AFRICAN TRANSFORMATION INDEX 2023

Tracking Africa's economic successes and setbacks

AFRICAN CENTER FOR
ECONOMIC TRANSFORMATION

ACET African Center for Economic Transformation

The African Center for Economic Transformation (ACET) is a pan-African economic policy institute supporting Africa's long-term growth through transformation. We produce research, offer policy advice, and convene key stakeholders so that African countries are better positioned for smart, inclusive, and sustainable development. Based in Accra, Ghana, we have worked in nearly two dozen African countries since our founding in 2008.

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FOREWORD

When I founded ACET in 2008, Africa's 21st century story was still unfolding. Economies across the continent were growing—some at record rates. While the optimism was welcome after decades of disappointment, the underlying mechanics of Africa's growth did not point to a sustained turnaround. ACET began operations to shine a light on the reasons why and to offer pathways for countries to transform, not just grow, economies. Fifteen years later, we have a much better understanding of what economic transformation means for Africa, what it will take to get there, and where countries are making gains or falling short. The African Transformation Index is a big reason why.

The ATI is a unique tool that ACET devised in 2014 to measure progress on economic transformation at the country level. This report updates the index to cover 30 African countries, tracking their successes and setbacks from 2000 to 2020. As the findings make clear, most African countries are not transforming their economies at a consistent or steady rate. At the same time, they are struggling to achieve the targets set out in the Sustainable Development Goals. While this is a sobering reality, the ATI offers data and analysis that helps explain it.

One extremely important aspect of economic transformation that this report spotlights is the resilience, or lack thereof, of African economies to withstand external shocks. The turbulence of the global economy and the negative impacts of disease and climate are generally beyond the control of African policymakers, yet they have disrupted the continent's transformation journey time and again this century. What African leaders can do, however, is learn from the past to craft and implement policy solutions that better address the root causes of the most recent setbacks to Africa's transformation agenda.

Not all the news is bad. Human well-being, the ultimate goal of economic transformation in Africa and one of the core inputs measured by the index, has improved since the turn of the century—not everywhere, of course, but enough for the data to show an encouraging trend. Yet, we should not confuse encouragement with success. The gains that we have seen in income levels and formal employment remain highly vulnerable and fragile. And of course there are other threats, such as violence and political instability, that are beyond the scope of our economic index but pose challenges that must be considered and addressed nonetheless.

As you read this report, you will see what it seeks to measure and what it does not attempt. That distinction is important, because the ATI is not a universal measurement of all the factors that will determine a country's successful economic transformation. Issues of governance, debt, global finance, climate, and more are all part of the story that continues to unfold.

But the ATI is the only tool that measures the core economic components that we know to be most impactful to African countries' transformation outcomes, including diversified production and exports, labor productivity, and technology usage. The ATI gives us critical empirical knowledge to help inform future policy solutions that will help improve on these outcomes as well as the other challenges. I hope you find this revised index as useful and informative as I believe it to be.

K.Y. Amoako
Founder and President, ACET

OVERVIEW

About the ATI

The first edition of ACET's flagship *African Transformation Report*, published in 2014, featured an urgent call to action for the continent. To foster and sustain economic gains for long-term development, countries must transform their economies, not just grow them. In other words, economic growth alone would not be enough to ensure a prosperous and secure future for all Africans.

Backed by in-depth diagnostic studies of the development experience of several African countries, the report went a step further and defined in empirical terms what economic transformation means for Africa. Many countries around the world had successfully transformed their economies in the second half of the 20th century, spurring sustained growth and rapid social and economic development. The report studied how African countries could take what was unique to their individual contexts and circumstances and pursue their own successful transformation agendas. The result was "growth with DEPTH," a new way to define economic transformation in Africa in empirical terms.

Growth with DEPTH framework

Growth with DEPTH is a policy and development framework in which DEPTH stands for *Diversification*, *Export competitiveness*, *Productivity increases*, *Technology upgrading*, and *Human well-being*. By focusing on policies that improve performance and outcomes in these five areas, ACET determined that African countries could put themselves on a path toward economic transformation.

ACET formulated the DEPTH framework after more than three years of extensive in-house research—empirical, comparative analyses of the development experiences and outcomes in early transformer countries, including Brazil, Chile, Indonesia, Malaysia, Singapore, South Korea, Thailand, and Vietnam over the last four or five decades—as well as inputs from development economists, scholars, and policymakers from Africa and outside the continent. The framework is consistent with the structural analysis of economic development. However, it goes beyond the classical approach to structural change, which focuses on relative sectoral productivity and resource shifts, to focus on broader socioeconomic issues such as technological adoption, export earnings, income inequality, and formal employment, among others.

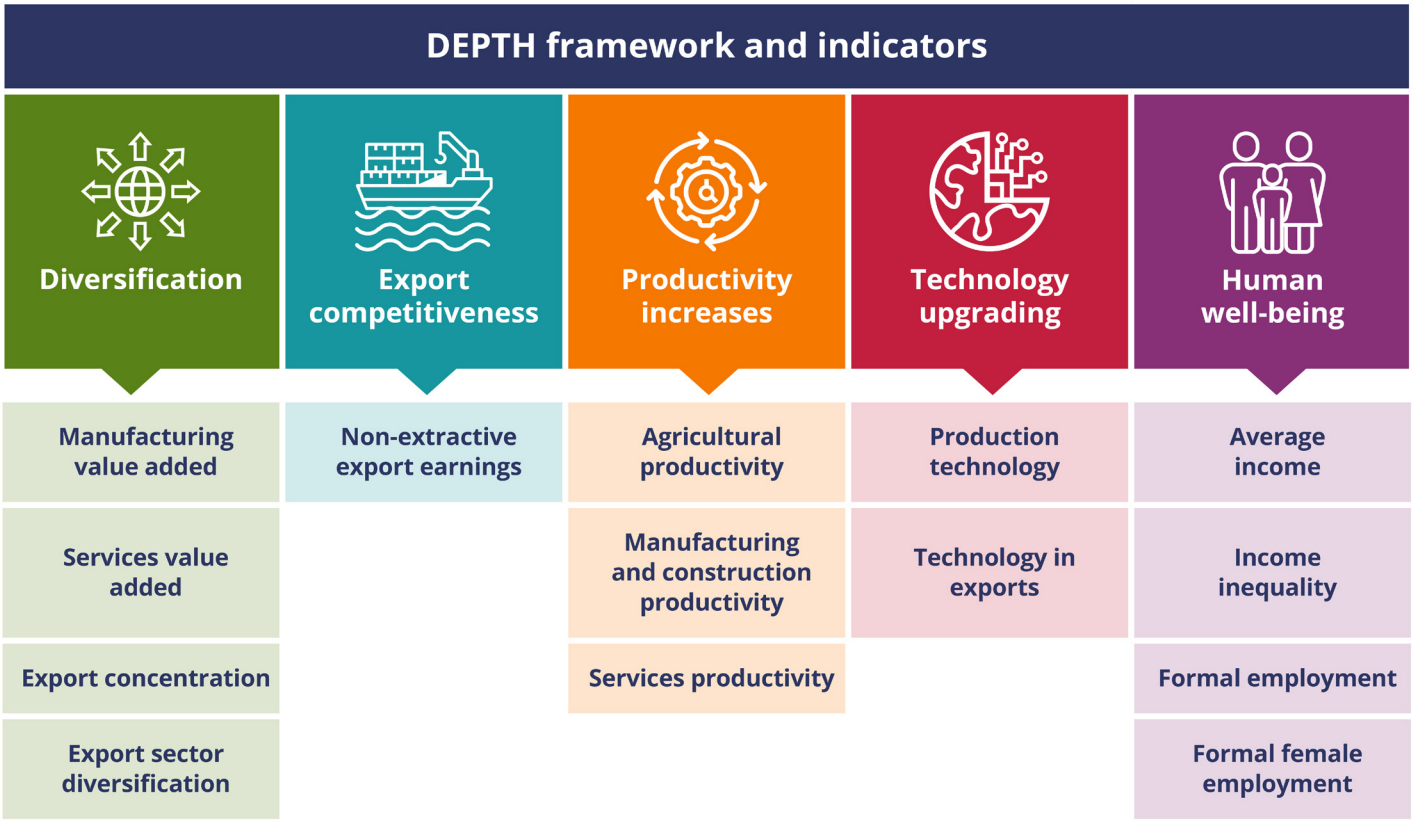
The early transformers started at social and economic development levels akin to those of African countries when they emerged from colonial rule—widespread poverty, low productivity, low levels of technology, and narrow production and export structures. Some of these countries have now achieved economic well-being comparable to those of the world's most developed countries.

Meanwhile, most African economies have continued to struggle, their growth and transformation trajectories undermined by things within their control, such as poor policy choices and weak economic management, and things outside their control, such as the volatility of global markets and fiscal shocks. The ATI provides a multi-faceted view of individual countries' economic transformation journeys, including how that range of impacts, from poor policies to fiscal shocks, has affected their economies.

What the ATI measures

To track the progress of economic transformation on the continent through the growth with DEPTH framework, ACET also developed the African Transformation Index (ATI), which aggregates scores of indicators capturing gains or losses within each of the five DEPTH areas, or dimensions. The first index was published alongside the 2014 African Transformation Report. The revised ATI, captured in this report and available online at **acetforafrica.org/ati**, updates and expands the range of the original index to capture a more current and inclusive view of Africa's effort to transform its economies.

The results presented in this report are derived from the study of 30 African countries, covering the years 2000–2020, using indicators for each of the DEPTH dimensions.



DEPTH dimensions

- ***Diversification*** measures the relative size of the manufacturing and services sectors and the range of exports using four indicators. It is based on the shares of manufacturing and services value added in GDP and exports to reflect the diversity of the production and export base of a country, and it also measures how dependent countries are on their five most valuable export products.
- ***Export competitiveness*** measures the global competitiveness of a country's non-extractive exports using a single indicator. Extractive exports are excluded from the calculation of the competitiveness measure because rising extractive production and exports in Africa normally do not indicate progress on economic transformation.

- ***Productivity increases*** measures labor productivity in the agriculture, manufacturing and construction, and services sectors, using three indicators weighted by the relative size of each sector. Economic transformation requires raising the shares of manufacturing and services in GDP efficiently.
- ***Technology upgrading*** measures the medium- and high-technology content in production and exports using two indicators. Increasing the technological sophistication of the production base takes time to spread across sectors and requires intentional and strategic policy and implementation.
- ***Human well-being*** measures income, income inequality, and total and female formal employment using four indicators. A transformed economy should, among other things, generate decent employment and support high incomes. While many factors can be included in this dimension, the ATI measures them using the best available common metrics.

Scores are measured as a three-year moving average. A country's ATI score is constructed from the five DEPTH dimensions using an arithmetic mean, giving each dimension equal weight. **Annex II** offers a detailed description of the ATI methodology, including indicators and computations.

Index updates

As noted, this revised ATI has a number of updates to expand coverage and improve upon the results of the 2014 index. The sample period has been extended to cover two decades, from 2000–2010 to 2000–2020. The range of countries has been increased from 24 to 30, comprising 86.5 percent of the total GDP of the continent as of 2020. Countries in the sample are determined by the availability of reliable data across the sample period. The range of indicators has also increased from 10 to 14, with three notable revisions:

- The *Human well-being* dimension is updated to include an indicator that tracks female formal employment and the Gini index of income inequality.
- The *Diversification* and *Productivity increase*s dimensions are updated to capture performance in the services and construction sectors.
- Labor productivity is now weighted by the relative size of each sector for a more accurate aggregate measurement under *Productivity increases*.

Index scope

The ATI maintains a disciplined focus on the five dimensions of the DEPTH framework by design. It does not measure numerous notable factors of long-term development success, such as peace and security, democracy and governance, environmental sustainability, or institutional development. Nor does the ATI take into account the impact of positive or negative externalities that may have transpired during the transformation process—environmental harm from industrialization, for example. While all are critical to a country's social and economic stability, such elements fall outside the scope of the index as a tool to measure progress toward economic transformation as defined by the DEPTH framework.

Key findings

During two decades of economic shocks, Africa's economic transformation has been slow, with some countries making significant progress while others lag behind. Human well-being has improved substantially, but as economic resilience has declined, progress remains vulnerable.

Economic transformation has been slow, widening gaps between African countries and early transformers.

While some countries have made significant progress on economic transformation, the average ATI score for Africa remains low at 30.3 out of 100. The divergence in transformation outcomes between Africa and early transformers in Asia and Latin America that was apparent in the early 2000s continued throughout the next two decades. Gaps widened even further in key aspects, including productivity, income, and export competitiveness.

Despite several economic shocks, human well-being has improved significantly, but progress remains vulnerable to the impact of economic instability.

Human well-being is the ultimate goal of economic transformation and a major enabler of growth with DEPTH. African countries have made steady progress in this dimension. As a result, in 2020 more people in Africa enjoyed a higher quality of life with more opportunities to fulfill their potential than two decades before. However, the core components of this dimension, including income levels and formal employment, remain fragile and vulnerable due to underlying weaknesses in economic resilience.

African economies have become less diversified and the competitiveness of their exports has declined—potentially diminishing their resilience to external shocks.

The average African *Diversification* score declined by almost six points between 2000 and 2020, while the *Export competitiveness* score remains just 13.8 out of 100. Countries with a poorly diversified economy, a high reliance on raw materials, and deeply uncompetitive exports are more likely to suffer from global price volatility and economic shocks and have their progress on economic transformation reversed.

The following section presents the full ATI findings in reviewing Africa's economic transformation progress between 2000 and 2020.

FINDINGS

Economic transformation in Africa, 2000–2020

The first ATI was released after Africa had undergone a period of solid economic growth, starting in the mid-1990s, without significant structural change. Findings from the first ATI underscored the urgent need for a targeted policy focus on economic transformation, since countries were performing much more poorly than they should on the DEPTH dimensions, despite the high growth levels around the continent. And by enhancing DEPTH outcomes, countries would become less dependent on foreign assistance and more resilient to shocks—mirroring the successes of Asian and Latin American countries over the previous several decades.

This edition of the ATI revisits some of the early data with a larger dataset of countries and a more comprehensive set of DEPTH measurements, extending the period of study through 2020. Unfortunately, unlike the steady and high growth that characterized African economies from the mid-1990s until 2007, the later period was characterized by a series of economic shocks that put earlier growth gains at risk and, in many cases, halted or reversed transformation efforts.

The Global Financial Crisis of 2007, the end of the commodity supercycle in 2015, and the onset of the COVID-19 pandemic in 2020 each significantly impacted African economies, underscoring their vulnerability. Looking at these crises through the lens of the ATI and its dimensions reveals more about the nature and extent of different countries' economic resilience, defined as a country's ability to withstand and quickly recover from adverse shocks.

Growth and transformation trends since 2000

The average GDP growth rate for the 30 African countries was 4 percent between 2000 and 2020, ranging from a high of 5.4 percent in 2005 to a low of 1.1 percent in 2019. There has been a downward trend in GDP growth since 2007, reflecting the impact of the external shocks from the three major global crises. The average African ATI score was 30.3 between 2000 and 2020, with a high of 31.9 in 2007 and a low of 27.4 in 2003. Although economic transformation in 19 economies fell below the mean ATI score, the data shows a slight upward trend in the African average ATI score since 2003, indicating some progress in economic transformation across the continent.

In general, economic growth is strongly correlated with economic transformation as measured by DEPTH, but there are some divergences. Growth fell precipitously between 2015 and 2020, while overall transformation outcomes showed signs of recovery. And economic transformation declined between 2000 and 2003 at a time of steady and high economic growth. These disparities can be explained by the factors driving the episodes of economic growth. For example, price rallies on international commodity markets often drive growth in natural resource-endowed countries even as they remain poorly diversified, fail to upgrade their technology, and remain weakly productive. Or conversely, economic transformation can improve while growth is weak; a country could be diversifying its production and exports without yet having attained the level of competitiveness required to have positive impacts on growth.

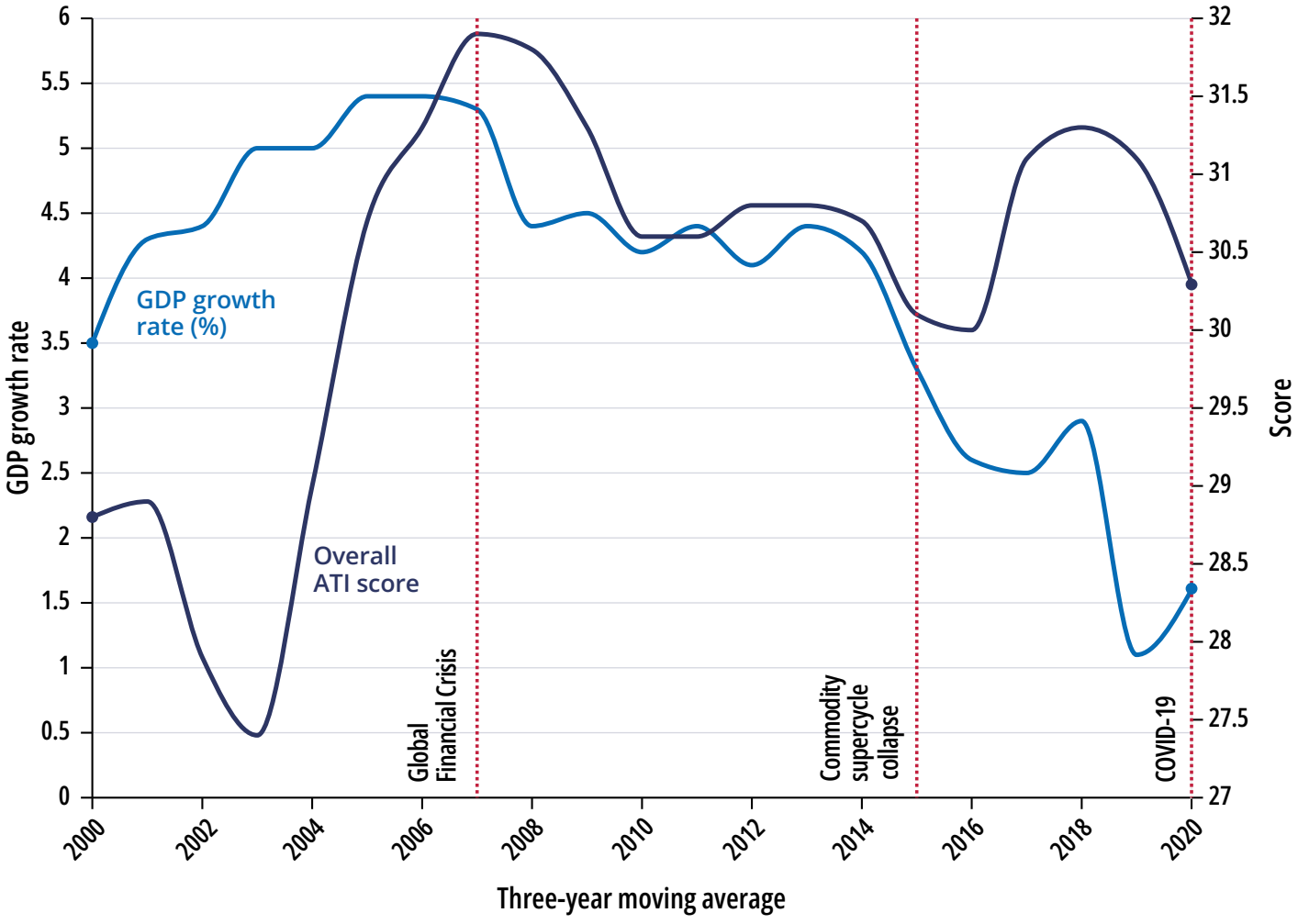
Overall, DEPTH did not improve significantly across Africa during this period characterized by the external shocks of the Global Financial Crisis, the commodities slump, and the COVID-19 pandemic. In fact, two dimensions of DEPTH—*Diversification* and *Export competitiveness*—actually

trended down. This lack of widespread economic transformation has proved detrimental to the continent's resilience to shocks and its ability to translate economic progress into lasting and durable improvements in the well-being of African citizens.

Growth acceleration and disruption

The country-level data demonstrates how economic shocks can disrupt economic growth. All countries tracked by the ATI experienced at least one period of growth acceleration—defined as at least three consecutive years of expected GDP growth above 3 percent—between 2000 and 2020. However, some economies that experienced rapid growth failed to sustain long periods of growth acceleration because they remained vulnerable to external shocks.

Economic transformation and external shocks, 2000–2020



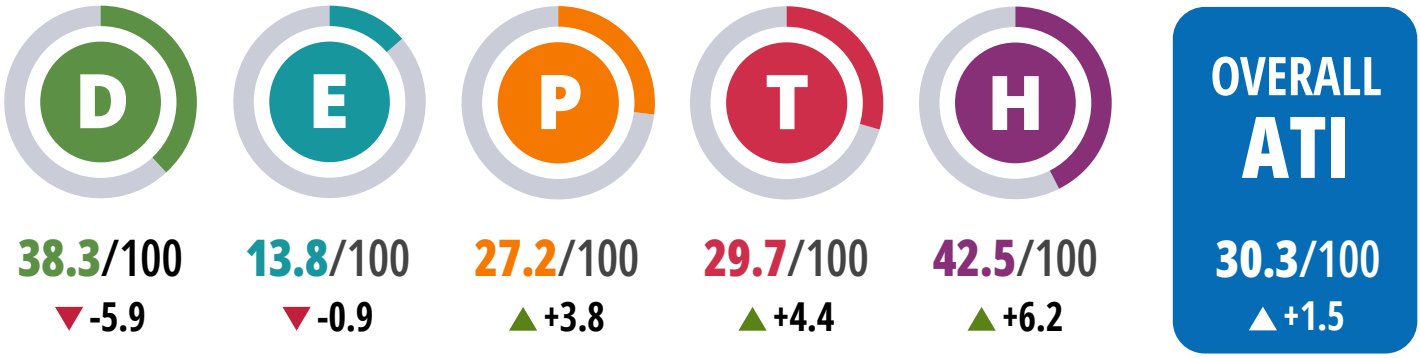
In 2008, 24 countries were growing rapidly; by 2012, a few years after the Global Financial Crisis, only 13 continued the same rapid growth. In 2014, 19 countries were growing rapidly; by 2018, a few years after the end of the commodity supercycle, only 13 continued. In 2019, 18 countries were growing rapidly; in 2021, just two years later and one year after the onset of the COVID-19 pandemic, only 12 continued. The number of countries experiencing pandemic-related growth disruption is likely to increase further when data for 2022 and 2023 are taken into account.

All told, each shock reduced the number of countries with rapid growth by about one-third.

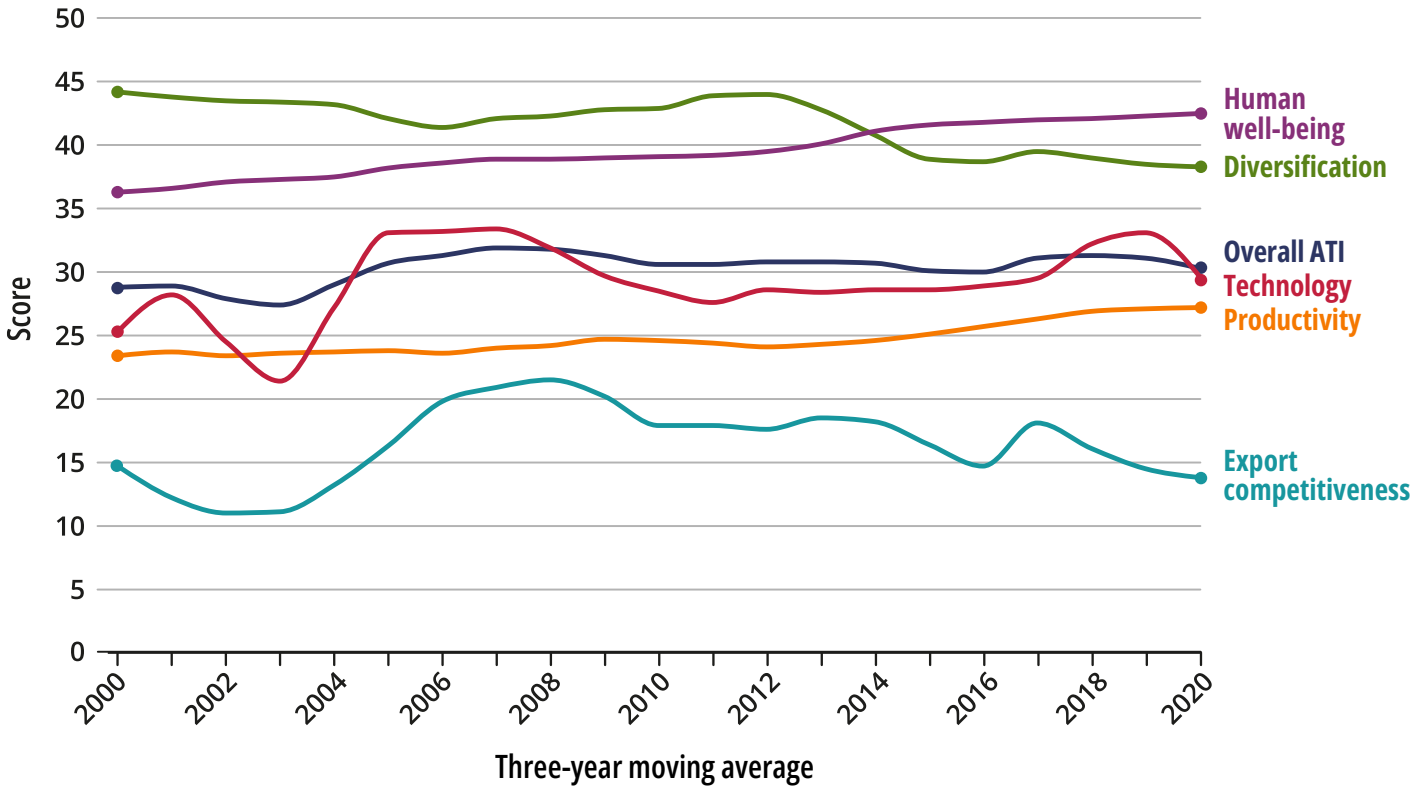
Throughout the 2000–2020 period, only four countries—Ghana, Rwanda, Tanzania, and Uganda—managed to sustain growth acceleration for all 20 years. But even for these four countries, the rate of acceleration decreased in the second decade. An obvious takeaway is that economies should be managed in ways that promote steady growth—not just rapid growth—to enable investment in productive assets and bolster resilience to shocks. In other words, positive feedback effects between growth acceleration, economic transformation, and building resilience hold the potential for sustained economic development.

Africa's overall DEPTH performance

Overall, economic transformation progress in Africa between 2000 and 2020 as measured by DEPTH was slow and uneven, with a large degree of variation in performance across the 30 African countries that comprise the ATI. While some countries made significant progress, the cumulative level of transformation is low. The average overall ATI score is 30.3 out of 100.



● **Economic transformation in Africa, 2000–2020**



Only five countries—Mauritius, Morocco, Eswatini, South Africa, and Tunisia—have an overall ATI score above 50, while a majority of countries (18 out of 30) have an overall score below 30.

There is a wide gap between the best and the worst performers. The top three economies based on ATI measurements—Tunisia, South Africa, and Morocco—scored four to five times higher than the bottom three economies—Niger, Burundi, and Mozambique. The data also prove that gaps have widened even further between Africa and early transformers in Asia and Latin America, particularly around productivity, exports, and income.

Some countries achieved very positive changes in their overall ATI scores, indicating significant leaps in economic transformation. Examples include Morocco (+17.6), Rwanda (+8), and Tunisia (+16). Others went in the opposite direction, regressing on economic transformation. Examples here include Gambia, (-4.8), Niger (-10.3), and Zimbabwe (-12.4). Meanwhile, some countries—including Eswatini, Mauritius, and Egypt—have maintained relatively high levels of economic transformation over time, but have not improved significantly.

Findings within the individual DEPTH dimensions also reveal a lack of progress on economic resilience. The average African *Diversification* score of 38.3 represents a decline of almost six points between 2000 and 2020. *Export competitiveness* also declined, from 14.7 to a still dismal 13.8. These two DEPTH dimensions are key to building economic resilience, as countries with a poorly diversified economy, a high reliance on raw materials, and deeply uncompetitive exports are more likely to suffer from global price volatility and other economic shocks. As African economies have become less diversified and less competitive with their exports since 2000 their resilience has diminished.

Top transformers

2020 SCORE 69.5 /100	Tunisia
2020 SCORE 60.4 /100	South Africa
2020 SCORE 60.2 /100	Morocco

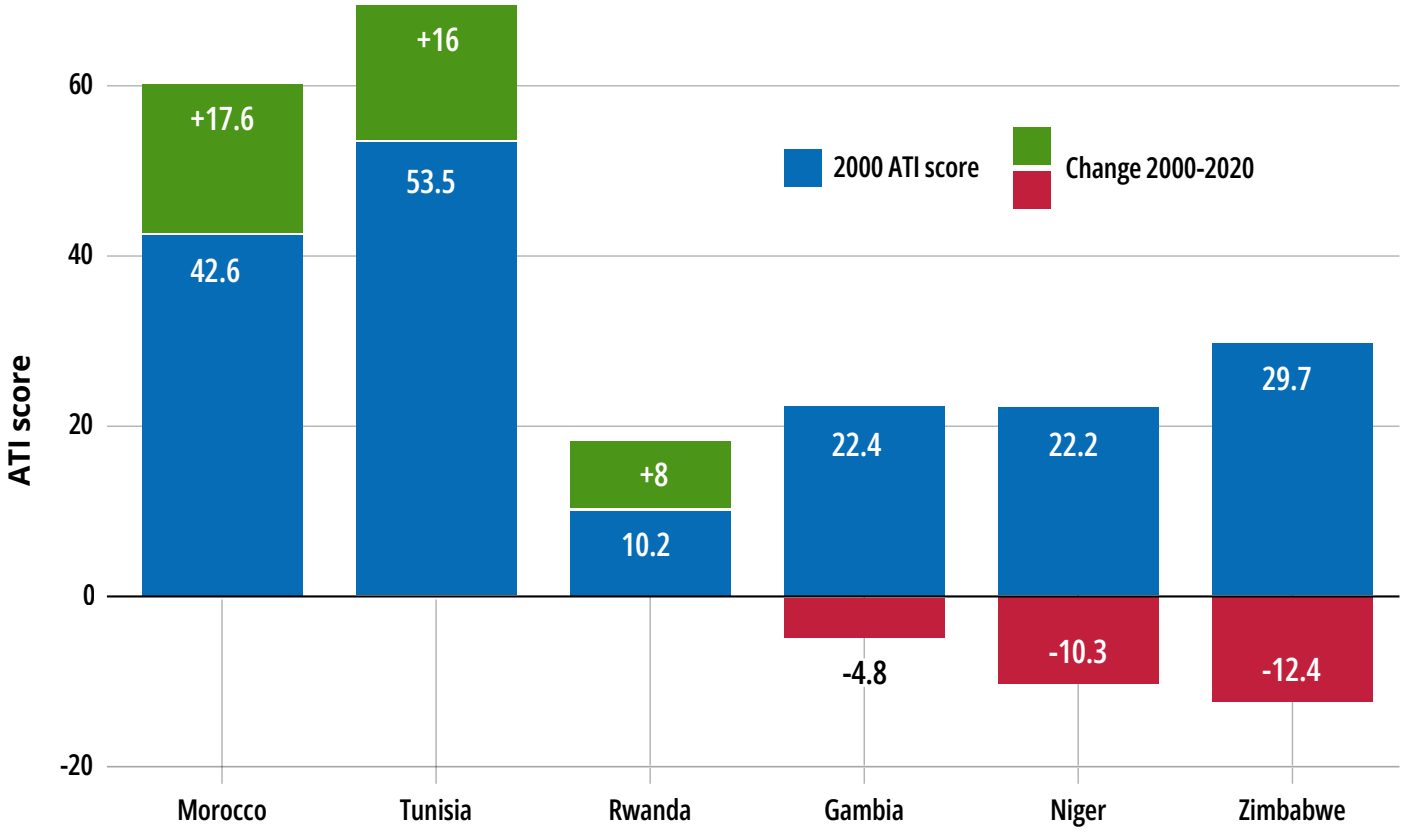
Bottom transformers

2020 SCORE 13 /100	Mozambique
2020 SCORE 11.9 /100	Niger
2020 SCORE 11.9 /100	Burundi

Productivity increases and *Technology upgrading* improved slightly, but inconsistently. These dimensions also have some of the most significant gaps between high- and low-performing countries, with a lot of variation in progress across the continent.

