

# AFRICAN SUNRISE FLASH UPDATE

## Education: Hard Work on Soft Infrastructure

There is plenty of talk about Africa's need for more infrastructure. Most discussions focus on hard infrastructure like transportation, electricity, power, housing, and the like. The world knows how to fund and build these items, and progress is visible throughout the continent. We think building hard infrastructure is the easy part.

Developing human capital is another matter. Finding the money, developing sound policies, and taking decisive action to improve outcomes in education will take political will similar to what the continent did to create the African Continental Free Trade Area. The stakes could not be higher: Africa must prepare its young people for a future of work in an increasingly technology- and services-oriented world. Failure to act now could doom many young people to a future of poverty, under-employment, and wasted potential.

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### Africa's Vast Human Capital—Potential that Must Be Realized

Soft infrastructure—or human capital development—is essential to the continent's future, and is more difficult to achieve than building new roads or bridges. The impact of underinvestment in this arena is already obvious—and will become more significant in the future if not addressed.

### It is Time for an All-Out Push to Improve Education

Any visitor to an African city can see the size of the informal economy, hard infrastructure shortfalls, and the willingness of young Africans to work toward a better future. Every government presentation includes officials saying “we need jobs”. And global firms like Google, Facebook, P&G, Coca-Cola, GE, Caterpillar, and Microsoft are making major investments on the continent. How to pull this all together to drive growth?

- The private sector has the most to gain if young Africans enter the workforce with good skills—and the most to lose if their strategic plans can't be executed due to lack of qualified workers. We think it's just good business for companies to put some of their excess cash to work in supporting a wholesale upgrade of Africa's educational infrastructure and teaching capacity, particularly at the secondary and tertiary levels.
- Governments want companies to create more jobs? Then they had better prepare their youth to be productive workers. Antiquated notions of how children should be taught, unsophisticated usage of technology, inadequate facilities, poorly trained and too few teachers, and inefficient spending—particularly at the primary school level—will hamper job growth and wealth creation in any country. The pandemic is making this situation substantially more difficult.
- A future in which young Africans can find work only in self- or under-employment in the informal sector will lead to poverty, despair, and political instability. There is absolutely no time to waste. Africa's educational systems are failing its young people—and that must change.

In doing our research for this first report on the education sector, we found that several institutions are laying out roadmaps to improve education, coordinating strategies for reforming education from top to bottom, and providing real-world advice to governments. The depth and quality of the reports we saw from the African Development Bank, World Bank, MasterCard Foundation, African Center for Economic Transformation, the Association of African Universities, a number of technology-focused groups, and others show that serious work is being done—implementation is the next step.

## Thoughts From the African Development Bank

In its *African Economic Outlook 2020: Developing Africa's Workforce for the Future* report, the African Development Bank makes some key points about education:

- Literacy and numeracy continue to be binding constraints to competitiveness. Low skills and education lead to low-quality jobs, poverty, and inequality.
- African students have lower test scores than their global peers. On a global basis, harmonized test scores in 2017 ranged from 300 to 625; the average score in Africa was 374.
- Human capital is a key driver of economic growth, through its effect on productivity. Many African students receive a poor-quality education, learning skills that do not match the needs of modern employers. Education must not only prepare students for today's jobs, but must also include critical thinking and the capacity to adapt and learn as economies change.
- The AfDB calculates that Africa is the least efficient region for educational spending, with a 58% score for primary school and 41% for secondary school. Governments could achieve 42% better (primary) and 59% (secondary) outcomes from existing spending by increasing completion rates at each level, boosting test scores, and improving the qualifications of teachers.

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## Education is a Prerequisite for Long-Term Economic Prosperity

Much of the discussion around the economic outlook in Africa focuses on GDP growth. Governments talk about economic diversification and job creation as their highest priorities. Without the proper education framework, however, none of these things can happen.

- For the continent to meet its growth and development goals, more attention—and investment—must go into properly planned and executed human capital development.
- Studies around the world look at improved lifetime earnings per year of school, and Africa should be no different. However, workers must arrive in the workforce with basic hard and soft skills and with the ability to adapt as the world changes around them. The AfDB report outlines some of the jobs young Africans must be prepared for, including software engineer, computer programmer, writer, financial advisor, data analyst, and marketing specialist—to name just a few.
- Financial returns can come from many directions: direct payments to private-sector suppliers for tuition, books, educational materials, and related technology; public-private partnerships that allow employers to direct and support specialized training that enables them to attract and retain skilled workers; improved worker productivity and corporate profitability; and more.

## Making Schools Work Better for Africans

Primary school enrolment numbers are robust, and schools have welcomed a large increase in student numbers in the past few decades. Much work remains to be done, however, before primary education prepares young Africans for future employment, and creates the base of intellectual capital the continent needs. Some areas of opportunity:

- Schools are often in poor condition, lacking electricity, toilets, running water, internet, and other basic amenities. Class sizes are often very large, teachers can be unqualified or absent, and textbooks are scarce and often out of date. It's no surprise that parents will stretch their budgets to the limit to put their children in privately-operated schools at the primary and secondary levels.
- Covid-related lockdowns had a significant impact on education around the world. The most vulnerable students in Africa—girls, children living in rural areas, and those without access to computers or the internet—have lost time and access that will be very difficult to overcome.

## Improve Secondary Schooling

For the continent to have a chance at being globally competitive, students must get adequate basic education in primary school, and more advanced, sophisticated education in secondary school. Secondary school capacity must expand, the number and quality of teachers must increase, enrolment must rise, and curricula must be adapted to better prepare students for higher education and more productive careers. To address some of the challenges in this area, the MasterCard Foundation published a blueprint for educators and policymakers, providing ideas for improved performance. The African Center for Economic Transformation (ACET) is also providing substantial input. Funding remains a major challenge.

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## Technical Vocational Education and Training: Jobs for the Future

As African nations expand and upgrade infrastructure, install power capacity, construct housing, develop manufacturing capacity, and industrialize, the continent will need skilled workers.

There is plenty of activity around TVET on the continent. A World Bank project intends to set up specialized institutes inside 16 African TVET institutions. Objectives include:

- Train technicians and faculty; develop industry-recognized short-term training, targeting regional priority sectors, including transport, energy, manufacturing and ICT; and provide support on quality assurance and curriculum development to promote regional mobility of skilled workforces in sub-Saharan Africa.
- On a regional level, the project seeks to harmonize standards and develop mutual recognition of qualifications for priority occupations.
- Establish a regional technical TVET center for policy research, strategy development, and knowledge dissemination.
- Capacity development in order to make African skills globally competitive.
- The World Bank notes that the TVET centers should develop and implement market-relevant and competency-based training programs for work including 3D printing, digital fabrication tools and virtual reality, and other advanced technologies. Representatives from the regional TVET institutes have visited countries including Korea and China to learn about global best practices.

## TVET and the Auto Industry—Or Any Other Growing Industry

In a recent report, we wrote about the ambitions of the auto industry to develop a manufacturing and supply chain base across the continent. The advent of the African Continental Free Trade Area means that manufacturers can now achieve scale out of a base in any given country.

- In discussing the issues around the auto sector, one thing has become clear: for the industry to succeed, there must be many more trained engineers, mechanics, chemists, designers, marketing and sales managers, logistics experts, manufacturing managers, and financial executives. Much of this capacity can be developed through TVET—in partnership with companies in the industry.
- Similar investments will be required to support the Dangote oil refinery and fertilizer plant, and the new value addition programs governments want to implement around minerals, agricultural commodities, and other raw materials.
- Trained workers are needed not only to build infrastructure and other fixed assets, but to maintain and service the assets. Poor maintenance—commonly seen around the continent—shortens the useful life of capital items and reduces the benefits from large investments.
- We expect ongoing expansion in mining, oil and gas, healthcare, construction, communications, agribusiness, and many other sectors—all require trained staff.

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## Technology Can have a Significant Impact

Young Africans are eager and early adopters of technology solutions to many challenges. There is considerable scope for the private sector to invest in better connectivity and access to digital tools in the classroom.

- Mobile phone penetration on the continent is very high, with smartphone penetration rising from a low base as handsets become more affordable. The app developer ecosystem (principally for Android systems) is robust, creative, and focused on problem-solving. However, we have seen a number of reports noting that usage of mobile phones for educational purposes inside African classrooms is very low.
  - One idea for using mobile phones in the classroom would be to train students in how to absorb, process, and think critically about online news and information—with training from experienced journalists in local media outlets.
  - Another would be to have bankers or financial experts explain how to use digital financial services to plan a budget, save to buy a car, or determine whether an entrepreneurial idea will be viable.
  - Financial and economic education is valuable for students everywhere in the world. Most African cities have venture capital incubators of some kind—where tech-savvy experts can help students understand how to start a business, how to calculate market size and inventory requirements, and how local funding sources work.
- Broadband access is limited by affordability and by coverage, particularly in rural areas. We also cover the information and communications technology sector, where we see considerable investments being made. The pandemic has exposed income disparities and shortfalls in services available to lower-income households. Access to affordable internet connectivity—in Africa and around the world—is a clear dividing line between the digital “haves” and “have-nots”.
- Tablets and laptop computers are very valuable in education, as long as they have very long battery life, aren’t too fragile for classroom and home environments, and are affordable.
- Some observers have noted that technology is not necessarily deployed in African schools in a way that prepares students for real-world work. Utilization of word-processing or spreadsheet software is not geared toward business writing or traditional financial models, and collaboration tools—knowledge of which is critical for successful corporate employment—are not widely used.
- Modular education tools could use the type of pay-as-you-go financial model that works well in mobile communications, solar power, and other consumer goods. Ideas include digital delivery of textbook chapters and other learning materials, preparation for entrance exams for higher education, or new ways of engaging students who are learning remotely using solely a mobile phone. The pandemic accelerated development of these and other tech-enabled tools. This will be an area worth watching closely in coming years.

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## Universities Require Significant Reform and Investment

There is very strong demand for higher education amongst young Africans. The continent has a number of world-class universities—but capacity falls far short of demand. Families with means often send their children to school overseas for secondary and tertiary education. If African educational institutions had more capacity and a wider range of high-quality programs, some of this spending would remain at home.

