.4	94.7	95.8
Uganda	103.6	100.0	94.2	104.7	105.5	107.2	100.7	97.4	94.9	91.3
Zambia	90.4	100.0	97.2	99.2	102.5	97.9	86.2	85.0	94.9	89.1
Zimbabwe	...	...	...	...	...	...	...	...	...	...
Sub-Saharan Africa	**94.8**	**100.0**	**99.6**	**103.2**	**103.3**	**103.2**	**100.5**	**97.3**	**98.4**	**99.9**
Median	98.4	100.0	100.2	99.5	101.3	101.2	97.0	96.2	96.6	98.1
Excluding Nigeria and South Africa	97.5	100.0	99.6	103.9	105.6	104.5	103.0	103.6	106.5	104.2
Oil-exporting countries	**89.1**	**100.0**	**100.7**	**108.8**	**115.0**	**120.9**	**116.0**	**109.6**	**105.8**	**108.7**
Excluding Nigeria	89.0	100.0	101.0	104.6	108.8	112.2	108.3	108.2	120.8	107.7
Oil-importing countries	**99.0**	**100.0**	**98.8**	**99.2**	**95.5**	**92.0**	**90.6**	**89.1**	**93.0**	**93.7**
Excluding South Africa	100.6	100.0	99.2	103.7	104.6	102.2	101.3	102.1	102.6	102.8
Middle-income countries	**93.0**	**100.0**	**99.5**	**101.9**	**101.6**	**101.2**	**97.5**	**94.0**	**95.9**	**98.0**
Excluding Nigeria and South Africa	93.9	100.0	99.4	100.8	102.5	99.4	96.0	98.8	105.1	101.4
Low-income countries	**102.6**	**100.0**	**99.9**	**108.2**	**110.0**	**111.6**	**112.8**	**110.4**	**108.8**	**108.2**
Excluding low-income countries in fragile situations	101.2	100.0	99.8	110.4	112.9	113.9	113.3	111.1	111.0	108.5
Countries in fragile situations	**104.5**	**100.0**	**100.4**	**100.9**	**102.4**	**104.6**	**105.8**	**104.7**	**100.9**	**104.7**
CFA franc zone	100.8	100.0	100.0	97.2	99.5	100.4	94.0	95.2	95.3	97.2
CEMAC	99.0	100.0	99.1	96.9	99.6	101.6	95.5	97.2	97.4	99.0
WAEMU	102.4	100.0	100.8	97.5	99.4	99.4	92.8	93.5	93.5	95.7
COMESA (SSA members)	99.8	100.0	99.9	109.2	110.3	111.8	115.1	116.0	116.3	115.3
EAC-5	97.4	100.0	94.3	106.5	109.8	112.0	109.3	109.3	110.9	110.3
ECOWAS	92.9	100.0	100.0	105.6	110.8	112.6	107.9	103.7	97.5	103.3
SACU	95.4	100.0	98.4	93.2	82.7	77.8	75.9	71.4	80.1	81.4
SADC	95.2	100.0	99.5	99.2	93.5	90.8	88.6	84.1	92.6	90.6

See sources and footnotes on page 91.