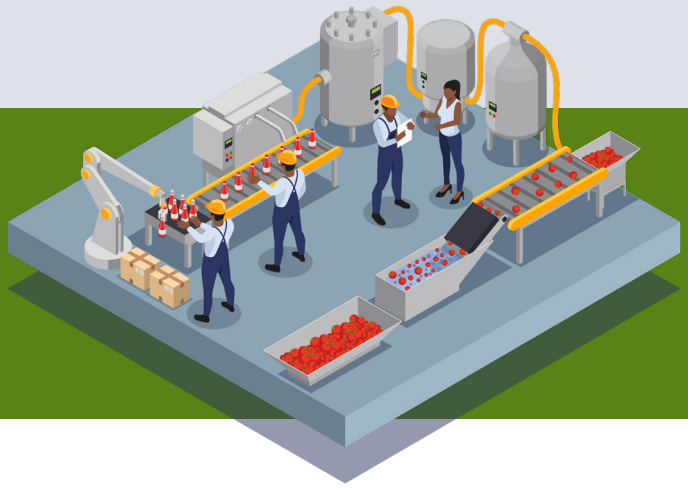
Human well-being offers the highest and most improved score at 42.5. The 6.2-point increase reflects increased political and economic stability, better access to health and education, and the successful achievement of a targeted pursuit of development goals. As a result, in 2020 more people in Africa enjoyed a higher quality of life with more opportunities to fulfill their potential than two decades before. However, it is important to note that the core components of this dimension, including income levels and formal employment, remain fragile and vulnerable to economic instability. So despite impressive gains in *Human well-being* since 2000, underlying weaknesses in economic resilience are putting economic transformation at risk.

- **Most significant 20-year changes**



The following pages review findings for each of the five DEPTH dimensions in greater detail.

Diversification



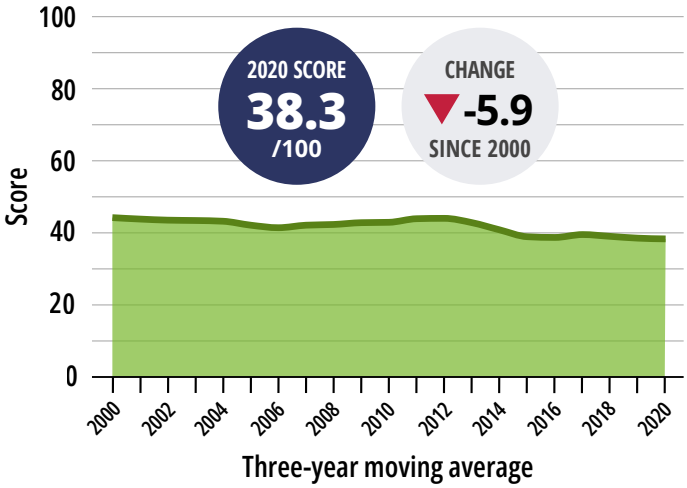
Diversification measures an economy's capability to produce and export a widening array of goods and services.

Acquiring the capability to produce a widening array of goods and services is essential for economic transformation. However, today most African economies are confined to a narrow range of commodity production. The importance of diversified production applies equally to exports. But most African economies rely on the exports of a small number of primary products.

Diversification scores by country

COUNTRY (alphabetical order)	2020 SCORE	CHANGE SINCE 2010	CHANGE SINCE 2000
Algeria	8.2	1.7 ▲	-2.8 ▼
Botswana	24.0	-7.0 ▼	2.0 ▲
Burundi	25.5	1.4 ▲	6.5 ▲
Cameroon	39.0	-6.6 ▼	-3.8 ▼
Cabo Verde	45.1	-12.2 ▼	-9.9 ▼
Congo Rep	19.1	8.5 ▲	11.5 ▲
Côte d'Ivoire	33.1	-4.9 ▼	-14.1 ▼
Egypt	63.9	-1.1 ▼	0.0 ●
Eswatini	70.9	1.0 ▲	-4.7 ▼
Ethiopia	25.8	-4.4 ▼	-1.4 ▼
Gabon	12.6	5.6 ▲	-1.0 ▼
Gambia	38.5	-8.6 ▼	-5.1 ▼
Ghana	26.8	-0.2 ▼	-17.0 ▼
Kenya	52.2	-8.2 ▼	-5.5 ▼
Madagascar	43.2	-14.3 ▼	-10.0 ▼
Malawi	31.7	0.1 ▲	0.7 ▲
Mauritius	75.8	1.5 ▲	0.8 ▲
Morocco	69.9	-6.0 ▼	-9.9 ▼
Mozambique	25.4	-9.4 ▼	-14.7 ▼
Namibia	38.9	-12.9 ▼	-5.9 ▼
Niger	11.6	-5.5 ▼	-19.5 ▼
Nigeria	16.4	-0.8 ▼	-5.8 ▼
Rwanda	37.4	0.6 ▲	8.2 ▲
Senegal	50.3	-7.9 ▼	-8.4 ▼
South Africa	63.8	-6.2 ▼	-11.7 ▼
Tanzania	29.9	-12.3 ▼	-19.5 ▼
Tunisia	76.0	1.3 ▲	1.0 ▲
Uganda	40.7	-14.7 ▼	2.4 ▲
Zambia	23.7	-4.3 ▼	-18.7 ▼
Zimbabwe	30.4	-12.4 ▼	-20.4 ▼

Average African *Diversification* score



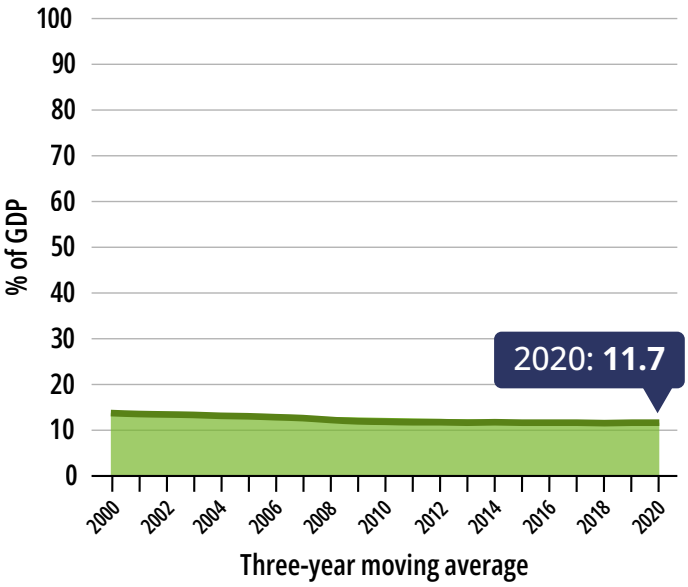
The average African *Diversification* score above is the average of the 30 economies tracked by the ATI. The map below and the table on the left show the individual country scores.

Diversification scores by country, 2020

The *Diversification* dimension measures diversity in production and exports through four indicators. The charts below show the average indicator scores for the 30 African economies tracked by the ATI for the years 2000–2020.

Manufacturing

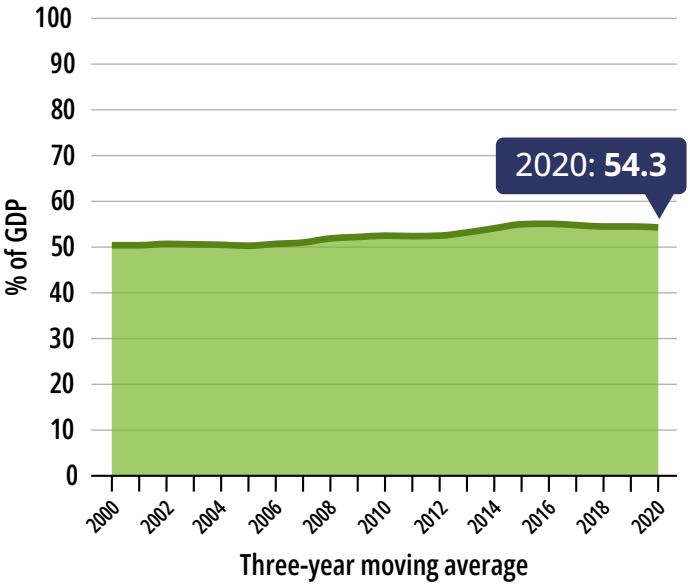
Manufacturing value added during a given period as a percentage of GDP.



Source: United Nations Statistics Division national accounts data

Services

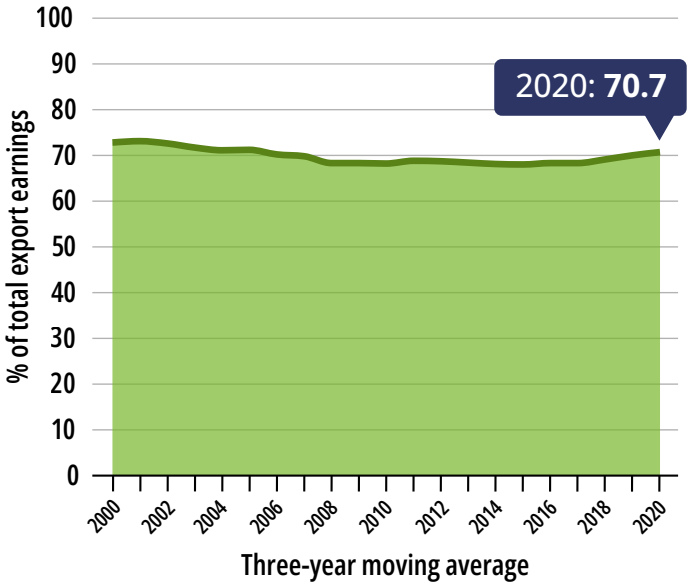
Services value added during a given period as a percentage of GDP.



Source: United Nations Statistics Division national accounts data

Export concentration

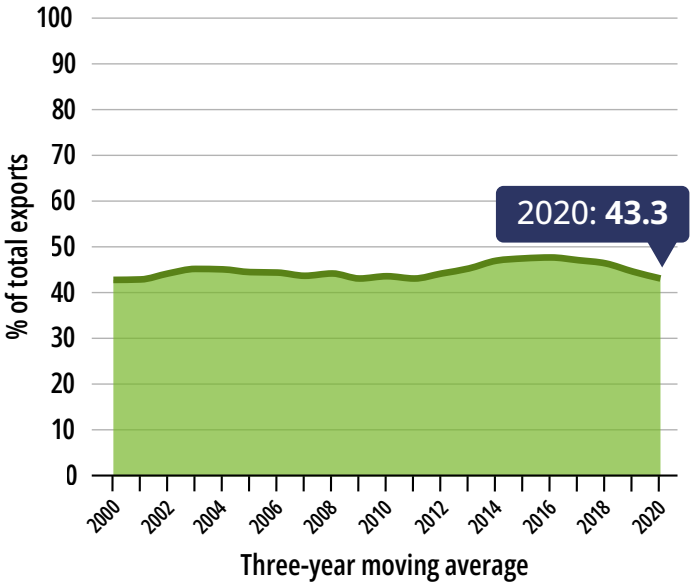
The combined share of the country's five highest-earning exports of total export earnings.



Source: United Nations Comtrade Database; World Integrated Trade Solution; World Development Indicators (2022 update)

Export sector diversification

Share of manufacturing and service exports in total exports.



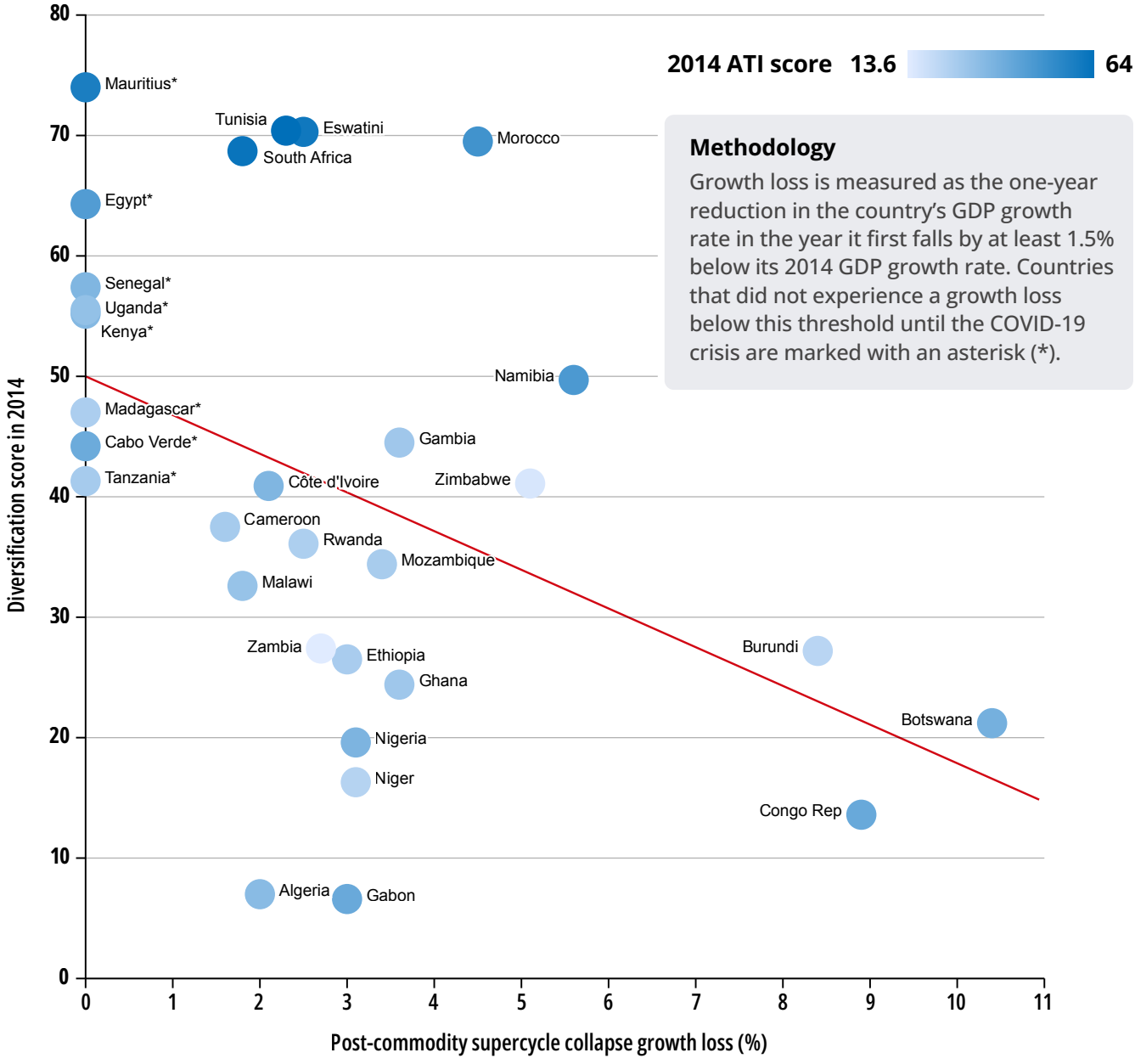
Source: United Nations Comtrade Database; World Integrated Trade Solution

Resilience and transformation

Diversification and the commodity supercycle

Africa's growth acceleration has been partly supported by the commodity supercycle that started in the mid-1990s and ended in 2015. In the early part of this period, African economies made advances in transformation. However, not all African economies that experienced rapid growth were resilient enough to maintain the momentum after 2015. The extent of a country's *Diversification* score is particularly relevant to its ability to withstand commodity price collapses. The average African country in the ATI had a very high level of export concentration, with the top five exports accounting for around 70 percent of the total export value at the peak of the commodity supercycle in 2014. At the same time, the share of services and manufactured goods—both products that were less affected by the commodity price collapse—remained relatively low. These factors, which helped many African economies grow rapidly at times of high commodity prices, also meant a stronger economic decline when the prices collapsed.

The chart below illustrates how more diversified African countries experienced significantly lower growth loss after commodity prices collapsed in 2015.

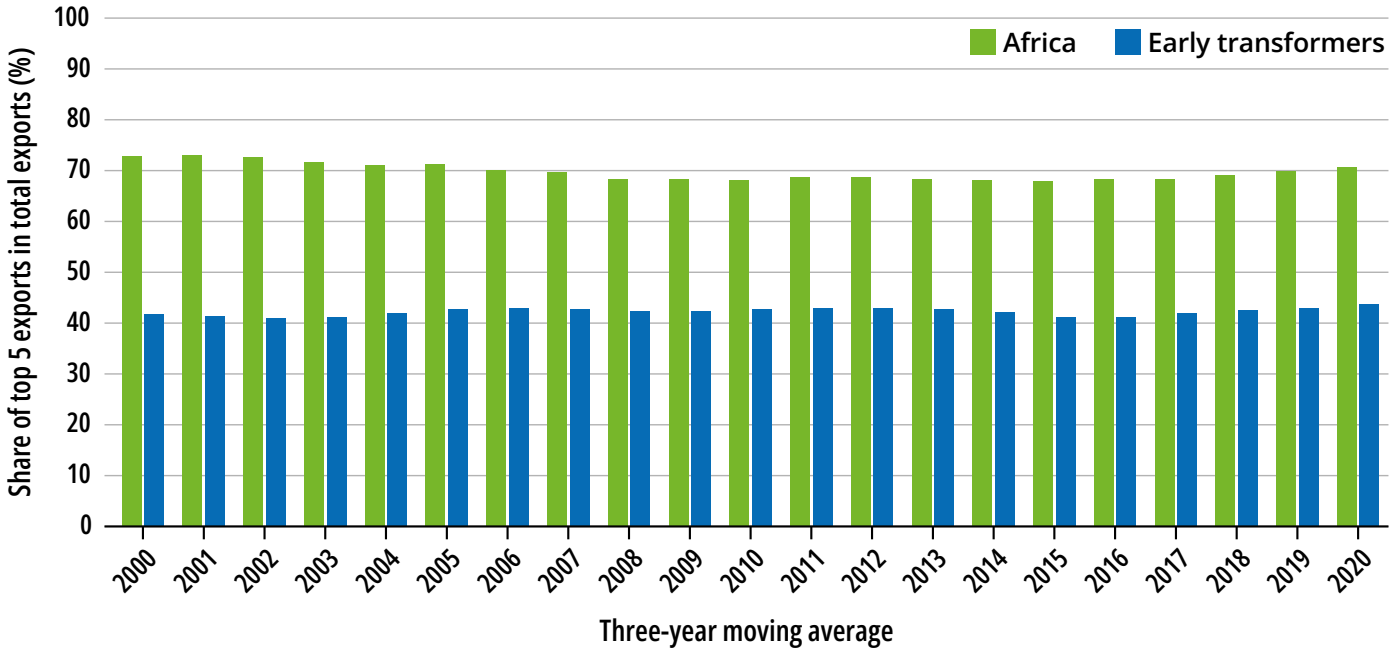


Global context

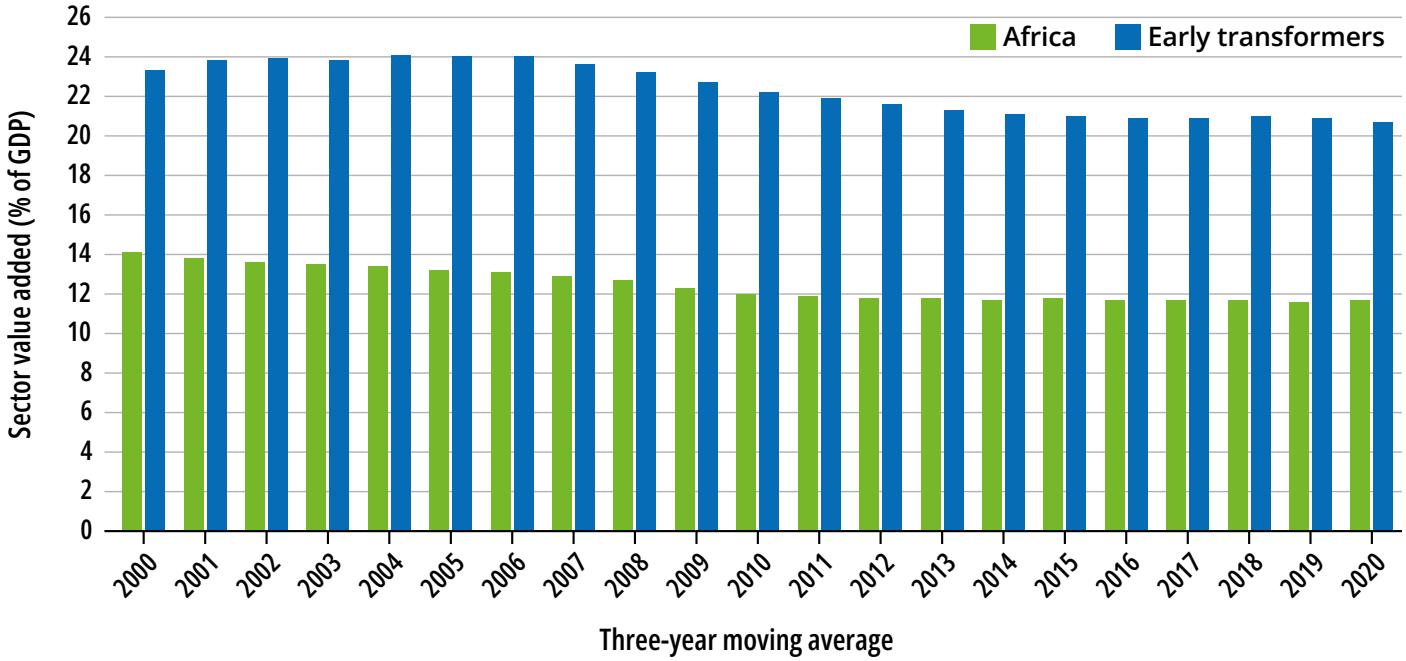
Africa's lagging export diversification and manufacturing

In 2020, the top five exports comprised more than 70 percent of Africa's exports, while in early transformers in Asia and Latin America, they made up less than half. Exporting more products can help Africa cope with shocks, compete better, and change the structure of its economy. In contrast with early transformers, Africa has also failed to grow its manufacturing sector, which can create jobs, boost productivity, and foster innovation. Between 1990 and 2020, the share of manufacturing dropped from 16 percent to 12 percent in Africa, while it stayed around 20 percent in Asia and Latin America.

● **Export concentration in Africa and early transformers**



● **Manufacturing in Africa and early transformers**

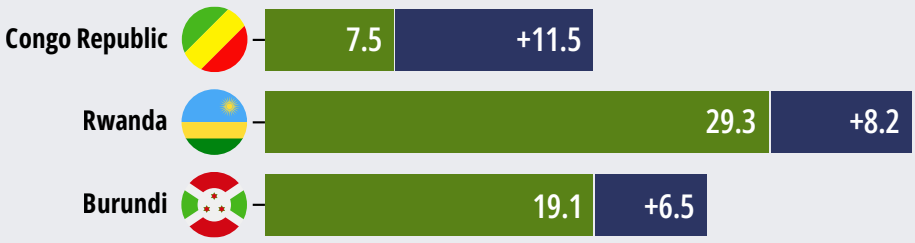


Pathways for improved Diversification

Shifting from commodity dependence to value addition

Reorienting production and export structures and strengthening technological and industrial capabilities towards higher value-added products have been successful pathways to diversified economies for early transformers in Asia and Latin America, as well as for some countries in Africa.

Three most improved countries (2000-2020)



Highest score

Tunisia

2020 SCORE 76 /100

CHANGE ▲ +1.0 SINCE 2000

Lessons from early transformers

India aggressively implemented diversification policies that spurred an agribusiness transition, including sustained investments in technology, infrastructure, entrepreneurial capabilities, national research systems, extension services, and stronger supply and value chains. The Shared Mobile Infrastructure Program expanded mobile phone networks to rural areas, extending the reach of digital extension services such as the Kisan Call Centers to rural farmers. Farmers could then receive agricultural extension services via mobile phones, hastening the adoption of modern agricultural technologies. These initiatives boosted smallholders' productivity and increased the agricultural capacity of small and medium enterprises to integrate with other activities, such as logistics and manufacturing, forming a value chain that increases incomes beyond the agricultural sector.

Examples from Africa

In **Tunisia**, an upgrading program, Programme de Mise à Niveau, helped firms develop a competitive advantage, diversifying the economy by modernizing the industrial sector with technical assistance, training, subsidies, and infrastructure upgrades. The country also promoted private sector-led export policies that attracted trade and investment partnerships, plugging the domestic economy into regional and global manufacturing value chains.

Mauritius shifted from a commodity-driven economy reliant on sugar cane to a more diversified economy with larger contributions from processed products and services, including textiles, financial services, and tourism.

Eswatini reduced its dependence on agriculture and focused on improving value addition in manufacturing and services. The country took advantage of the African Growth and Opportunity Act and Multi-Fiber Act of 2004 to deepen its domestic supply chains for textiles and garments and to expand its processing of other non-extractive goods.

Export competitiveness

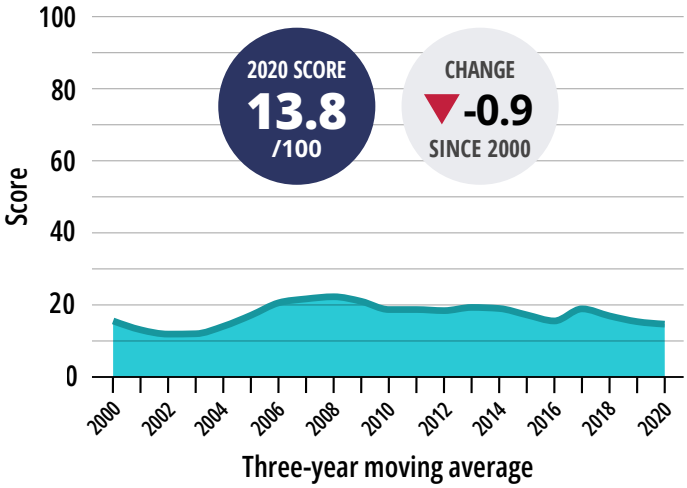
***Export competitiveness* measures the share of non-extractive exports to GDP relative to the share of global non-extractive exports to global GDP.**

Exporting provides the opportunity to expand production, boost employment, reduce unit costs, and increase incomes. It enables an economy to generate higher incomes, which helps pay for the investments in skills, capital, and technology needed to upgrade a country's comparative advantage over time.

Export competitiveness scores by country

COUNTRY (alphabetical order)	2020 SCORE	CHANGE SINCE 2010	CHANGE SINCE 2000
Algeria	0.2	0.2 ▲	-0.4 ▼
Botswana	3.4	-7.7 ▼	-3.2 ▼
Burundi	2.8	0.6 ▲	2.6 ▲
Cameroon	5.9	-0.6 ▼	0.8 ▲
Cabo Verde	5.3	-11.1 ▼	-3.4 ▼
Congo Rep	18.9	-34.7 ▼	2.9 ▲
Côte d'Ivoire	7.0	-8.6 ▼	-7.8 ▼
Egypt	10.0	-4.4 ▼	6.9 ▲
Eswatini	100.0	0.0 ●	0.0 ●
Ethiopia	0.0	-1.5 ▼	-1.0 ▼
Gabon	14.5	-1.4 ▼	-1.7 ▼
Gambia	0.3	-7.1 ▼	-0.6 ▼
Ghana	3.8	-3.8 ▼	-8.4 ▼
Kenya	4.7	-6.2 ▼	-3.2 ▼
Madagascar	13.1	-4.4 ▼	-2.1 ▼
Malawi	2.1	-7.1 ▼	-9.8 ▼
Mauritius	25.8	-17.1 ▼	-45.7 ▼
Morocco	41.1	11.4 ▲	15.1 ▲
Mozambique	5.4	-1.3 ▼	3.4 ▲
Namibia	14.4	-12.8 ▼	3.7 ▲
Niger	0.8	-2.2 ▼	-5.4 ▼
Nigeria	1.2	-1.0 ▼	1.2 ▲
Rwanda	7.8	6.2 ▲	7.6 ▲
Senegal	9.2	-0.8 ▼	1.6 ▲
South Africa	24.5	1.0 ▲	5.7 ▲
Tanzania	2.7	-3.3 ▼	1.5 ▲
Tunisia	70.6	0.0 ●	21.6 ▲
Uganda	4.9	-1.6 ▼	3.9 ▲
Zambia	10.2	1.6 ▲	-1.8 ▼
Zimbabwe	4.2	-4.7 ▼	-11.7 ▼

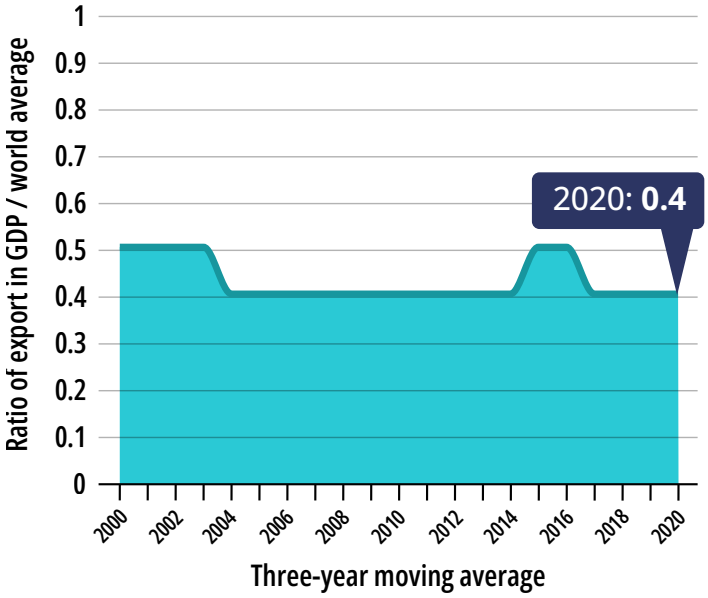
Average African *Export competitiveness* score



The average African *Export competitiveness* score above is the average of the 30 economies tracked by the ATI. The map below and the table on the left show the individual country scores.

Export competitiveness scores by country, 2020

The *Export competitiveness* dimension measures the global competitiveness of a country's non-extractive exports through one indicator. The chart below shows the average indicator score for the 30 African economies tracked by the ATI for the years 2000–2020.



Non-extractive export earnings

The *Export competitiveness* dimension is based on a single indicator: the ratio of a country's share in the world's exports of non-extractive goods and services to its share in world non-extractive GDP. In other words: if this indicator exceeds 1, the country has more competitive non-extractive exports than the global average. If the ratio is below 1, that country has less competitive exports than the global average. The average indicator for all 30 ATI countries remains consistently below 1, demonstrating Africa's comparatively poor export competitiveness.

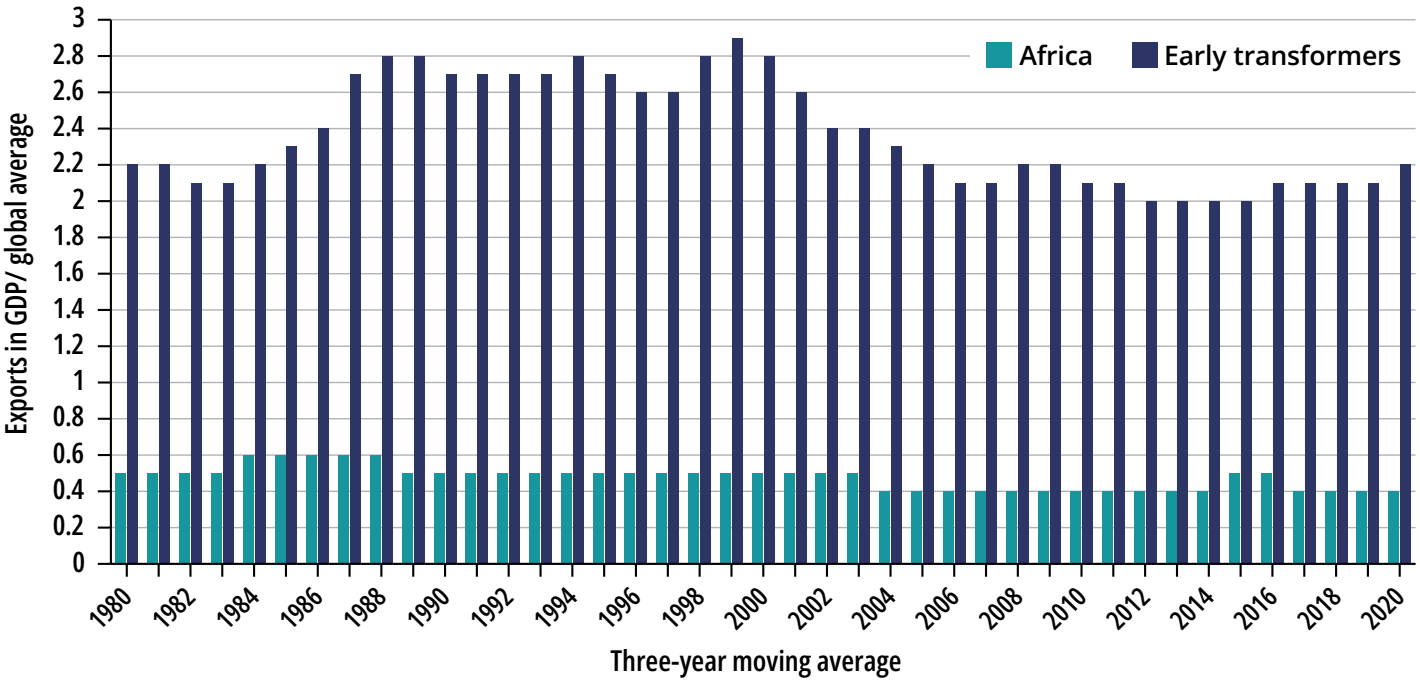
Source: United Nations Comtrade Database; World Integrated Trade Solution; World Development Indicators

Global context

Africa's non-extractive exports remain deeply uncompetitive

The early transformers' ratio of their share in the world's exports of non-extractive goods and services to the share of global GDP has fluctuated between 2 and 3. This means that on average, early transformers were twice to three times more competitive than the global average. Meanwhile, Africa's ratio of around 0.5 shows that it has remained only half as competitive as the global average, with no improvement in recent decades.