### Enrolment is Low by World Standards

According to the World Bank, the share of Africans enrolled in tertiary education has more than tripled—from 2.9% in 1987 to 9.4% in 2018; vs. other parts of the world, the numbers are very low. For comparison: in 2018 the same figure for the United States was 88%, 61% in the U.K., 70% in Canada, and 28% in India. In Brazil, tertiary enrolment in 2011 (the latest year for which data are available) was 44%.

### Realigning Priorities

The Association of African Universities (AAU) has membership from 400 higher education institutions (HEIs). The AAU's 2020-2025 strategic plan report noted that during structural adjustments in the 1980's, the World Bank (WB) calculated that returns from investments in primary education outweighed those from higher education. Government budgets were adjusted accordingly. New data show higher returns from investment in higher education—but it will take time to turn this ship around. Key AAU ideas:

- Higher education is central to development of any nation. Lack of capacity amongst African HEIs holds back the continent's progress.
- To succeed, HEIs must be relevant through research, innovation, and training of employable graduates. Educational standards must be harmonized on a global basis. Capacity must expand to absorb the large numbers of secondary education graduates. Technology can support distance learning, while keeping courses more affordable.
- The AAU notes that many experienced African educators are approaching retirement age. HEIs must renew the teaching force and retain high-quality staff.
- Inadequate and out-of-date infrastructure that does not serve the needs of modern education—particularly for information and communications technology and scientific research—is a deterrent to learning, attracting the best students and faculty, and delivering world-class results.
- Funding is a steep challenge for HEIs and students. In an earlier strategic plan, the AAU encouraged universities to seek new sources of revenue, including mobilizing grant and donation resources, commercializing services, and establishing endowments that will provide future revenue. Creation of a student loan market would also help.
- We believe the Covid pandemic served as a loud wake-up call to African HEIs. The continent must—to control its own future—quickly move to create capacity to conduct research, foster innovation, and develop its own intellectual property.

### Preventing Brain Drain

Think about the number of times you have encountered a doctor, engineer, attorney, or other highly qualified individual who is a member of the African diaspora. Their presence in the U.S. or another developed market is a great benefit to us, but also a great loss to their home country. People have many reasons for moving to another part of the world, but an inability to find world-class education and professional opportunities at home is certainly high up on the list. African governments can look at investment in HEIs—particularly those doing advanced, global-standard research and innovation—as one way to improve local capacity in critical industries. Universities can also tap into the expertise and networks of people in the African diaspora to help improve educational offerings on the continent.

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## Where Will Africa Find the Money?

Education is funded from three primary sources, all of which are under severe pressure due to the Covid pandemic. Governments spend a large share of (shrinking) tax revenue on debt service, although debt relief programs help somewhat in the short run. Healthcare spending has risen and is likely to continue to grow. Households are under pressure from reduced incomes and rising inflation. Donors are also being forced to re-examine their priorities, with some funds being redirected toward pandemic relief and away from other uses.

**Governments:** Most funding for primary and secondary education comes from government budgets.

- Ratios for spending on education don't look too low; in 2017, governments in sub-Saharan Africa spent an average of 4.2% of GDP on education. This compares with an average of approximately 4.6% for the U.S., the U.K., Brazil, India, and Japan.
- Education spending as a share of government spending averaged 17.7% in 2017 for the sub-Saharan African nations in our index, comparable with other nations around the world. Worth noting: Nigeria is an outlier at just 5.6% in the proposed 2021 budget (the only year for which information was available).
- According to the African Development Bank, spending per student in primary school is \$533, and \$925 for secondary school (on a purchasing power parity basis). This is only 25% of spending in Latin America and 20% of spending in Asia. Population growth on the continent exceeds 2%, and the surging numbers of new pupils are putting further pressure on already-stretched budgets.

**African families:** Household spending on education represents a material expense for many Africans.

- We know from personal experience: our regular driver in Nairobi has a large family. Each child requires school fees, money for books, uniforms, lunch, transport to/from school, and payment for other items. This represents a constant budget overhang for Ngatia, but he is absolutely committed to keeping his children in a high-quality school. The same story holds for our friends in Uganda, Nigeria, and elsewhere.
- We use a familiar metric in assessing household spending priorities in developing economies. In Africa, the first extra shilling (or naira, or kwanza, etc.) goes for mobile phone airtime, an absolutely essential commodity. The next allocation is for education, which comes ahead of health, clothing, and many other items others would consider basic necessities.
- Families with greater means often send children abroad for secondary or tertiary education. Pandemic-related travel bans have kept that spending at home—in our view, improved local quality of education would help keep more tuition revenue within the continent.

**Donors:** According to the African Development Bank, donor funding for education has been rising since a sharp fall in 2011. In 2017, worldwide donor funding for education was \$14.8 billion, with Africa receiving 36%, or \$5.4 billion. Postsecondary education received 30% of the worldwide total, with basic education receiving 25%. It remains to be seen how the pandemic will affect these numbers.

