International Growth Centre

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The boring infrastructure that Rwanda needs

Sometimes, the infrastructure that is needed is old and boring.

In the 21st century, where the world is electronically interconnected and global information transfers happen in the fraction of a second, building electronic, communication infrastructure is an important component of economic success. Even small farmers in rural Africa benefit from these information transfers. For example, transfers can help spread knowledge of agricultural prices from distant markets. The challenge for governments, particularly low-income country governments, is to build infrastructure capacity in these "new" forms of electronic infrastructure, while not forgetting about the "old" infrastructure.

Investments in 'older' transport infrastructure still matters for economic growth

While an increasing fraction of goods are consumed from the information economy, the bulk of the economy, still consists of the "old" economy, with goods such as food, clothing, manufactured goods, and education and health services. The "old" infrastructure: ports, roads, bridges, railways and electricity are crucial for both the old economy, and even for supporting the information infrastructure of the new economy.

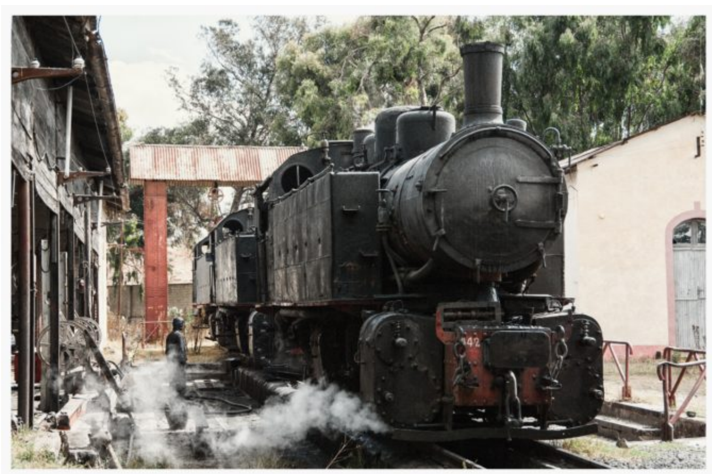

Image credit: Andrea Moroni

For landlocked countries, the relative importance of the quality of its transportation infrastructure is almost, by definition, higher. The population centre of non-landlocked (coastal) countries is often at or near the coast. In contrast, for landlocked countries, the cost of inland road or rail transport is typically higher for three reasons:

- The distance to the nearest port from its population centre is typically higher.
- A significant fraction of that distance can be outside its jurisdictional control.
- It does not control the port.

Now, consider the context of the landlocked country of Rwanda. Rwanda's population centre is near its capital, Kigali. Aside from air freight, the bulk of Rwanda's exports and imports travel through one of two ports: Mombasa, Kenya (along the "Northern Corridor") or Dar Es Salaam, Tanzania (along the "Central Corridor"). Mombasa is 1600 km and roughly 4 days away by truck. Dar Es Salaam is 1400 km and also roughly 4 days away. The cost of transporting a 40-foot container to either port is more than 4000 USD.

The case for rail

Certainly, the distance is long. Across this distance, the Rwandan, Kenyan, Ugandan and Tanzanian governments all subsidise road transport completely. Roads must be maintained, but neither cars nor trucks pay direct tolls to use them. As a single measure to keep these costs somewhat under control, governments have weighbridges to ensure that trucks are not overloaded and damaging the roads. The problem with weighbridges is that they increase the time cost of shipping, and can be a potential locus for corruption, creating "hassle costs" that truck drivers must endure. These "hassle costs" are typically higher for foreign (e.g. Rwandan) trucks.

This begins to build a strong case for the merits of a railway for Rwanda. To frame it differently, consider the following facts. There are 41 landlocked countries in the world. Of these, 3 are high-income (Austria, Luxembourg, and Switzerland), and 8 are in the top 100 (out of 222) countries by income ranking (Belarus, Botswana, Czech Republic, Hungary, Kazakhstan, Macedonia, Slovakia, and Turkmenistan). However, consider the list of landlocked countries that do NOT have rail access to a port. I constructed this list with the assistance of Google Maps and other maps. The full list includes Afghanistan, Bhutan, Burundi, Central African Republic, Chad, Nepal and Rwanda. This is exactly the list of countries from which Rwanda needs to separate itself, should it wish to achieve its goal of becoming a middle-income country. Of course, this list is illustrative, and does not demonstrate, on its own, that railways cause economic growth. However, the ability of railroads to stimulate growth has been demonstrated, in separate research forthcoming at the *American Economic Review* by Dave Donaldson of MIT, through the historical experience of railway building in India.

Indeed, there currently are plans to build a railway along both transport routes (Northern Corridor and Central Corridor) from Rwanda to the ports of Mombasa and Dar Es Salaam, respectively, but financing railways is expensive. African governments typically need foreign assistance as a result. The first leg of the Standard Gauge Railway (SGR) along the Northern Corridor is being built with Chinese financing. While on a train trip along the old meter-gauge colonial rail line between Nairobi and Mombasa, I saw work progressing on the largely parallel SGR railway between Mombasa and Nairobi in December, 2015. The workers reflected the financing. The supervisors were Chinese, while the bulk of the labourers were African. Whether Chinese financing is obtained for the remainder of the railway along this corridor may depend on the economic situation in China. However, regardless of the presence or absence of Chinese financing, the long-term benefits of railway construction are sufficiently strong to justify seeking other sources of finance.

Public and private pension funds in the West may be a good source of finance for railways, as their investing horizon is typically measured in decades, in synchronicity with the payoff from the railways. I agree completely with Paul Collier (2011) who has outlined in a *Finance and Development* article the reasons why railways should be a regulated private monopoly, with the locus of appeal and arbitration between the government and the railway firm mutually agreed upon in advance.

Rail transport unlocks cross-border trade

While railways are expensive, many of their benefits are significant, and frequently not factored into the cost and benefit accounting of decision makers. High quality railways reduce the prevalence of truck transport and as a result, the costs to governments of road maintenance, weighbridge variable costs, and traffic congestion. Similarly the costs of time and hassle to transporters from weighbridge stops and police check points are also reduced. In short, the police cannot stop a train, and haggle with it for a bribe. While railways need to be maintained, they, of course, last much longer than roads. Cost-benefit analyses also rarely account fully for the benefits of increased access to and integration into the world market by a landlocked country. New businesses and industries that were not economically feasible before become feasible.

One of the benefits of the current absence of a railway is the competition that exists between the Mombasa and Dar ports in terms of ease, cost and efficiency, in order to attract truck transport from Rwanda. While building two railroads may be expensive, one significant advantage of building a railway along both the Central Corridor and the Northern Corridor would be the maintenance of this very healthy competition between the ports.

Landlocked countries need railroads to connect effectively with the world market. It is hard to imagine that Switzerland would be the high-income country that it is if it were not connected to the rest of Europe by high-quality rail. Kenya is currently upgrading its main railroad from Mombasa to Nairobi from the colonial-era narrow gauge railway to a modern Standard Gauge Railway. In future, instead of the 21 hours that my train trip took from Nairobi to Mombasa, it should take around 5 hours. As economists would say, right now, the train trip from Kigali to Mombasa takes infinite time, since it doesn't exist.

Rwanda desperately needs a railway so that a train trip to the port can be achieved in finite time.