● ***Export competitiveness*** **in Africa and early transformers**



Resilience and transformation

Export competitiveness and the commodity supercycle collapse

The low overall average *Export competitiveness* score, which measures the global competitiveness of an economy's non-extractive exports, illustrates the sensitivity of African economies in the face of commodity price fluctuations. The vast majority of African economies scored very low on this dimension in 2014, just prior to the collapse of the commodity supercycle in 2015. Most of the low-scoring economies in the bottom-left corner of this chart remained deeply reliant on extractives such as oil and gas and minerals—all of which also experienced the strongest price declines when the cycle ended.

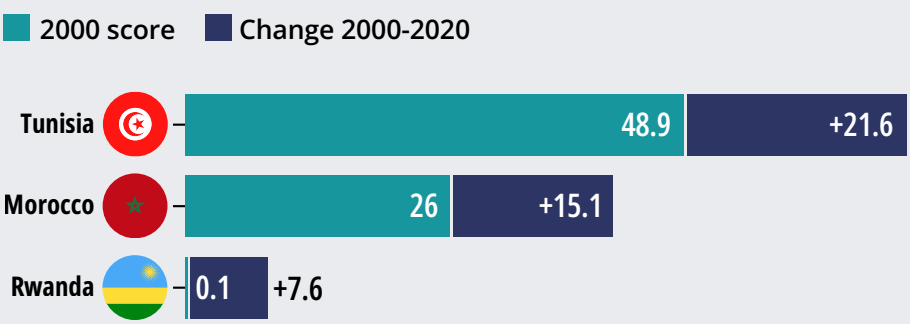
● ***Export competitiveness*** **and economic transformation in 2014**

Pathways for improved *Export competitiveness*

Boosting exports with technology and innovation

Tunisia, Morocco, Egypt, Mauritius, and South Africa have diversified their exports to light manufactures and semi-processed merchandise products. However, many of their export products still fall short in global competitiveness due to low levels of technology and insufficient innovation. By contrast, many early transformers have overcome similar challenges through industrial policy measures targeting import restrictions, export subsidies, infrastructure enhancements, and increased support for higher education.

Three most improved countries (2000-2020)



Highest score

Eswatini

2020 SCORE
100
/100

CHANGE
0
SINCE 2000

Lessons from early transformers

Several early transformers, including **China**, **Chile**, **South Korea**, and **Malaysia**, used state support to create national export champions. This support took various forms: subsidies and access to credits at concessional rates for firms that successfully export their products; investments in infrastructure and education; and taxes on competing imports.

Malaysia targeted anchor industries, including palm oil, ready-made garments, and electronics, to successfully increase export competitiveness, while **Chile** leveraged its mining rents to promote innovation and industrial clusters.

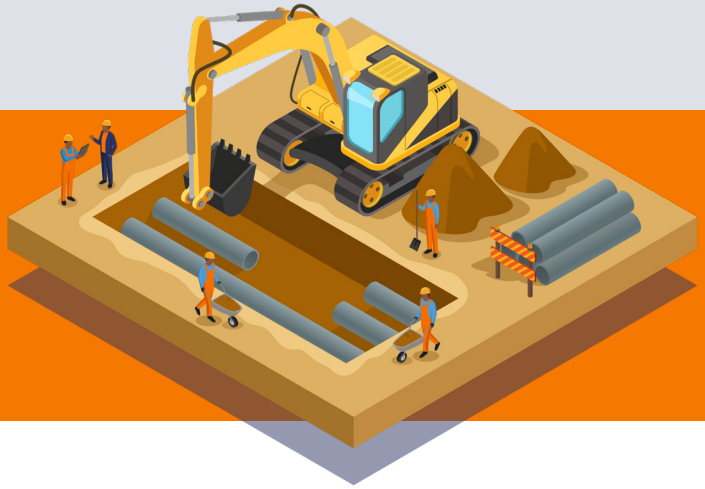
Almost all earlier transformers used Special Economic Zones (SEZs) to plug into global value chains. **China** used these zones as its first major experiment in opening its economy to investors in electronics and machinery industries in the Pearl River Delta. In **Thailand**, the multinational firms in its SEZs provided much of the technology for the production of automobiles and electronics.

Examples from Africa

Improvements in **Rwanda's** *Export competitiveness* score—from 1.6 in 2010 to 7.8 in 2020—are in part due to the implementation of Rwanda's National Export Strategy and the country's export product differentiation, which has established niche export markets for coffee and tea through deliberate and aggressive marketing campaigns.

In **Tunisia**, the public and private sectors have collaborated effectively to promote export competitiveness through trade and investment partnerships, attracting FDI and integrating into regional and global value chains. Progress was also made on the back of a set of trade initiatives that helped Tunisian firms forge partnerships in external markets, including a free trade agreement with the European Union in 1995.

Productivity increases



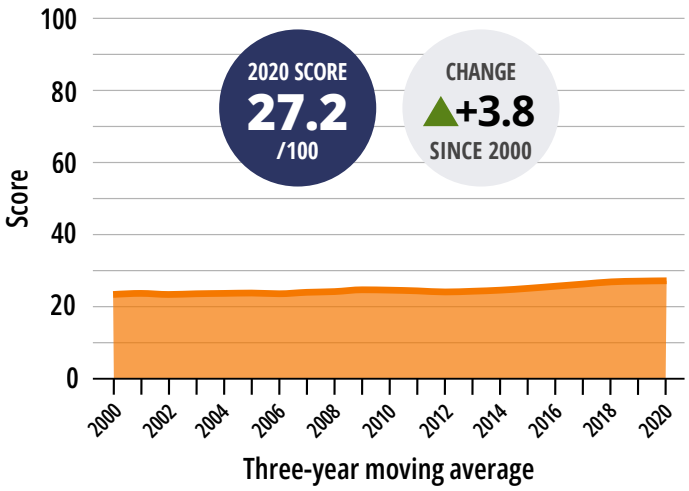
Productivity increases measures the value added per unit of labor in agriculture, manufacturing and construction, and services.

Productivity increases remain vital for Africa's post-pandemic recovery and long-term prosperity. High and growing labor productivity is the basis for high and growing incomes, which are in turn a source for transformative investments and consumption. Yet despite recent improvements, labor productivity remains low in many African countries.

Productivity increases scores by country

COUNTRY (alphabetical order)	2020 SCORE	CHANGE SINCE 2010	CHANGE SINCE 2000
Algeria	52.3	10.8 ▲	11.3 ▲
Botswana	70.0	15.1 ▲	26.9 ▲
Burundi	0.4	0.0 ●	-2.2 ▼
Cameroon	9.9	0.6 ▲	0.0 ●
Cabo Verde	31.5	-2.2 ▼	-1.6 ▼
Congo Rep	8.9	-3.3 ▼	-3.6 ▼
Côte d'Ivoire	16.4	2.3 ▲	-3.1 ▼
Egypt	37.5	9.6 ▲	9.6 ▲
Eswatini	66.3	-3.5 ▼	3.4 ▲
Ethiopia	3.2	2.0 ▲	2.4 ▲
Gabon	70.8	6.1 ▲	-5.8 ▼
Gambia	7.2	-6.3 ▼	-14.9 ▼
Ghana	14.4	2.3 ▲	0.1 ▲
Kenya	7.7	0.8 ▲	-4.1 ▼
Madagascar	0.8	-1.0 ▼	-3.2 ▼
Malawi	4.2	0.4 ▲	-0.7 ▼
Mauritius	85.9	20.4 ▲	36.5 ▲
Morocco	40.0	8.6 ▲	13.4 ▲
Mozambique	2.2	0.2 ▲	1.1 ▲
Namibia	62.6	-0.3 ▼	4.1 ▲
Niger	3.4	0.9 ▲	0.0 ●
Nigeria	31.2	4.7 ▲	16.4 ▲
Rwanda	4.1	0.9 ▲	2.3 ▲
Senegal	16.7	1.5 ▲	-0.6 ▼
South Africa	84.0	-3.1 ▼	13.8 ▲
Tanzania	5.3	1.7 ▲	1.6 ▲
Tunisia	50.2	4.9 ▲	11.0 ▲
Uganda	9.0	0.3 ▲	-1.6 ▼
Zambia	11.1	-0.4 ▼	0.6 ▲
Zimbabwe	8.2	4.5 ▲	0.0 ●

Average African _Productivity increases_ score



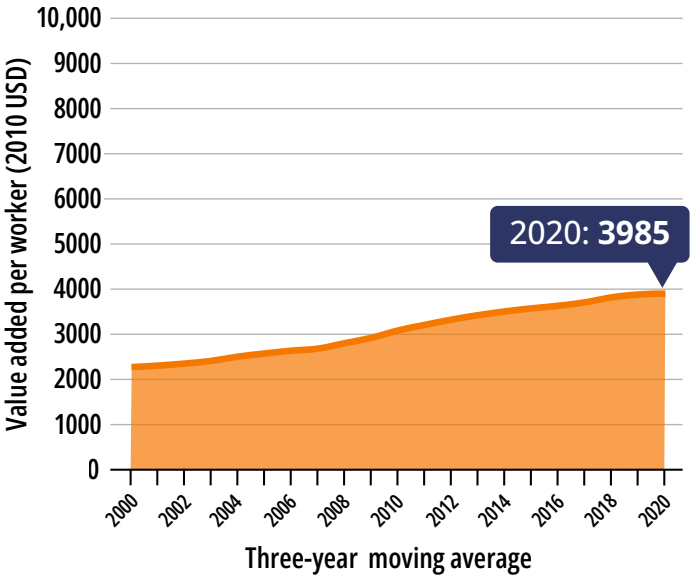
The average African _Productivity increases_ score above is the average of the 30 economies tracked by the ATI. The map below and the table on the left show the individual country scores.

Productivity increases scores by country, 2020

The *Productivity increases* dimension measures labor productivity in the agriculture, manufacturing and construction, and services sectors through three indicators, which are weighted according to the relative size of each sector. The charts below show the average indicator scores for the 30 African countries tracked by the ATI for the years 2000–2020.

Agricultural labor productivity

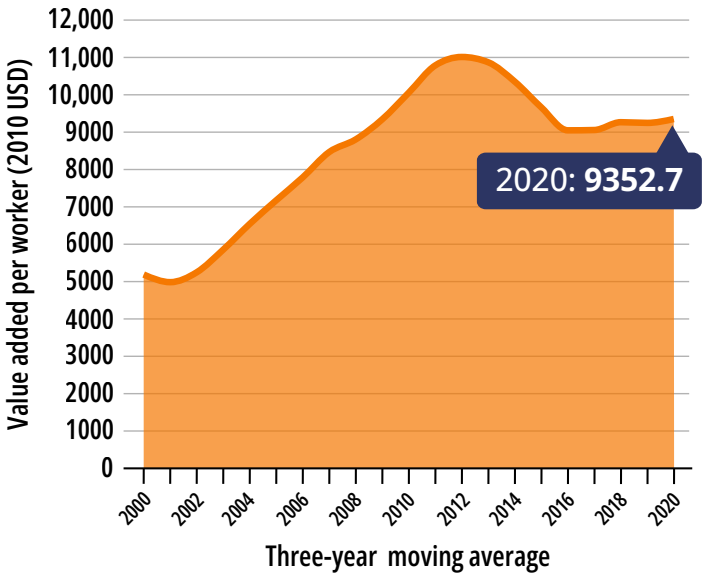
Agriculture, forestry, and fishing value added per worker (constant 2020 US$)



Source: World Development Indicators (2022 update)

Manufacturing and construction labor productivity

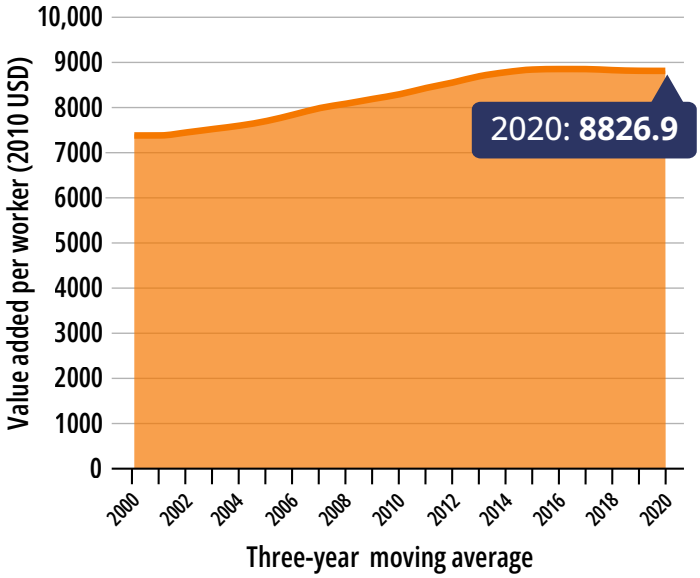
Manufacturing value added per manufacturing worker (2010 US$).



Source: United Nations Statistics Division national accounts data

Services labor productivity

Services, value added per worker (2010 US$).



Source: World Development Indicators (2022 update)

The missing link in Africa's productivity growth: structural change

There are two types of productivity increases: within-sector and between-sector. Within-sector productivity growth means sectors become more efficient by using better machines, technology, workers, or firms. Between-sector productivity growth means that workers move from less productive sectors to more productive ones. This leads to structural change.

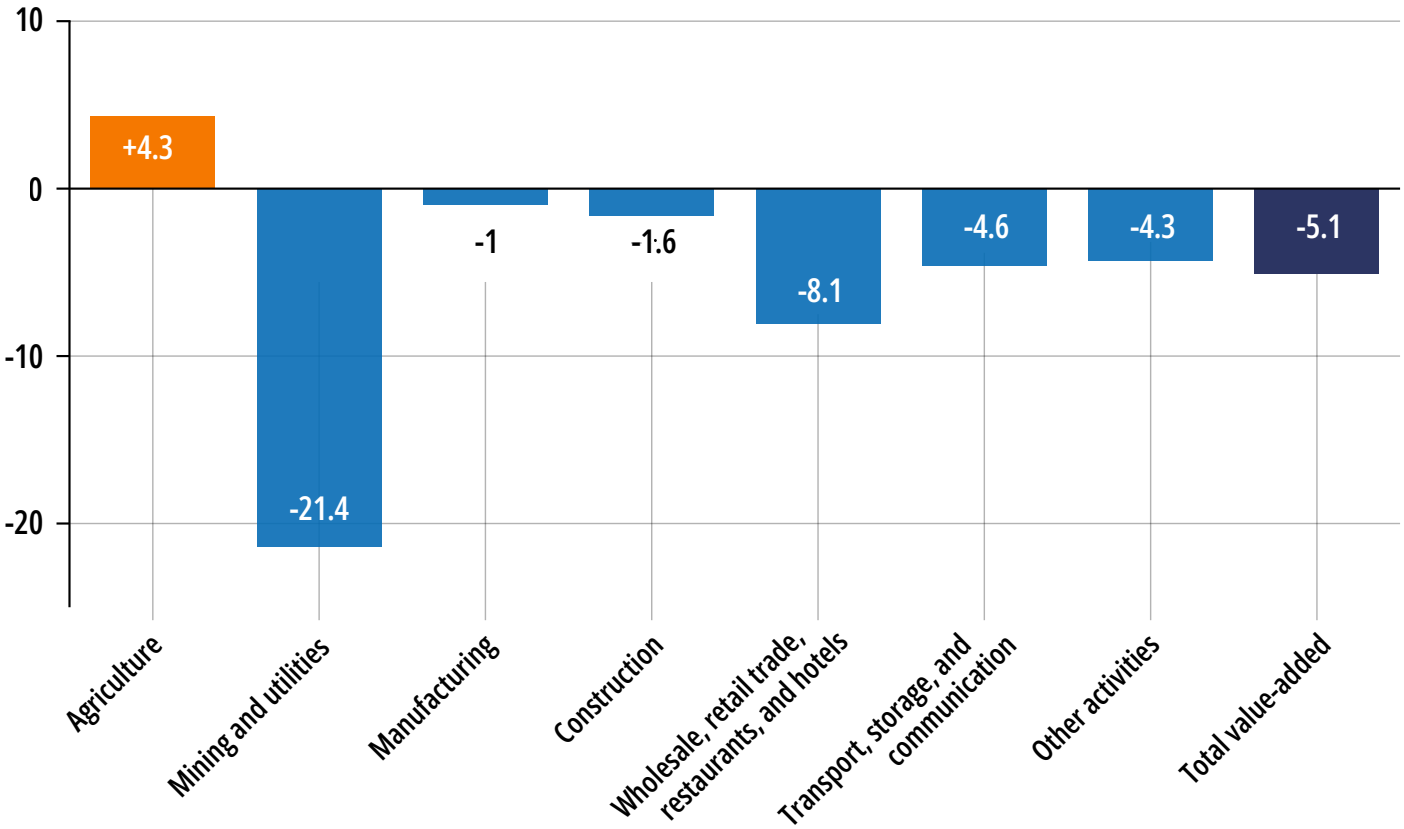
Most of the productivity growth in Africa has come from within-sector improvements, especially in agriculture. But between-sector productivity growth has been very low or negative. This has slowed down the overall growth of the economy and the creation of jobs.

Resilience and transformation

How COVID-19 slowed Africa's productivity growth

The COVID-19 pandemic triggered unprecedented disruptions to Africa's economy leading to the continent's first recession since the 1990s. Containment measures including border closures, stringent social distancing, and restricted mobility caused by lockdowns and shutdowns triggered supply-side and demand-side effects that drastically affected Africa's productivity growth. While the impact as measured by the overall average *Productivity increases* dimension in the ATI seems muted, this is mainly because the latest data measures a three-year average, which includes pre-pandemic data. A closer look at the loss in value addition per sector shows a significant and immediate impact on all sectors except for agriculture.

Losses and gains in value-addition in Africa, 2020

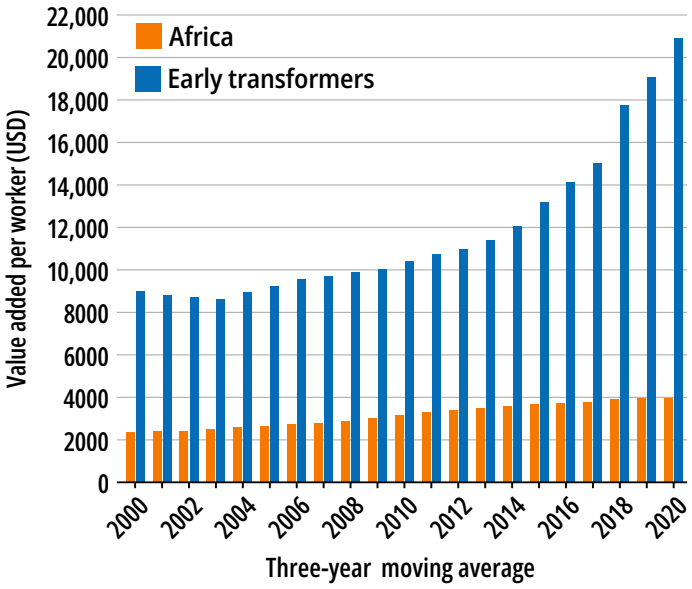


Global context

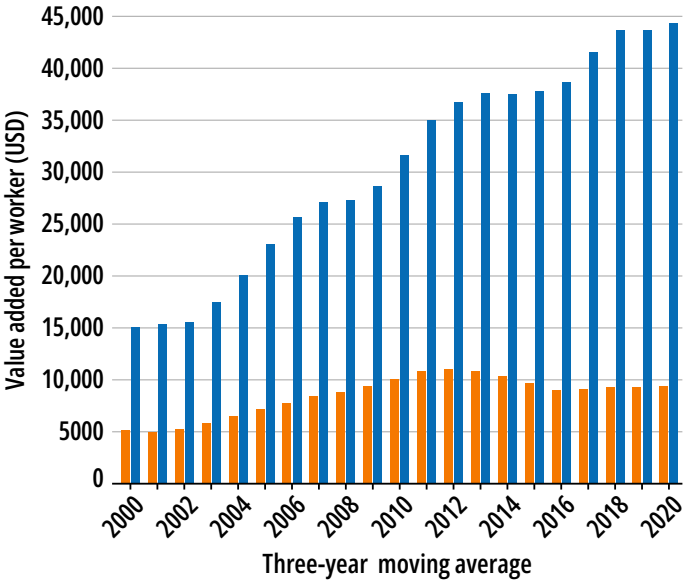
Africa's manufacturing and construction productivity declines

The labor productivity gap between Africa and early transformers has grown significantly across all sectors, especially in manufacturing and construction. African economies had an advantage over their Asian and Latin American counterparts in the 1970s and 1980s, but they lost it in 1989 and have been lagging ever since. Meanwhile, Africa's services sector labor productivity has improved steadily since the early 2000s, but not as fast as the early transformers. In 2020, a services sector worker in the early transformers would produce nearly $25,000 more value-added than an African worker. This is almost double the difference in 1990. Advanced technologies have boosted productivity in the agricultural sector in early transformers recently, but most African economies have yet to reap the benefits.

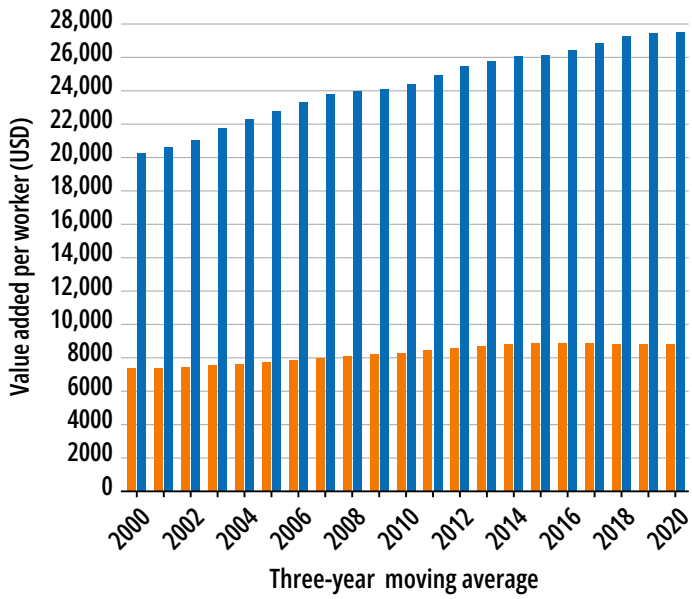
Agricultural labor productivity



Manufacturing and construction labor productivity

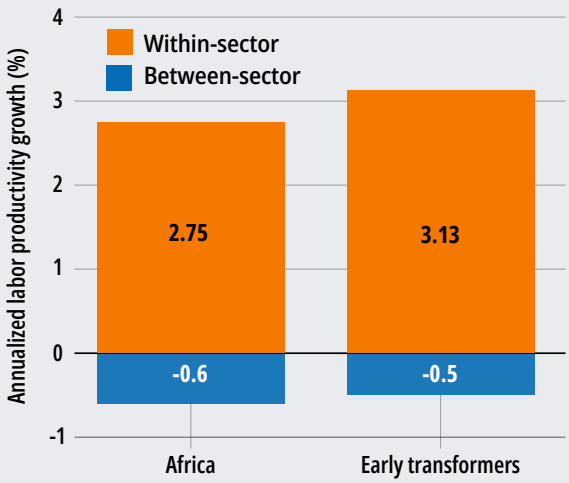


Services labor productivity



Labor productivity growth, 2000–2020

Average annual within- and between-sector labor productivity growth in African countries and early transformers.

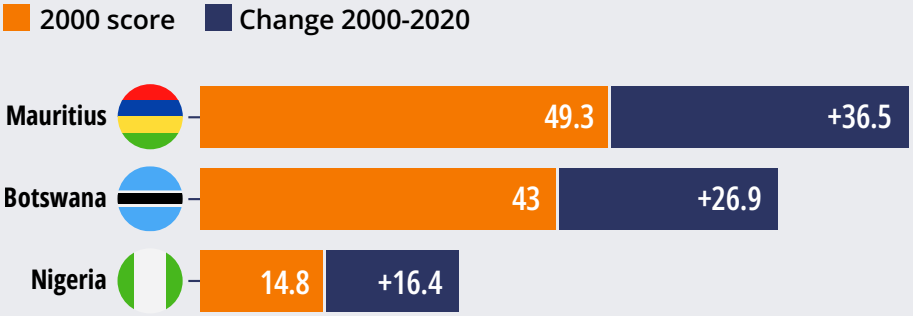


Pathways for higher *Productivity increases*

Making gains through land reforms and labor-intensive models

Many early transformers and some African economies have enabled large-scale, more profitable farming by improving land governance and administration. Other pathways include labor-intensive models that boost employment in highly productive industrial sectors as well as favorable policy environments that attract independent power investors.

Three most improved countries (2000-2020)



Highest score

Mauritius

2020 SCORE
85.9
/100

CHANGE
▲**+36.5**
SINCE 2000

Lessons from early transformers

Some Latin American economies, including the **Dominican Republic**, **Panama**, and **Peru**, achieved higher labor productivity growth through a decline in informal activity. These countries successfully addressed informality by upgrading worker skills and improving access to financial services, transport, healthcare, land rights, and markets. Education has proven to positively influence productivity, particularly in the agricultural sector. **Vietnam** and **Indonesia** fueled their industrial expansion by increasing the average years of schooling to six.

South Korea focused on scientific farming and deep processing of agricultural products, which ultimately led to a consistent rise in agricultural productivity and the reallocation of workers to modern sectors. **Singapore** used innovation to ensure that input factors such as land and energy did not constrain its productivity. The country directed its education and training to stimulate the use of advanced technologies and sustain long-term productivity growth.

Examples from Africa

Kenya boosted firm productivity and financial inclusion through digital technology, notably its highly successful M-Pesa mobile money service. In **Ghana**, online platforms like Esoko, Farmerline, and Trotro Tractor have enabled smallholder farmers to gain easier access to critical market insights and extension services through voice and text messaging.

Malawi revolutionized its land reform program by drawing on Brazil's market-based approach, addressing ownership inequality and landlessness to diversify farming and increase agricultural production. Similarly, **Senegal** supported a comprehensive land reform program through the Millennium Challenge Corporation that shored up land development and improved the country's rice production. It also mitigated the impact of soil degradation in the Delta and Podor corridors through newly developed irrigable lands.

Technology upgrading

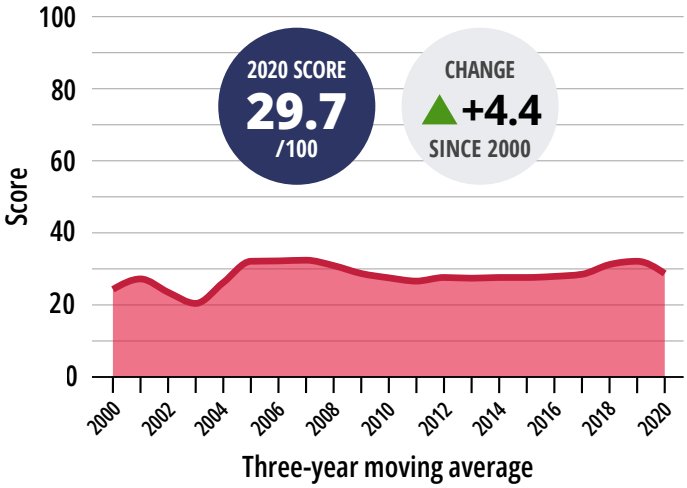
***Technology upgrading* measures the medium-and high-technology content in total production activities and total exports.**

Sustainable productivity growth can only be achieved through the development of new and improved technologies and the ability to master more sophisticated economic activities. The share of medium- and high-technology manufactures in production and exports has increased in Africa, but there is a wide gap between the highest- and lowest-performing countries.

Technology upgrading scores by country

COUNTRY (alphabetical order)	2020 SCORE	CHANGE SINCE 2010	CHANGE SINCE 2000
Algeria	2.9	-5.8 ▼	-9.8 ▼
Botswana	8.8	-3.8 ▼	-0.9 ▼
Burundi	8.0	-16.3 ▼	5.5 ▲
Cameroon	15.4	-5.4 ▼	9.7 ▲
Cabo Verde	32.0	-7.9 ▼	-4.6 ▼
Congo Rep	37.7	-13.2 ▼	23.0 ▲
Côte d'Ivoire	36.2	0.4 ▲	7.3 ▲
Egypt	51.9	2.6 ▲	3.6 ▲
Eswatini	13.7	2.5 ▲	6.3 ▲
Ethiopia	40.5	3.7 ▲	30.6 ▲
Gabon	11.2	-0.2 ▼	2.0 ▲
Gambia	11.1	7.2 ▲	-14.0 ▼
Ghana	18.6	4.7 ▲	13.1 ▲
Kenya	30.8	0.9 ▲	8.8 ▲
Madagascar	3.4	-2.1 ▼	-1.4 ▼
Malawi	28.1	3.1 ▲	14.8 ▲
Mauritius	14.7	9.0 ▲	10.0 ▲
Morocco	97.2	37.2 ▲	57.7 ▲
Mozambique	19.2	-10.8 ▼	-9.4 ▼
Namibia	7.0	-11.2 ▼	-4.4 ▼
Niger	24.8	-5.0 ▼	-26.7 ▼
Nigeria	90.2	30.3 ▲	3.4 ▲
Rwanda	12.1	-9.9 ▼	4.3 ▲
Senegal	42.1	4.6 ▲	-6.8 ▼
South Africa	64.0	3.1 ▲	7.8 ▲
Tanzania	23.6	-0.5 ▼	-5.3 ▼
Tunisia	72.9	29.6 ▲	33.8 ▲
Uganda	26.5	0.0 ●	-4.1 ▼
Zambia	28.2	5.5 ▲	-1.6 ▼
Zimbabwe	18.3	-16.7 ▼	-20.0 ▼

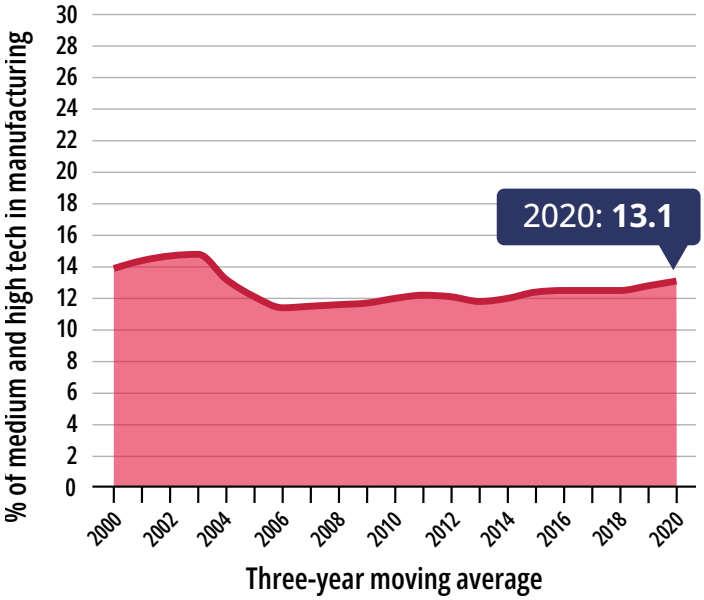
Average African *Technology upgrading* score



The average African *Technology upgrading* score above is the average of the 30 economies tracked by the ATI. The map below and the table on the left show the individual country scores.

Technology upgrading scores by country, 2020

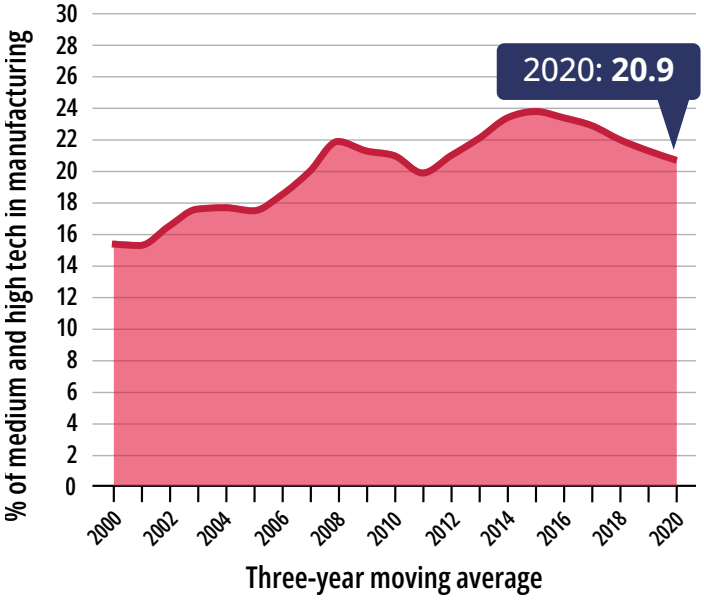
The *Technology upgrading* dimension is measured by two indicators. The charts below show the average indicator scores for the 30 African countries tracked by the ATI for the years 2000–2020.



Technology production

This is the share of medium- and high-technology inputs in manufacturing value added. Manufacturing value added is classified into low technology, medium technology, and high technology, and the shares of medium and high technology are combined to represent the level of technology in the manufacturing sector. The Lall approach is used for the technology decomposition of manufacturing value added.

Source: World Development Indicators (2022 update)



Technology in exports

This is the share of medium- and high-technology products in total exports. The Lall approach is used for the technology decomposition of manufactured exports.

As these graphs illustrate, the increasing overall *Technology upgrading* score for Africa has been driven primarily by an increase in medium- and high-technology exports. The adoption of advanced technology in production in manufacturing has stalled.

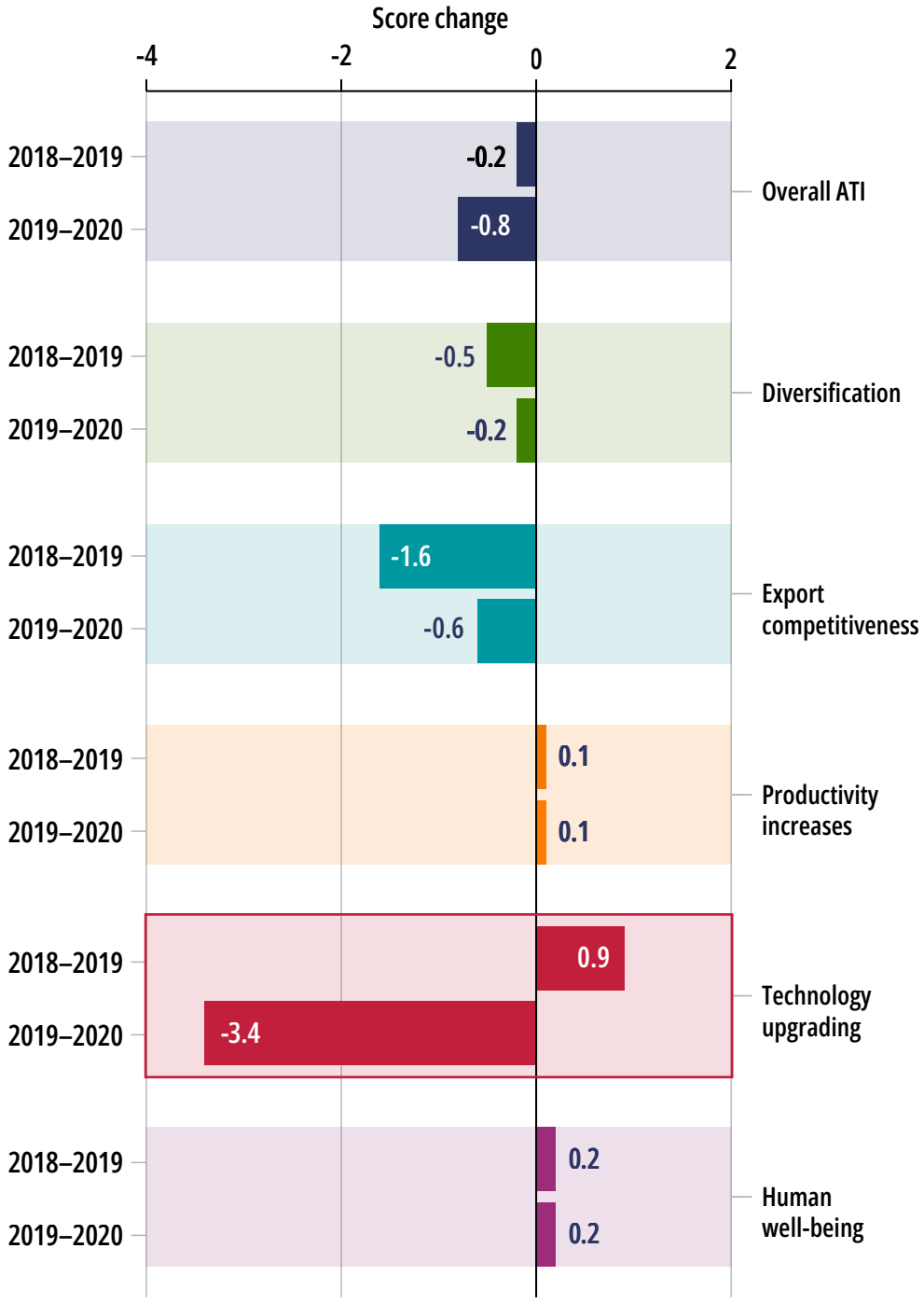
Source: World Development Indicators (2022 update)

Resilience and transformation

COVID-19 and the sharp decline of *Technology upgrading* in Africa

While the specific transmission mechanisms are complex and merit further research, the overall immediate impact of the COVID-19 pandemic on African economic transformation outcomes is clear: the pandemic made a bad situation worse for Africa's transformation. Between 2018 and 2019, *Diversification* and *Export competitiveness* were already weakening. Only *Technology upgrading* was improving, while *Human well-being* and *Productivity increases* were stagnant. As the pandemic hit the continent, *Technology upgrading* was hit harder than any other dimension as a result of a collapse in global production and exports.

Changes in DEPTH scores before and during the COVID-19 pandemic

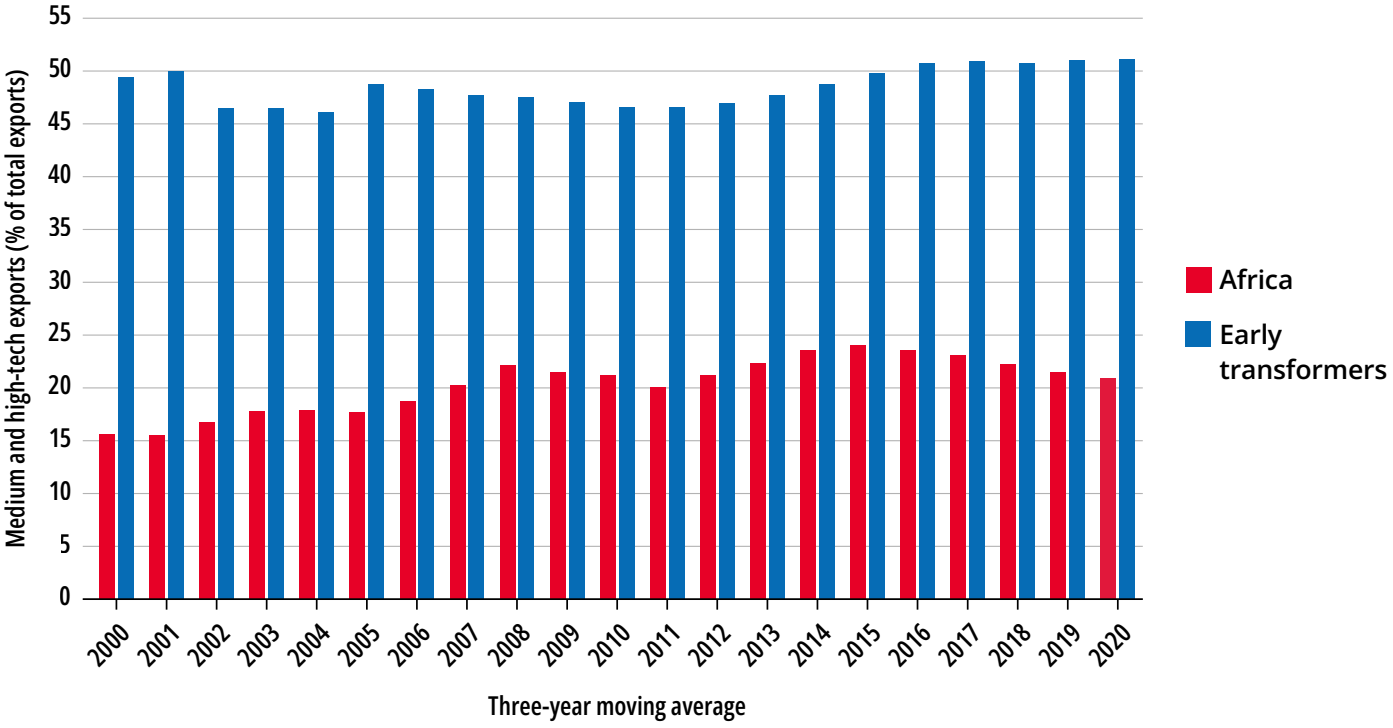


Global context

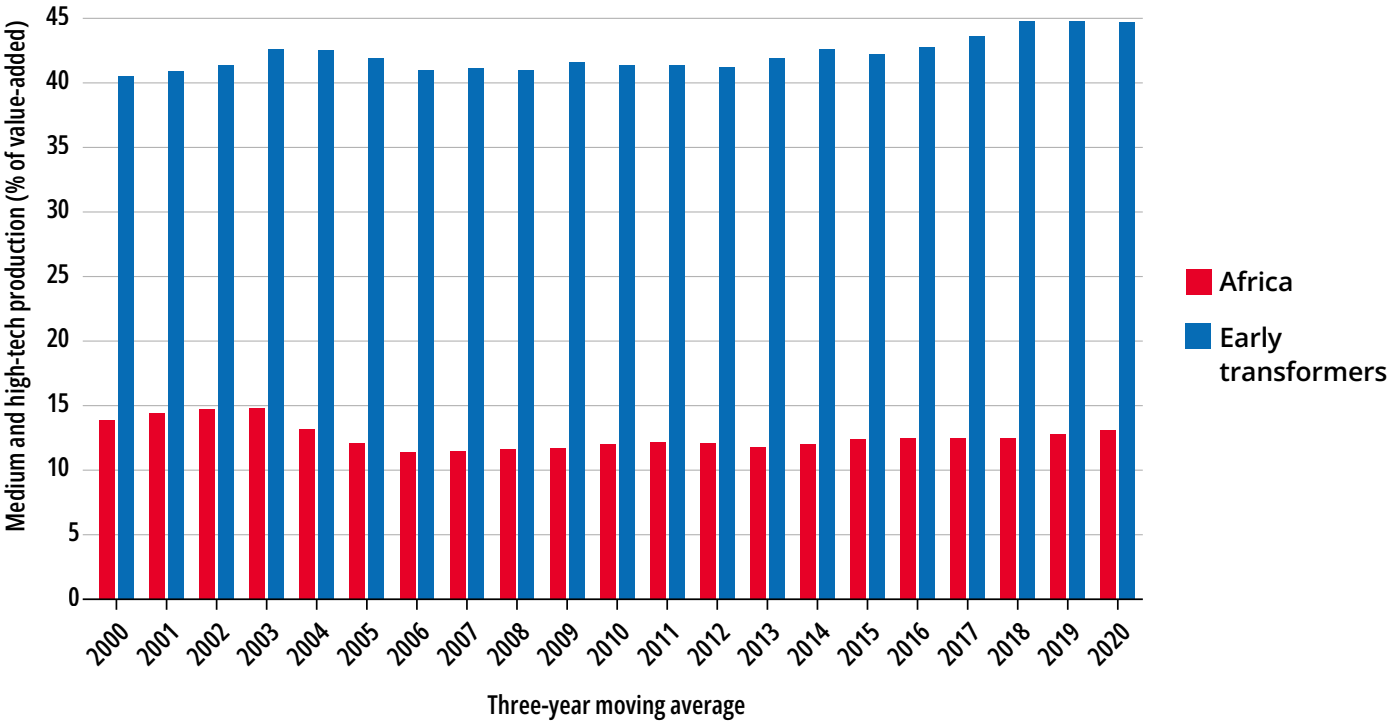
The technology content challenge for Africa's exports and production

Despite slow but sustained improvements in technology content in Africa's exports between 2000 and 2020, countries still have a long way to go to catch up to early transformers. Africa has fallen even further behind when it comes to medium- and high-tech production, where progress has been notably absent.

Technology in exports: Africa and early transformers



Production technology: Africa and early transformers

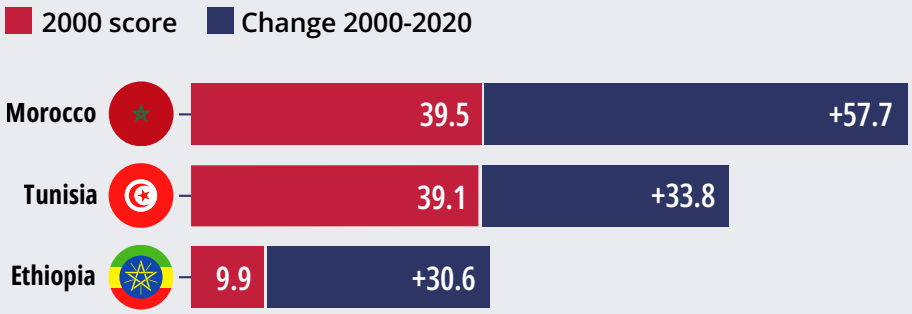


Pathways for improved *Technology upgrading*

Closing knowledge, skills, and technology gaps

Successful technology transfers often result from industrial policies that encourage partnerships between foreign and domestic investors in manufacturing. These policies include attracting FDI with advanced technology, acquiring strategic foreign firms, promoting joint ventures, and encourging collaboration in routines and teamwork between domestic and foreign enterprises. However, not every partnership yields the same results. For example, ACET research has shown that African countries that partner with OECD member countries see more investment in equity partnerships than those that partner with non-OECD members. Such partnerships also have more direct technology transfer clauses, worker training programs, research and development activities, and international quality certifications.

Three most improved countries (2000-2020)



Highest score

Morocco

2020 SCORE **97.2** /100

CHANGE **+57.7** SINCE 2000

Lessons from early transformers

South Korea incentivized corporations to develop new technology and upgrade productive efficiency to compete in the global market for high-tech manufacturing and high-value services. The government supported innovation through the Research, Innovation and Enterprise Plan, which promoted greater collaboration between industry and research institutes. The country also invested heavily in education, especially in STEM fields.

Thailand had a major influx of FDI in electronics and automobiles but limited technological transfer. To seize the opportunity, the country established the Thailand Automotive Institute, a partnership between the automatives sector and the Ministry of Industry, to improve human resource development and technology transfer for Thai-owned suppliers.

Chile's transformation has benefited significantly from technology transfer and investment financing through high FDI inflows. Chile is a good example of a commodity exporter that has experienced robust productivity growth despite an economy less concentrated in manufacturing production.

Examples from Africa

Tunisia launched two major programs that boosted its industrialization and openness to international markets: the Programme de Mise à Niveau upgrading program and the Priority Technological Investment program. These initiatives encouraged the modernization of the industrial sector and the participation of firms in high-tech value chain sectors. The country also reformed its higher education system to support a modern economy, prioritizing technical and vocational skills.

Human well-being

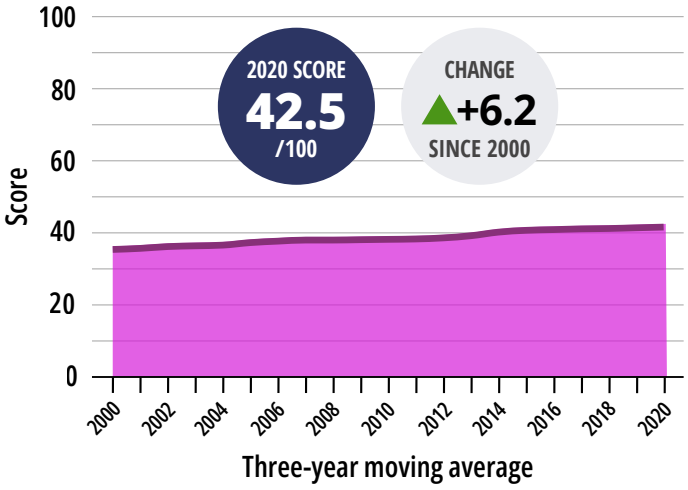
Human well-being **measures economic and social outcomes and enablers in terms of incomes, income inequality, formal employment, and female participation in formal labor markets.**

A transformed economy should, among other things, generate decent employment and support high incomes. Overall, Africa has made steady progress in promoting *Human well-being*. However, Africa still lags behind other regions of the world.

● *Human well-being* scores by country

COUNTRY (alphabetical order)	2020 SCORE	CHANGE SINCE 2010	CHANGE SINCE 2000
Algeria	77.8	-1.2 ▼	13.6 ▲
Botswana	65.0	6.4 ▲	8.4 ▲
Burundi	22.9	-0.9 ▼	-1.8 ▼
Cameroon	27.0	4.0 ▲	3.0 ▲
Cabo Verde	61.4	8.8 ▲	19.8 ▲
Congo Rep	20.9	-2.6 ▼	-1.5 ▼
Côte d'Ivoire	37.0	13.0 ▲	10.4 ▲
Egypt	72.6	5.8 ▲	3.9 ▲
Eswatini	50.1	-2.5 ▼	-2.7 ▼
Ethiopia	27.6	4.7 ▲	0.6 ▲
Gabon	74.5	0.0 ●	5.4 ▲
Gambia	31.0	7.1 ▲	10.6 ▲
Ghana	32.0	7.0 ▲	8.8 ▲
Kenya	45.3	10.9 ▲	13.2 ▲
Madagascar	21.2	4.2 ▲	-0.4 ▼
Malawi	37.7	4.6 ▲	8.3 ▲
Mauritius	93.4	1.7 ▲	8.8 ▲
Morocco	52.7	6.3 ▲	11.6 ▲
Mozambique	13.0	0.4 ▲	0.7 ▲
Namibia	49.6	-0.2 ▼	7.0 ▲
Niger	19.1	-4.4 ▼	0.3 ▲
Nigeria	33.6	2.9 ▲	14.4 ▲
Rwanda	30.0	10.2 ▲	17.8 ▲
Senegal	39.7	8.8 ▲	12.9 ▲
South Africa	65.8	-5.3 ▼	0.1 ▲
Tanzania	25.4	4.5 ▲	4.5 ▲
Tunisia	78.1	3.7 ▲	12.6 ▲
Uganda	27.7	5.4 ▲	9.2 ▲
Zambia	18.8	5.4 ▲	-1.5 ▼
Zimbabwe	25.2	-5.0 ▼	-9.9 ▼

● Average African *Human well-being* score



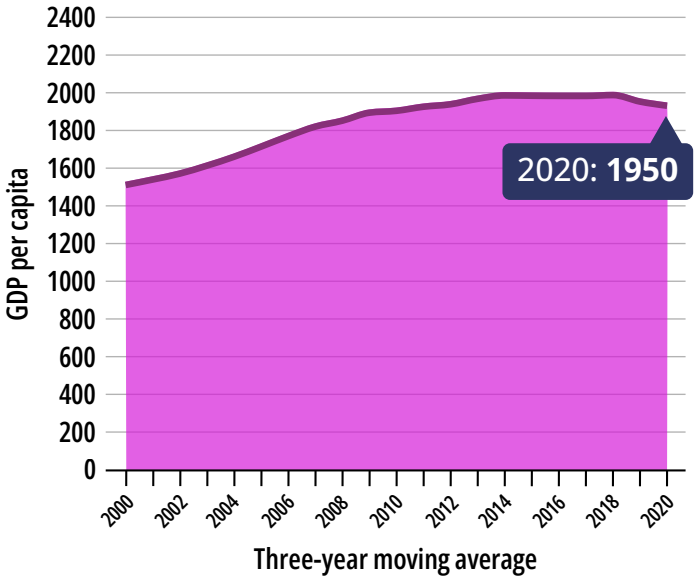
The average African *Human well-being* score above is the average of the 30 economies tracked by the ATI. The map below and the table on the left show the individual country scores.

● *Human well-being* scores by country, 2020

The *Human well-being* dimension is measured by four indicators. The charts below show the average indicator scores for the 30 African countries tracked by the ATI for the years 2000–2020.

Average income

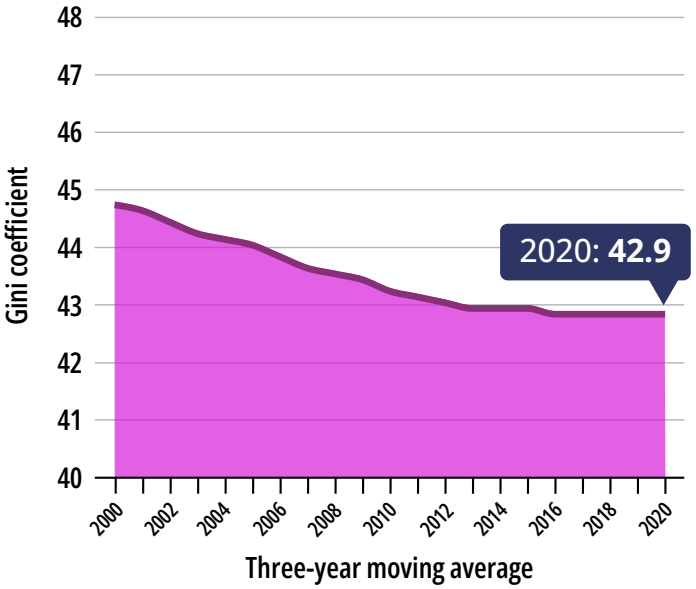
The average income is measured as GDP per capita; the gross domestic product divided by mid-year population. Data are in constant 2010 US dollars.



Source: World Bank, World Development Indicators (2022 update)

Income inequality

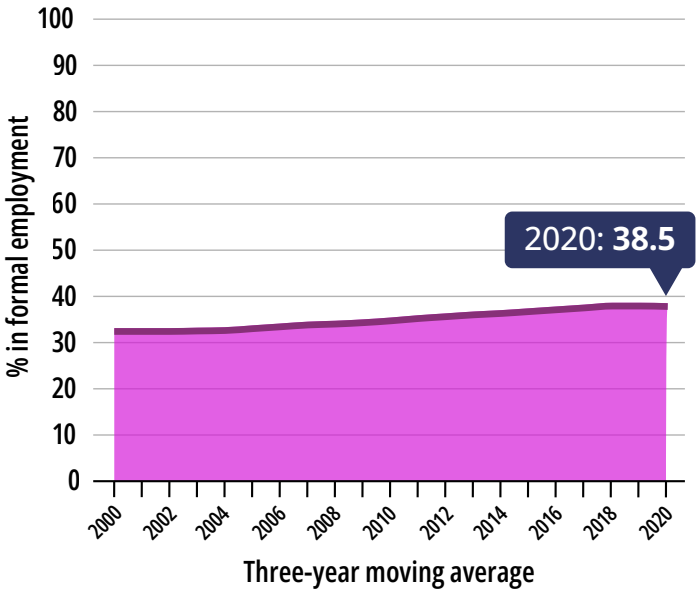
The Gini index measures income inequality. A coefficient of 0 represents perfect equality, while 100 implies complete inequality.



Source: World Bank, World Development Indicators (2022 update)

Formal employment

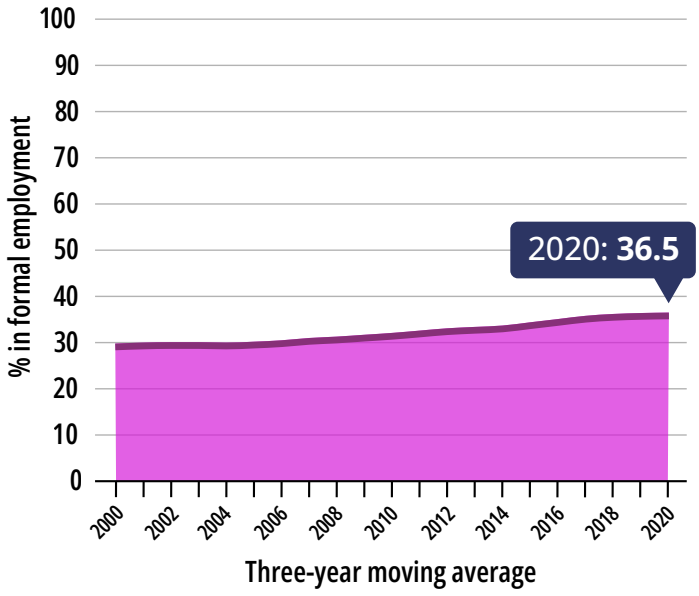
Ratio of formal sector employment in the total labor force. Formal employment is the type of employment where there are work arrangements.



Source: International Labour Organization, ILOSTAT database

Formal female employment

Ratio of waged and salaried women workers among all women workers. Waged and salaried workers earn a basic remuneration that is not directly dependent upon the revenue of the unit for which they work.



Source: World Bank, World Development Indicators (2022 update)

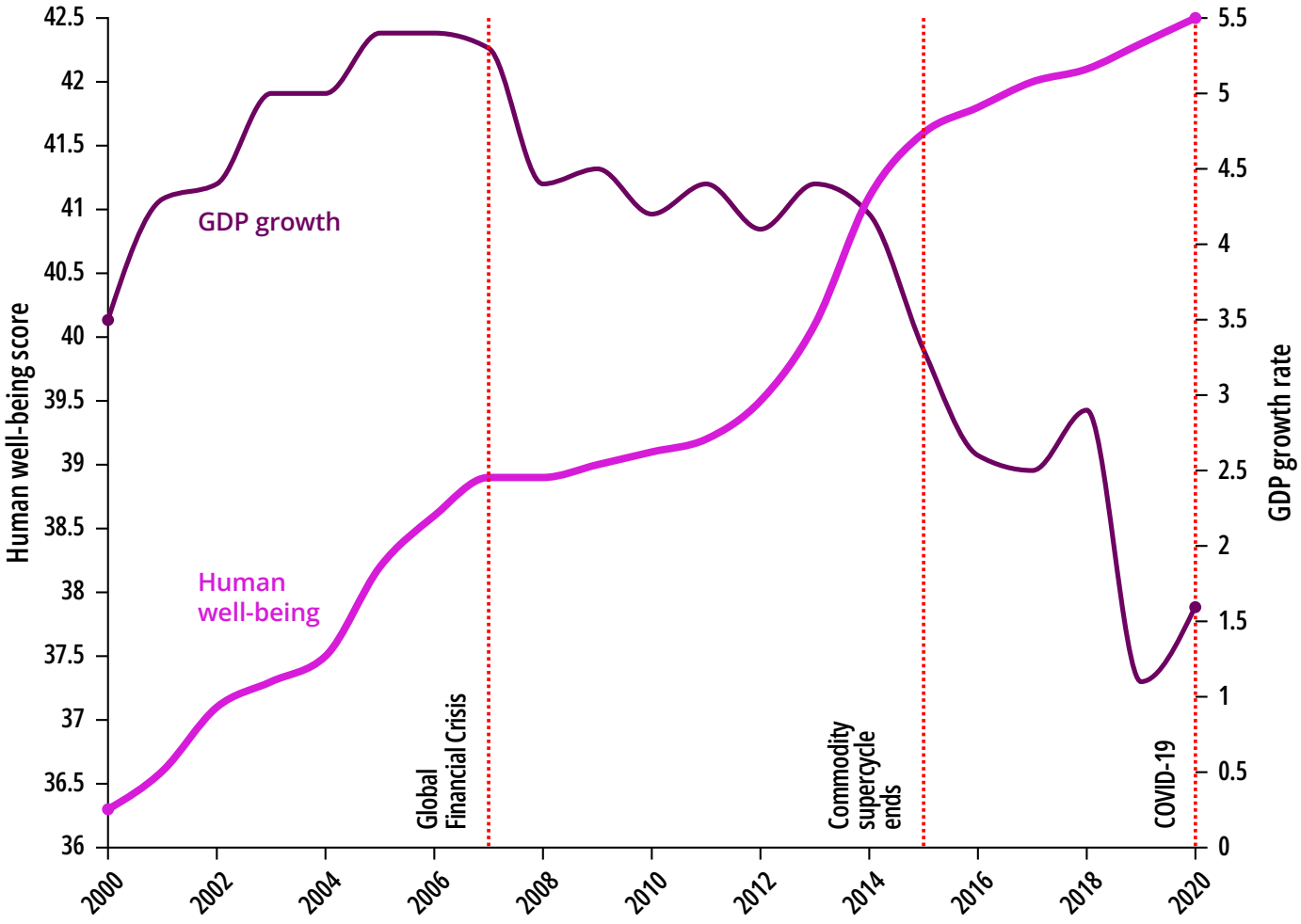
Resilience and transformation

The uneven and vulnerable path of *Human well-being* in Africa

Human well-being has been the most improved dimension of DEPTH between 2000 and 2020. The average score for this dimension rose by 6.2 points, surpassing the progress made in any other dimension. The average *Human well-being* score of 42.5 in 2020 was also the highest among all dimensions. However, progress on *Human well-being* has also been sensitive to external shocks.

Years of rapid improvement during periods of high economic growth were followed by years of much slower progress after economic crises. For example, while *Human well-being* increased by 1.4 points in the four years leading up to the Global Financial Crisis of 2007, in the subsequent four years the score increased by only 0.2 points. The end of the commodity supercycle in 2015 caused a similar slowdown. Without enhanced resilience, *Human well-being* progress is likely to be similarly impacted by the economic fallout of the COVID-19 crisis.

