AFRICA: Transit needs more than infrastructure boost
Friday, August 22 2008

An Oxford Analytica In-depth Analysis

SUBJECT: Links between transport infrastructure and trade.

SIGNIFICANCE: Improvements in the physical aspects of transport infrastructure will reduce costs and transit times, creating opportunities for expanded African trade. However, this will only happen if such moves are accompanied by institutional changes. The stakes are especially high for landlocked countries.

ANALYSIS: Africa is currently experiencing large and multiple investments in its transport infrastructure. In many instances, transport infrastructure projects link its landlocked interior countries with the coast. The expansion and enhancement of transport infrastructure reflect efforts to boost trade both within Africa and between Africa and other regions, which is linked to improved transport logistics.

Transport quality backlog. According to World Bank research, it takes six days to export a container from a factory in Berlin onto a ship. From Bangui, it takes 116 days. Time delays impose many costs on exporters:

- Larger inventories must be carried, extra wages must be paid and produce quality deteriorates. Unnecessarily lengthy processes rule out the export of some products altogether.
- While businesses can adjust and plan for given delays if they are constant and foreseeable, many hold-ups are unpredictable in both location and length.
- On average, an extra delay in transport by one day reduces trade by approximately 1%.

Much of the delay is attributed to bad transport systems. Africa ranks poorly in terms of the World Bank's Logistics Performance Index of transport quality, which is measured by factors including transport infrastructure, communications technology and customs procedures.

Key insights
- Africa's transport infrastructure transformation should help reduce transit times and increase trade.
- Yet the main constraints on transit times are institutional hold-ups such as customs clearance delays.
- Landlocked countries stand the most to gain from a regional approach to transport quality improvements.
Transport quality varies within Africa. Indeed, South Africa has the highest index value for any middle income country in the world. However, Africa fares poorly relative to the rest of the world, including other developing regions.

**Infrastructure and trade.** Most econometric evidence positively associates infrastructure quality with trade performance. For example, economists Nuno Limao and Anthony Venables have calculated that a deterioration in a country's infrastructure quality from the world median to the 75th percentile would increase transport costs by 12% and reduce trade by 28%. Other academic studies, which consider sub-components of infrastructure, indicate that port efficiency would have the biggest impact on trade.

A 2006 World Bank cost-benefit analysis concludes that road network upgrades in Africa would expand overland trade by about 250 billion dollars over 15 years. Financing the programme would require about 20 billion dollars for initial upgrades and 1 billion dollars annually for maintenance.

**Strong business case.** The analysis makes a strong developmental case for road investment. Funding for these projects is also coming from governments and international bodies, including the World Bank and African Development Bank (see AFRICA: Panel backs Kaberuka strategy for AfDB reform - February 15, 2008). There is also a strong business case:

- Commercially oriented institutions (private and state-owned) are finding such projects an attractive prospect (see AFRICA: Region's attractiveness for SWFs could grow - May 14, 2008; and see AFRICA: Gulf investment mainly reflects commercial aim - January 4, 2008).
- Private institutional investors are also backing many initiatives, investing through newly established infrastructure funds (see NIGERIA: PPPs step up to help finance infrastructure - May 22, 2008).
- The long and stable durations of the annuities generated by these assets make them particularly attractive for pension funds seeking to match their liabilities (see AFRICA: Pension funds hold promise for infrastructure - April 25, 2006).

**Not just physical.** Although good quality physical infrastructure is important, the length of time it takes to transport a container to port and to its final destination is determined by a number of factors. Good logistics need communications technology, ease of customs clearance and limited hold-ups at impromptu inspections.

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*A higher value indicates better transport quality  
The so-called Harvard group has proposed in South Africa a diagnostic approach to finding binding constraints to growth and tailoring development policy accordingly (see SOUTH AFRICA: State considers ‘Harvard Group’ policies - June 20, 2008). For example, if export performance is low, and this is due to delays in shipping goods, econometric evidence could be used as a basis for investing in transport infrastructure. However, a new or improved road will have little impact if getting to the border quicker merely results in joining a longer inspection queue.

Africa underperforms in this respect, as well:

- A World Bank survey of trucking companies in Africa has found that 30-40% of transport time comprises waiting at a border.
- World Bank studies discovered that 48% of goods are subject to physical inspection at an African border. In the OECD, the proportion is 3%.
- A Danish exporter needs three documents (exports declaration form, bill of lading and commercial invoice) and two signatures (one by a customs official and one at the port) to complete all requirements for shipping cargo abroad. In contrast, it takes 11 documents, 17 visits to various offices and 29 signatures for an exporter in Burundi.
- It takes 67 days on average to have goods moved from the factory to the ship in Burundi, but a Danish competitor needs only five.

**Perverse incentives.** Relative to the complexity and cost of road upgrades, technologies to speed up customs clearance or track shipments are inexpensive and easy to implement. Ghana and Senegal have been able to implement state of the art information technology for revenue collection at the border.

Similarly, steps taken to reduce red tape and limit corruption should be cheap, but the incentives for institutional delays create a stubborn obstacle:

- Improving other aspects of the transport process may result in those extra rents being captured at the border by corrupt customs officials.
- It may create incentives for the introduction of extra weigh-bridges or for other impromptu stops to spring up en route.
- In fact, respondents in the trucking surveys indicated that these unofficial and unexpected stoppages were a bigger hindrance than bribes to officials at the border itself.