Table SA23. Nominal Effective Exchange Rates[1]
(Annual average; index, 2010 = 100)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	117.2	100.0	94.2	96.9	96.2	95.3	87.6	66.0	64.0	42.2
Benin	104.1	100.0	101.2	96.2	99.3	100.9	92.3	95.5	97.9	101.3
Botswana	117.1	100.0	95.9	99.9	82.4	78.3	77.0	74.6	77.6	77.7
Burkina Faso	98.9	100.0	102.0	100.2	104.6	109.0	104.7	107.1	109.2	113.0
Burundi	109.8	100.0	97.7	88.4	83.4	85.7	94.9	93.9	92.1	90.1
Cabo Verde	100.9	100.0	100.7	98.4	101.0	101.3	98.0	99.3	100.4	101.9
Cameroon	102.0	100.0	101.2	97.7	100.6	101.7	94.4	97.6	100.3	103.2
Central African Rep.	101.1	100.0	101.2	98.1	102.0	104.2	99.0	102.9	106.4	111.5
Chad	99.6	100.0	101.0	97.5	100.3	101.4	94.8	97.9	100.3	103.3
Comoros	98.8	100.0	104.1	101.2	105.5	107.6	101.2	105.1	107.5	113.4
Congo, Dem. Rep. of	192.4	100.0	96.2	101.0	104.2	107.7	122.5	120.2	81.3	72.6
Congo, Rep. of	98.3	100.0	102.8	99.2	103.5	105.4	100.5	105.9	108.4	115.2
Côte d'Ivoire	100.7	100.0	101.4	98.6	102.3	105.1	99.5	103.6	105.8	111.6
Equatorial Guinea	99.8	100.0	101.4	98.1	100.4	101.3	94.3	96.9	99.0	102.2
Eritrea	99.7	100.0	97.6	100.9	102.9	105.4	116.0	120.7	121.8	121.8
Eswatini	103.8	100.0	99.6	95.3	88.1	83.5	81.2	77.7	82.4	82.7
Ethiopia	164.4	100.0	82.6	81.7	78.6	76.7	80.0	78.7	72.7	62.7
Gabon	101.3	100.0	100.9	97.8	101.4	103.4	98.2	100.7	102.5	105.9
Gambia, The	107.0	100.0	92.7	88.7	79.2	69.0	65.4	75.3	72.8	69.2
Ghana	156.3	100.0	91.4	80.0	73.6	50.3	42.5	42.4	38.3	35.9
Guinea	166.1	100.0	82.6	81.2	82.8	84.0	87.6	75.6	74.5	74.6
Guinea-Bissau	100.1	100.0	101.4	98.9	102.1	104.0	99.1	101.4	103.1	106.5
Kenya	109.5	100.0	87.8	95.5	96.0	95.7	93.4	93.9	93.3	94.9
Lesotho	105.2	100.0	98.5	91.8	80.7	73.3	68.5	61.2	66.2	66.2
Liberia	124.6	100.0	95.6	99.8	94.3	87.7	98.4	92.6	76.9	59.3
Madagascar	113.4	100.0	99.4	95.8	96.0	89.4	82.1	78.1	79.0	73.0
Malawi	117.4	100.0	94.0	66.7	44.0	39.7	38.1	27.6	26.4	26.3
Mali	100.0	100.0	101.2	99.1	102.3	104.6	100.2	102.1	103.1	105.7
Mauritius	105.3	100.0	103.4	104.0	102.8	105.0	102.0	104.0	106.3	106.5
Mozambique	141.9	100.0	113.5	122.9	121.4	121.3	108.9	74.0	69.3	72.4
Namibia	105.3	100.0	98.1	92.2	82.7	76.2	72.6	67.5	71.9	71.8
Niger	102.0	100.0	100.5	96.8	99.9	101.6	97.2	99.4	100.6	103.5
Nigeria	120.3	100.0	94.5	95.4	96.0	96.4	86.2	70.9	56.5	55.8
Rwanda	99.4	100.0	100.5	100.7	98.1	94.6	101.6	97.7	96.1	93.8
São Tomé & Príncipe	158.5	100.0	101.2	98.6	101.2	102.7	100.0	102.3	104.3	107.9
Senegal	100.9	100.0	102.1	99.6	103.4	105.7	99.3	102.6	104.5	108.8
Seychelles	202.0	100.0	93.6	88.7	101.5	97.8	105.5	108.0	103.8	100.4
Sierra Leone	141.2	100.0	89.6	94.3	94.9	93.1	94.3	78.5	66.9	62.0
South Africa	109.8	100.0	97.3	89.1	76.7	69.3	65.7	58.9	64.6	64.6
South Sudan	...	...	...	...	...	...	...	...	...	...
Tanzania	118.4	100.0	87.7	90.0	90.9	89.5	81.7	77.4	76.0	74.5
Togo	99.1	100.0	101.5	98.2	101.5	104.2	98.2	101.9	105.0	108.7
Uganda	119.7	100.0	86.6	90.3	90.8	92.7	81.9	80.5	77.7	75.4
Zambia	116.7	100.0	95.7	95.3	95.0	86.9	71.7	61.3	66.9	61.3
Zimbabwe	...	...	...	...	...	...	...	...	...	...
Sub-Saharan Africa	**117.5**	**100.0**	**95.0**	**93.0**	**89.6**	**86.2**	**80.1**	**72.0**	**67.6**	**65.2**
Median	105.3	100.0	99.4	97.5	99.3	97.8	94.8	95.5	93.3	93.8
Excluding Nigeria and South Africa	118.9	100.0	94.2	93.2	92.0	88.3	83.4	79.2	76.9	72.2
Oil-exporting countries	**116.5**	**100.0**	**95.4**	**95.9**	**96.7**	**97.1**	**87.7**	**73.7**	**62.3**	**58.9**
Excluding Nigeria	108.2	100.0	97.9	97.5	98.7	98.9	91.8	81.6	81.4	68.1
Oil-importing countries	**117.8**	**100.0**	**94.7**	**90.9**	**84.8**	**79.0**	**74.9**	**70.6**	**71.0**	**69.5**
Excluding South Africa	122.9	100.0	93.0	91.9	90.0	85.2	80.9	78.3	75.4	72.9
Middle-income countries	**115.3**	**100.0**	**95.7**	**93.2**	**89.3**	**85.0**	**78.0**	**68.9**	**64.6**	**62.6**
Excluding Nigeria and South Africa	113.7	100.0	95.7	94.3	92.8	86.7	79.9	75.5	75.0	69.6
Low-income countries	**126.4**	**100.0**	**92.2**	**91.9**	**91.0**	**90.5**	**88.2**	**84.3**	**79.4**	**75.7**
Excluding low-income countries in fragile situations	126.0	100.0	90.6	91.4	91.0	90.1	86.1	82.0	79.0	74.7
Countries in fragile situations	**117.1**	**100.0**	**98.1**	**94.8**	**94.6**	**95.7**	**95.6**	**94.6**	**88.3**	**88.3**
CFA franc zone	100.7	100.0	101.5	98.3	101.7	103.7	97.7	100.9	103.1	107.0
CEMAC	100.7	100.0	101.4	98.0	101.1	102.4	96.0	99.2	101.6	105.2
WAEMU	100.7	100.0	101.5	98.7	102.3	104.9	99.3	102.4	104.4	108.6
COMESA (SSA members)	127.2	100.0	90.4	91.4	89.5	87.9	86.3	83.3	78.8	73.9
EAC-5	113.8	100.0	88.3	92.5	92.9	92.6	87.1	85.1	83.6	82.9
ECOWAS	120.0	100.0	95.0	94.0	94.1	91.1	82.2	71.9	61.0	60.4
SACU	109.8	100.0	97.3	89.7	77.3	70.1	66.6	60.0	65.6	65.6
SADC	115.1	100.0	96.3	92.1	83.7	78.4	73.9	65.0	66.9	62.6

See sources and footnotes on page 91.

