Policy brief

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Rural Feeder Roads and Access to Markets

In brief

- There is little research on the impact of large scale infrastructure investments in very poor economies, with some projects having mixed or even adverse effects on neighbouring populations rather than promoting growth. A large amount of foreign aid is directed to infrastructure upgrading, yet the infrastructure related needs of Sub-Saharan Africa are still immense.

- This project aims to help governments and donors quantify the potential impact of infrastructure rehabilitation programs, and inform what type of infrastructure projects should be prioritized and why. In examining the magnitude of these impacts, we will understand whether the cost of investment in road infrastructure is justified.

- The authors expect to provide evidence regarding the impacts of rural feeder roads on prices, markets and trading behaviour in the rural economy.

- Our results will allow infrastructure rehabilitation projects to be grounded upon a clear theory of change and an understanding of the potential impacts in the local context, as well as its' impacts on markets and incentives.

- The study will allow us to test whether better roads enhance price information and market access for smallholder producers, whether better roads increase competition among middlemen and thereby increase the surplus of farming households selling their produce, and the potential impact of better-integrated markets on crop prices.

- Where market failures are identified, infrastructure upgrading should be a priority. High transport costs and supply chain bottlenecks are most likely to hinder market efficiency and smallholder profits in the absence of adequate infrastructure.

Policy Motivation

"There has been little rigorous research on the impact of large scale infrastructure investments in very poor economies"

In spite of the central relevance of infrastructure in the development policy debate, there has been little rigorous research on the impact of large scale infrastructure investments in very poor economies. In the past decades, numerous such projects came to be known as "white elephants", having had mixed or even adverse effects on the neighboring populations rather than the expected positive impact on local economic growth. Meanwhile considerable amounts of foreign aid are still being spent to upgrade infrastructure in Sub-Saharan Africa, and infrastructure- related needs remain immense on the continent. In a 2011 report, the World Bank estimated that it would take Sierra Leone at least 15 years to reconstruct its road network at the current spending level of $9 million per year.[1] Understanding how and where infrastructure should be improved is therefore central to the foreign aid debate.

Policy Impact and Audience

This project will help governments and donors to quantify the potential impact of infrastructure rehabilitation programs, as well as inform on the type of infrastructure projects that should be prioritized, and why. By assessing the magnitude of these impacts the project will contribute to our understanding of whether the substantial cost of investment in road infrastructure is justified by the benefits accruing to farmers. The target audience includes governments and donor organizations seeking to reconstruct or rehabilitate infrastructure networks (roads, electricity, water supply, cell phone coverage) in poor economies. Results from this study will be particularly relevant to policy-makers seeking to allocate funds to priority infrastructure under tight budgetary constraints.

Policy Implications

"This project will help governments and donors to quantify the potential impact of infrastructure rehabilitation programs"

We expect the project to be able to provide evidence on the impacts of rural feeder roads on prices, markets and more generally trading behavior in the rural economy. The results will allow us to better understand the benefits of investments in rural infrastructure, in particular:

- Infrastructure rehabilitation projects must be grounded upon a clear theory of change and a firm understanding of potential impacts in the local context.
- Better infrastructure may be primarily beneficial through its impact on markets and trading agents' incentives.
- In particular, better roads might enhance price information and market access for smallholder producers.
- Better roads might also increase competition among middlemen, thereby increasing the surplus of farming households selling their produce.
- The potential impact of better-integrated markets on crop prices is ambiguous. In theory prices should decrease due to reduced transport costs and increased

1. "Sierra Leone's Infrastructure: A Continental Perspective", The World Bank, June 2011.

competition amongst traders, but this effect might be offset by increased demand through increased access to markets for consumers.
- Understanding the effect of better infrastructure on prices therefore requires a general equilibrium analysis.

Implementation and Dissemination

A first action point arising from this study is to prioritize upgrading infrastructure in areas where market failures have been most clearly identified, and where the potential for addressing these failures through better networks is highest. High transport costs and bottlenecks in the supply chain of agricultural produce (for example, a small number of middlemen operating between crop producers and the consumer market) are most likely to hinder market efficiency and to negatively impact the profits and livelihoods of smallholders, in the absence of adequate infrastructure.

"A first action point arising from this study is to prioritize upgrading infrastructure in areas where market failures have been most clearly identified"

The target audience for the dissemination of our results includes policy-makers and donors endowed with a mandate to rehabilitate infrastructure in Sub-Saharan Africa. Once the project is complete with results, we expect to disseminate the results broadly in Sierra Leone, especially given the roads project was conducted by the EU in Sierra Leone. In addition, the government has been working on their strategy for feeder roads and we hope this research will help build on that strategy. We have also been asked to present the results in Kenya where the government there is just starting to think about investments in rural infrastructure.

Further Readings

On the impact of infrastructure upgrading in poor or emerging economies: "Dams", E. Duflo and R. Pande, *Quarterly Journal of Economics*, (2007) 122 (2): 601-646. See also "Railroads of the Raj: Estimating the Impact of Transportation Infrastructure, David Donaldson, *London School of Economics Working Paper* (2009).

About the authors

Lorenzo Casaburi is a Postdoctoral Fellow at the Stanford Institute for Economic Policy Research (SIEPR). He completed his PhD at Harvard University.

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