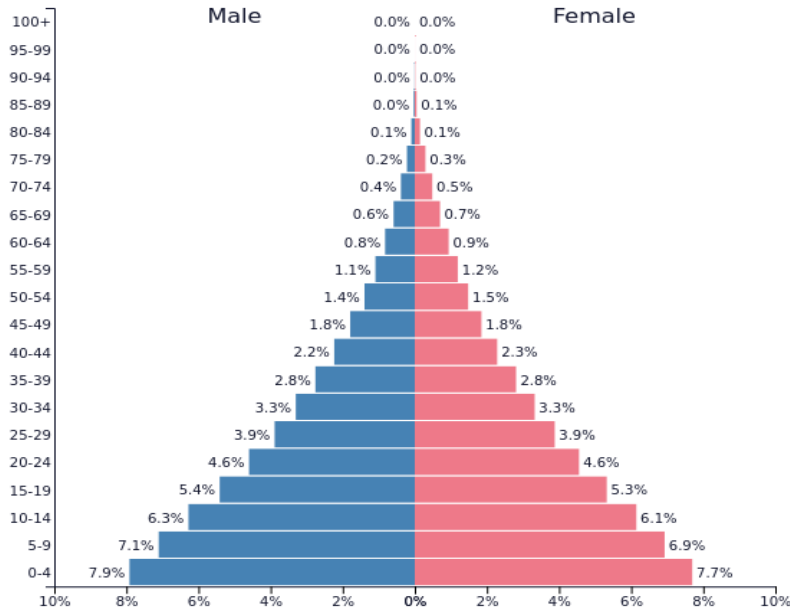
**Private sector:** Spending on broad-based education by the private sector is limited, but there is plenty of room for corporations to invest more in industry-specific vocational training or university-based research.

- Companies can develop for-profit services around existing educational programs, including exam preparation, language training, and supplemental tutoring.
- There are a number of privately-funded school systems offering high-quality education at an affordable price. Spark Schools, Nova Pioneer Schools, and Bridge International Academies are a few examples.

### Figures to Illustrate the Story

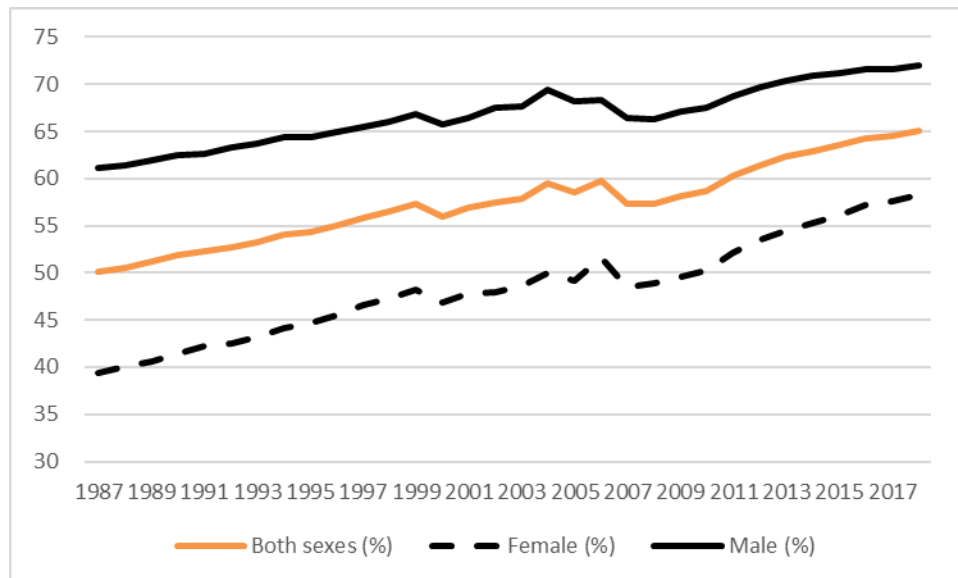
The demographic pyramid is a familiar image to our clients, since Africa's young-skewing population indicates a potential demographic dividend—or time bomb, if young people can't find proper work. The continent has made good strides in improving literacy rates, although women still suffer from educational disadvantages that have kept literacy rates lower.

#### The Wave of Young Africans Coming into the Educational System



Source: PopulationPyramid.net. Refers to a 2020 population of 1,094,365,605 in Sub-Saharan Africa.

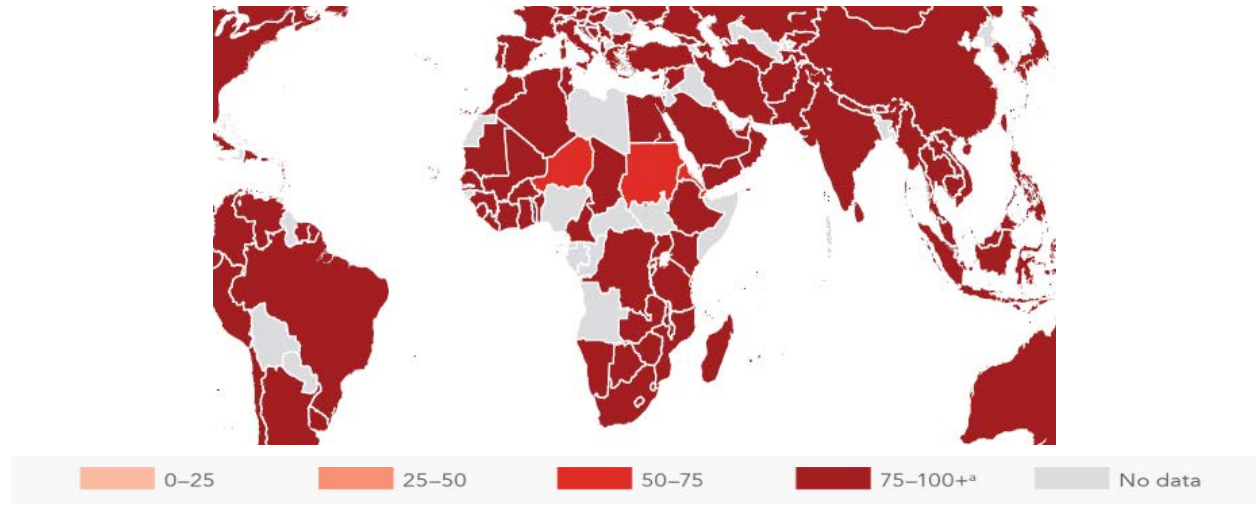
#### Literacy is Rising—And the Gap Between Women and Men is Narrowing