Table SA24. External Debt, Official Debt, Debtor Based
(Percent of GDP)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	23.5	20.3	18.1	16.9	21.6	23.8	31.1	44.4	37.5	45.7	54.2	51.3
Benin	20.1	17.0	15.8	15.7	17.3	18.4	20.9	21.4	23.1	26.5	27.3	26.7
Botswana	3.8	15.3	12.3	12.4	12.1	11.6	11.3	10.0	13.9	11.2	10.4	8.8
Burkina Faso	29.5	26.7	21.2	23.1	22.4	21.4	25.8	26.5	25.3	23.8	24.0	23.0
Burundi	120.2	22.4	24.0	22.6	21.0	18.9	18.2	16.7	15.3	14.9	14.1	13.5
Cabo Verde	46.0	51.2	53.2	70.0	81.4	82.6	95.1	91.4	96.5	91.1	92.8	89.0
Cameroon	17.9	5.6	6.3	8.2	11.4	14.9	19.4	19.6	22.5	23.6	26.1	25.9
Central African Rep.	61.0	9.0	8.0	9.9	15.0	35.0	32.6	28.2	29.1	25.5	24.9	23.2
Chad	23.4	24.5	20.6	20.5	21.8	27.0	24.5	25.8	28.7	26.5	26.8	24.3
Comoros	73.0	48.9	44.9	40.7	18.6	19.1	23.0	26.4	29.5	28.7	32.6	33.6
Congo, Dem. Rep. of	88.9	24.2	20.7	18.3	15.0	13.0	13.2	13.8	13.1	12.9	11.7	11.3
Congo, Rep. of	61.5	17.1	17.0	25.3	23.5	22.1	39.1	49.3	39.9	31.6	31.6	32.5
Côte d'Ivoire	67.8	47.1	48.1	29.1	27.2	24.5	28.9	27.7	32.4	35.9	37.0	34.1
Equatorial Guinea	2.0	8.0	6.7	7.3	6.2	5.6	8.8	9.1	9.2	9.0	12.0	13.9
Eritrea	60.0	45.8	35.8	29.4	25.1	22.5	22.6	20.5	20.1	20.1	19.9	20.3
Eswatini	12.5	8.1	7.3	7.0	7.5	7.5	9.2	9.2	10.2	11.7	13.4	14.8
Ethiopia[1]	37.2	18.8	24.4	21.1	24.1	25.9	38.8	34.9	35.8	31.8	29.8	28.0
Gabon	32.8	16.8	15.4	16.6	24.2	25.3	33.3	35.6	40.6	36.8	41.7	41.8
Gambia, The	49.7	23.2	27.6	26.4	32.5	35.6	36.4	40.9	46.2	44.2	42.3	40.7
Ghana	17.3	14.5	14.3	16.2	18.8	26.1	32.5	29.9	29.1	27.9	29.9	27.8
Guinea	61.9	45.9	53.3	17.9	18.8	20.8	21.4	22.2	20.4	21.1	30.7	32.0
Guinea-Bissau	161.7	38.7	24.5	27.3	25.7	22.8	23.1	22.8	20.8	22.7	23.4	22.7
Kenya	25.2	21.5	22.4	21.1	19.3	22.8	24.6	26.1	26.9	28.4	28.9	27.2
Lesotho	39.5	29.0	27.3	29.4	33.0	31.2	35.8	34.8	32.9	32.9	33.8	34.2
Liberia	345.4	6.9	6.9	6.6	7.5	11.5	16.4	20.1	24.3	28.7	33.5	38.3
Madagascar	46.2	26.4	24.1	25.2	24.6	24.9	29.0	28.6	28.4	29.0	30.9	32.9
Malawi	42.2	12.4	11.4	20.1	26.6	25.9	25.2	31.3	32.8	30.3	29.8	30.0
Mali	27.9	21.4	19.0	22.2	22.2	19.6	22.2	23.8	25.6	23.3	23.8	23.5
Mauritius	11.4	11.6	12.4	13.0	15.9	15.5	16.1	14.6	12.9	11.5	16.4	17.4
Mozambique	46.6	38.4	33.7	33.2	47.0	52.4	66.6	92.4	94.3	84.4	106.7	102.6
Namibia	4.7	4.3	6.4	7.8	7.9	8.0	12.9	16.6	15.5	15.8	16.6	16.2
Niger	31.1	16.9	15.5	17.1	18.2	20.5	27.1	29.4	32.8	32.6	34.8	35.9
Nigeria	11.4	3.2	3.5	3.8	2.6	2.6	3.1	4.0	6.3	8.8	8.7	8.6
Rwanda	36.2	13.5	15.2	14.5	20.4	22.8	26.9	33.6	36.9	40.1	40.6	39.9
São Tomé & Príncipe	215.0	79.5	78.0	81.0	71.1	69.5	86.5	78.8	74.7	66.7	64.0	59.0
Senegal	22.7	21.7	22.4	24.9	26.3	29.1	30.9	31.2	41.0	43.6	44.9	42.6
Seychelles	62.0	49.3	48.1	48.3	39.2	37.3	34.8	31.8	30.0	28.1	26.5	24.1
Sierra Leone	71.4	30.4	32.4	25.8	21.3	22.5	29.1	36.7	40.3	42.9	44.4	44.6
South Africa	7.2	9.5	10.0	14.1	14.4	15.3	12.9	18.9	21.3	18.8	20.6	20.8
South Sudan	...	...	...	...	...	...	...	...	...	...	...	...
Tanzania	26.7	19.3	21.1	21.4	22.2	22.7	26.6	27.6	27.5	27.0	27.0	27.0
Togo	70.2	16.7	11.9	13.7	14.8	16.8	21.2	19.2	20.7	23.6	25.9	25.1
Uganda	27.1	13.4	14.2	14.6	16.2	15.9	21.4	21.8	25.4	27.3	29.3	31.2
Zambia	41.6	7.3	8.0	13.7	13.6	19.9	34.5	38.2	36.7	44.5	51.2	56.3
Zimbabwe[2]	49.2	48.8	40.5	35.3	32.9	32.1	32.7	33.8	31.1	27.0	32.2	27.7
Sub-Saharan Africa	**19.2**	**12.3**	**12.3**	**13.2**	**13.6**	**14.4**	**16.9**	**20.5**	**22.4**	**22.8**	**23.8**	**23.2**
Median	38.4	19.8	19.8	20.3	21.1	22.5	25.5	27.1	28.5	27.6	29.5	27.8
Excluding Nigeria and South Africa	33.2	20.2	19.4	18.8	20.6	22.4	27.9	30.1	30.2	30.8	32.7	31.6
Oil-exporting countries	**15.6**	**7.3**	**7.4**	**7.6**	**7.8**	**8.2**	**10.1**	**13.8**	**15.7**	**18.0**	**18.1**	**17.3**
Excluding Nigeria	23.9	16.5	15.1	15.5	19.1	21.2	27.9	36.1	33.1	36.3	41.1	39.6
Oil-importing countries	**21.6**	**15.8**	**15.8**	**17.5**	**18.4**	**20.0**	**22.3**	**25.0**	**26.4**	**25.5**	**27.1**	**26.7**
Excluding South Africa	36.9	21.8	21.4	20.3	21.2	23.0	27.9	28.2	29.3	29.2	30.5	29.6
Middle-income countries	**14.0**	**10.1**	**10.3**	**11.5**	**11.6**	**12.3**	**13.9**	**18.0**	**20.2**	**21.0**	**22.0**	**21.3**
Excluding Nigeria and South Africa	25.6	18.2	17.4	17.1	19.2	21.7	27.4	30.8	30.4	32.4	35.0	33.6
Low-income countries	**45.5**	**23.4**	**22.7**	**21.5**	**22.7**	**23.5**	**28.6**	**29.1**	**29.9**	**28.7**	**29.9**	**29.1**
Excluding low-income countries in fragile situations	33.4	20.5	21.6	21.1	23.6	24.9	32.8	33.1	34.4	33.0	34.1	33.4
Countries in fragile situations	**64.4**	**30.9**	**28.3**	**23.9**	**22.7**	**22.0**	**24.0**	**24.9**	**25.4**	**25.2**	**26.2**	**25.0**
CFA franc zone	34.0	20.7	19.2	18.3	19.5	20.4	25.2	26.0	29.1	29.4	31.2	30.3
CEMAC	25.3	12.3	11.5	13.5	15.6	17.7	23.2	25.0	26.6	25.2	27.7	27.8
WAEMU	42.8	29.5	27.8	23.6	23.6	23.1	26.8	26.8	30.9	32.5	33.6	32.1
COMESA (SSA members)	39.6	20.0	20.1	19.9	19.9	21.4	26.9	27.1	27.6	27.5	28.0	27.3
EAC-5	28.5	18.7	19.9	19.6	19.8	21.5	24.7	26.1	27.2	28.2	28.7	28.1
ECOWAS	20.6	9.2	9.1	8.3	7.7	7.8	9.5	11.4	14.4	16.6	16.8	16.2
SACU	7.3	9.7	10.0	13.9	14.1	15.0	12.9	18.4	20.7	18.4	20.0	20.1
SADC	15.8	13.7	13.5	16.2	17.7	19.0	20.3	26.0	26.1	25.6	28.0	27.7

See sources and footnotes on page 91.

Table SA25. Terms of Trade on Goods
(Index, 2010 = 100)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	92.0	100.0	124.6	131.6	129.4	118.2	69.1	59.0	76.4	86.1	65.8	71.3
Benin	42.1	100.0	107.4	74.5	63.9	62.4	60.0	61.8	54.5	49.2	44.2	40.4
Botswana	104.5	100.0	101.2	114.8	117.9	122.4	129.4	164.9	120.3	120.1	127.5	129.0
Burkina Faso	159.5	100.0	100.0	115.1	105.7	87.9	100.3	101.9	110.2	104.9	101.7	102.7
Burundi	68.8	100.0	91.0	72.3	65.3	81.9	47.0	60.2	58.4	51.5	52.0	53.8
Cabo Verde	100.2	100.0	107.4	106.8	95.4	89.6	67.5	68.6	80.3	90.3	82.2	84.9
Cameroon	113.7	100.0	100.5	110.5	108.9	100.9	87.0	89.1	86.8	89.1	83.6	81.3
Central African Rep.	93.3	100.0	100.8	100.5	121.7	140.0	209.2	208.3	169.6	147.0	157.5	156.5
Chad	76.0	100.0	121.2	123.0	134.7	128.3	67.1	62.3	81.1	97.7	82.1	83.4
Comoros	110.1	100.0	136.2	148.5	121.2	99.5	101.7	158.4	200.2	189.8	193.5	196.4
Congo, Dem. Rep. of	92.9	100.0	89.6	84.1	80.2	87.1	87.6	88.5	121.2	112.7	92.9	92.7
Congo, Rep. of	100.2	100.0	127.6	113.1	102.3	109.2	88.5	95.1	103.9	96.0	89.1	88.8
Côte d'Ivoire	65.1	100.0	93.8	85.9	67.0	81.8	92.9	107.5	104.1	105.3	107.2	106.9
Equatorial Guinea	71.9	100.0	111.1	129.0	95.2	77.2	46.7	46.9	60.9	85.9	72.5	71.5
Eritrea	157.0	100.0	100.5	100.9	101.3	101.3	101.3	101.3	101.3	101.3	101.3	101.3
Eswatini	83.9	100.0	117.1	94.9	78.2	86.6	92.3	105.8	89.3	81.5	87.0	89.9
Ethiopia[1]	62.8	100.0	120.1	127.5	106.1	108.4	109.2	109.5	112.4	101.5	97.8	100.5
Gabon	90.2	100.0	131.3	121.8	120.6	109.4	60.1	53.9	69.3	88.1	72.0	71.2
Gambia, The	158.1	100.0	93.7	118.1	137.1	120.0	96.4	110.4	141.2	111.0	101.9	103.0
Ghana	60.6	100.0	117.9	116.1	107.1	99.6	85.6	87.3	82.4	87.0	81.9	81.1
Guinea	100.1	100.0	77.7	117.9	129.4	136.0	140.9	192.9	173.7	163.7	164.2	166.0
Guinea-Bissau	124.2	100.0	142.2	100.5	98.8	118.8	159.9	203.0	254.2	205.7	222.2	225.6
Kenya	86.7	100.0	81.3	79.1	79.5	81.0	96.2	82.2	76.3	68.4	70.2	70.9
Lesotho	117.1	100.0	102.6	100.7	104.4	115.5	130.1	121.2	121.8	120.7	122.8	123.1
Liberia	72.8	100.0	99.8	76.6	84.6	75.4	55.6	63.9	69.4	61.8	61.7	61.7
Madagascar	85.0	100.0	108.6	123.5	152.6	172.5	159.9	216.9	222.2	230.4	213.0	212.3
Malawi	83.3	100.0	100.2	85.6	83.3	85.3	87.4	87.6	77.3	73.8	80.0	78.2
Mali	76.0	100.0	130.8	144.9	122.0	129.5	147.9	170.3	167.1	158.0	168.0	167.2
Mauritius	97.3	100.0	96.8	96.1	96.8	95.4	110.9	113.2	106.3	103.2	101.5	104.0
Mozambique	90.9	100.0	99.5	92.7	92.6	91.0	89.9	91.7	94.1	91.8	92.0	91.3
Namibia	89.9	100.0	108.4	109.0	127.4	137.2	143.6	128.2	128.2	128.2	128.2	128.2
Niger	69.5	100.0	100.3	103.0	99.8	80.8	74.4	71.1	67.6	68.2	65.7	65.1
Nigeria	95.2	100.0	113.0	112.9	113.9	110.5	81.1	76.2	84.0	94.5	87.7	87.3
Rwanda	54.1	100.0	84.7	95.0	102.9	99.9	113.8	98.7	108.7	117.9	119.1	121.3
São Tomé & Príncipe	153.2	100.0	87.6	141.4	106.9	114.1	95.8	127.5	173.7	163.1	185.9	228.4
Senegal	83.6	100.0	94.6	94.5	87.0	88.8	99.5	99.9	100.6	102.1	102.7	103.1
Seychelles	103.7	100.0	100.1	102.2	102.5	102.5	99.2	96.6	97.8	101.5	100.0	99.7
Sierra Leone	98.8	100.0	92.9	95.9	92.7	77.9	60.4	65.9	75.8	67.6	70.8	70.3
South Africa	84.5	100.0	106.8	102.3	101.4	100.2	103.1	106.1	111.2	108.0	107.2	106.0
South Sudan	...	...	...	...	...	...	...	...	...	...	...	...
Tanzania	65.3	100.0	103.2	104.0	100.9	96.9	95.7	98.2	93.4	85.3	84.6	86.1
Togo	96.3	100.0	105.0	101.0	99.8	102.6	109.6	107.1	106.7	104.8	104.6	106.0
Uganda	102.0	100.0	112.4	106.5	109.0	117.7	127.7	140.6	132.0	127.0	126.4	126.5
Zambia	77.9	100.0	106.4	91.3	85.1	83.2	80.6	79.2	90.2	85.1	82.3	81.2
Zimbabwe[2]	51.3	100.0	152.1	126.5	99.7	91.8	93.2	95.8	101.1	107.7	95.9	95.5
Sub-Saharan Africa	**87.7**	**100.0**	**109.8**	**109.1**	**106.9**	**104.5**	**91.2**	**92.2**	**97.6**	**99.1**	**94.6**	**94.6**
Median	90.5	100.0	102.9	103.5	101.9	100.0	95.7	98.4	101.2	101.5	96.8	97.6
Excluding Nigeria and South Africa	85.2	100.0	109.8	110.4	104.8	102.2	93.0	95.4	98.0	97.5	92.8	93.8
Oil-exporting countries	**94.8**	**100.0**	**115.5**	**117.2**	**116.3**	**110.9**	**78.1**	**72.8**	**82.0**	**92.4**	**83.4**	**84.0**
Excluding Nigeria	93.8	100.0	120.4	126.2	121.4	111.6	70.5	65.2	78.2	88.1	73.1	75.3
Oil-importing countries	**82.9**	**100.0**	**105.7**	**102.8**	**99.0**	**98.8**	**101.9**	**105.3**	**107.0**	**103.0**	**101.0**	**100.9**
Excluding South Africa	81.3	100.0	104.8	103.2	97.3	98.0	101.1	104.8	104.6	100.3	97.8	98.4
Middle-income countries	**88.7**	**100.0**	**110.0**	**109.2**	**107.7**	**104.8**	**88.4**	**87.3**	**92.9**	**96.4**	**91.8**	**91.5**
Excluding Nigeria and South Africa	86.9	100.0	110.4	111.4	105.8	101.5	85.8	84.7	86.3	89.2	83.8	84.8
Low-income countries	**82.3**	**100.0**	**108.8**	**108.8**	**103.1**	**103.2**	**102.5**	**109.1**	**113.8**	**108.3**	**103.7**	**104.5**
Excluding low-income countries in fragile situations	80.3	100.0	107.1	109.1	103.9	103.0	104.4	109.7	109.9	103.2	100.5	101.7
Countries in fragile situations	**81.9**	**100.0**	**109.7**	**104.6**	**94.9**	**99.5**	**97.3**	**107.4**	**116.3**	**113.2**	**107.9**	**108.1**
CFA franc zone	88.0	100.0	109.5	110.1	99.0	96.3	88.6	94.7	97.2	99.6	96.6	96.2
CEMAC	94.9	100.0	115.2	118.5	110.6	102.9	75.3	76.4	82.9	91.7	82.3	81.3
WAEMU	80.8	100.0	103.1	100.8	87.2	89.7	99.7	108.7	108.0	105.6	106.8	106.4
COMESA (SSA members)	82.9	100.0	103.9	100.3	94.5	97.1	101.8	102.1	105.7	99.6	95.1	95.9
EAC-5	80.7	100.0	94.9	93.2	93.3	93.9	101.0	96.9	91.6	84.5	85.0	85.9
ECOWAS	89.9	100.0	111.3	111.2	109.5	106.7	84.7	84.6	90.2	97.0	92.1	91.7
SACU	85.5	100.0	106.7	102.9	102.6	102.3	105.6	109.8	112.0	109.0	108.7	107.8
SADC	85.6	100.0	109.3	107.3	106.1	103.9	96.3	98.6	104.8	104.2	99.8	100.0