**Worthwhile reforms.** As difficult as these reforms may be, the evidence suggests they are worth attempting. A 2008 paper by Oxford University’s Centre for the Study of African Economies (CSAE), Logistics & Exports, calculates that a one standard deviation improvement in logistics quality would increase a country’s exports by 59%:

- An alternative explanation for the relationship is that countries that trade a lot may have the resources or incentives to build better trade and transport infrastructure, especially if there is a high fixed cost component. More trade leads to better logistics quality.
- However, it is also the case that higher trade volumes can lead to longer waiting times at overstretched ports or borders, so more trade can be associated with lower logistics quality. In some cases, econometric techniques can deal with these difficulties.

In this example, the results suggest the two effects more or less cancel each other out, so the estimate is of a causal effect from logistics to exports. Other econometric work calculates the effects of improvements in trade facilitation (which includes tariffs), port efficiency, customs procedures and the regulatory environment on world trade. If each country currently below the world median were to have improvements sufficient to move it half way towards the median level, global trade would rise by 377 billion dollars.

**Lowering costs vs prices.** A 2008 World Bank report by Gael Raballand and Patricia Macchi, Transport Costs and Prices, finds that transport costs in Africa add 15-20% to the cost of importing goods. On average, it is more expensive per kilometre to transport goods in Africa than elsewhere.
Nevertheless, underlying costs are not the only factor in the prices charged by transport companies:

- Fuel and wage costs are much lower in Africa, and trucking companies did not seem overly concerned with actual road quality.
- The study found little relationship between the road quality and the prices charged by truckers within Africa.
- In addition to increasing time costs for exporters, border delays and informal bribes also add to truckers' costs. For example, border delays lead to fewer trips done by a truck in a given year, which raises the costs allocated to the truck per trip.

Moreover, the report revealed that many firms are actually rather profitable:

- The prices paid by people to export goods are not necessarily driven by the costs incurred by trucking companies, but could be driven by market structure and the regulatory environment.
- A lack of competition, possibly driven by burdensome market entry requirements, is keeping prices higher than they should be in places.
- The presence of few firms and few operational routes makes it easy for trucking companies to form cartels. This not only allows them to raise prices, but to be less efficient in their handling of the cargo.

It does not appear to be the case that better roads will lead directly to lower prices charged by trucking companies. However, the opening up of alternative routes may make collusion harder, and make it easier for new operators to enter and increase competition. For this to take place, onerous regulatory hurdles would need to be removed from some jurisdictions.

**Regional approach.** The African Development Bank and the World Bank have shown favour towards trans-frontier projects and transport corridors (see AFRICA: Investor interest drives rail revival - December 10, 2007). Examples include Mozambique's three links to South Africa, Zimbabwe and Zambia (see MOZAMBIQUE: Maputo seeks to boost port capacity - June 30, 2008). These projects support the New Partnership for Africa's Development's transport agenda of trade corridors without borders and barriers, which aims to facilitate trade and promote economic integration in the sub-region.

Funding for these projects forms part of the World Bank's Regional Integration Assistance Strategy. The Bank views regional integration as a means of creating an environment for a more competitive and efficient private sector. For example, it approved in June a 190 million dollar package to improve the transit of goods between Ghana and landlocked countries Mali and Burkina Faso. Together with improved coordination between local and international logistics providers, these improvements are now making it feasible for Burkina Faso to export mangoes, which have a three-week shelf life.

**Landlocked countries.** The evidence suggests that initiatives would be especially beneficial for landlocked countries, which are particularly vulnerable to delays:

1. **Trade lag.** Landlocked countries trade about 30% less than coastal countries. Limao & Venables have calculated that poor infrastructure accounts for 40% of transport costs in coastal countries, but 60% in landlocked nations. Furthermore, they have concluded that an improvement in own- and transit-country infrastructure would be equivalent to overcoming half the trade disadvantage of being landlocked. The CSAE study calculated a one standard deviation improvement in own and neighbour logistics quality would increase a landlocked country's exports by 74%.
2. **Rent-seeking.** When an infrastructure project requires the cooperation of a number of countries, a standard public good problem arises. Much of the return to improving a stretch of road depends on similar improvements taking place in the other countries. For example, world-class roads in Mali would be of limited benefit for trade if trucks will form a queue as soon as they encounter pot holes in Burkina Faso. Even if there is good will on both sides, there may be incentives to hold off until visible improvements have been made by the other countries.

However, the hold-up problem can be more severe if one of the countries is landlocked. There is an inherent asymmetry in the need for trade facilitation: Burkina Faso needs Ghana more than Ghana needs Burkina Faso. Therefore, the incentives exist for the transit country to hold the landlocked country to ransom for military or economic reasons. This applies before an agreement is made as well as after a project is completed.

Multilateral organisations can be well placed to help overcome part of the rent-seeking problem (see AFRICA: Overlap and EPAs bedevil regional integration - September 15, 2006). By offering regionally based finance and project management expertise, individual countries can be committed to developing their infrastructures simultaneously. They can use a range of incentives to encourage the transit country to agree to a project.

Anticipation of ex post ransom is part of the reason why it is favourable to have more than one transit route:

- **Uganda** has two highways, one through Kenya and one through Tanzania. The recent political turmoil in Kenya -- which disrupted trade throughout the landlocked Great Lakes region for weeks -- highlights another compelling reason to diversify (see EAST AFRICA: Kenya crisis blunts regional potential - February 20, 2008).

- **The Berbera-Addis Ababa Corridor**, which gives Ethiopia an alternative port in Somaliland, provides a hedge against over-reliance on Djibouti (see EAST AFRICA: Horn ports key in new regional politics - September 27, 2006).

Recognising the additional difficulties they face, the landlocked developing countries formed the **G31** (see INTERNATIONAL: Limited traction for landlocked group - August 23, 2005). They have taken a common position at the Doha Round of trade negotiations, where they have highlighted their particular needs for trade facilitation. However, most of their requirements are already in place under current WTO rules, so the issue is more one of implementation than principle.

**CONCLUSION:** