



Large Infrastructure

Infrastructure, growth and jobs

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Infrastructure, growth and jobs

Investing in infrastructure can stimulate economic growth by increasing capital accumulation and facilitating the transition of workers to higher-productivity jobs. Trade and economic integration, in general, can contribute significantly to productivity improvements.[1] An IMF study of infrastructure spending in several countries from 1985 to 2014 found that an unanticipated 1% increase in public infrastructure boosted GDP by 0.4% the following year and by 1.5% four years later.[2] The Economic Policy Institute agrees, noting that ‘infrastructure investments can boost even private-sector productivity growth.’[3]

In general, the positive relationship between infrastructure and development is uncontroversial, but the benefits of investment in different types of infrastructure over shorter horizons are heavily debated. The type of infrastructure, how it is financed and how quickly it is rolled out, together with levels of development, all matter:[4]

- In the short term (i.e. during the construction phase), goods and services are consumed in building the infrastructure and additional workers are hired. This temporary fiscal stimulus precedes a more lasting improvement in productivity, as completed roads and railways open new markets and make product delivery and worker commutes more efficient. Power plants also produce more energy more cheaply, which, in turn, supports power-heavy secondary industries.
- Long-term benefits depend substantially on the kind of infrastructure. Core infrastructure such as roads, ports and utilities have the largest economic effects as they unlock more economic activity than other investments. The productivity impact of the new infrastructure improves the competitiveness of firms, which allows them to expand and increase employment.

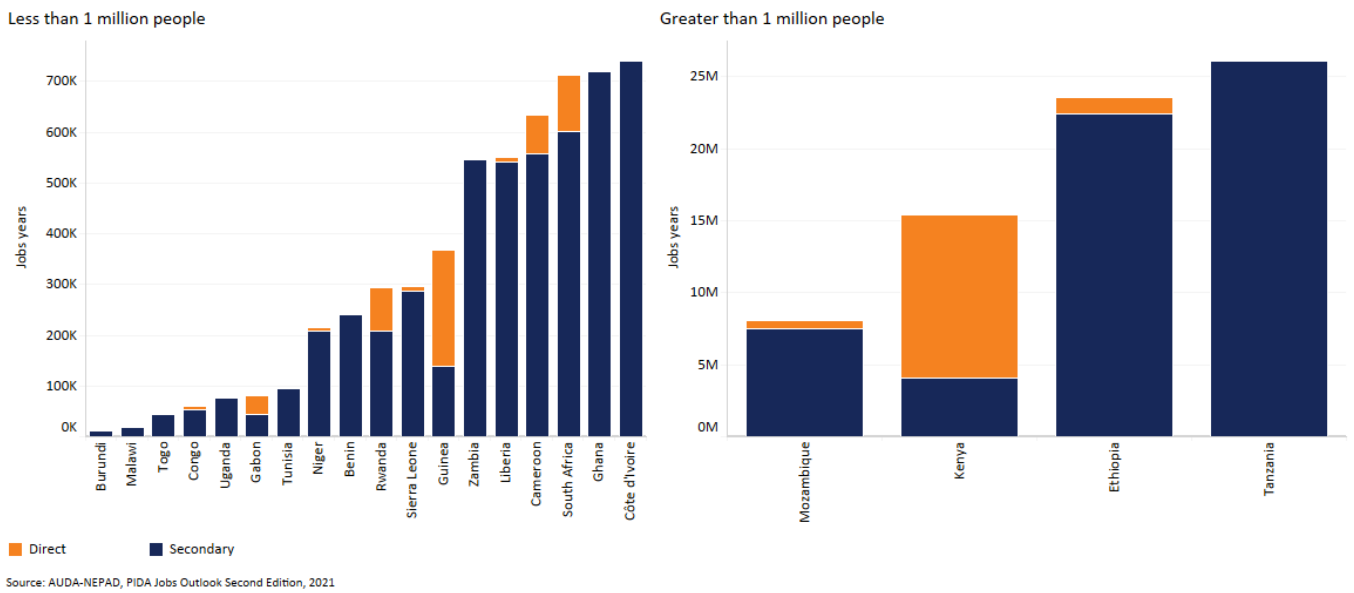
Provided that poor people are not priced out of access, expanding basic infrastructure such as roads, ICT, electricity access and water and sanitation can reduce inequality by improving equal access to essential services.[5] The impact of freight rail, port and airport developments may be more indirect, reducing inequality by raising employment, for example. However, such investments may also disproportionately benefit wealthy holders of capital, increasing inequality and poverty in the short term.