See sources and footnotes on page 91.

Table SA26. Reserves
(Months of imports of goods and services)

	2004–08	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Angola	3.1	5.0	7.1	7.8	7.2	8.8	10.7	10.3	6.9	6.7	6.2	6.7
Benin[1]	...	...	...	...	...	...	...	...	...	...	...	...
Botswana	20.7	11.5	10.9	10.0	10.6	12.9	13.6	14.6	13.4	12.5	11.9	11.9
Burkina Faso[1]	...	...	...	...	...	...	...	...	...	...	...	...
Burundi	2.7	4.1	3.3	3.5	3.5	3.9	2.1	1.4	1.4	1.3	1.3	1.3
Cabo Verde	3.2	3.4	3.7	4.0	4.5	7.4	6.0	6.1	5.3	5.4	5.2	5.1
Cameroon[2]	...	...	...	...	...	...	...	...	...	...	...	...
Central African Rep.[2]	...	...	...	...	...	...	...	...	...	...	...	...
Chad[2]	...	...	...	...	...	...	...	...	...	...	...	...
Comoros	6.3	5.5	6.4	6.8	6.0	8.4	9.2	6.7	6.5	7.3	6.4	6.0
Congo, Dem. Rep. of	0.3	1.1	1.3	1.5	1.4	1.7	1.2	0.5	0.5	0.7	0.7	0.7
Congo, Rep. of [2]	...	...	...	...	...	...	...	...	...	...	...	...
Côte d'Ivoire[1]	...	...	...	...	...	...	...	...	...	...	...	...
Equatorial Guinea[2]	...	...	...	...	...	...	...	...	...	...	...	...
Eritrea	2.1	1.9	2.2	2.4	2.0	2.3	2.2	2.0	1.5	1.5	1.5	1.5
Eswatini	2.5	4.1	3.2	4.2	4.8	4.9	4.2	3.5	3.3	2.8	3.1	3.9
Ethiopia[3]	2.3	2.0	2.6	2.0	1.8	1.5	1.9	2.1	2.0	1.6	1.9	2.3
Gabon[2]	...	...	...	...	...	...	...	...	...	...	...	...
Gambia, The	3.8	5.4	5.6	6.3	4.8	3.0	2.0	1.2	2.5	2.4	3.0	3.1
Ghana	2.7	2.9	2.9	2.9	2.9	2.5	2.6	2.6	2.8	2.7	2.7	2.9
Guinea	0.5	1.2	3.2	2.9	2.9	3.3	1.1	1.4	1.4	1.8	2.1	2.4
Guinea-Bissau[1]	...	...	...	...	...	...	...	...	...	...	...	...
Kenya	2.9	2.9	2.9	3.7	3.8	5.4	5.6	4.7	4.1	4.3	4.3	4.6
Lesotho	4.7	4.3	3.9	5.5	5.4	6.2	5.8	4.4	4.5	3.4	3.2	2.6
Liberia	0.4	2.2	2.0	2.0	1.6	1.8	2.3	2.8	3.0	2.7	2.1	1.4
Madagascar	2.5	2.6	3.5	3.0	2.3	2.7	2.8	3.0	3.8	3.9	4.1	4.1
Malawi	1.3	1.6	1.0	1.1	2.0	3.0	3.2	2.8	3.4	3.1	3.7	4.0
Mali[1]	...	...	...	...	...	...	...	...	...	...	...	...
Mauritius	3.8	4.2	4.4	5.0	5.6	7.2	7.9	8.3	9.3	9.3	9.2	9.1
Mozambique	4.2	3.4	2.3	2.6	3.1	3.5	3.8	2.8	3.9	2.8	2.3	2.3
Namibia	2.0	3.0	2.9	2.8	2.1	1.8	2.9	2.6	1.7	1.5	1.7	1.9
Niger[1]	...	...	...	...	...	...	...	...	...	...	...	...
Nigeria	10.7	4.3	4.8	6.9	6.0	5.6	7.3	6.5	7.2	7.1	6.3	5.7
Rwanda	2.8	5.3	6.8	5.6	4.8	3.9	3.6	4.1	4.5	4.6	4.6	4.5
São Tomé & Príncipe	4.6	3.9	4.6	3.5	3.3	4.1	4.7	3.9	3.6	2.6	2.5	2.8
Senegal[1]	...	...	...	...	...	...	...	...	...	...	...	...
Seychelles	0.8	2.6	2.6	2.7	3.2	3.9	4.3	3.7	3.8	3.7	3.4	3.3
Sierra Leone	3.8	1.6	1.8	2.2	2.0	3.6	4.2	3.5	3.7	3.2	3.2	3.5
South Africa	3.5	4.3	4.7	5.0	5.1	5.9	6.2	5.7	5.6	5.5	5.2	4.9
South Sudan	...	...	6.3	3.5	2.5	1.4	0.3	0.3	0.1	0.2	0.6	0.5
Tanzania	4.8	4.1	3.5	3.6	4.0	4.3	4.6	5.4	6.1	6.1	5.5	4.6
Togo[1]	...	...	...	...	...	...	...	...	...	...	...	...
Uganda	5.6	3.9	3.7	4.7	4.8	5.3	5.3	5.0	4.8	4.3	4.1	4.1
Zambia	1.7	3.0	2.8	2.7	2.6	3.4	3.4	2.4	2.1	1.6	0.9	0.6
Zimbabwe[4]	0.2	0.6	0.5	0.6	0.4	0.5	0.6	0.6	0.4	0.2	0.6	0.9
Sub-Saharan Africa	**5.2**	**4.0**	**4.6**	**5.4**	**5.1**	**5.4**	**6.1**	**5.6**	**5.4**	**5.2**	**4.9**	**4.7**
Median	2.9	3.4	3.3	3.5	3.3	3.9	3.8	3.5	3.7	3.1	3.2	3.3
Excluding Nigeria and South Africa	3.6	3.6	4.2	4.4	4.2	4.9	5.1	4.8	4.2	4.0	3.8	3.9
Oil-exporting countries	**7.7**	**4.4**	**5.4**	**7.0**	**6.2**	**6.2**	**7.8**	**7.2**	**7.1**	**7.0**	**6.2**	**5.9**
Excluding Nigeria	3.1	5.0	7.0	7.5	6.8	8.1	9.7	10.1	6.7	6.5	6.0	6.5
Oil-importing countries	**3.5**	**3.8**	**4.0**	**4.1**	**4.1**	**4.7**	**4.8**	**4.5**	**4.4**	**4.3**	**4.1**	**4.0**
Excluding South Africa	3.6	3.2	3.2	3.3	3.2	3.7	3.7	3.6	3.6	3.4	3.4	3.5
Middle-income countries	**5.6**	**4.3**	**4.9**	**5.9**	**5.5**	**5.9**	**7.0**	**6.3**	**6.1**	**5.9**	**5.5**	**5.3**
Excluding Nigeria and South Africa	4.1	4.3	5.1	5.5	5.3	6.5	7.3	6.7	5.3	5.1	4.8	5.0
Low-income countries	**2.8**	**2.7**	**3.0**	**2.8**	**2.7**	**2.8**	**2.7**	**2.8**	**2.9**	**2.7**	**2.7**	**2.7**
Excluding low-income countries in fragile situations	3.9	3.3	3.3	3.2	3.2	3.4	3.5	3.6	3.9	3.6	3.5	3.4
Countries in fragile situations	**0.7**	**1.4**	**2.6**	**1.9**	**1.7**	**1.8**	**1.3**	**1.0**	**1.0**	**1.0**	**1.2**	**1.3**
CFA franc zone	4.9	5.6	5.6	5.4	5.1	5.2	4.8	3.2	3.2	3.7	3.9	4.1
CEMAC	4.3	4.7	5.4	5.6	5.4	5.8	4.6	2.3	2.4	2.8	3.4	3.9
WAEMU	5.4	6.6	5.8	5.1	4.7	4.7	5.0	3.9	3.9	4.3	4.4	4.3
COMESA (SSA members)	2.4	2.7	2.7	2.9	2.9	3.4	3.4	3.1	2.9	2.8	2.9	3.1
EAC-5	4.0	3.7	3.5	4.0	4.1	4.9	5.1	4.9	4.8	4.8	4.6	4.5
ECOWAS	8.1	4.1	4.6	6.3	5.6	5.3	6.7	5.9	6.4	6.3	5.7	5.2
SACU	4.0	4.4	4.9	5.1	5.2	6.0	6.3	6.0	5.8	5.7	5.4	5.1
SADC	3.6	4.2	4.8	5.1	5.0	5.9	6.3	5.9	5.4	5.2	4.8	4.7

See sources and footnotes on page 91.

Table SA27. Banking Penetration
(Total banking sector assets in percent of GDP)

	2004-08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	24.1	56.5	53.3	50.8	52.8	52.6	64.2	65.0	53.9	52.1
Benin	32.9	49.7	53.6	54.2	58.6	63.7	71.6	74.3	69.1	63.9
Botswana	51.4	60.8	53.0	57.7	54.6	52.1	60.6	55.3	54.1	54.2
Burkina Faso	28.4	38.0	39.7	41.2	46.8	53.9	62.5	70.5	73.9	68.1
Burundi	28.8	36.4	36.4	35.4	34.0	34.9	35.2	35.5	37.6	42.2
Cabo Verde	90.0	103.0	111.2	120.6	134.5	137.0	141.1	146.6	148.5	144.2
Cameroon	20.7	26.0	26.9	25.7	27.4	27.6	28.6	29.2	29.3	...
Central African Rep.	12.6	17.3	19.1	19.2	25.7	25.4	24.6	24.1	24.0	...
Chad	7.3	10.0	10.3	11.0	11.7	14.6	17.0	21.3	21.7	...
Comoros	25.1	37.6	41.5	44.5	42.5	43.0	48.0	53.7	49.9	...
Congo, Dem. Rep. of	6.7	11.4	12.2	14.0	14.0	14.3	14.9	15.6	14.7	17.4
Congo, Rep. of	12.2	18.4	23.1	28.0	29.6	34.2	44.8	47.5	38.6	...
Côte d'Ivoire	25.2	32.1	37.7	36.4	37.3	39.8	43.8	47.0	51.4	52.2
Equatorial Guinea	9.0	16.1	14.1	18.0	20.2	21.6	27.3	29.1	26.6	26.0
Eritrea	143.7	124.7	113.1	105.6	110.0	104.9	...	...	...	...
Eswatini	27.9	34.7	35.3	32.8	34.1	33.5	35.0	38.1	38.5	38.5
Ethiopia	...	...	...	...	...	...	...	...	...	...
Gabon	23.6	23.4	25.5	28.8	32.3	29.9	33.2	34.6	24.9	...
Gambia, The	29.0	39.0	45.3	45.2	48.4	53.7	...	...	54.5	56.1
Ghana	21.5	29.5	28.1	27.7	29.9	33.8	36.1	39.1	37.9	...
Guinea	11.3	20.1	24.3	19.7	20.3	22.3	24.5	23.0	21.0	...
Guinea-Bissau	11.0	24.8	28.1	28.3	30.3	33.7	32.1	32.4	31.3	36.7
Kenya	57.4	56.0	57.6	58.1	60.7	63.6	63.1	58.9	55.5	55.3
Lesotho	37.5	45.7	41.3	39.8	46.4	43.2	44.2	39.6	46.6	47.3
Liberia	...	...	...	...	...	...	...	...	...	...
Madagascar	26.3	29.2	30.1	30.4	29.0	28.9	29.3	30.4	31.2	...
Malawi	15.3	27.3	29.8	31.8	31.6	30.2	32.1	31.4	...	...
Mali	30.7	37.7	36.0	36.9	42.0	47.6	52.0	54.4	51.8	51.5
Mauritius[1]	272.9	359.4	369.5	370.2	359.2	347.5	344.3	324.6	343.8	294.1
Mozambique	33.2	52.7	53.7	61.0	63.7	71.7	80.0	78.4	72.9	75.2
Namibia	66.3	93.4	94.9	87.8	85.2	82.1	86.8	85.9	87.9	95.6
Niger	14.5	24.4	24.9	26.3	28.1	30.8	31.7	32.7	35.1	34.4
Nigeria	27.5	31.2	30.4	29.2	30.1	30.5	29.7	31.2	30.4	...
Rwanda	23.9	25.5	31.5	31.7	35.3	37.8	38.1	37.7	37.9	41.0
São Tomé & Príncipe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Senegal	28.9	40.1	42.4	42.3	46.4	50.2	54.8	59.2	57.7	57.8
Seychelles	118.8	109.3	113.0	102.2	117.5	116.5	93.0	93.8	98.0	99.9
Sierra Leone	16.2	24.9	24.5	23.0	21.3	23.1	26.5	27.8	29.1	29.4
South Africa	116.4	116.3	115.4	115.1	111.4	113.0	122.4	114.6	113.5	116.6
South Sudan	...	...	6.7	14.7	13.4	19.3	68.7	77.8	50.1	45.9
Tanzania	24.2	30.0	28.8	28.6	28.0	28.4	30.2	27.2	27.3	...
Togo	38.0	51.7	61.4	68.7	79.8	78.2	85.3	95.5	93.1	93.8
Uganda	24.0	26.6	26.1	27.0	28.1	29.0	29.6	30.2	30.8	29.8
Zambia	24.9	25.5	25.8	27.6	29.2	31.8	38.1	33.1	32.2	32.5
Zimbabwe	…	27.6	32.2	34.3	32.6	34.6	36.7	40.6	39.4	...
Sub-Saharan Africa	**40.1**	**48.7**	**49.0**	**49.6**	**51.5**	**52.7**	**55.2**	**55.8**	**55.3**	**63.9**
Median	25.2	31.7	32.2	32.8	34.0	34.6	38.1	39.1	38.6	52.1
Excluding Nigeria and South Africa	38.4	47.4	47.9	48.5	50.5	51.7	54.1	54.9	54.4	62.0
Oil-exporting countries	**17.8**	**26.0**	**23.8**	**25.8**	**27.2**	**28.8**	**39.2**	**42.0**	**34.4**	**41.4**
Excluding Nigeria	16.1	25.1	22.8	25.3	26.8	28.5	40.5	43.5	35.0	41.4
Oil-importing countries	**44.7**	**53.2**	**54.8**	**55.0**	**57.0**	**58.1**	**59.0**	**59.1**	**60.3**	**66.5**
Excluding South Africa	42.5	51.4	53.0	53.2	55.4	56.5	57.1	57.4	58.7	64.4
Middle-income countries	**52.8**	**63.9**	**64.9**	**64.9**	**66.9**	**67.0**	**69.6**	**68.6**	**68.5**	**77.8**
Excluding Nigeria and South Africa	50.7	62.8	64.0	64.1	66.5	66.5	68.8	68.1	68.1	75.0
Low-income countries	**27.8**	**34.9**	**35.2**	**36.2**	**38.0**	**40.2**	**41.5**	**43.5**	**42.7**	**49.0**
Excluding low-income countries in fragile situations	25.9	35.3	36.9	38.6	41.2	45.0	49.1	50.1	49.6	52.1
Countries in fragile situations	**25.8**	**31.7**	**32.2**	**33.0**	**34.4**	**35.9**	**36.2**	**38.7**	**37.6**	**42.5**

See sources and footnotes on page 91

Table SA28. Banking Sector: Loan-to-Deposit Ratio[1]
(Percent of deposits)