Source: World Bank, African Sunrise Partners LLC. Adult literacy rate, population 15+ years, (%).

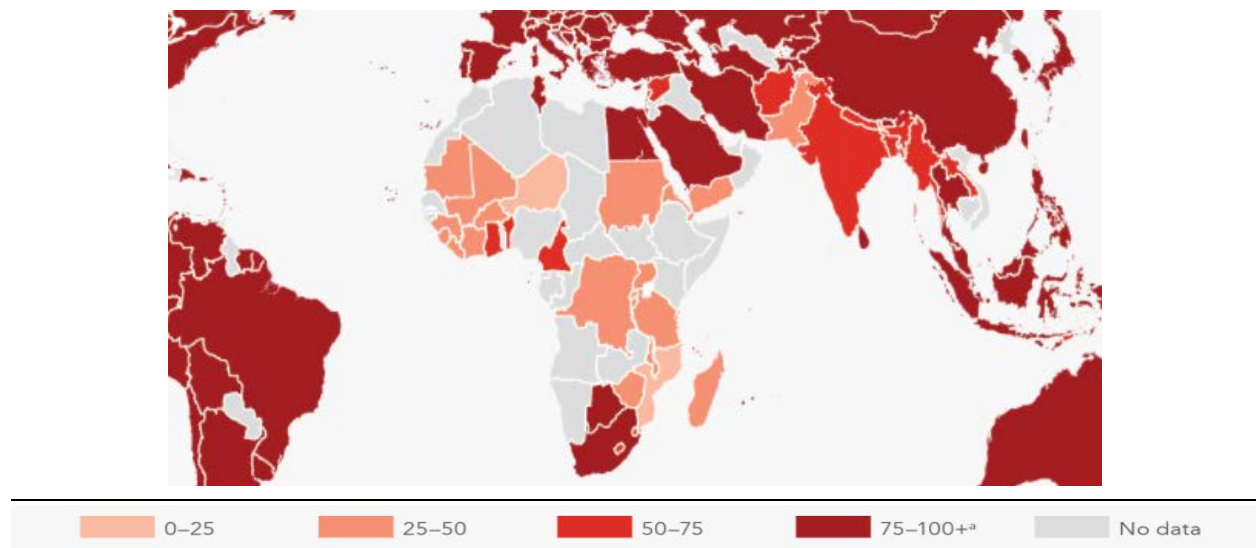
Africa has made strong progress in expanding primary enrolment, but class sizes are too large, too many children are still out of school, and there are not enough teachers to provide quality education to the rapidly-rising number of young pupils. The continent is much further behind in secondary education, a problem that must be solved if enough students are to receive the strong grounding in math, writing, critical and analytical thinking, and communications skills required for their future work.

**Africa’s Primary Enrolment Numbers Aren’t Too Bad...**



Source: United Nations Educational, Scientific and Cultural Organization Institute for Statistics; WDI (SE.PRE.ENRR, SE.PRM.ENRR, SE.SEC.ENRR, SE.TER.ENRR). Refers to school enrolment by education level, most recent year available during 2013-2015 (% gross). The gross enrolment ratio is the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population which corresponds to the same level of education, and it may exceed 100%.

**...But the Continent Drops Off Sharply in Secondary School Enrolment...**



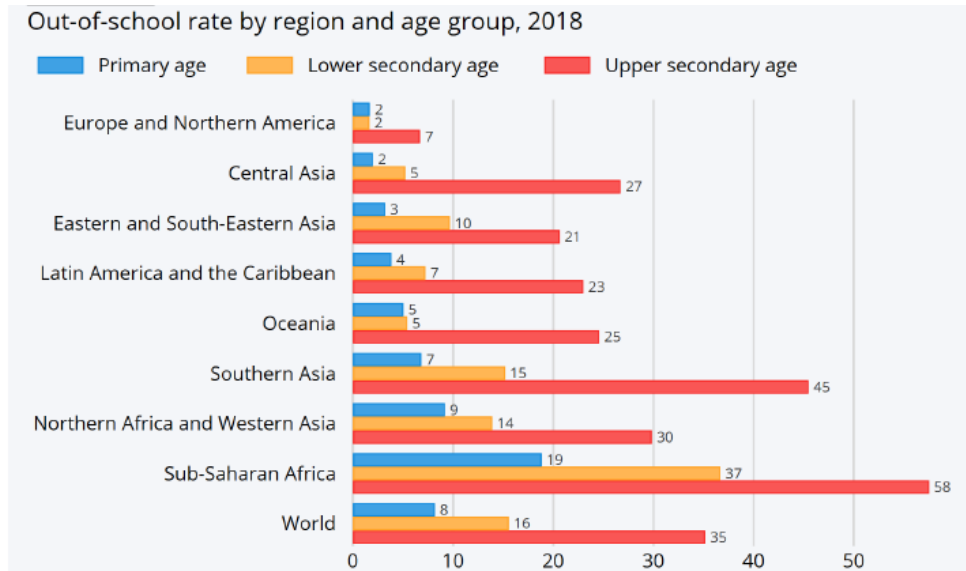
Source: United Nations Educational, Scientific and Cultural Organization Institute for Statistics; WDI (SE.PRE.ENRR, SE.PRM.ENRR, SE.SEC.ENRR, SE.TER.ENRR).



Africa leads the world in the number of children out of school, particularly those of upper secondary age. Given the poor quality of many primary education programs, this means that very large numbers of young Africans will start their working life at a severe disadvantage.

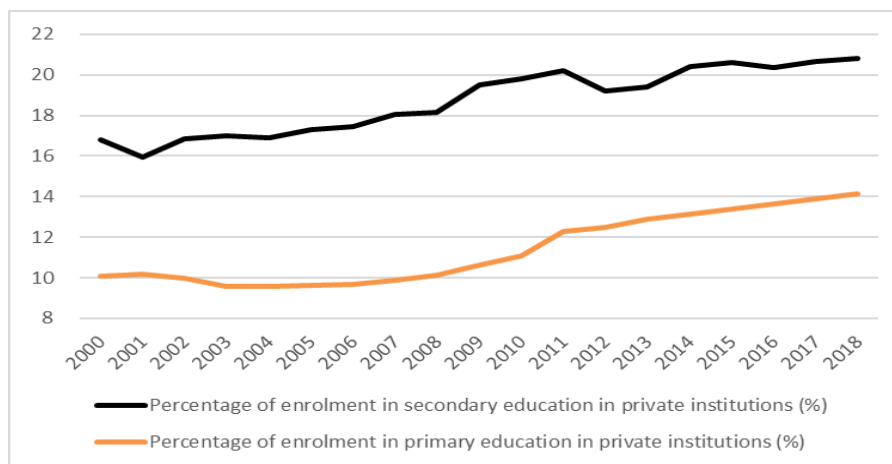
Separately: parents with any degree of ability to fund a private education are doing so, especially for secondary school. Parochial schools also offer a strong alternative to public education.

**...And Enrollment Doesn't Necessarily Mean Children are Actually Attending School**



Source: UNESCO Institute for Statistics Database, Fact Sheet No. 56, September 2019. Out-of-school rate (%).

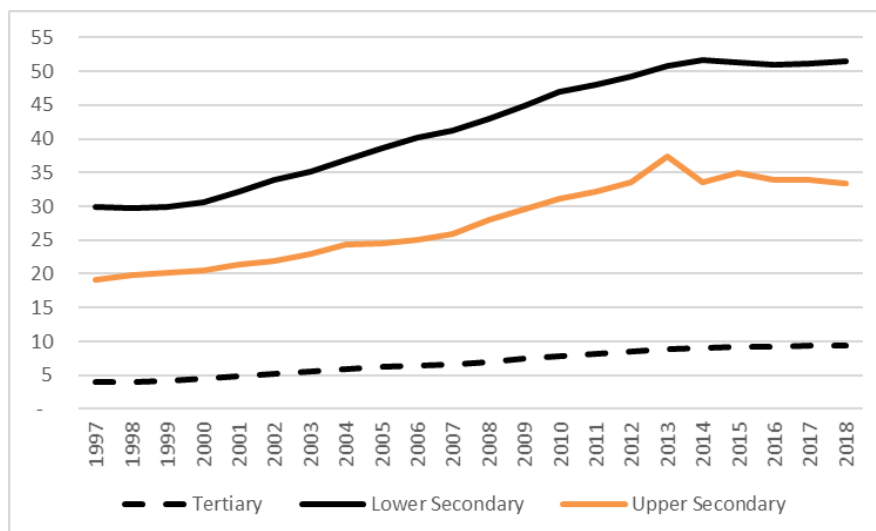
**Parents are Increasingly Willing to Pay for Private Education**



Source: World Bank, African Sunrise Partners LLC.

Levels of enrolment in upper secondary and tertiary secondary education remain very low. There are not enough teachers for the rising number of students. Large class sizes like these make it very difficult for children to learn.

**More Students are Getting Higher Education—But Levels are Still Very Low**



Source: World Bank, African Sunrise Partners LLC. Gross enrolment ratio for a given level of education, both sexes (%).