Chart 12 shows the AUDA-NEPAD forecast of job creation by implementing PIDA. The forecast distinguishes between direct, indirect, induced and secondary job years:

- Direct jobs are created in the construction, maintenance and operation of a project.
- Indirect jobs are created through the suppliers of goods and services needed for a project.
- Induced jobs are created by the multiplier effect associated with the spending of income acquired through direct and indirect employment.

Secondary jobs are created by the improved infrastructure itself (such as new businesses and factories opening in response to cheaper, more reliable electricity, or better road access to an underdeveloped district).

Chart 12: Job forecast due to PIDA projects



Source: AUDA-NEPAD, PIDA Jobs Outlook Second Edition, 2021

Infrastructure development can, of course, have short-lived negative effects, particularly for local communities, if it is implemented without careful consultation and good planning. For example, a freeway could cut through a poor community that still largely commutes by foot or bicycle and thus reduces people’s mobility. Infrastructure developments could lead to increased conflict over land as projects increase land value around them, or detract from value. In many poor African countries, large, prestigious projects such as railways and airports have distracted from potentially more helpful but unglamorous projects such as investing in rural roads and water and sanitation infrastructure.[6]

Both the amount and quality of infrastructure are positively correlated with growth in income, although not equally so: the impact depends on the relative development stage of the country and the period over which impact is assessed.[7]

A World Bank study showed that in Africa the amount of infrastructure contributed almost nine times as much to per capita income growth as the quality thereof. However, this effect is region specific, with the potency of increasing quantity over quality appearing to be particularly strong for sub-Saharan Africa. In contrast, in North Africa, where the infrastructure deficit is smaller, improving the quality of infrastructure, specifically roads, had the greatest potential impact on income.[8]

Although increasing the amount of infrastructure in sub-Saharan Africa remains the most decisive factor in infrastructure development in the region, a commensurate increase in quality would make the impact of infrastructure on economic growth far more potent.[9]

The demand for infrastructure in Africa is rising as its population continues to grow and become increasingly more urban, putting immense pressure on existing networks. Africa’s dependence on trade is also large, with a disproportionate reliance on commodity exports. Yet poor logistical infrastructure makes trade expensive or difficult, undercutting Africa’s ability to engage and compete in global markets. Non-tariff barriers such as inaccessibility to markets are a significant hindrance.[10] Better rail, road and port infrastructure would allow Africa to better tap into global markets and maximise growth.[11]

Endnotes

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Dr Jakkie Cilliers is the ISS's founder and former executive director. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation (AFI) programme at the Pretoria office of the Institute. His 2017 best-seller *Fate of the Nation* addresses South Africa's futures from political, economic and social perspectives. His three most recent books, *Africa First! Igniting a Growth Revolution* (March 2020), *The Future of Africa: Challenges and Opportunities* (April 2021), and *Africa Tomorrow: Pathways to Prosperity* (June 2022) take a rigorous look at the continent as a whole.

Dr Blessing Chipanda joined the African Futures and Innovation (AFI) programme in January 2023. Before joining the ISS he worked as an assistant lecturer/research assistant at the University of Pretoria, Department of Economics. He is particularly interested in tasks within the wider realm of international trade, development economics, public policy, monetary policy, and econometric modelling. Equally interested in economic and socio-economic activities that impact social welfare. Blessing has a PhD in economics from the University of Pretoria, South Africa.

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