	2004-08	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	42.6	72.5	79.3	89.1	85.8	75.0	67.2	60.2	62.0	49.8
Benin	79.7	80.4	82.2	80.6	80.1	80.1	71.6	69.6	86.8	81.3
Botswana	55.8	55.4	67.5	74.0	79.1	82.5	76.4	76.9	76.7	77.3
Burkina Faso	94.2	82.6	81.2	84.7	90.6	95.6	92.2	84.8	85.5	85.7
Burundi	67.7	66.4	82.0	81.7	75.8	75.9	74.0	72.3	59.6	58.9
Cabo Verde	54.8	74.2	80.2	73.9	64.7	59.2	57.2	53.6	54.0	53.9
Cameroon	69.3	69.4	70.3	80.1	81.4	82.3	87.9	90.3	87.1	...
Central African Rep.	118.0	103.7	99.6	109.1	108.3	108.2	99.1	100.9	87.4	...
Chad	82.7	73.4	73.5	77.5	80.2	80.9	83.3	87.7	94.9	...
Comoros	49.5	57.6	55.1	56.5	64.7	67.9	70.0	67.0	75.5	...
Congo, Dem. Rep. of	49.7	57.5	68.8	68.0	68.7	71.4	73.7	80.0	75.5	79.5
Congo, Rep. of	36.4	39.5	38.3	49.8	59.6	55.3	72.8	82.0	88.9	...
Côte d'Ivoire	106.2	88.3	76.4	80.3	83.9	80.9	85.1	86.9	89.6	89.0
Equatorial Guinea	43.0	59.0	68.1	38.0	48.1	54.1	74.9	91.5	95.5	98.1
Eritrea	24.6	23.8	24.0	24.7	23.3	21.9	...	...	...	...
Eswatini	96.7	74.4	85.8	79.8	81.7	86.2	79.3	72.8	73.9	72.2
Ethiopia	...	...	...	...	...	...	...	...	...	...
Gabon	62.5	62.7	62.9	65.1	77.7	81.4	73.3	80.0	82.4	...
Gambia, The	38.0	43.7	40.8	39.9	37.5	30.8	...	...	17.8	19.8
Ghana	73.3	65.5	57.9	63.2	69.5	70.6	70.3	65.8	62.9	...
Guinea	...	...	...	...	...	...	...	...	...	...
Guinea-Bissau	46.4	69.1	68.1	98.7	92.9	87.4	87.3	86.4	88.0	87.6
Kenya	76.6	72.6	77.8	76.9	80.5	83.7	87.0	88.6	83.5	78.4
Lesotho	26.4	36.6	37.2	50.9	45.3	47.9	45.7	50.8	44.9	46.8
Liberia	...	...	...	...	...	...	...	...	...	...
Madagascar	75.8	78.6	74.4	69.5	75.4	78.4	81.4	72.5	73.4	...
Malawi	...	...	...	...	...	...	...	...	...	...
Mali	93.6	82.0	86.7	88.2	90.4	87.3	87.4	91.9	101.2	93.8
Mauritius	65.5	68.2	80.9	77.2	72.6	74.9	68.0	66.8	66.1	68.1
Mozambique	53.3	74.4	74.4	71.1	74.4	73.5	61.7	66.2	67.3	56.2
Namibia	110.1	74.5	74.3	77.5	82.8	88.8	92.5	95.4	92.8	86.3
Niger	91.4	88.6	105.5	101.0	110.9	101.3	107.8	112.3	123.5	108.5
Nigeria	76.3	64.0	56.2	54.8	57.4	65.3	68.3	77.9	72.1	...
Rwanda	78.4	83.2	88.7	94.9	84.4	86.2	81.3	85.9	89.8	87.6
São Tomé & Príncipe	66.7	108.1	110.0	84.0	78.2	58.9	76.0	72.3	63.8	62.3
Senegal	80.8	86.1	91.4	92.8	96.6	94.6	88.4	91.3	100.7	98.3
Seychelles	30.9	35.9	33.9	34.7	28.9	31.8	42.6	43.8	43.4	42.6
Sierra Leone	38.7	47.5	46.5	40.5	37.0	34.4	31.9	30.6	33.3	35.1
South Africa	122.8	120.7	113.2	119.0	118.7	117.3	118.1	117.5	115.6	116.8
South Sudan	...	...	9.8	11.8	15.2	11.3	7.7	8.7	8.7	6.6
Tanzania	52.0	62.1	67.1	69.9	71.2	75.6	81.4	87.3	81.9	...
Togo	85.2	74.8	80.0	84.5	96.2	84.3	90.8	80.7	82.8	80.3
Uganda	58.8	77.2	85.5	79.5	80.0	74.6	75.4	75.8	71.2	70.9
Zambia	50.5	52.9	56.5	65.2	61.1	65.7	60.1	54.1	49.7	52.5
Zimbabwe	…	68.8	85.5	87.4	93.4	87.4	72.4	59.1	46.7	...
Sub-Saharan Africa	**67.2**	**69.4**	**70.7**	**71.8**	**73.3**	**72.5**	**74.9**	**75.3**	**73.9**	**70.5**
Median	66.8	71.0	74.4	77.2	78.2	75.9	75.4	77.9	76.1	77.3
Excluding Nigeria and South Africa	65.5	68.2	69.9	71.1	72.5	71.5	73.9	74.1	72.9	68.8
Oil-exporting countries	**59.0**	**62.9**	**57.3**	**58.3**	**63.2**	**63.2**	**66.9**	**72.3**	**74.0**	**51.5**
Excluding Nigeria	56.1	62.8	57.4	58.8	64.0	62.9	66.7	71.5	74.2	51.5
Oil-importing countries	**69.0**	**70.8**	**73.9**	**75.1**	**75.7**	**74.7**	**77.0**	**76.1**	**73.9**	**72.7**
Excluding South Africa	67.3	69.2	72.7	73.8	74.4	73.4	75.6	74.7	72.6	70.9
Middle-income countries	**67.4**	**69.0**	**70.9**	**71.3**	**72.7**	**72.8**	**74.5**	**75.9**	**75.3**	**72.8**
Excluding Nigeria and South Africa	63.8	66.4	69.4	69.6	71.0	70.8	72.5	73.5	73.2	69.7
Low-income countries	**67.0**	**69.8**	**70.4**	**72.4**	**73.8**	**72.1**	**75.3**	**74.7**	**72.6**	**68.0**
Excluding low-income countries in fragile situations	72.5	78.4	83.5	83.1	84.5	83.9	81.6	83.1	86.6	81.7
Countries in fragile situations	**65.0**	**67.7**	**65.8**	**67.8**	**69.5**	**66.0**	**72.9**	**71.9**	**68.0**	**61.3**

See sources and footnotes on page 91.

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