Average African *Human well-being* scores and GDP growth, 2000-2020

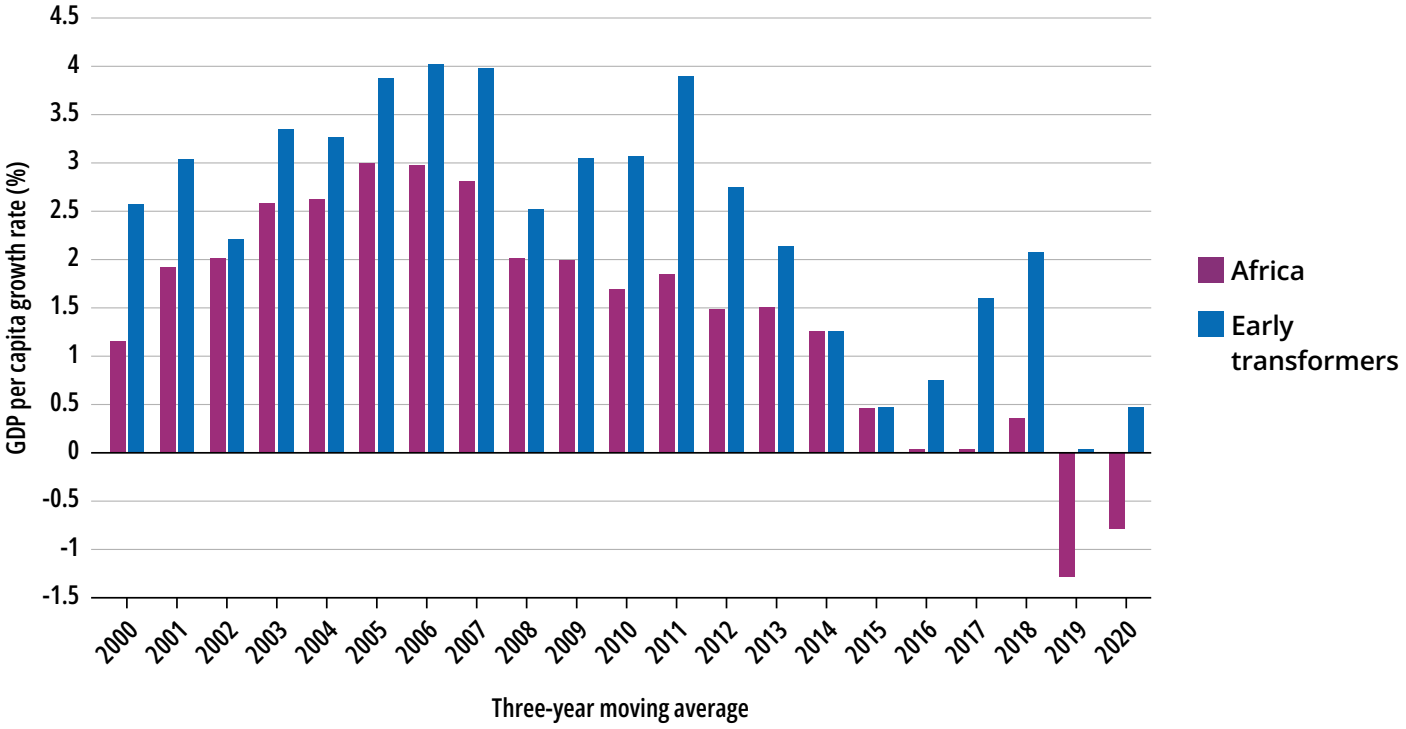


Global context

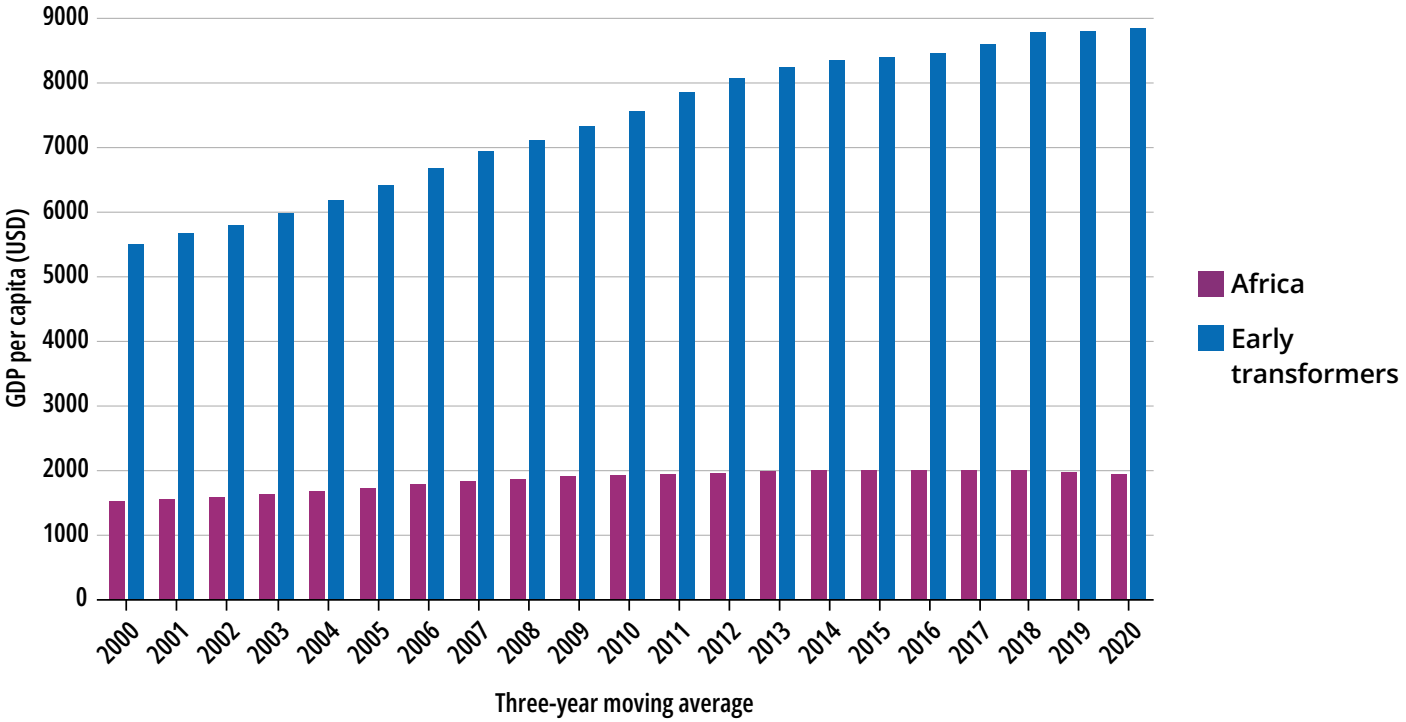
The widening income gap between Africa and early transformers

The widening gap between early transformers and African countries is particularly pronounced when it comes to incomes and economic growth. African countries' GDP growth rates have been erratic and faltering, remaining below those of the early transformers every year for the past 20 years. This has resulted in an ever-widening income gap.

Economic growth: Africa and early transformers



Income: Africa and early transformers

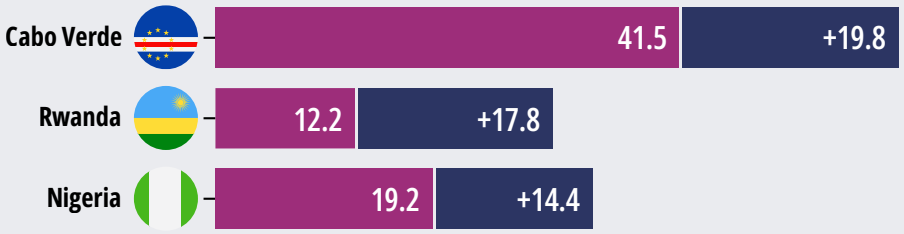


Pathways for improved *Human well-being*

Investing in human capital to reduce inequality and promote inclusion

Countries have improved the economic and social well-being of their citizens by scaling up education and skills training, creating economic opportunities for productive employment, increasing regional collaboration for labor mobility, supporting digital innovation, and addressing the demographic transition to reap the dividends of having more workers than dependents. These measures have the tendency to foster economic growth while reducing economic inequalities at the same time.

Three most improved countries (2000-2020)



Highest score:

Mauritius

2020 SCORE **93.4** /100

CHANGE ▲ **+8.8** SINCE 2000

Lessons from early transformers

Singapore achieved low levels of informal work and long-term unemployment by providing high-quality education and vocational training for its workforce. It also implemented universal health coverage and family planning policies that improved the social well-being of its population.

South Korea increased women's rights and participation in paid employment by reforming its labor laws and social norms. As a result, female employment rates rose from 49 percent in 1990 to 60 percent in 2019, mainly in the service sector. The country also introduced universal health insurance in 1989, ahead of many other countries with similar income levels.

Examples from Africa

To promote women's empowerment and gender equity in education, **Zambia** rolled out a re-entry policy for teenage mothers. The policy required all schools to grant girls maternity leave and readmit them to continue their education. In **Burkina Faso**, **Kenya**, and **Malawi**, cash and in-kind transfers targeting girls increased their enrollment, attendance, and graduation.

Ghana introduced a free Senior High School policy in 2017, increasing enrollments by 69 percent in three years. The government also instituted a policy of 60 percent enrollment in science and 40 percent in arts and humanities to facilitate STEM uptake at the tertiary level.

Senegal tackled the gender imbalance in STEM education through awareness campaigns, performance-based contracts targeting females in STEM, and teacher training to encourage women to pursue STEM education.

ATI SCORECARD 2020

Country	Overall score	D Diversification	E Export competitiveness
Algeria	28.3	8.2	0.2
Botswana	34.3	24	3.4
Burundi	11.9	25.5	2.8
Cameroon	19.4	39	5.9
Cabo Verde	35.1	45.1	5.3
Congo Rep	21.1	19.1	18.9
Côte d'Ivoire	25.9	33.1	7
Egypt	47.2	63.9	10
Eswatini	60.2	70.9	100
Ethiopia	19.4	25.8	0
Gabon	36.7	12.6	14.5
Gambia	17.6	38.5	0.3
Ghana	19.1	26.8	3.8
Kenya	28.1	52.2	4.7
Madagascar	16.3	43.2	13.1
Malawi	20.8	31.7	2.1
Mauritius	59.1	75.8	25.8
Morocco	60.2	69.9	41.1
Mozambique	13	25.4	5.4
Namibia	34.5	38.9	14.4
Niger	11.9	11.6	0.8
Nigeria	34.5	16.4	1.2
Rwanda	18.3	37.4	7.8
Senegal	31.6	50.3	9.2
South Africa	60.4	63.8	24.5
Tanzania	17.4	29.9	2.7
Tunisia	69.5	76	70.6
Uganda	21.8	40.7	4.9
Zambia	18.4	23.7	10.2
Zimbabwe	17.3	30.4	4.2
African average	30.3	38.3	13.8

P Productivity increases	T Technology upgrading	H Human well-being	ATI CHANGE 2000-2020
52.3	2.9	77.8	+2.4
70	8.8	65	+6.6
0.4	8	22.9	+2.1
9.9	15.4	27	+1.9
31.5	32	61.4	+0.1
8.9	37.7	20.9	+6.5
16.4	36.2	37	-1.4
37.5	51.9	72.6	+4.8
66.3	13.7	50.1	+0.5
3.2	40.5	27.6	+6.2
70.8	11.2	74.5	-0.2
7.2	11.1	31	-4.8
14.4	18.6	32	-0.7
7.7	30.8	45.3	+1.8
0.8	3.4	21.2	-3.4
4.2	28.1	37.7	+2.7
85.9	14.7	93.4	+2.1
40	97.2	52.7	+17.6
2.2	19.2	13	-3.8
62.6	7	49.6	+0.9
3.4	24.8	19.1	-10.3
31.2	90.2	33.6	+5.9
4.1	12.1	30	+8
16.7	42.1	39.7	-0.3
84	64	65.8	+3.1
5.3	23.6	25.4	-3.4
50.2	72.9	78.1	+16
9	26.5	27.7	+2
11.1	28.2	18.8	-4.6
8.2	18.3	25.2	-12.4
27.2	29.7	42.5	+1.5

TAKEAWAYS

Recommendations and next steps

The growth with DEPTH model is a useful framework for countries to assess their performance and progress on economic transformation and to identify their strengths and weaknesses. The ATI provides a comprehensive and comparable measurement of the five DEPTH dimensions for 30 African countries, as well as drivers and constraints of transformation at the country level. Annex I offers a closer look at 11 of those 30 countries.

Based on the data collected and analyzed, this section offers key recommendations and suggested next steps for countries to improve their growth with DEPTH outcomes.

Key recommendations

Countries should enhance their diversification and export competitiveness to increase resilience to external shocks.

African economies have become less diversified, and the competitiveness of their exports has declined over the last two decades, potentially diminishing their ability to cope with and recover from crises such as the COVID-19 pandemic. Policymakers and stakeholders should learn from top performers such as Tunisia, which is both the most economically transformed country and the most diversified country in Africa. Tunisia has achieved a high level of diversification and export competitiveness by developing a diversified and dynamic manufacturing sector, integrating into global value chains, investing in human capital and innovation, and improving its business environment and governance.

Other countries that have improved rapidly on these dimensions can also offer lessons. For example, Rwanda remains a low economic transformer, but it has had great success in diversifying its economy as part of a deliberate and coherent transformation strategy that has involved building a development-oriented state and an efficient public service, rehabilitating the Rwanda Development Board to become a one-stop shop for strategic investors, promoting private sector development and entrepreneurship, and fostering regional integration and trade.

Countries should prioritize and protect human well-being, which is a key enabler and the ultimate goal of economic transformation.

Human well-being as measured by the ATI has improved steadily in Africa between 2000 and 2020, yet lasting progress remains vulnerable to economic instability. COVID-19 exposed and exacerbated weaknesses in country systems, threatening to reverse recent gains in areas such as healthcare, education, income, and social protection.

African countries should learn from top performers such as Mauritius, which has the highest score in *Human well-being* on the continent. Mauritius has achieved its success by investing heavily in core public services such as education, promoting inclusive growth and social cohesion, ensuring gender equality and women's empowerment, and strengthening its institutions and governance.

African countries can also learn from peers that have improved rapidly in this dimension, such as Cabo Verde, Rwanda, and Nigeria. These countries have pursued policies and programs that have improved human capital development, reduced poverty and inequality, increased formal employment and income opportunities, and expanded social protection coverage and benefits.

Countries should pursue a comprehensive and integrated approach to economic transformation that (i) identifies and addresses weaknesses in the DEPTH dimensions, (ii) learns from early transformers' experiences and best practices, and (iii) adapts those practices to their own specific conditions and contexts.

Progress on economic transformation in Africa has been relatively slow and uneven, with only a few countries achieving high scores on all five DEPTH dimensions. Countries therefore can use ATI scores to identify which dimension of economic transformation they perform poorly on and which indicators contribute to their low performance. For example, a country may have a low score on *Diversification* because it has a high concentration of exports or a low complexity of production. Identifying the weakest dimension and its indicators can help countries prioritize their policy actions and allocate resources more effectively.

African countries should learn from early transformers that have achieved rapid and sustained economic transformation by pursuing deliberate policies and strategies that include: investing in infrastructure, skills, technology, and innovation; promoting industrialization and structural change; fostering regional integration and trade; enhancing institutional quality and governance; ensuring macroeconomic stability and fiscal discipline; and adopting a pragmatic and flexible approach to policy design and implementation.

However, economic transformation is not a one-size-fits-all process. Each country has its own specific conditions that require tailored solutions and adaptations. Moreover, economic transformation is not a linear process. It involves uncertainties, risks, trade-offs, and feedback loops that require constant monitoring and evaluation. Therefore, African countries should adopt an integrated approach to economic transformation that considers the interrelated nature of the DEPTH dimensions as they apply to specific country contexts, including existing strengths and weaknesses and potential transformation pathways.

Using the ATI to drive country-level transformation

The ATI and its supporting data can assist policymakers, researchers, journalists, and civil society in driving economic transformation at the country level. Suggestions follow for how each group of stakeholders can take actionable next steps to get the most out of the index and its findings.

- **Policymakers.** The ATI is a valuable tool for policymakers who want to design and implement strategies to foster economic transformation in their countries. The index not only provides a comparative assessment of how 30 African countries are performing on economic transformation, but it also tracks the change in performance over time and identifies some drivers and constraints. Policymakers can use the ATI to benchmark their countries against regional and continental peers, identify areas of strength and weakness, and pursue successful pathways through peer learning.

  To achieve this through its research and policy advisory services, ACET assists countries to conduct a Country Economic Transformation Outlook (CETO) study, that offers a deep dive into opportunities and pathways for enhancing economic transformation and the policy options and avenues available to address related challenges and risks. As of 2023, CETOs are underway in Ghana, Kenya, and Zambia. Studies will commence in Ethiopia, Senegal, and Tunisia in 2024.

- **Researchers.** The ATI is a rigorous framework for measuring and analyzing African economic transformation. It builds on existing literature and methodologies on economic transformation but also introduces new indicators and dimensions that capture the specificities and complexities of the African context. Academics can use the ATI to research and study various aspects of African economic transformation, such as its determinants, outcomes, drivers, and barriers.

- **Journalists.** The ATI is a useful source of information for journalists who want to report on the state and trends of economic transformation in Africa. The ATI offers a reliable dataset on transformation for two decades. Journalists can use the ATI to access and analyze data at the continental and national levels, generate stories and insights on the achievements and challenges of economic transformation in Africa, compare and contrast different countries, and engage with experts and stakeholders.

- **Civil society organizations and citizens.** The ATI is a data-driven tool for organizations and citizens who want to advocate for and support economic transformation in Africa, offering credible and comparable evidence on country performance. Civil society organizations can use the ATI to raise awareness and mobilize action on the importance of economic transformation in Africa, monitor and evaluate the policies and programs of governments and other actors, identify gaps and opportunities for intervention, and collaborate with other stakeholders.

Areas for further research

The ATI provides a comprehensive and comparable framework for measuring and analyzing economic transformation in Africa, but it does not cover all aspects and dimensions of such a complex process. Many fundamental questions and issues need further exploration, such as:

- What are the drivers and constraints of economic transformation at the country level?
- What is the role of institutions and governance in facilitating or hindering economic transformation?
- What is the role of resilience to economic and non-economic shocks for economic transformation?
- What is the impact of economic transformation on environmental sustainability and social inclusion?

However, data gaps pose an ongoing challenge to any research trying to provide a more comprehensive and accurate picture of economic transformation in Africa. Some data gaps that need to be addressed and improved include: (i) the availability and quality of data on some indicators and countries; (ii) the timeliness and frequency of data updates; (iii) the consistency and comparability of data across sources and countries; (iv) the disaggregation and granularity of data by sector and subsector; and (v) the coverage and representativeness of data for informal activities.

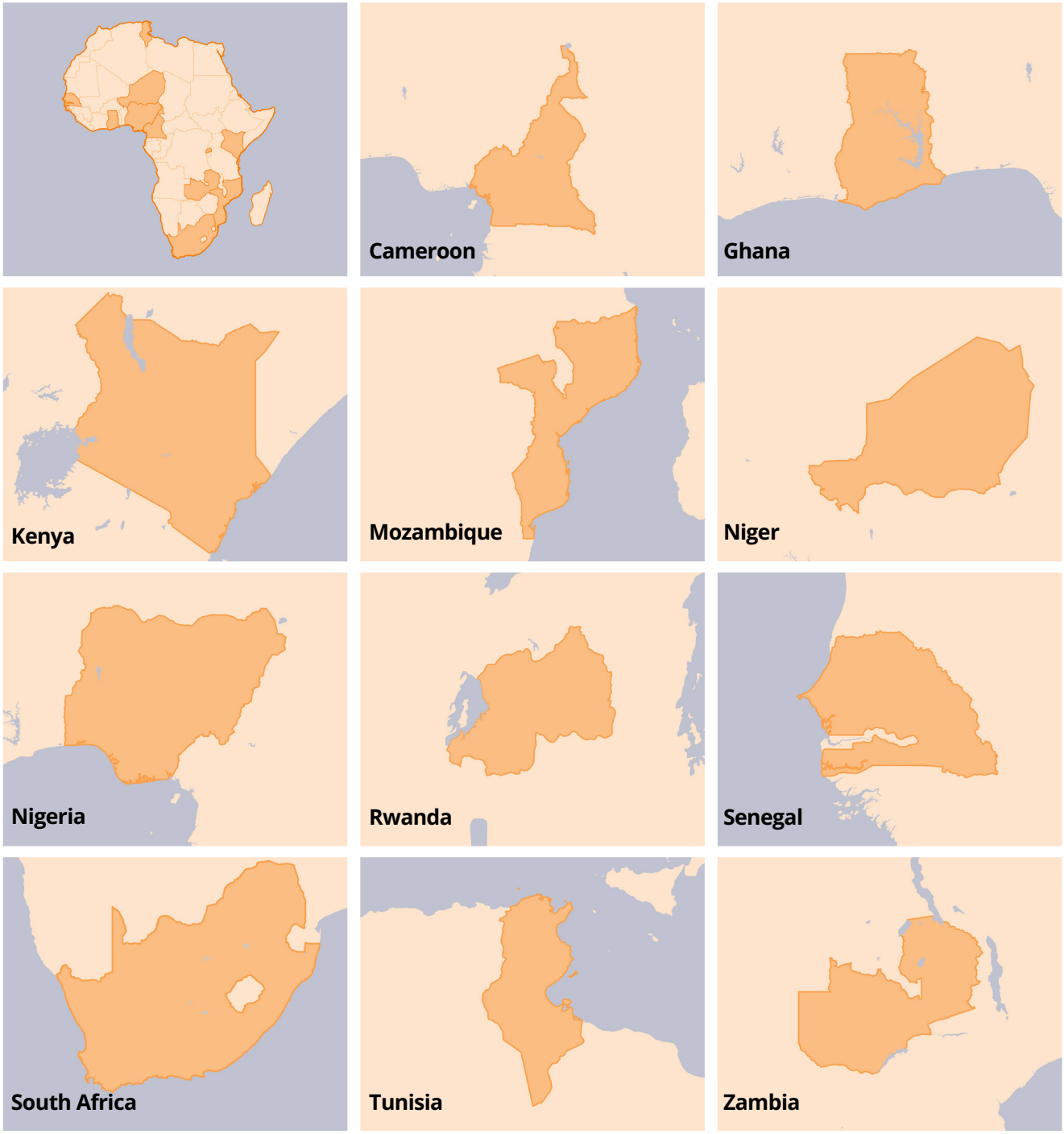
African governments, international organizations, and research institutions can help improve these data gaps and limitations by improving data collection and reporting systems, harmonizing data standards and methodologies, enhancing data quality control and validation mechanisms, expanding data disaggregation and granularity, and incorporating data from alternative sources such as surveys and administrative records into their reporting.

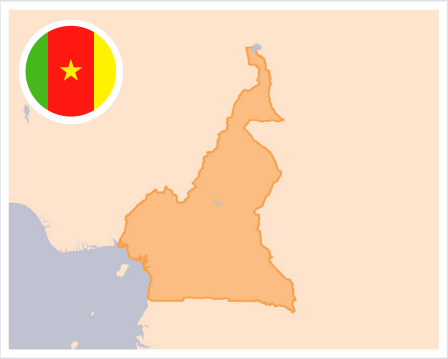
The ATI relies on existing data sources from various international organizations and databases, which have their own strengths and weaknesses. Other researchers and academics are encouraged to build on the ATI to conduct their own analysis of Africa's economic transformation.

ANNEX I

Country profiles

This section discusses the economic transformation profile of 11 selected countries. Each profile is prepared by in-country experts in collaboration with ACET. The profiles assess the performance of each country on DEPTH and identify structural challenges and opportunities for inclusive and sustainable growth. The 11 countries are representative of the 30 countries tracked by the ATI. They have been selected to ensure regional representation and a balance of countries with varying levels of economic transformation and population size.





Cameroon

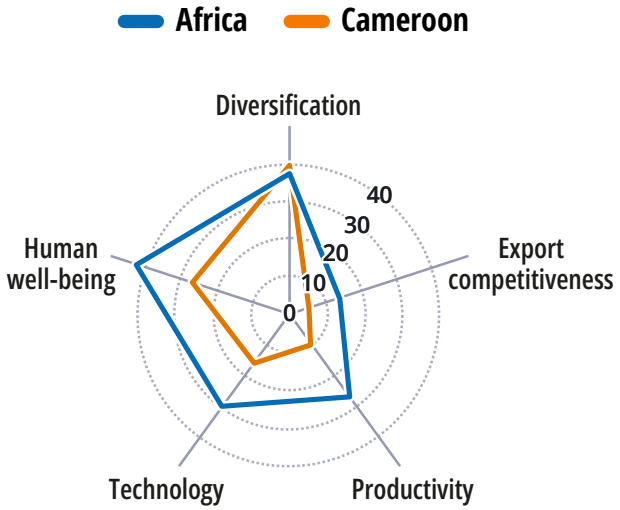
2020 SCORE **19.4** /100

CHANGE ▲+1.9 SINCE 2000

acetforafrica.org/ati/cameroon

Capital City: **Yaoundé** • Population: **27.2 million** • Population Growth: **2.6%**
GDP Growth: **3.5%** • GDP per capita: **US$1589** — *World Bank Open Data (2022)*

DEPTH comparison

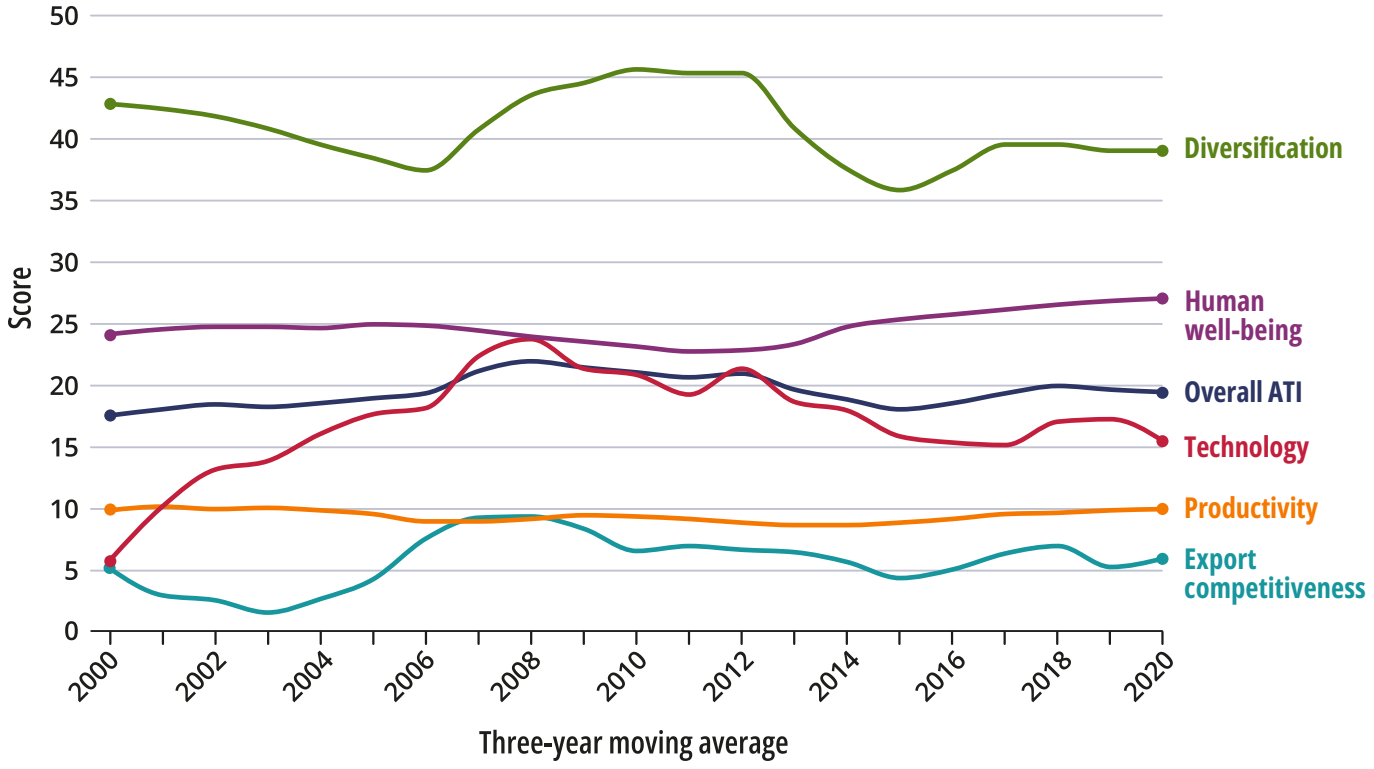


Cameroon's DEPTH scores, 2020

D	Diversification	39	▼ -3.8
E	Export competitiveness	5.9	▲ +0.8
P	Productivity increases	9.9	● 0.0
T	Technology upgrading	15.4	▲ +9.7
H	Human well-being	27	▲ +3.0

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Cameroon, 2000–2020



Cameroon is a lower-middle-income country in Central Africa. Between 2000 and 2020, economic growth was generally positive, a beneficial result of economic reforms in the 1990s that created a relatively stable macroeconomic environment. Cameroon has undergone several structural adjustment programs, including the Highly Indebted Poor Countries initiative in 2006. In 2009, Cameroon adopted a long-term development vision aimed at turning the country into an emerging economy by 2035. Despite the recent growth and gains, Cameroon has remained vulnerable to global shocks and civil strife, inhibiting further positive economic progress.

DEPTH performance

Cameroon is a low economic transformer with an overall ATI score of 19.4. Cameroon falls below the African average on all DEPTH dimensions except for *Diversification*. Overall, the country made gains on economic transformation between 2000 and 2008, but most of that progress has since eroded.

39 Diversification

Cameroon is slightly more diversified than the African average. The country has diversified broadly towards services (finance, insurance, real estate and business services, and social and personal services), which have overtaken agriculture as the dominant pillar of the economy. The country's share of its top five commodity exports (crude petroleum, cocoa, refined petroleum product, sawn wood, and other rough wood) constitutes almost three-quarters of total exports. Meanwhile, the manufacturing sector's share in the economy is not only small but has been shrinking over time. New businesses face credit constraints and high input costs, discouraging them from entering the manufacturing sector. The services sectors did see an increase in activity, but this mainly involved the emergence of more low-productivity, low-wage informal businesses. In recent years, Cameroon's diversification progress has stalled.

5.9 Export competitiveness

Cameroon's export competitiveness is low and stagnant. Between 2005 and 2020, the country added three new products to its export basket, all of which are traditional primary commodities: coal, lignite, and peat; petroleum gases; and gold. Although Cameroon's share of exports in GDP relative to that of the world has improved very slightly, the country has still not been able to capture a significant share of the global market in non-extractive exports.

9.9 Productivity increases

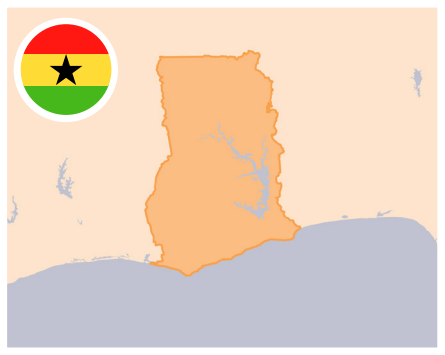
Cameroon's productivity has stayed low and flat since 2000. Unlike most of its peers, Cameroon has also seen its services sector productivity decline in recent years. The business environment does not promote private initiative, and the delivery of economic and social infrastructures is slow and inadequate. As a result, the costs of the main factors of production remain very high and weigh on firms' productivity. Cameroon faces a number of challenges that keep production factor costs high and reduce foreign investment, including administrative bottlenecks, excessive bureaucracy, bank credit restrictions, and distortions in public utilities.

15.4 Technology upgrading

Cameroon performs poorly in this dimension, despite strong progress between 2000 and 2020. The most significant gains came in the early 2000s, when the government made efforts to support the development of technologies through the creation of the National Agency for Information and Communication Technologies in 2002, as well as various measures to improve energy production, infrastructure development, and digitalization of the economy. However, since 2012 the country has seen a significant decline in exports with medium- and high-technology content, while technology in production has been flat.

27 Human well-being

Cameroon's *Human well-being* score is close to the African average. Since 2013, Cameroon's performance has increased, albeit slowly, from 23.3 to 27 in 2020. This slight increase might have been caused by an expansionary policy, the revival of economic growth in 2010 after the economic slowdown in 2008, and the success of policies targeting youth unemployment. However, the country has seen a rapid increase in income inequality alongside improvements in formal sector employment and income per capita, limiting its performance in this dimension.