**Africa's Schools Need More Teachers...**

	2013	2014	2015	2016	2017	2018
Pre-Primary	672,858	574,737	619,393	796,478	756,112	842,763
Primary	4,012,097	4,193,491	4,297,307	4,427,512	4,583,344	4,727,632
<i>Growth</i>	12%	5%	2%	3%	4%	3%
Lower secondary	1,484,363	1,571,404	1,623,564	1,655,989	—	—
Upper Secondary	1,094,670	1,073,439	1,180,542	1,118,121	—	—
Total Secondary	2,579,034	2,644,843	2,804,106	2,774,110	2,879,093	2,937,927
<i>Growth</i>	17%	3%	6%	-1%	4%	2%
Tertiary	338,622	355,084	362,269	378,769	398,626	397,574
Total	7,602,610	7,768,154	8,083,075	8,376,870	8,617,175	8,905,896
<i>Growth</i>	13%	2%	4%	4%	3%	3%

Source: World Bank, African Sunrise Partners LLC. Teachers in each level of education, both sexes (number).

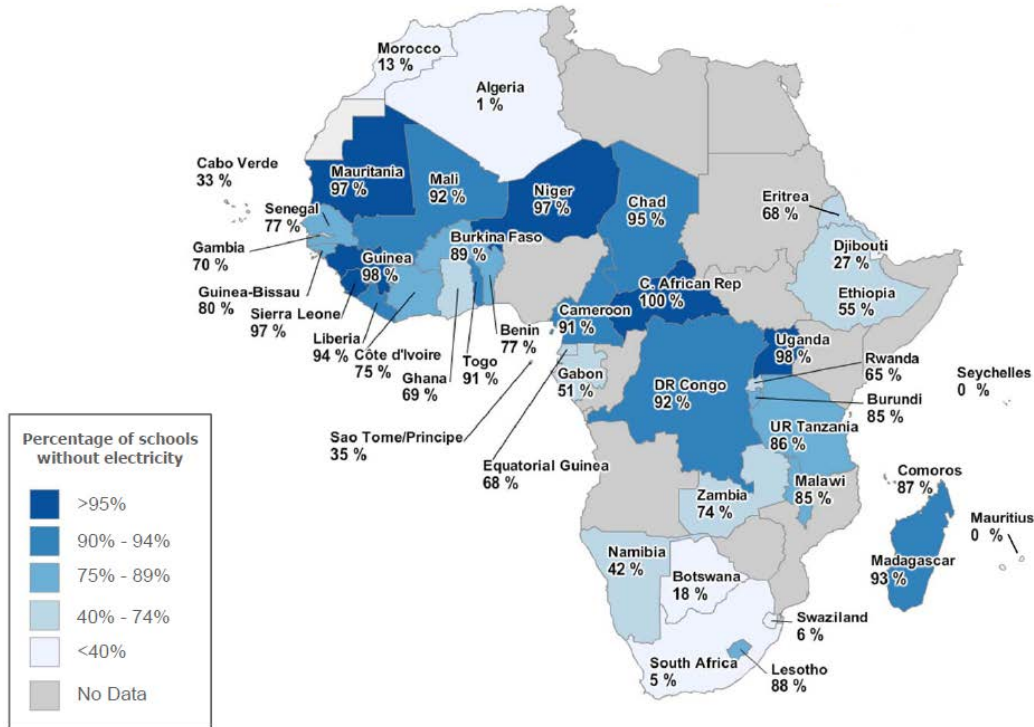
**...Particularly in Crowded Primary School Classrooms**

	2013	2014	2015	2016	2017	2018	2019
Primary	50.5	48.6	46.9	46.6	46.7	46.0	47.3
Secondary	28.5	26.7	27.1	27.2	27.4	—	—

Source: World Bank, African Sunrise Partners LLC. Pupil-qualified teacher ratio (headcount basis).

The shameful state of many African schools is illustrated by the figure below, which shows the number of schools without electricity. The solar power industry is accelerating its deployment of solar panels around the continent—schools would seem to be a logical place to use this type of power for lighting, charging of electronic devices, and to power a water pump for improved hygiene facilities. The charts showing lack of toilets, running water, and other basic amenities follow roughly the same pattern.

**Lack of Electricity is a Proxy for Poor School Infrastructure and Facilities**



Source: UNESCO Institute for Statistics. \*Data for more countries are available on the UIS website

Source: UNESCO Institute for Statistics. School Resources and Learning Environment in Africa, September 2016.

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## About African Sunrise Partners and its Managing Director

African Sunrise Partners LLC is a research and advisory firm founded in 2011. Our work is dedicated to bringing private-sector investment to Africa. The original idea for this business came when our Founder and Managing Director sponsored several Rwandan women through the [Women for Women International](#) program. These women had strong commercial and business instincts, and they were dedicated to using their newly-earned skills to make a better living for their families. Our epiphany was: *When people have jobs, they can solve their own problems*. Profit-oriented, private-sector business and investment is the answer, in our view.

### What Do We Do?

Our work is informed by extensive global experience, deep understanding of African markets, and first-hand knowledge based on our own research and access to other primary sources.

