



Business



E C O N O M I C V I E W P O I N T

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Can Better Technologies Reverse Africa's Course?

There is considerable concern that the pandemic has reversed some of the limited progress made in Sub-Saharan economies over the last decade. The World Bank reports sizeable increases in poverty levels in many lower-income countries, and those on the continent will feature prominently in this poverty reversal. The larger and more fundamental question is what one can expect for the future of Sub-Saharan Africa (SSA).

[A recent piece by Harvard Professor Dani Rodrik](#) serves to focus attention on the issues of productivity and jobs. Rodrik was ahead of the curve in recognizing that low-income economies in the 1980s were peaking prematurely with respect to their share of GDP accounted for by manufacturing.

By prematurely, we refer to the level of per capita income at which manufacturing begins to decline vis-a-vis services. This was occurring at points in development trajectories where large segments of the population had still not escaped poverty; this observation was distinct from the East Asian experience of the past or more recent trends in China and Vietnam where manufacturing led income growth for much of the population. Africa, it seemed with few exceptions, would be stuck

generating commodity exports and low-value-added products.

To this picture we need to add new technologies. Some believed technology would enable Africa to leapfrog into new digital and service-related industries. Indeed, Melinda Gates' Pathways for Prosperity Commission aimed to show this could work. Even before the pandemic, and despite recent passage of the African Continental Free Trade Area agreement, this hope seemed a long shot that would not help most countries. Now Rodrik has posited a new dilemma: He argues that while some firms have seen productivity improvements, these gains have been posted by larger and more capital-intensive firms that employ relatively little labor. Jobs, Rodrik argues, are largely generated by small but relatively unproductive firms. Small firms' lower levels of productivity can be seen worldwide, which is why dynamic firms that grow and reach significant scale are desired.

Rodrik's observation is not wrong, but it misses several key points. First, larger and more capital-intensive firms must embrace newer technologies in order to be competitive. No one wants products made with yesterday's methods, at least not in export markets.

Second, in order for medium-size firms that employ more workers to thrive, they must be given access to credit, the ability to import newer technologies, and the chance to grow. Growth of new firms depends crucially on local competition policy, which is often lacking in Africa. Third, access to the newest technology often hinges on strategic foreign investment, and effective policies in this area have eluded most SSA economies.

The key impediment to using newer technologies in a labor-complementing way is the significantly low level of human capital across most of the continent. One need look no further than the World Bank's Human Capital Index (2018) that measures both health and education variables. Start with the general observation that 80 percent of the world's poor live in countries with an index level below .4. (The range is between 0 and 1.0.) Supplement this with the finding that almost all 30 countries ranked below this threshold are in Sub-Saharan Africa. More specifically, the average years of schooling achieved by the population versus the learning-adjusted levels reveal why the adoption of new technologies will not come easily.

Let's look at the three largest economies. For Nigeria, these values are 8.4 years versus 4.3 learning-adjusted years. For South Africa, the values are 9.3 versus 5.1, and for Angola, they are 7.9 versus 4.1. This means the average Angolan has almost eight years of schooling but, when adjusted for knowledge attained, it is the equivalent of four years of school. Similar data is found for the rest of the continent (with Mauritius being the outlier), and the average years of learning-adjusted schooling range largely between 4 and 5. That

is not even equivalent to the performance expected from elementary school leavers.

Why does this pattern exist? The answer takes us into issues of poor teacher quality, astonishing teacher absentee rates, and broader poverty considerations. A technology-driven development strategy cannot be built on weak educational foundations. An apt comparison might be Vietnam, with an annual per-capita income of less than \$2,000 a decade ago but years of schooling closer to 12 (10.2 in learning-adjusted years), as recently measured.

Whether a country's development path involves higher value-added basic products or manufactures or even services, there are four essentials for success: a massive improvement in human capital, a private sector with access to global value chains or attractive enough to draw foreign investment partners, coordinated economic policies that foster competition and competitiveness, and pathways to new technologies that raise the productivity of firms, no matter their size.

These considerations, already evident, have become even more crucial in the post-pandemic world. Low-income developing countries will need to differentiate themselves, as Vietnam and Cambodia have successfully done, and they will need to use technology to promote more modern activities that can employ better-skilled workers. Technology alone will not suffice, however. It will require a host of complementary actions that relatively few Sub-Saharan African countries have been able to marshal so far. Given the IMF's recent projections that 110 countries will not see their GDP restored to 2019 levels until 2023, a major effort is now required to break the status quo and undertake necessary reforms.