Ghana

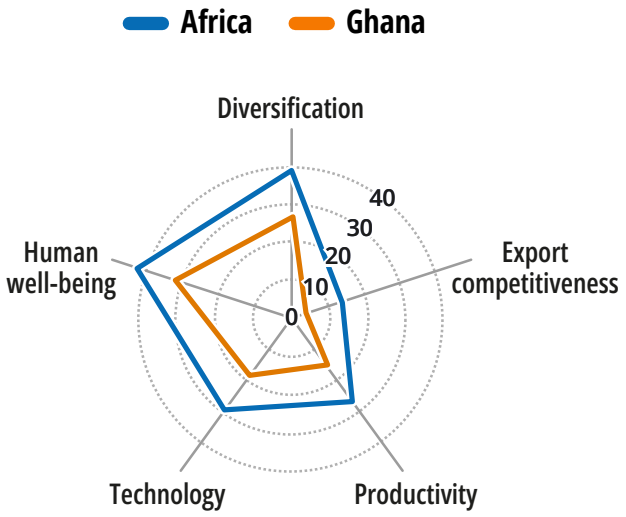
2020 SCORE **19.1** /100

CHANGE ▼-0.7 SINCE 2000

acetforafrica.org/ati/ghana

Capital City: **Accra** • Population: **33.5 million** • Population Growth: **1.9%**
GDP Growth: **3.2%** • GDP per capita: **US$2176** — *Source: World Bank Open Data (2022)*

DEPTH comparison

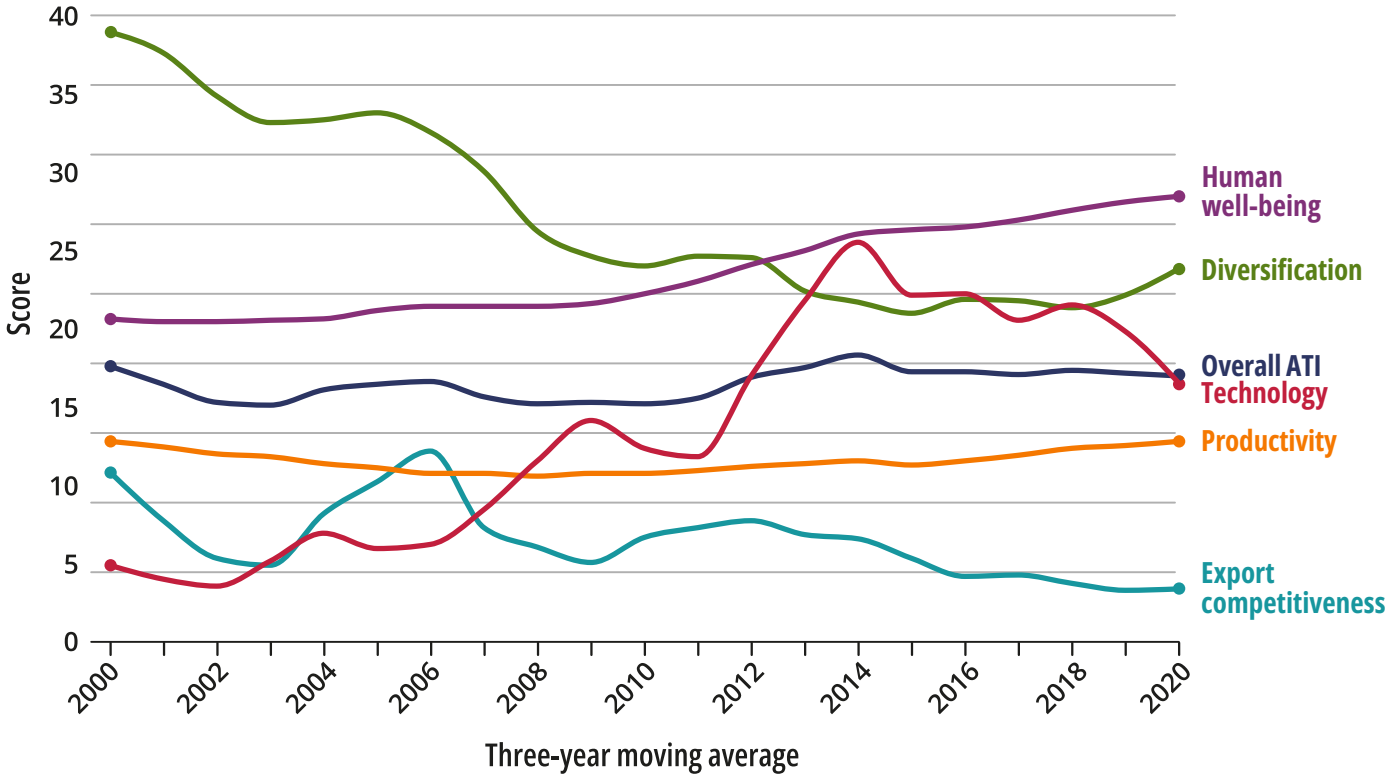


Ghana's DEPTH scores, 2020

D	Diversification	26.8	▼ -17.0
E	Export competitiveness	3.8	▼ -8.4
P	Productivity increases	14.4	▲ +0.1
T	Technology upgrading	18.6	▲ +13.1
H	Human well-being	32	▲ +8.8

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Ghana, 2000–2020



Ghana is a lower-middle-income country in West Africa. Between 2000 and 2020, the country experienced rapid GDP growth, reaching an all-time high of 14.1 percent in 2011, when the country's commercial oil production began. However, growth has been sensitive to investment uncertainty in the traditional sectors. The economy has also suffered from falling productivity in the manufacturing sector and high vulnerability to external and commodity price shocks. Overall, Ghana's development is marred by numerous challenges, including debt and energy crises, large trade and fiscal imbalances, infrastructure weaknesses, and inconsistent long-term development planning.

DEPTH performance

Ghana is a low economic transformer with an overall ATI score of 19.1. Its DEPTH progress has been weak and unstable since peaking with an overall ATI score at 20.6 in 2014. Ghana scores below the African average in every DEPTH dimension, with particularly poor scores in *Productivity increases* and *Export competitiveness* and a rapid decline in *Diversification*.

26.8 Diversification

Ghana performs increasingly poorly in this dimension. It has become significantly less diversified since 2000, even as the economy shifted from farming to services, aided by government support for the banking and ICT sectors. It has leapfrogged industrial development with the share of manufacturing declining by more than half between 2000 and 2020. Exports have become increasingly concentrated, with the share of the top five products (crude oil, cocoa, gold, wood products, and fruit and nuts) rising from 70 percent in 2000 to 89 percent in 2020.

3.8 Export competitiveness

Ghana scores very low in this dimension, a reflection of its limited integration into global and regional value chains. Ghana is constrained by low product diversification and a lack of export sophistication. Almost all of Ghana's current export basket—94 percent—has low technology content, which has not changed significantly over the last 30 years. This reflects, in part, the country's limited success in diversifying into non-traditional exports and upgrading technology for production. Consequently, Ghana's competitiveness has not been improving over time, and the country remains vulnerable to external shocks.

14.4 Productivity increases

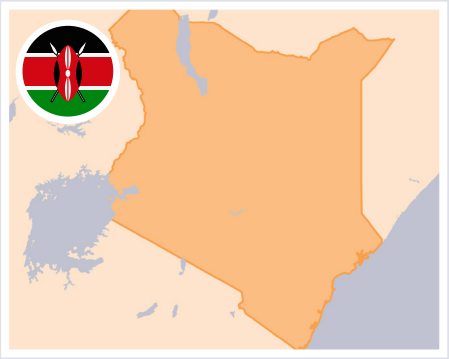
Ghana's productivity is significantly below the African average. Labor productivity has remained flat since 2000. Manufacturing labor productivity dropped by almost 50 percent between 2012 and 2020, and services productivity has remained relatively flat. However, agricultural productivity started increasing steadily after 2010.

18.6 Technology upgrading

Ghana scores significantly below the African average in this dimension, though it has begun to catch up to its peers. The generally poor technology content of production and mechanized exports partly reflects the inability of the small manufacturing sector to access highly skilled and innovative workers capable of applying more complex production technologies. Progress has also been limited by energy supply challenges and a lack of investment in research and development.

32 Human well-being

Ghana performs best on *Human well-being* but remains below the African average. Robust growth and significant improvement in per capita incomes—from $935 in 2000 to $1815 in 2020—contributed to a substantial reduction in poverty, but income inequality remains relatively high. While there has been progress in formal sector employment, the vast majority of workers, especially female workers, remain in the informal sector.



Kenya

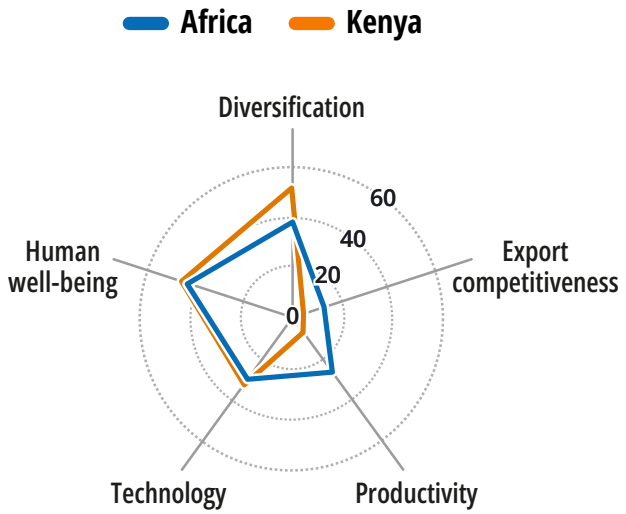
2020 SCORE **28.1** /100

CHANGE ▲ **+1.8** SINCE 2000

acetforafrica.org/ati/kenya

Capital City: **Nairobi** • Population: **54 million** • Population Growth: **1.9%**
GDP Growth: **4.8%** • GDP per capita: **US$2099** — *Source: World Bank Open Data (2022)*

DEPTH comparison

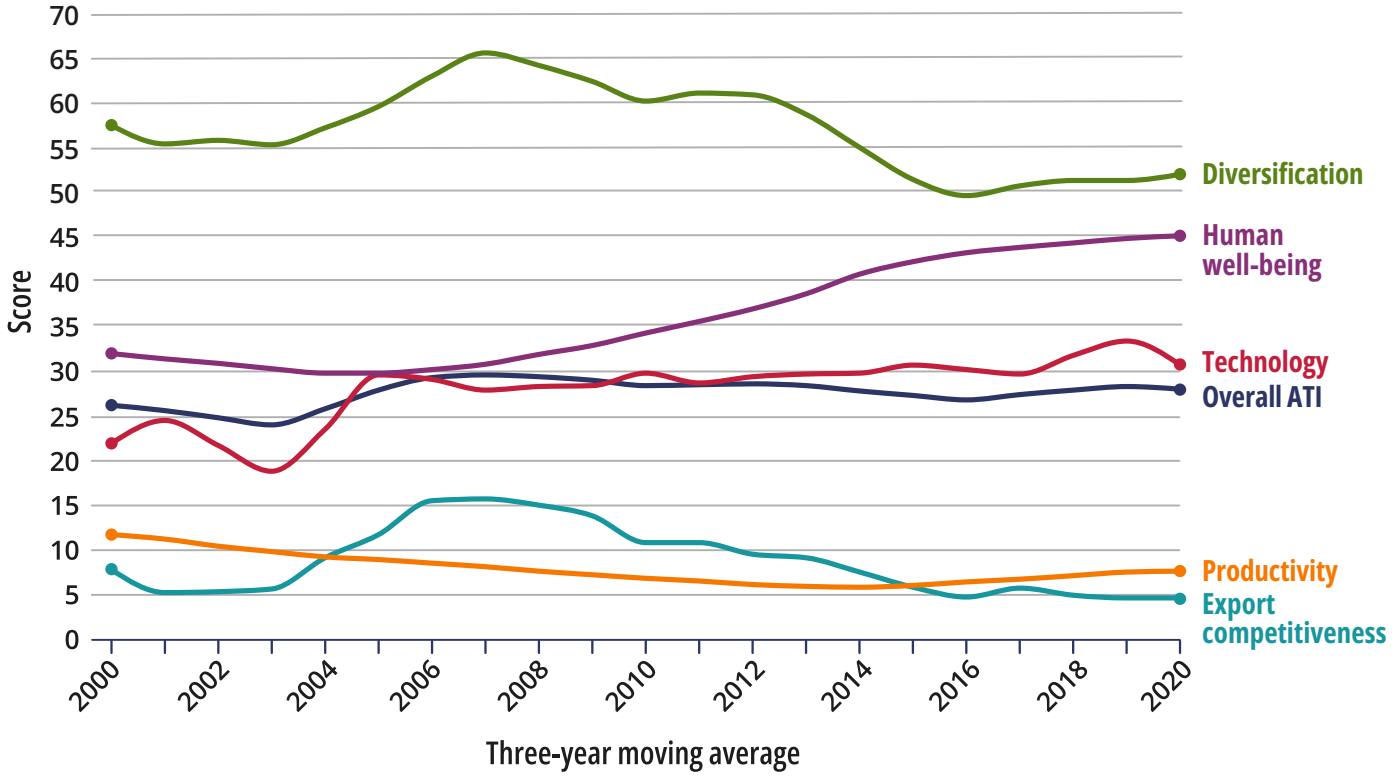


Kenya's DEPTH scores, 2020

D	Diversification	52.2	▼ -5.5
E	Export competitiveness	4.7	▼ -3.2
P	Productivity increases	7.7	▼ -4.1
T	Technology upgrading	30.8	▲ +8.8
H	Human well-being	45.3	▲ +13.2

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Kenya, 2000–2020



Kenya is a lower-middle-income country with the largest economy in East Africa. The economy grew steadily between 2000 and 2020 at an annual average rate of 4 percent. This progress can be attributed to the country's renewed emphasis on long-term economic planning, with clear medium-term goals and an increased focus on strategic investments and transformation pathways through two interrelated strategies: the 2003 Economic Recovery Plan for Employment and Wealth Creation, and Kenya Vision 2030, which was initiated in 2007. Kenya's economy is diverse and dynamic, with the services sector contributing around 60 percent to the country's GDP between 2000 and 2020. It has also benefited from strong public investment, dynamic smallholder agricultural production, and foreign manufacturing sector investments.

DEPTH performance

Kenya is a medium economic transformer with an overall ATI score of 28.1. It falls just below the 30.3 African average. The country made significant progress on economic transformation between 2003 and 2006, but the gains were partly reversed in subsequent years. Kenya performs better than the African average in *Diversification* and matches the African average in *Human well-being* and *Technology upgrading*. It lags in *Productivity increases* and *Export competitiveness*.

52.2 Diversification

Kenya's economy is significantly more diversified than its peers, though it has become less so in recent years. Between 2000 and 2020, the country's score in this dimension dropped from 57.7 to 52.2. Kenya's manufacturing sector has been shrinking due to a lack of strategic investment in firms and diminished agricultural output, including agro-based manufacturing, due in part to climate challenges. Transportation and logistics constraints and limited skills capacity have also held back the economy. The level of export diversification has improved, with the overall share of the top five commodity exports (tea, cut flowers, coffee, refined petroleum, and gold) declining from 59 percent in 2000 to 45 percent in 2020. And unlike many African countries, Kenya is increasingly diversifying and improving technology use in agriculture.

4.7 Export competitiveness

Kenya performs poorly in this dimension. The country is struggling to maintain competitiveness in an increasingly competitive regional and international market for transport, travel and tourism, ICT, insurance, and finance—all of which made up nearly half of Kenya's total exports of goods and services in 2019. As a result, several countries, including Mozambique, Rwanda, Senegal, and Cameroon, have overtaken Kenya in this area in recent decades.

7.7 Productivity increases

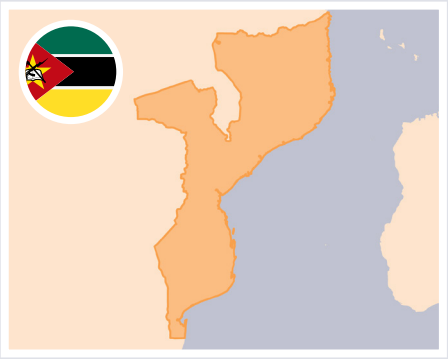
Kenya's score in this dimension is significantly lower than most of its African peers. The economy has also become less productive over time, dropping by 4.1 points between 2000 and 2020. Most of this decline took place when agricultural productivity dropped substantially from a high of $1500 in value addition per worker in 2000 to just over $1000 in 2010. Productivity in the services sector has remained almost flat, while manufacturing productivity has increased rapidly, from $1820 per worker in 2000 to $4761 in 2020. However, since the size of the manufacturing sector is relatively small and declining, the rising manufacturing productivity has had little impact on overall productivity.

30.8 Technology upgrading

Kenya scores just above the African average in this dimension, having upgraded its technology more rapidly than its peers. In 2000, Kenya's score of 22 was below the African average of 25.3. This improvement was driven in equal parts by the increasing share of technology in production and exports. However, improvement has slowed in recent years, with the share of high-tech exports peaking in 2010 at 25 percent, and the share of high-tech usage in manufacturing peaking in 2015 at 14 percent.

45.3 Human well-being

Kenya performs above average in this dimension. With an increase of 13.2 points since 2000, Kenya's *Human well-being* score has improved faster than many other countries. This rapid and steady progress can be attributed to broad improvements in the economic well-being of its citizens since 2005, with particularly impressive per capita income gains and reductions in income inequality. Kenya also has made strong progress in closing the gender gap in formal sector employment. In 2000, 39 percent of the total workforce was formally employed, but just 20 percent of the female workforce. In 2020, the proportion of all formal workers had increased to 48 percent, while the proportion of female formal workers had more than doubled to 42.5 percent.



Mozambique

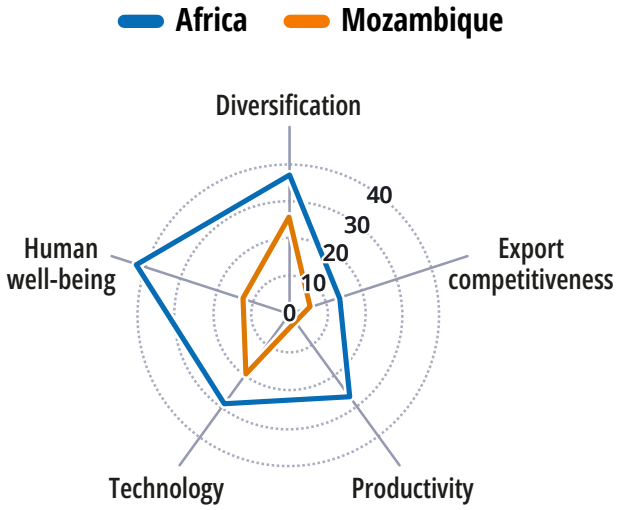
2020 SCORE **13** /100

CHANGE ▼-3.8 SINCE 2000

acetforafrica.org/ati/mozambique

Capital City: **Maputo** • Population: **33 million** • Population Growth: **2.7%**
GDP Growth: **4.1%** • GDP per capita: **US$541** — *World Bank Open Data (2022)*

DEPTH comparison

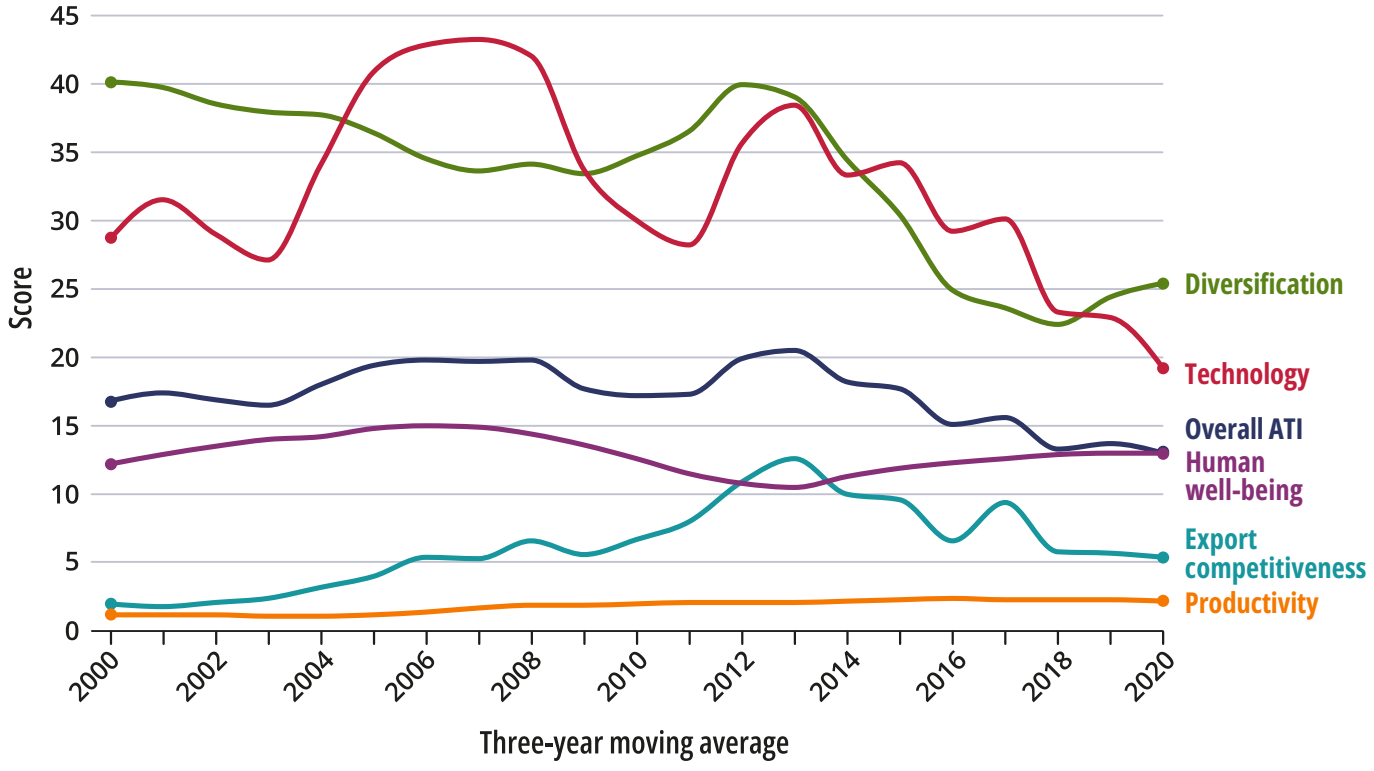


Mozambique's DEPTH scores, 2020

D	Diversification	25.4	▼ -14.7
E	Export competitiveness	5.4	▲ +3.4
P	Productivity increases	2.2	▲ +1.1
T	Technology upgrading	19.2	▼ -9.4
H	Human well-being	13	▲ +0.7

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Mozambique, 2000–2020



Mozambique is a low-income country in Southern Africa. Decades of civil war have held back its economic development. In the early 2000s, Mozambique experienced accelerated growth as post-civil war reconstruction efforts moved into public-private ventures. These initiatives focused on amplifying and modernizing regional transport infrastructure to facilitate foreign direct investment in natural resources such as minerals, oil, and gas. Mozambique's sustained growth was largely due to increased investment in natural resource extraction and the creation of export-oriented "megaprojects" supported by concessional foreign financing. However, since 2016, Mozambique's economic growth has been in slow decline, triggered by a financial crisis linked to debt and corruption and exacerbated by natural disasters and conflicts.

DEPTH performance

Mozambique is a low economic transformer with an overall ATI score of 13. It falls substantially below the overall African average of 30.3 and performs worse than average across all DEPTH dimensions. *Human well-being*, *Export competitiveness*, and *Productivity* have remained low since 2000, while its two highest-performing dimensions, *Diversification* and *Technology upgrading*, have declined precipitously over the same period.

25.4 Diversification

Mozambique's economy used to be as diversified as the African average, but in recent years it has become one of the continent's weakest performers in this dimension. Production and export diversification has been on the wane since 2012, with the economy increasingly dominated by a few natural resource-based megaprojects. The manufacturing sector remains small, and its share in GDP has fallen from 16 percent in the 2000s to 9 percent in 2020. Services remain the largest sector of the economy; however, the sector's share of the total value added has also declined, from 54 percent in 2000 to 46 percent in 2020. The economy did see some progress in the share of manufacturing and services in the total exports of goods and services, while the country's five top exports (raw aluminum, coal, electricity, raw tobacco, and petroleum gas) declined as a total share from 80.7 percent in 2007 to 68.1 percent in 2020.

5.4 Export competitiveness

Despite some minor progress since 2020, Mozambique remains part of the large group of African countries that rate poorly in this dimension. Its *Export competitiveness* score trended upward between 2001 and 2013 before tumbling as a result of the country's increased reliance on large extractive projects and its limited integration into the global value chain of its non-extractive exports. However, significant progress has been made in recent years in reducing trade restrictions and improving infrastructure at the Maputo-Matola port complex and the Ressano Garcia border crossings.

2.2 Productivity increases

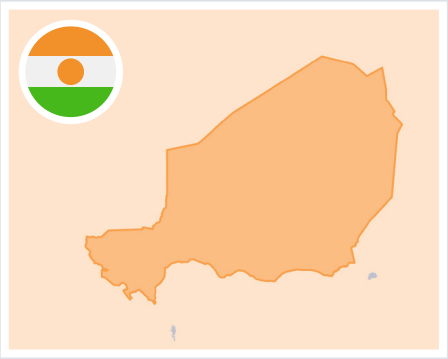
Mozambique is among the least productive countries in Africa, failing to record any significant progress in this area. The country's *Productivity increases* score of 2.2 is the worst of all the dimensions. While labor productivity has improved slightly—albeit from a low base—in the services and agriculture sectors between 2000 and 2020, manufacturing productivity has declined drastically during the same period, and informal small- and micro-sized enterprises with low-productivity technology now dominate the sector.

19.2 Technology upgrading

Mozambique has lost its technological advantage, falling behind most of its peers. Progress on *Technology upgrading* has stalled after gaining momentum between 2003 and 2013. The Industrial Policy Strategy implemented between 1997 and 2012 and the subsequent adoption of the National Development Strategy from 2015 to 2035 aimed to create a favorable environment that would give local companies better access to new technology and production organization methods through the use of Special Economic Zones and technology learning, but the benefits have not yet been realized.

13 Human well-being

Mozambique remains one of the worst performers in this dimension. The country's per capita income almost doubled between 2000 and 2020, but these gains have had a limited impact on overall economic well-being. Income inequality, as measured by the Gini coefficient, increased rapidly after 2007, with large income gaps between rural and urban areas and between female- and male-led households. Broad-based intervention policies have improved the proportion of formal employment in the labor force from 11.6 percent in 2000 to 17.6 percent in 2020, but the female labor force continues to lag, with just 6.9 percent of women formally employed.



Niger

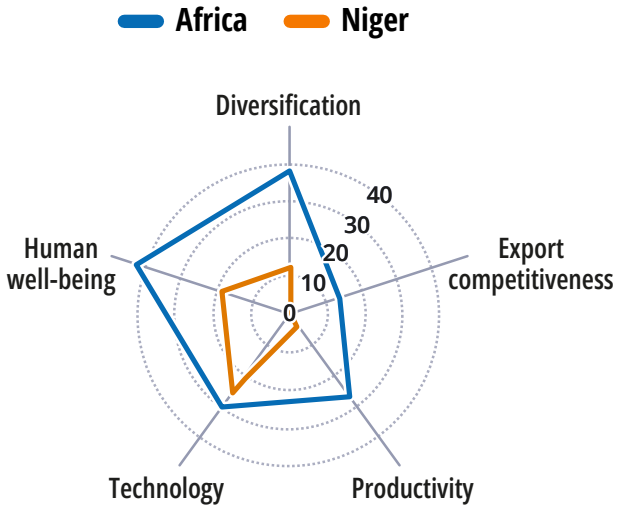
2020 SCORE **11.9** /100

CHANGE **▼-10.3** SINCE 2000

acetforafrica.org/ati/niger

Capital City: **Niamey** • Population: **26.2 million** • Population Growth: **3.7%**
GDP Growth: **11.5%** • GDP per capita: **US$533** — *Source: World Bank Open Data (2022)*

DEPTH comparison

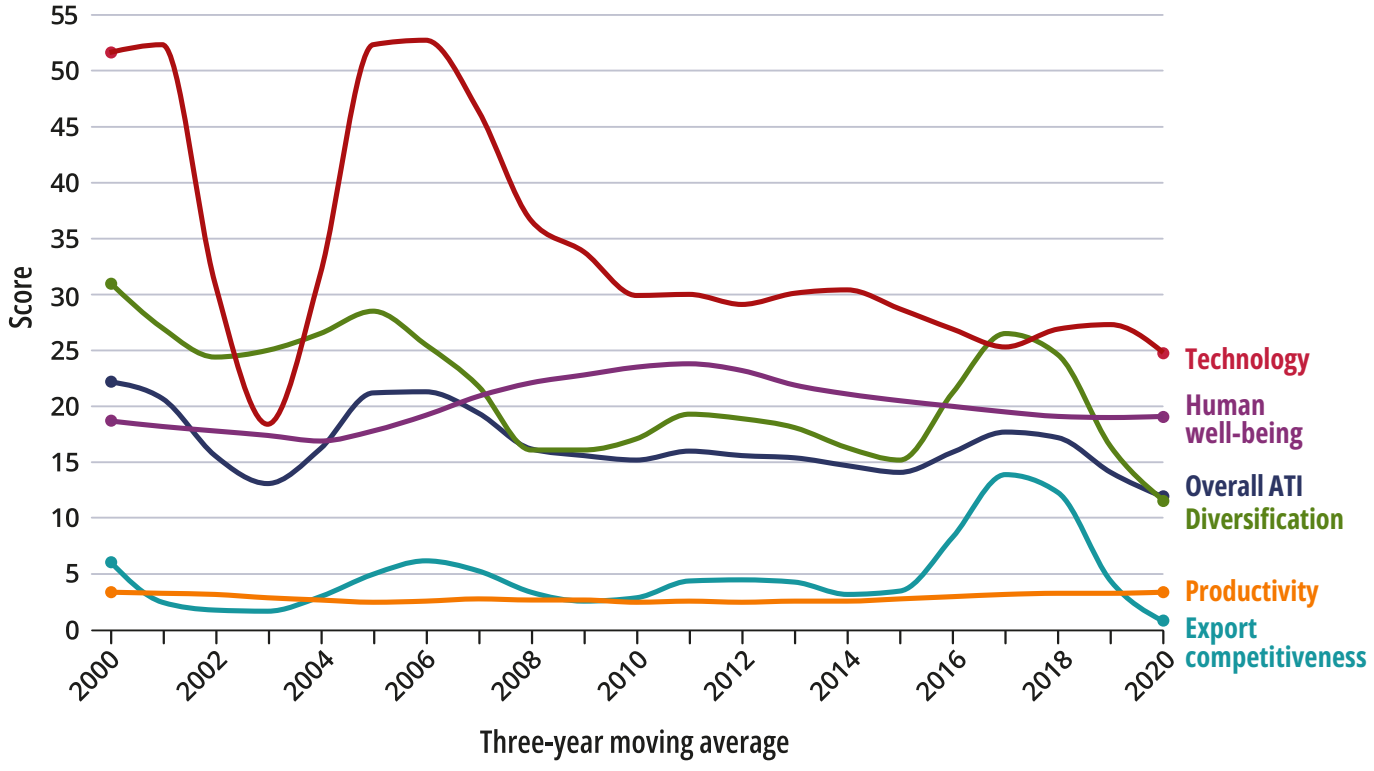


Niger's DEPTH scores, 2020

D	Diversification	11.6	▼ -19.5
E	Export competitiveness	0.8	▼ -5.4
P	Productivity increases	3.4	● 0.0
T	Technology upgrading	24.8	▼ -26.7
H	Human well-being	19.1	▲ +0.3

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Niger, 2000–2020



Niger is a low-income country in West Africa. Niger's economy has exhibited steady growth over the past two decades, with an average growth rate of 5 percent between 2000 and 2020, peaking at 7.5 percent in 2013. This growth was supported by several factors, including bumper harvests, surging artisanal gold production, and strong construction and services sectors. However, the economy's growth potential has been curtailed by a combination of health, climate, and security shocks and crises. And despite its dependence on primary commodities, Niger did not experience the type of growth accelerations that some high resource-based economies experienced during the commodity supercycle. Yet it still experienced growth reductions when the cycle ended.

DEPTH performance

Niger is a low economic transformer with an overall ATI score of 11.9. It falls substantially below the overall African average (30.3) and performs worse than average across all DEPTH dimensions. Niger's overall score is the lowest registered, alongside Burundi, among the 30 African countries comprising the index and reflects the country's deteriorating transformation environment—an almost 50 percent drop from its overall score in 2000.

11.6 Diversification

Niger's economy is poorly diversified and became significantly less diversified between 2000 and 2020. The economy is increasingly dominated by extractive industries, particularly oil, uranium, and gold. The share of services and manufactured goods in the country's exports has been volatile, with limited diversification over the past decade. The five top exports (gold, petroleum, uranium, oil seeds, and wood) account for 88 percent of the country's exports. Niger is one of the few African countries to have seen the relative size of its services and manufacturing sectors decline since 2000. In 2020, agriculture accounted for more than half of Niger's GDP, even though the sector contributed less than two decades prior.

0.8 Export competitiveness

Niger has one of the least export-competitive economies in Africa. National programs such as the Programme de Promotion des Exportations Agro-pastorales have boosted export volumes and contributed to the country's *Export competitiveness* score reaching 13.9 in 2017, but its progress has reversed dramatically since then. Efforts to diversify exports and make them more competitive are hampered by unfavorable geographical conditions, low human capital, low productivity, and persistent insecurity.

3.4 Productivity increases

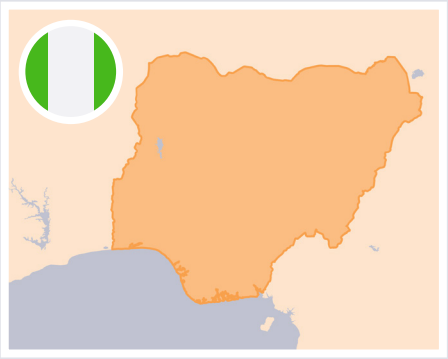
Niger's economy is deeply unproductive, and it saw no overall improvement between 2000 and 2020. Productivity in the agriculture, manufacturing, and services sectors is very low, although agricultural productivity has doubled during the period due to programs such as the 3N Initiative (Nigeriens Nourishing Nigeriens), which also doubled the irrigable land between 2011 and 2020. The initiative demonstrates how long-term planning with specific policy goals can yield results. However, the lack of similar development in other sectors, including services, continues to impede transformation progress.

24.8 Technology upgrading

In 2000, Niger outperformed many of its peers in this dimension, scoring significantly higher than the African average, but it has since fallen behind. Its score declined in 2006, driven primarily by a rapid drop in the use of medium and high technology in manufacturing. Technology-intensive sectors such as telecommunications, energy, and mining resources have typically had limited private sector interventions to bolster learning and use of new production technology.

19.1 Human well-being

Unlike most other African economies, Niger has seen minimal improvements in this area. Even though *Human well-being* is Niger's best-performing DEPTH dimension, it has been in decline since 2010. Going against continent-wide trends, formal employment is shrinking, with just 5.6 percent of the overall labor force and 1.8 percent of the female labor force holding a formal job. While GDP per capita increased until 2019, more than 40 percent of the population still lives in extreme poverty.



Nigeria

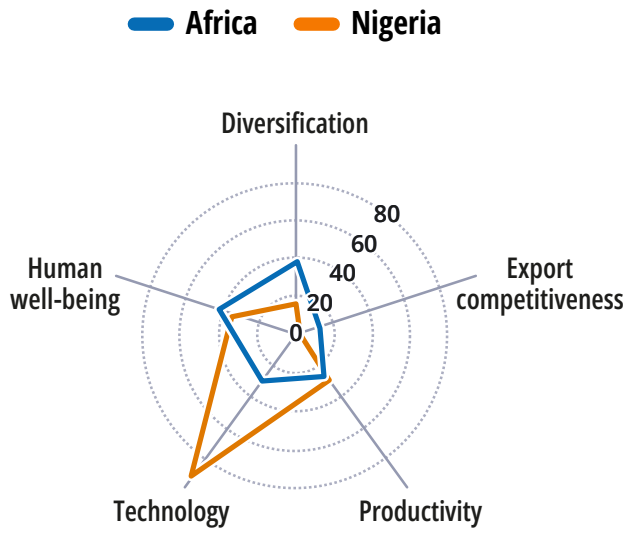
2020 SCORE **34.5** /100

CHANGE ▲+5.9 SINCE 2000

acetforafrica.org/ati/nigeria

Capital City: **Abuja** • Population: **218.5 million** • Population Growth: **2.4%**
GDP Growth: **3.3%** • GDP per capita: **US$2184** — *Source: World Bank Open Data (2022)*

DEPTH comparison

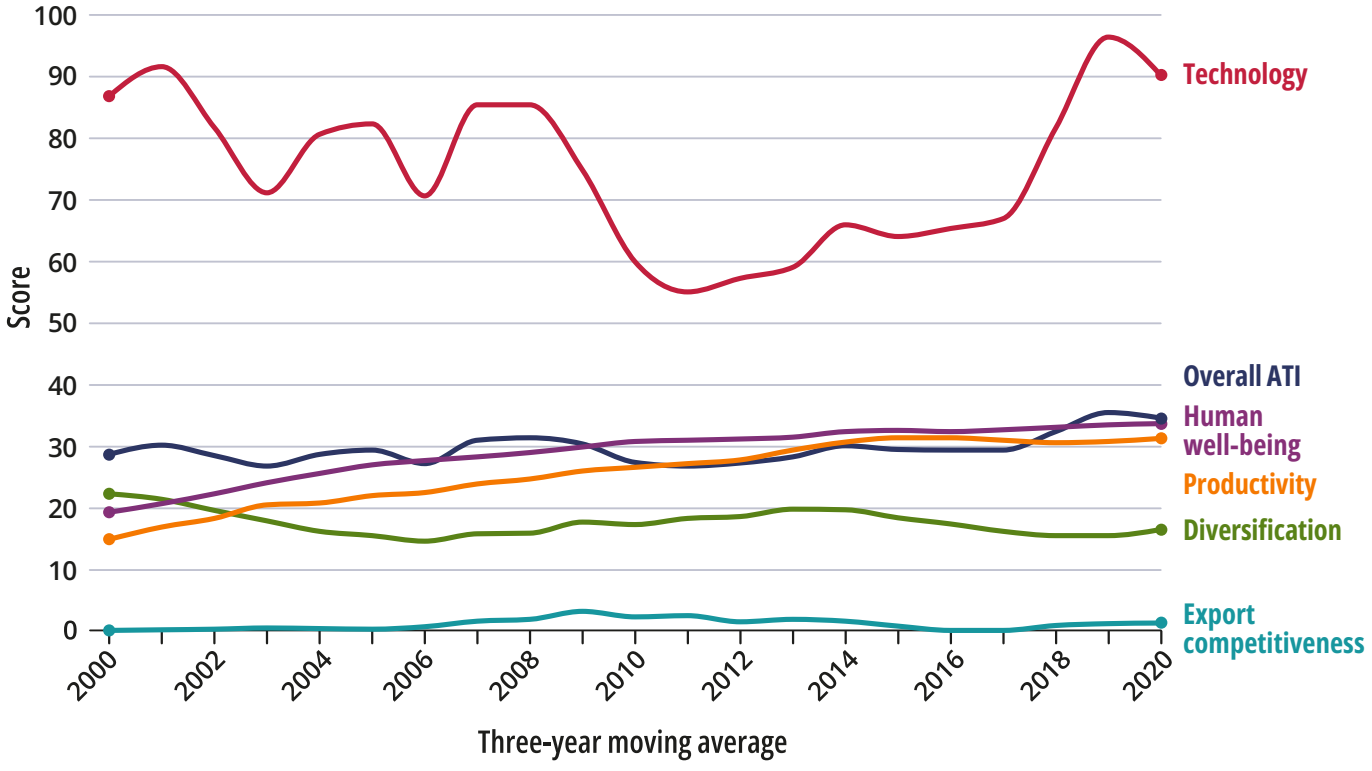


Nigeria's DEPTH scores, 2020

D	Diversification	16.4	▼ -5.8
E	Export competitiveness	1.2	▲ +1.2
P	Productivity increases	31.2	▲ +16.4
T	Technology upgrading	90.2	▲ +3.4
H	Human well-being	33.6	▲ +14.4

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Nigeria, 2000–2020



Nigeria is a lower-middle-income country with the largest economy in West Africa. The population of 218.5 million is projected to double by 2050, which would make it the third most populous country in the world behind China and India. Despite extensive deposits of crude oil and natural gas, which it has been extracting and exporting for many decades, Nigeria's income per capita remains low. In fact, it is among the lowest of all petroleum-exporting countries worldwide. Nigeria's economic growth has been generally positive over the past two decades, reaching an all-time high of 15.3 percent in 2002, supported by robust growth of the non-oil economy and a temporary 52 percent surge in oil prices following an OPEC supply cut. However, like many African countries, the economy suffered blows from the end of the commodity supercycle and the onset of COVID-19, falling into recession in 2016 and 2020.

DEPTH performance

Nigeria is a medium economic transformer with an overall ATI score of 34.5. It sits slightly above the overall African average (30.3), but it scores well below the African average in *Diversification* and *Export competitiveness*. Still, Nigeria's economic transformation outcomes have improved substantially starting from 2012, particularly in *Technology upgrading* where its 90.2 score is second only to Morocco among the 30 African ATI countries. Nigeria has made some progress in *Human well-being*, but broad economic health continues to be hindered by weak human capital development, a lack of strong and effective institutions, public financial management deficiencies, and insecurity.

16.4 Diversification

Nigeria has one of the least diversified economies in Africa, and it has become even less diversified over time. The services sector has seen some growth, particularly in real estate; trade, information, and communication; professional, scientific, and technical services; and financial and insurance services. However, manufacturing has remained a small part of the economy, and the traditional extractives sector remains dominant. The country's export portfolio is also extremely dependent on a few merchandise products, with the five top exports accounting for 96 percent of total exports.

1.2 Export competitiveness

Nigeria's economy is one of the least export-competitive in Africa. Even with the advantages offered by its Special Economic Zones, competitiveness in non-extractive exports has been poor. The oil and gas industry has driven up the value of Nigeria's currency and made exports less competitive, an effect common to many countries rich in natural resources that can hamper other sectors of the economy.

31.2 Productivity increases

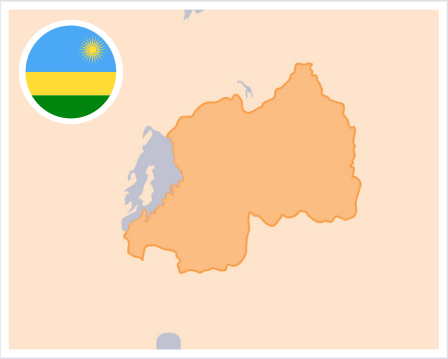
Nigeria's economy is more productive than most, with solid improvements between 2000 and 2020. The gains in this dimension can be attributed to rising productivity in all three main sectors up until 2015. Since then, manufacturing productivity has improved, but the spillover effects into the services and agriculture sectors have been marginal, and these sectors have stagnated or declined. The cost of production due to security, electricity, and infrastructure issues remains a major challenge to achieving economy-wide production efficiency.

90.2 Technology upgrading

Nigeria has seen a strong improvement in *Technology upgrading* and is one of Africa's best-performing countries in this dimension. After experiencing a technological decline in the early 2000s, the country showed robust recovery in the following decade. In 2020, half of Nigeria's manufactured exports involved medium technology, while over a third involved high technology. This impressive performance from 2010 to 2020 can be attributed to new industrial policies that boosted technology upgrading in some of the firms that emerged from the privatization of state enterprises between 2000 and 2007, as well as other programs to support small and medium enterprises.

33.6 Human well-being

Nigeria has made sustained progress in *Human well-being*, with positive trends in all indicators between 2000 and 2020. Per capita income has increased, although it remains low and among the lowest of all petroleum-exporting countries worldwide. The proportion of formally employed workers has steadily increased, but overall shares remain low, and a significant gender gap persists. And as in most African countries, high levels of youth unemployment remain a persistent challenge.



Rwanda

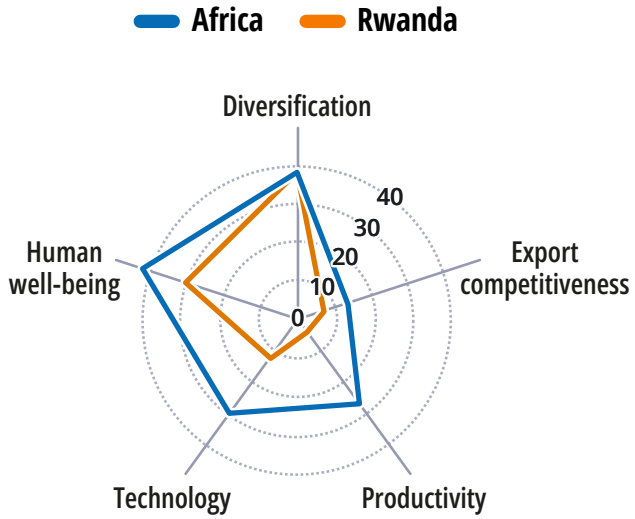
2020 SCORE **18.3** /100

CHANGE ▲+8.0 SINCE 2000

acetforafrica.org/ati/rwanda

Capital City: **Kigali** • Population: **13.8 million** • Population Growth: **2.3%**
GDP Growth: **8.2%** • GDP per capita: **US$966** — *Source: World Bank Open Data (2022)*

DEPTH comparison

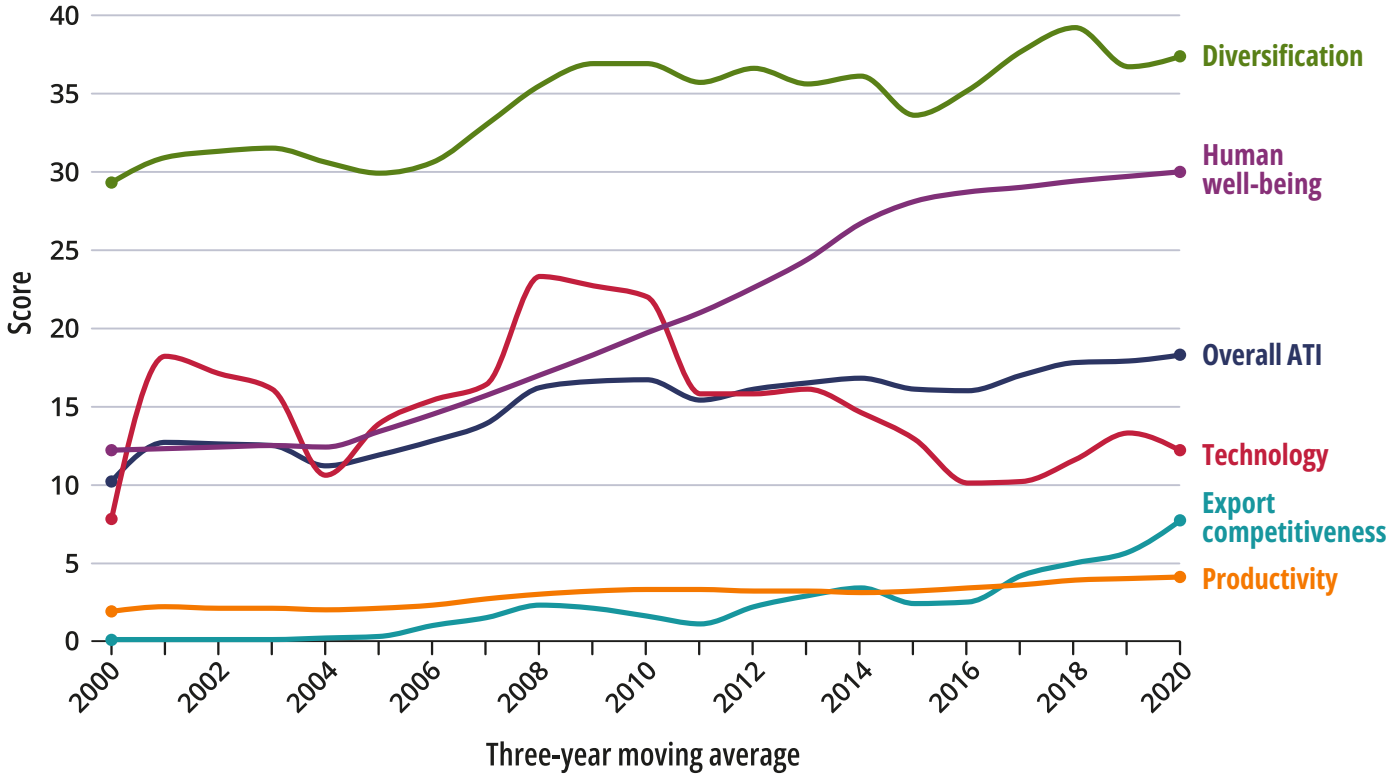


Rwanda's DEPTH scores, 2020

D	Diversification	37.4	▲ +8.2
E	Export competitiveness	7.8	▲ +7.6
P	Productivity increases	4.1	▲ +2.3
T	Technology upgrading	12.1	▲ +4.3
H	Human well-being	30	▲ +17.8

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Rwanda, 2000–2020



Rwanda is a low-income country in East Africa. The Rwandan economy grew rapidly between 2000 and 2020, with an annual GDP growth rate of around 8 percent. As a result, it more than doubled its GDP per capita over two decades. This rapid growth was interrupted by the COVID-19 pandemic in 2020, pushing the country into its first recession since 1994. However, based on growth performance after the Global Financial Crisis, Rwanda's economic resilience is better than average. Recent development planning is driven by the country's ambition to become a service-based middle-income economy by 2035.

DEPTH performance

Rwanda is a low economic transformer with an overall ATI score of 18.3. It sits well below the overall African average (30.3) and, despite its impressive economic growth, is below the African average in all DEPTH dimensions. Nonetheless, Rwanda has made remarkable progress in all dimensions, particularly *Human well-being*, while its *Diversification* score has been helped by a deliberate move into services.

37.4 Diversification

Rwanda is less diversified than most African economies, but it has also made more progress than almost any of its peers. The government embarked on a public investment program in air travel, high-speed broadband and cybersecurity, and the meetings, conferences, and exhibitions space, including the construction of the Kigali Innovation City and the Kigali International Financial Centre. As a result, the economy has diversified away from agriculture towards the services sector, with recent growth fueled by investments in real estate, trade, tourism, and government services. However, building a robust manufacturing base has been challenging due to the relatively high cost of utilities, which puts pressure on production costs. The country has also made significant progress in diversifying its exports. Its five top export products (gold, coffee, tea, zirconium ore, and tin ore) made up 96 percent of total export share in 2000 but their share delinced to 61 percent in 2020.

7.8 Export competitiveness

Rwanda has seen greater improvements in this dimension than all other countries except for Morocco and Tunisia. Improvements in the country's *Export competitiveness* score—from 1.6 in 2010 to 7.8 in 2020—are in part due to the implementation of Rwanda's National Export Strategy and the country's export product differentiation, which has established niche export markets for coffee and tea through deliberate and aggressive marketing campaigns. Despite diversification into services, the economy remains vulnerable to swings in the price of primary commodities, which still represent a substantial part of its export earnings.

4.1 Productivity increases

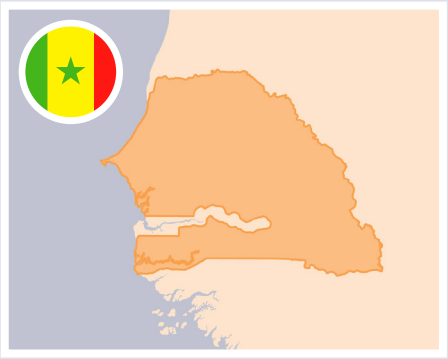
Despite minor improvements, Rwanda's productivity remains far below the African average. Starting from a very low base, Rwanda doubled its *Productivity increases* score in 20 years, but significant improvements remain elusive. The government has taken several measures to stimulate manufacturing through the revival of Export Processing Zones, which increased the production of more specialized manufactured goods for export. However, manufacturing productivity improvements have recently reversed, and the country still has one of the world's lowest levels of agricultural productivity. Between 2000 and 2010, the country made gains in productivity in the services sector through the widespread use of ICT, especially through e-health and e-government platforms.

12.1 Technology upgrading

Rwanda scores below most of its peers in this dimension. Despite some improvements between 2000 and 2020, the country's progress on upgrading technology has been inconsistent as the proportion of both medium- and high-level technology in exports and manufacturing have risen and fallen over the past two decades.

30 Human well-being

Rwanda has made more progress in *Human well-being* than any other country except for Cabo Verde. Despite sitting below the African average, Rwanda's *Human well-being* score has consistently improved since 2004, backed by strong progress in all indicators and supported by two decades of rapid economic growth. And unlike most of its peers, income inequality has fallen significantly at the same time. Rwanda has also made sustained progress in ensuring a higher proportion of formal workers, although progress has leveled off somewhat since 2015.



Senegal

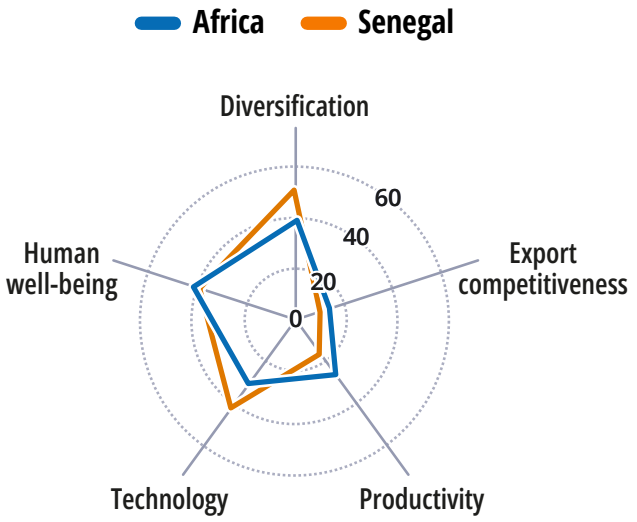
2020 SCORE **31.6** /100

CHANGE ▼-0.3 SINCE 2000

acetforafrica.org/ati/senegal

Capital City: **Dakar** • Population: **17.3 million** • Population Growth: **2.6%**
GDP Growth: **4.2%** • GDP per capita: **US$1599** — *Source: World Bank Open Data (2022)*

DEPTH comparison

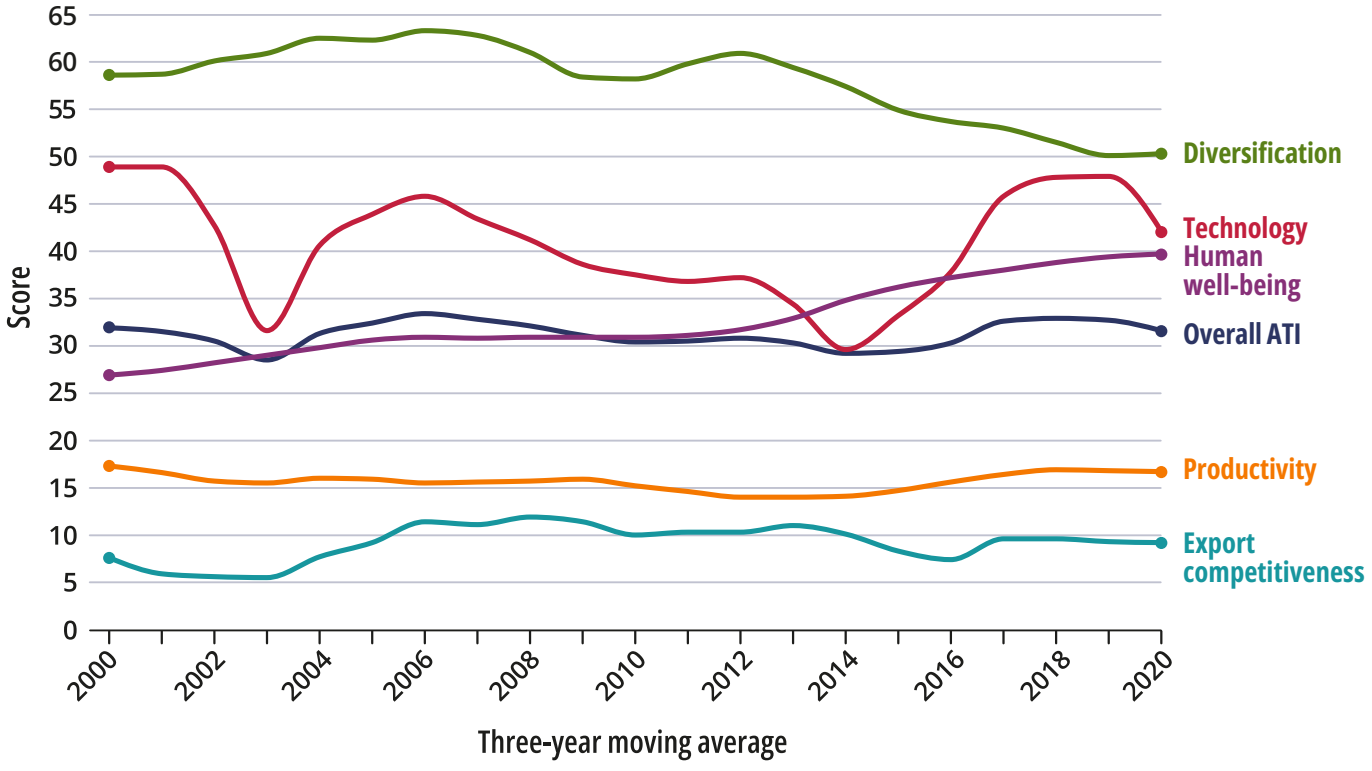


Senegal's DEPTH scores, 2020

D	Diversification	50.3	▼ -8.4
E	Export competitiveness	9.2	▲ +1.6
P	Productivity increases	16.7	▼ -0.6
T	Technology upgrading	42.1	▼ -6.8
H	Human well-being	39.7	▲ +12.9

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Senegal, 2000–2020



Senegal is a lower-middle-income country in West Africa. Between 2000 and 2013, Senegal's GDP growth steadily slowed from an average rate of 5 percent to 2.5 percent, with substantial annual variations associated largely with the country's vulnerability to extreme climate conditions and external shocks. In 2014, the government adopted the Emerging Senegal Plan (ESP), which aims for Senegal to be an emerging country by 2035. Between 2014 and 2018, the economy grew at an annual average rate of 6 percent, only slightly below the 7 percent targeted by the ESP for the decade.

DEPTH performance

Senegal is a medium economic transformer with an overall ATI score of 31.6. It sits just above the overall African average (30.3). Its current score is essentially unchanged from its 31.9 overall score in 2000. While Senegal has performed well and above the African average in *Diversification* and *Technology upgrading* in the past decade, in recent years it has shown slight regression.

50.3 Diversification

Despite becoming significantly less diversified since 2000, Senegal still remains one of the most diversified economies in Africa. The size of the manufacturing sector has declined from 22.1 percent to 16.8 percent over the past two decades, while services have remained steady at around 60 percent. Senegal's exports basket is relatively diversified compared to other African countries. This was achieved through successive medium-term development plans that focused on unlocking the growth potential of specific sectors, such as agriculture and industry.

9.2 Export competitiveness

Senegal's *Export competitiveness* is weak, though it scores better than most African countries. Senegal has seen little or no improvement in in this dimension since 2000, a result of low levels of technological sophistication in its exported goods.

16.7 Productivity increases

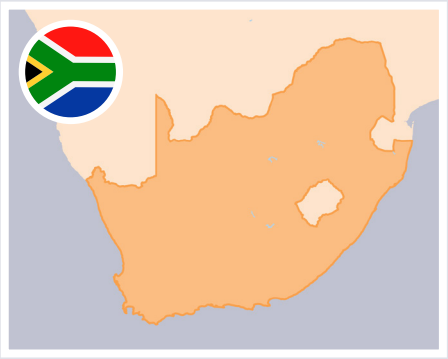
Senegal has slightly regressed in this dimension, dropping from a score of 17.3 in 2000 to 16.7 in 2020. While agricultural productivity has increased substantially and services productivity increased slightly, manufacturing productivity has fallen since 2012.

42.1 Technology upgrading

Despite a recent decline, Senegal continues to score well in *Technology upgrading*, outperforming most of its peers. The country has seen ups and downs, with a mostly declining proportion of medium- and high-technology content in exports, and volatility in the adoption of technologically advanced production methods

39.7 Human well-being

Senegal improved its *Human well-being* score significantly between 2000 and 2020. Steady progress has been driven by improvements across all indicators, with rapid gains in recent years in per capita income. Income inequality has fallen slightly, while the labor force is steadily becoming more formalized. Unemployment remains a challenge, and the government has put organizations and initiatives in place to support business development and job creation. Examples include incubation schemes, the National Bank for Economic Development, the General Delegation for Rapid Entrepreneurship of Youth and Women, the Priority Investment Guarantee Fund, and the Sovereign Strategic Investment Fund.



South Africa

2020 SCORE **60.4** /100

CHANGE **▲+3.1** SINCE 2000

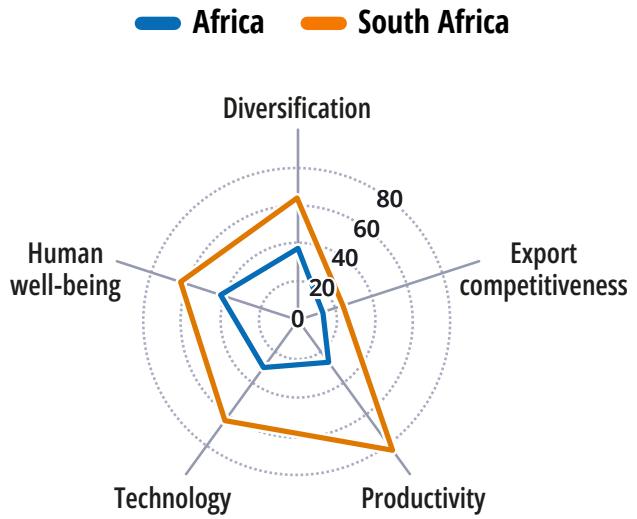
acetforafrica.org/ati/southafrica

Capital Cities: **Cape Town | Bloemfontein | Pretoria**

Population: **59.9 million** • Population Growth: **0.8%**

GDP Growth: **2%** • GDP per capita: **US$6777** — *Source: World Bank Open Data (2022)*

DEPTH comparison

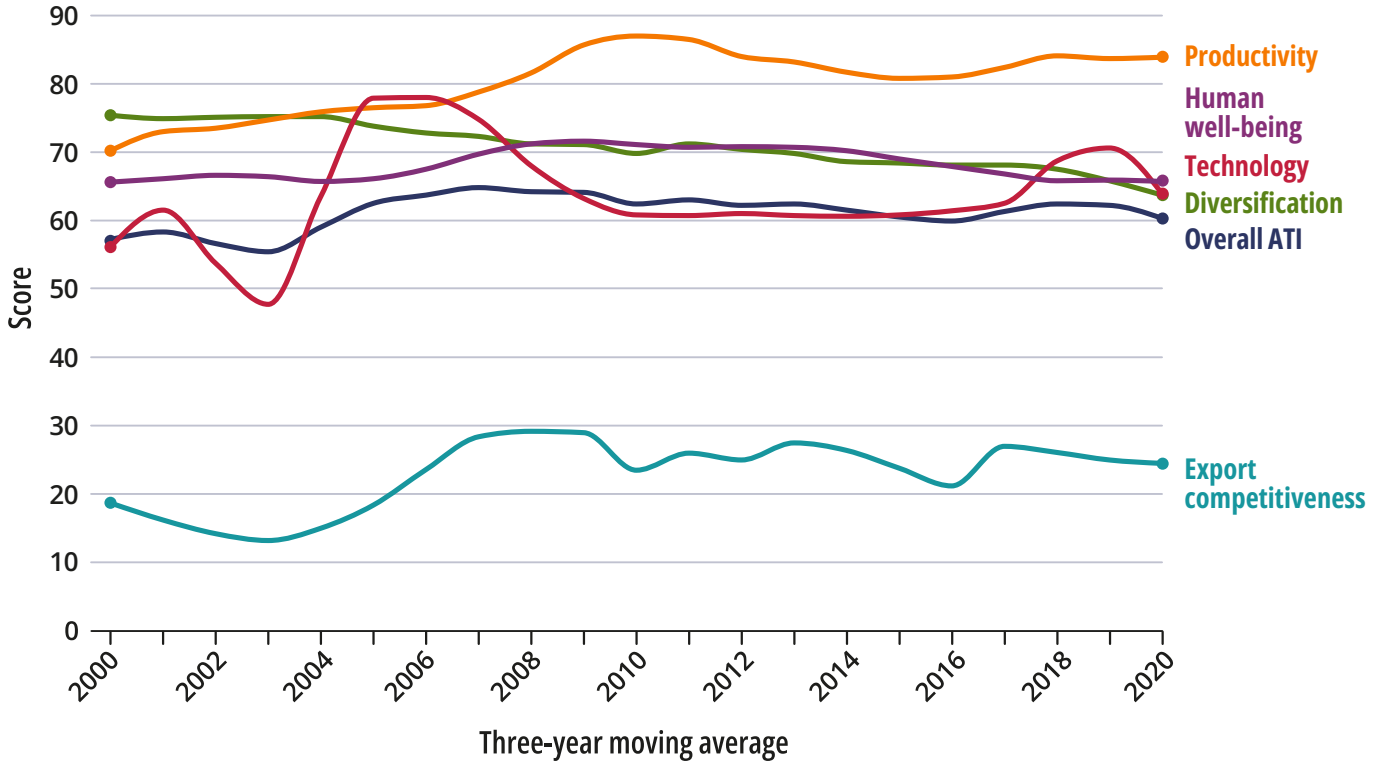


South Africa's DEPTH scores, 2020

D	Diversification	63.8	▼ -11.7
E	Export competitiveness	24.5	▲ +5.7
P	Productivity increases	84	▲ +13.8
T	Technology upgrading	64	▲ +7.8
H	Human well-being	65.8	▲ +0.1

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in South Africa, 2000–2020



South Africa is an upper-middle-income country and the largest economy in Southern Africa. After becoming a democratic country in 1994, South Africa implemented various political, economic, and social reforms to establish a stable democracy and address past inequalities from the apartheid era. After accelerated growth in the early to mid-2000s, helped by upswings in commodity prices, progress stalled after the Global Financial Crisis. Economic growth, along with per capita income growth, buckled further with the end of the commodity supercycle in 2015 and the onset of the COVID-19 pandemic in 2020.

DEPTH performance

South Africa is a high economic transformer with an overall ATI score of 60.4. This score is twice the African average of 30.3 and higher than any other country except Tunisia. South Africa surpasses the African average on all DEPTH dimensions, and scores within the top six of each dimension among the 30 countries comprising the ATI, with a particularly high score on *Productivity increases*.

63.8 Diversification

South Africa has a highly diversified economy, but its *Diversification* score declined significantly between 2000 and 2020. Since 2000, Mauritius, Egypt, and Tunisia have overtaken South Africa in this dimension. This is due to a decline in the share of manufacturing in the country's total value added, decreasing from 20.5 percent in 2000 to 13.3 percent in 2020. Services have become increasingly dominant, rising from 66.4 percent in 2000 to 71 percent in 2020. While South Africa has one of the most diverse export baskets of any African economy, the share of the top five exports (ores, slag, ash, precious metals, and stone products) has increased consistently in recent years, from 31.8 percent in 2015 to 39.6 percent in 2020.

24.5 Export competitiveness

South Africa scores higher on *Export competitiveness* than most of its peers, but its exports remain relatively uncompetitive compared to the global average. Since 2000, South Africa has made some sustained progress in this dimension, due in large part to a series of targeted strategies, including the National Export Strategy (2006-2009), the National Exporter Development Program (2013), and the Integrated National Export Strategy (2014). These plans aimed to improve production efficiency, broaden the export base, and create an export-friendly environment through incentives and targeted interventions. The country's export structure has become relatively more resource-based in recent years.

84 Productivity increases

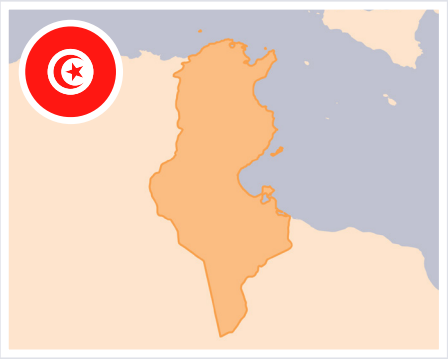
South Africa is among the most productive economies on the continent. South Africa's strong improvement in *Productivity increases* between 2000 and 2010 was sustained by rapid increases in manufacturing and agricultural productivity. Improvements in labor productivity have occurred despite challenges that affected total factor productivity, including skills shortages, high costs of doing business, and infrastructure deficits, particularly in transportation and energy.

64 Technology upgrading

South Africa is considerably more advanced technologically than most of its peers. After 1994, the new democratic government revamped the industrial development strategy it had inherited from the apartheid era. While maintaining those programs' industrial technological upgrading components, the government also created specific programs focused on export-oriented industries to help shore-up efficiency to compete internationally without state protection. While growth in this area has recently slowed, South Africa's production and exports have a high technology content compared to other African countries. And South Africa's current score of 64 still represents a modest gain from its score of 60.9 in 2010, though Morocco, Nigeria, and Tunisia have surpassed it.

65.8 Human well-being

South Africa has a high *Human well-being* score, but that score has remained virtually unchanged since 2000. Despite post-apartheid social protection schemes for the marginalized and previously disadvantaged, the country remains one of the most unequal societies in the world. The Gini coefficient increased from 58.3 in 2000 to 64.1 in 2005 and has stalled at 63 for the last 15 years. And per capita incomes actually fell between 2015 and 2020.



Tunisia

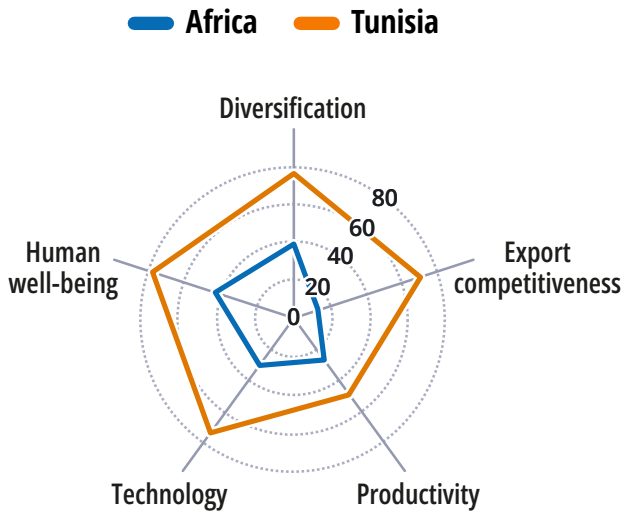
2020 SCORE **69.5** /100

CHANGE **▲+16** SINCE 2000

acetforafrica.org/ati/tunisia

Capital City: **Tunis** • Population: **12.4 million** • Population Growth: **0.8%**
GDP Growth: **2.5%** • GDP per capita: **US$3777** — *Source: World Bank Open Data (2022)*

DEPTH comparison

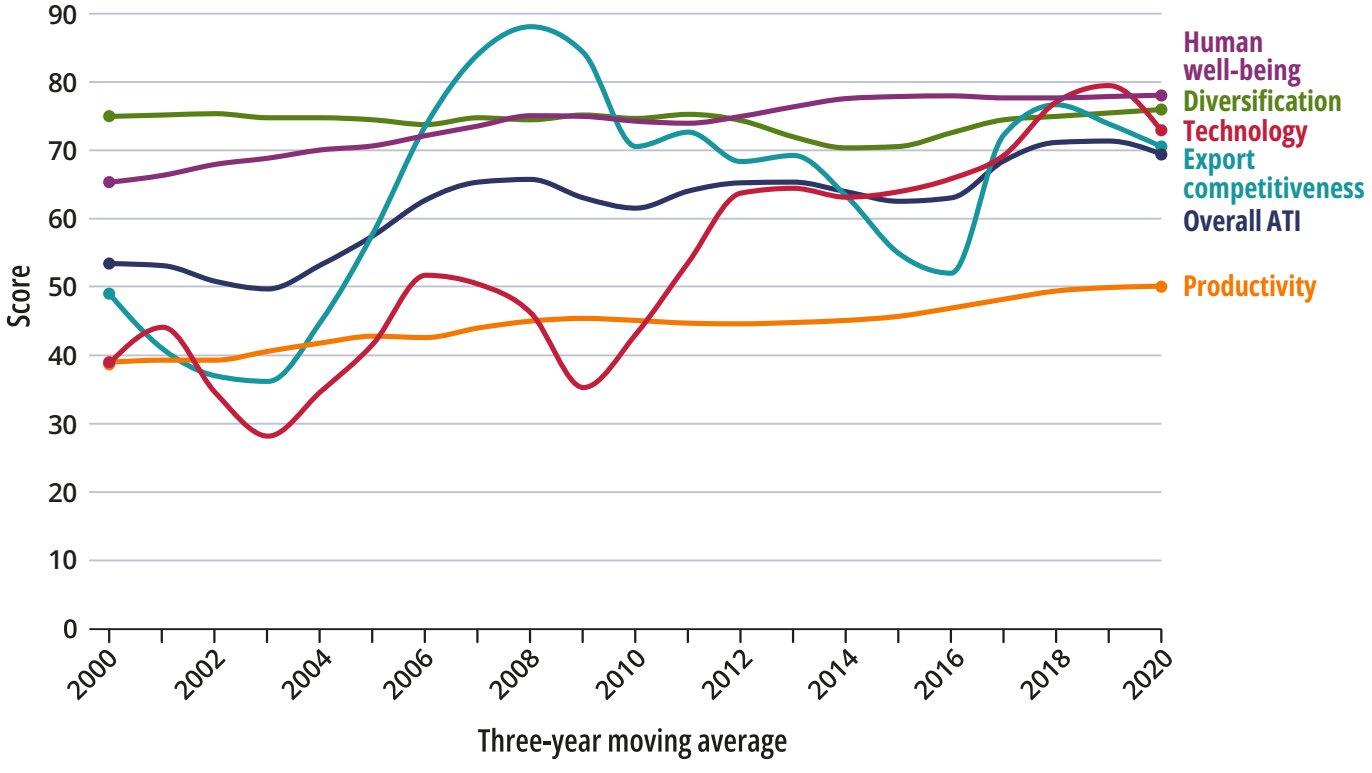


Tunisia's DEPTH scores, 2020

D	Diversification	76	▲ +1.0
E	Export competitiveness	70.6	▲ +21.6
P	Productivity increases	50.2	▲ +11.0
T	Technology upgrading	72.9	▲ +33.8
H	Human well-being	78.1	▲ +12.6

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Tunisia, 2000–2020



Tunisia is a lower-middle-income economy in North Africa. The country's development strategy in the mid-1990s focused on two main pillars: industrialization and openness to international markets. While these initiatives were successful in driving industrialization and trade-oriented growth, they failed to address high youth unemployment and severe income inequalities, which contributed to political instability and the Arab Spring protests that began in late 2010. In recent years, Tunisia has undertaken several initiatives to reorient its economy and address its shortcomings. Overall between 2000 and 2020, Tunisia significantly reduced poverty and steadily increased GDP per capita, with the exception of the decline caused by the COVID-19 pandemic.

DEPTH performance

Tunisia is a high economic transformer with an overall ATI score of 69.5. This is more than double the overall African average of 30.3. Tunisia has outperformed the African average in all DEPTH dimensions, with the top *Diversification* score and second-highest *Human well-being* score. The country made positive progress in every dimension between 2000 and 2020.

76 Diversification

Tunisia has the most diversified economy in Africa, maintaining a consistent *Diversification* score since 2000. Tunisia's economy has long had a large services sector, which has grown proportionally in the last decade. The share of the manufacturing sector in total value added has gradually decreased, but it remains one of the highest in Africa at 15.5 percent. Additionally, the share of manufactured goods and services in total exports has steadily increased, from 84.2 percent in 2000 to 94.1 percent in 2020. Tunisia remains the leading African country exporting industrial goods to the EU and has made progress in diversifying its export basket. Its top five commodity exports hold just a 33.1 percent share of total exports.

70.6 Export competitiveness

Tunisia is the second-most export competitive economy behind Eswatini, and one of the only African countries that has consistently outperformed the global average. The public and private sectors have collaborated effectively to promote export competitiveness through trade and investment partnerships, attracting foreign direct investment and integrating into regional and global value chains. Trade initiatives have helped Tunisian firms forge partnerships in external markets, including a free trade agreement with the EU in 1995.

50.2 Productivity increases

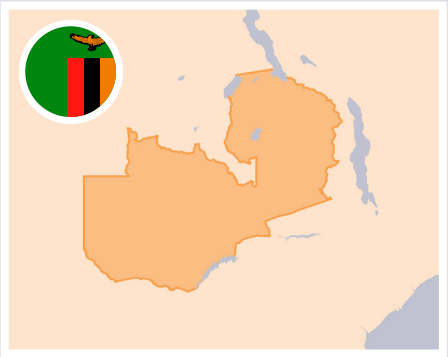
Tunisia's productivity is high relative to most other African countries but low relative to its own scores on the other four DEPTH dimensions. Tunisia has made significant and steady progress since 2000, aided by consistent public funding for improved innovation and technology adoption, education and skills development, infrastructure, logistics, and regulatory frameworks. The services and agriculture sectors had the most consistent productivity increases between 2000 and 2020, while manufacturing productivity has declined since 2012. Tunisia is one of the few countries on the continent where agricultural value added is larger than manufacturing value added.

72.9 Technology upgrading

Tunisia outperforms all but two countries in this dimension and has performed consistently well since 2009. One key program contributing to its strong performance is the Programme de mise à niveau (PMN), which offered technical assistance, training, subsidies, and infrastructure to support industrial modernization and help firms compete in an open-market economy. The government also established a PMN Grant to provide financial support to industrial firms, including startups. The Priority Technological Investment program is another example, supporting research and development activities and innovative projects with high technological content.

78.1 Human well-being

Tunisia has the second-highest *Human well-being* score behind Mauritius. Tunisia has one of the highest rates of formal employment in Africa, particularly for female workers, and the country has enjoyed a steady decline in poverty and a rise in GDP per capita. However, rising income inequality has held back progress to some extent. The country has also failed to address the key challenges of high youth unemployment and disparities in economic opportunities between urban and rural areas.



Zambia

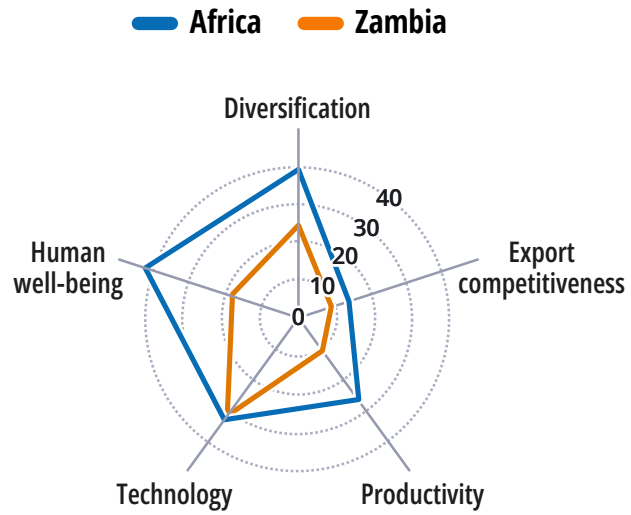
2020 SCORE **18.4** /100

CHANGE **▼-4.6** SINCE 2000

acetforafrica.org/ati/zambia

Capital City: **Lusaka** • Population: **20 million** • Population Growth: **2.8%**
GDP Growth: **4.7%** • GDP per capita: **US$1488** — *Source: World Bank Open Data (2022)*

DEPTH comparison

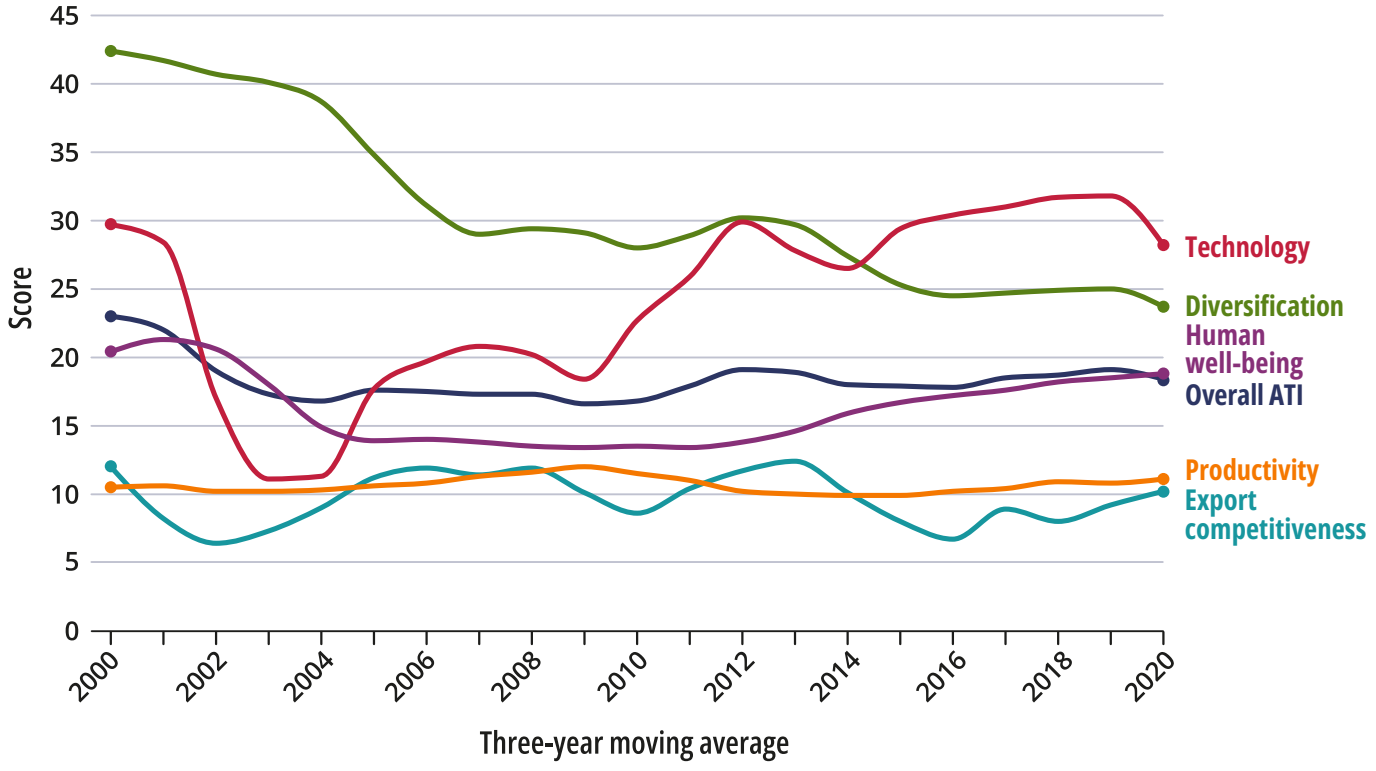


Zambia's DEPTH scores, 2020

D	Diversification	23.7	▼ -18.7
E	Export competitiveness	10.2	▼ -1.8
P	Productivity increases	11.1	▲ +0.6
T	Technology upgrading	28.2	▼ -1.6
H	Human well-being	18.8	▼ -1.5

CHANGE FROM 2000 TO 2020, SCORES OUT OF 100

Economic transformation in Zambia, 2000–2020



Zambia is a lower-middle-income economy in Southern Africa. Achieving middle-income status and sustainable economic growth by 2030 is a core development goal, as outlined in the country's Vision 2030 agenda. In pursuit of this vision, Zambia has created five national development plans since the early 2000s in an attempt to shift the country's economic structure away from reliance on copper and towards agriculture and manufacturing, with a focus on agroprocessing. However, the economy still remains heavily reliant on mining, leaving growth vulnerable to fluctuations in copper prices. Infrastructure needs, including power and electrical supply, and declining productivity in the manufacturing sector have also posed challenges.

DEPTH performance

Zambia is a low economic transformer with an overall ATI score of 18.4. It sits well below the overall African average (30.3) and lags in all DEPTH dimensions. In general, Zambia has faced a broad decline in its transformation performance since 2000, particularly in *Diversification*, although *Export competitiveness*, *Technology upgrading*, and *Human well-being* have also had erratic performances.

23.7 Diversification

Zambia's economy was about as diversified as the African average in 2000, but since then it has become significantly less diversified, falling behind most of its peers. Zambia's economic growth heavily relies on the mining sector, which accounts for more than 70 percent of the country's export earnings but has limited spillover effects on other sectors of the economy. This makes the country vulnerable to shocks that affect its traditional sectors. The manufacturing sector's contribution to total value added has fallen from 10.3 percent to 8.2 percent over the past two decades, while the share of manufactured goods and services in total exports of goods and services has dropped from 34.3 percent to 17.9 percent. Meanwhile, the services sector has retained nearly the same share of total value added at around 57 percent. As a result, there has been a shift towards extractive industries, with the share of its five top exports increasing from 74.1 percent to 81.2 percent.

10.2 Export competitiveness

Zambia is an average performer in this dimension relative to other African countries, but it is less competitive than the global average. As a leading producer of copper, producing nearly 70 percent of all African copper, Zambia has consistently performed poorly in this dimension. Despite adding 16 new products to its export basket between 2005 and 2020, Zambia's non-extractive exports have an insignificant global market share, as more than one-third of its exports are unprocessed commodity products. The high cost of production, the low quality of its products, and inconsistent and unfavorable export tax policies have adversely affected its export competitiveness.

11.1 Productivity increases

Zambia's economy is less productive than its peers and has failed to make progress between 2000 and 2020. Agricultural productivity has been very low and declining, with just $560 of agricultural value added in 2020. Services productivity increased from $5200 per worker in 2000 to $8240 per worker in 2009 but fell off and remained stagnant since then. Manufacturing productivity saw major fluctuations between 2000 and 2020, but overall productivity was not affected in any significant way due to the small size of the sector.

28.2 Technology upgrading

Zambia's economy is about as technologically advanced as its peers. The country's score on *Technology upgrading* has increased somewhat since 2003, but it still performed better in 2000 than it did in 2020. The lack of progress is mostly attributed to the poor adoption of medium and high technology in production, while the country has made some progress in boosting its higher technology exports.

18.8 Human well-being

Zambia has the second-lowest *Human well-being* score in Africa, and it is one of the few countries that has seen a decline since 2000. Zambia's inability to improve the well-being of its people is due to the lack of inclusive growth, a result of economic activity being highly concentrated in the mining sector. Income inequality is very high and rose drastically between 2000 and 2020, while GDP per capita has leveled off and declined since 2013. More than half of the population lives on less than $1.90 a day. Some progress has been made toward increasing the number of workers in the formal sector, but the vast majority of workers are still in informal employment.

ANNEX II

Methodology

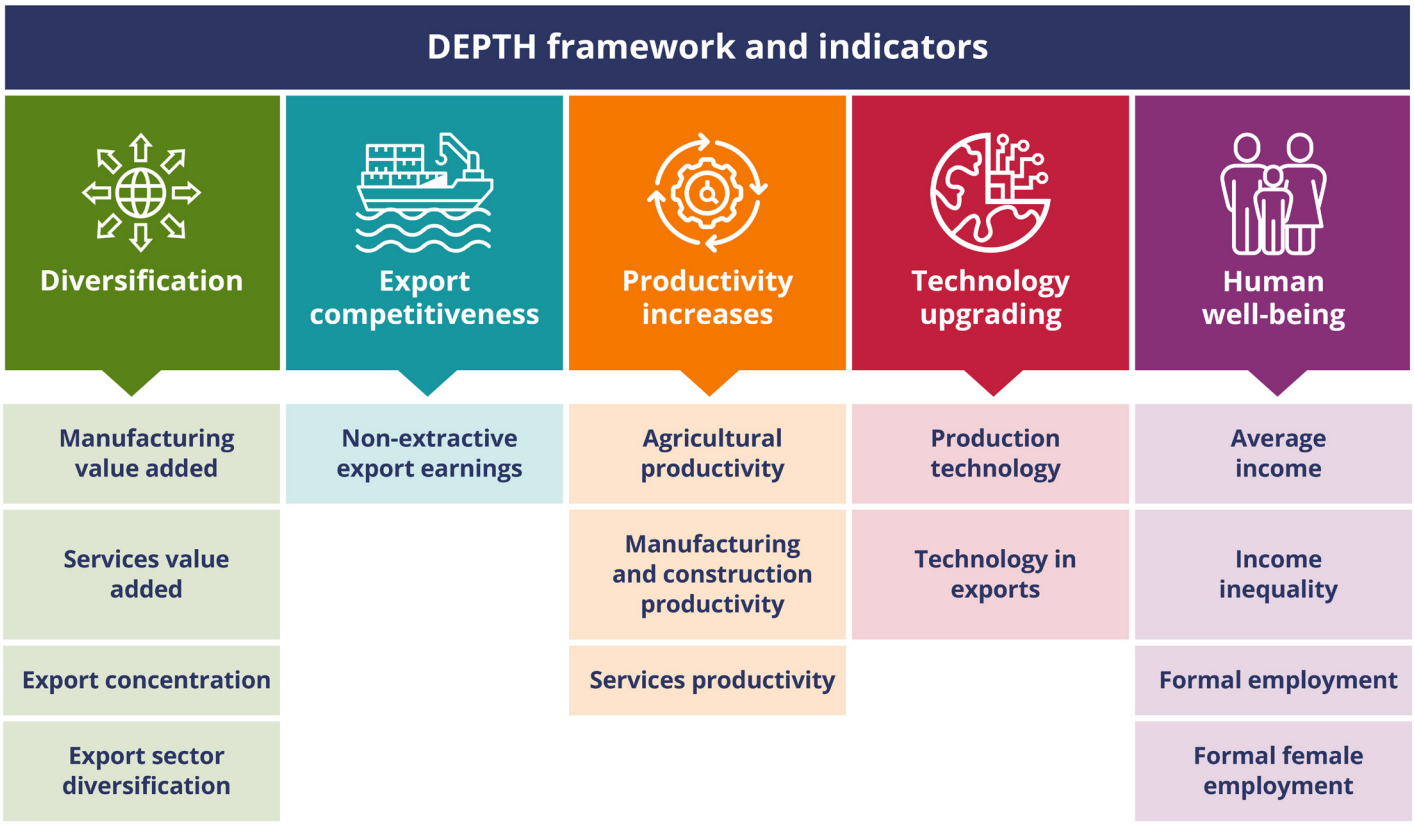
DEPTH framework

The African Transformation Index quantifies ACET's definition of economic transformation as growth with DEPTH. The ATI compares African countries and assesses their progress on economic transformation over time.

The index tracks progress on the five dimensions of DEPTH: *Diversification* of production and exports, which measures countries' capability to produce a widening array of goods and services; *Export competitiveness*, which measures the country's global non-extractive export share to its global non-extractive GDP share; *Productivity increases*, which measures labor productivity across the agriculture, manufacturing and construction, and services industries; *Technology upgrading*, which measures the use of medium and high technology in manufactured exports of goods and services; and *Human well-being*, which measures income, income inequality, and overall and female formal employment.

This version of the ATI covers 30 African countries, using datasets from 2000 to 2020 that are analyzed through the DEPTH framework. Each DEPTH dimension is measured as a composite of between one and four indicators that are used to track economic transformation progress in the 30 countries. There are 14 indicators, as shown below.

Each country's scores are based on three-year centered moving averages of the indicators, which are normalized and equally weighted. The three-year centered averaging smooths out the volatility of the raw data, which, viewed year-to-year, could give misleading medium-term results. The dimension scores are aggregated and also equally weighted to form the overall ATI score for each country.



Indicator definitions and data sources

Diversification

Indicators	Definitions and data sources
Manufacturing	Manufacturing value added during a given period as a percentage of total value added. Manufacturing corresponds to the industries belonging to International Standard Industrial Classification (ISIC) divisions 15-37 (Section D, Revision 4). *Source: United Nations Statistics Division national accounts data*
Services	Services value added during a given period as a percentage of total value added. Services correspond to the ISIC tabulation categories G-P (Revision 4) *Source: United Nations Statistics Division national accounts data*
Export concentration	The proportion of a country's export value generated by the top five highest-earning exports. The top five exports correspond to a country's five highest-earning exports during a given period. The inverse share is calculated as 100-share of the top five exports. *Source: United Nations Comtrade database; World Integrated Trade Solution*
Export sector diversification	The share of total export earnings derived from manufactures and services. Manufactures comprise merchandise products in Standard International Trade Classifications sections 5 (chemicals), 6 (basic manufactures), 7 (machinery and transport equipment), and 8 (miscellaneous manufactured goods), excluding division 68 (non-ferrous metals). Commercial service exports are total service exports minus exports of government services not included elsewhere. Goods exports (BoP, current US dollars) refer to all movable goods (including nonmonetary gold and net exports of goods under merchanting) involved in a change of ownership from residents to nonresidents. Data are in current US dollars. Service exports (BoP, current US dollars) refer to the economic output of intangible commodities that may be produced, transferred, and consumed simultaneously. Data are in current US dollars. $\frac{(\text{manufactures} + \text{commercial services exports})}{(\text{goods exports} + \text{services export})}$ *Source: United Nations Comtrade database; World Integrated Trade Solution; World Development Indicators*

Export competitiveness

Indicators	Definitions and data sources
Non-extractive export earnings	The country's share of world non-extractive exports divided by the country's share of world GDP. *Source: United Nations Comtrade database; World Integrated Trade Solution*

Productivity increases

Indicators	Definitions and data sources
Agricultural productivity	Agricultural productivity corresponds to the ISIC tabulation categories A and B (Revision 3) or tabulation category A (Revision 4) and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Data are in constant 2010 US dollars. *Source: World Development Indicators*
Manufacturing and construction productivity	Manufacturing productivity corresponds to industries belonging to ISIC divisions 15-37 (Section D). It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. Data are in constant 2010 US dollars. Construction productivity corresponds to industries belonging to ISIC divisions 41-43 (Section F). The origin of value added is determined by ISIC, Revision 4. Data are in constant 2010 US dollars. *Source: United Nations Statistics Division national accounts data; Employment data from International Labour Organization, ILOSTAT database*
Services productivity	Services productivity corresponds to the ISIC tabulation categories G-P (Revision 3) or tabulation categories G-U (Revision 4) and includes wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social and personal services. Data are in constant 2010 US dollars. *Source: World Development Indicators*

Technology upgrading

Indicators	Definitions and data sources
Production technology	The share of the total manufacturing value added from medium- and high-technology industries. Medium- and high-technology industry is defined using OECD classification based on the ISIC divisions Revision 3 (24, 29, 30, 31, 32, 33, 34, 35 excluding 351) and Revision 4, respectively. Manufacturing value added is the value added of the manufacturing industry, which is Section C of ISIC Revision 4 and Section D of ISIC Revision 3. *Source: World Development Indicators*
Technology in exports	Share of medium-and high-technology products in manufactured exports. (The Lall approach is used for the technology decomposition of manufactured exports.) *Source: World Development Indicators*

Human well-being

Indicators	Definitions and data sources
Average income	GDP per capita is gross domestic product divided by mid-year population. Data are in constant 2010 US dollars. *Source: World Development Indicators*
Income inequality	The Gini index measures the extent to which income distribution (or consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. The index measures the area between the Lorenz curve and a hypothetical line of absolute equality expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. *Source: World Development Indicators; PovcalNet*
Formal employment	Formal employment is the type of employment where there are work arrangements (written rules of recruitment, agreement and job responsibilities, social benefits, and social protection of the employee). The rate of formal employment in the labor force is derived as follows: $\frac{(\text{labor force-unemployment}) - \text{vulnerable employment})}{\text{total labor force}*100}$ *Source: International Labour Organization, ILOSTAT database*
Formal female employment	Waged and salaried workers, female (% of female employment) (modeled ILO estimate). Wage and salaried workers are workers who hold the type of jobs defined as "paid employment jobs," where the incumbents hold explicit (written or oral) or implicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work. *Source: World Development Indicators; International Labour Organization, ILOSTAT database*

Calculation of the index

To calculate a score for each indicator for each country, normalization is done using the following procedure, which produces a score ranging from 0 to 100:

$$\mathrm{NCS} = \left[\frac{[\mathrm{RCI} - \mathrm{Min(RCI)}]}{[\mathrm{Max(RCI)} - \mathrm{Min(RCI)}]}\right] * 100$$

NCS refers to the normalized country score for the indicator. RCI represents the three-year average of the raw value of the indicator for each country. Min(RCI) refers to the minimum three-year average of the raw value of the indicator among the group of countries, while Max(RCI) refers to the maximum three-year average of the raw value of the indicator among the group of countries.

$$\mathrm{NCS} = \begin{cases} 0, & \mathrm{RCI} = \mathrm{Min(RCI)} \\ 100, & \mathrm{RCI} = \mathrm{Max(RCI)} \end{cases}$$

Aggregation of indicators into DEPTH dimensions

The dimensions are constructed from 14 indicators using the following formula:

$$\gamma \sum_{i=1} i$$

For each dimension, γ is the respective weight (100 divided by the i number of indicators in each dimension). For example, *Diversification* has four indicators, where each is assigned 0.25. Since countries have different economic structures, the indicators of *Productivity increases* are weighted by how much each sector contributes to the total employment in the economy. Each indicator score and each dimension score ranges from 0 to 100, with a higher score indicating better performance.

Aggregation of the DEPTH index

The country ATI score is constructed from the five DEPTH dimensions using an arithmetic mean, giving each dimension equal weight.

$$\boldsymbol{ATI_j^t = \frac{1}{5}\sum_{k=1}^{5} \emptyset_{kj}^t}$$

Since the ATI is a weighted sum of indices, it also is an index ranging from 0 to 100. For constructing each DEPTH dimension, the same principle is followed. The overall ATI score (aggregated for the 30 African countries) is derived using a simple arithmetic mean.

Computation of growth acceleration

The data source is the country GDP in 2010 PPP dollars from the World Bank, linearized taking natural logs. The following method is used to compute each country's annual growth acceleration rate:

1. Generate the rolling regression growth rate: Estimate the rolling growth rates of GDP over a five-year consecutive window. The rolling growth rates are computed by regressing the natural log of the GDP on a constant and time trend.

2. Apply growth filter: Recode the growth rate to capture the speed of growth acceleration; (moderately rapid = 2.5-3.0), (rapid = 3.0001-5) and (very rapid = ≥5.0001).

3. For each country, the start year and end year of the growth acceleration mark the length of time taken for growth to accelerate over the five-year window.

List of countries sampled in the ATI

- Algeria
- Botswana
- Burundi
- Cameroon
- Cabo Verde
- Congo Republic
- Côte d'Ivoire
- Egypt
- Ethiopia
- Eswatini
- Gabon
- Gambia
- Ghana
- Kenya
- Madagascar
- Malawi
- Mauritius
- Morocco
- Mozambique
- Namibia
- Niger
- Nigeria
- Rwanda
- Senegal
- South Africa
- Tanzania
- Tunisia
- Uganda
- Zambia
- Zimbabwe

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