- **First:** we offer unique knowledge, analysis, insight, and ideas on many topics related to Africa. We help clients make better decisions. Our highly readable, accessible reports are based on our first-hand knowledge of issues that matter to companies, governments, and investors. Our premium [ASP Flash](#) costs \$495/year. [ASP QuickViews](#)—a condensed version of the premium product—is available for \$11.99/month. We also offer customized and deeper-dive research.
- **Second:** we match corporate advisory clients with prospective customers, decision-makers, partners, and market insights. One client recently told us: *You have provided higher-level, more actionable, and more responsive connections than anyone else we've worked with before.*
- **Third:** we take on special projects. For an African sovereign wealth fund, we analyzed portfolio holdings, recommended selling or holding assets, and identified ways that the team could add more value for the nation and for the fund's beneficiaries. With a partner, we raised the visibility of a nation's investment promotion effort and brought new potential investors to the appropriate decision-makers in the country. For two African corporate clients, we found technical and financial resources in the U.S. to help them expand and develop their business.

### Who is Running the Show?

Our Founder and Managing Director, Melissa Cook, has over 30 years of global research and business experience. She had a front-row seat watching the emergence of new economies in Eastern Europe and China. As a result, she brings a unique global perspective to her work.

- Ms. Cook covered several sectors as an equity analyst at Wall Street firms, including Drexel Burnham Lambert, Prudential Securities, and CLSA Asia-Pacific Markets. She was Head of Global Research at Lazard Asset Management. In these different roles, she conducted research and was involved in investment banking work in two dozen countries in North America, Western and Eastern Europe, and Asia.
- Ms. Cook has made over 50 trips to 16 countries in Africa since 2007, building a deep well of knowledge and a wide network of contacts.
- Ms. Cook served for two years on President Obama's Advisory Council on Doing Business in Africa. She is a member of the Bretton Woods Committee.
- Ms. Cook holds several FINRA licenses and offers her research to institutional investors under the auspices of a FINRA-registered broker-dealer.
- Ms. Cook has an A.B. degree in History from Dartmouth College. In addition, she has an M.B.A. in Finance from the Stern School of Business at New York University. She is a CFA charterholder. She holds FINRA Series 7, 16, 24, 63, 86, and 87 licenses.

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## Reports in Our Library

Here is a partial list of reports available to premium subscribers (visit <https://afrsun.com>):

- *Why Invest in Africa? A Primer.* Overview and outlook for sectors and economies, June 20, 2021.
- *Nigeria: Two Steps Forward, One Step Back.* Nigerian economy and corporate earnings, May 21, 2021.
- *Auto Industry: Free Trade, Local Markets.* Developing a local value chain. May 3, 2021
- *Debt, Liquidity, and Growth.* Sovereign debt, cash flow challenges. April 20, 2021
- *COVID: Innovation, and Vaccines.* Vaccine supply issues, innovative PPE. March 31, 2021
- *Farming Fish to Feed Africa.* Aquaculture for local food supply. March 21, 2021
- *Free Trade: Boosting Africa's Recovery.* Impact on private-sector investors. February 23, 2021
- *Reality Check.* Risks rising; economies, COVID, imports, and oil. November 6, 2020
- *Angola: Looking Past the Pandemic.* Finances, capital markets, special economic zone. October 16, 2020
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- *Feeding Nigeria,* September 18, 2020. Agribusiness, forex, and domestic production.
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- *China in Africa: Strategy, Funding, and Impact, July 21, 2020.* Chinese engagement and lending.
- *Finance, Liquidity, and Recovery,* July 3, 2020. Debt and economic revitalization.
- *Free Trade to Boost Post-COVID Growth,* June 15, 2020. African Free Trade Area
- *Crisis Spurs Investment in Data Connectivity,* May 15, 2020. Subsea cables and more.
- *COVID-19: Can Africa Escape the Worst?* May 1, 2020. Situation on the ground.
- *African Solutions for Global Problems,* April 16, 2020. Innovations for health.
- *Oil Crash: A Cold Sharp Slap to the Face,* March 17, 2020. Oil price, taxes, and COVID-19.
- *Powering Africa: Renewables Top of Mind,* March 5, 2020. Powering Africa Summit.
- *G20 Capital Markets: Foundations for Growth,* February 11, 2020. Riyadh G20 conference.
- *Looking Ahead: Africa in 2020,* December 31, 2019. What we're watching this year.
- *What Mattered in 2019?* December 15, 2019. Key themes for investors.
- *Angola Visit: Caution Today, Positive Longer-Term,* December 9, 2019. Trip to Luanda.
- *Kenya: East African Powerhouse,* September 19, 2019. Banking, agriculture, informal economy.
- *Somaliland: Early Days, Worth a Look,* August 21, 2019. Somaliland is now on our coverage map.
- *Rail in Africa: Gathering Speed.* July 16, 2019. Africa Rail conference and site visits.
- *Nigeria: Inching Ahead.* June 15, 2019. Visit to Nigeria.
- *Ghana: Promise Not Yet Fulfilled.* May 31, 2019. Visit to Ghana.
- *Trade: Fueling Economic Transformation.* April 15, 2019. Continental Free Trade Agreement.
- *Ethiopia: Distinctly Different, With Vast Potential.* March 31, 2019. Economic and political outlook.

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The author certifies that this market commentary accurately states her personal views about the securities mentioned, which are reflected in the substance of this publication. The author further certifies that no part of her compensation was, is, or will be directly or indirectly related to the views contained in this publication. The author does not know or have reason to know at the time of this publication of any material conflict of interest.

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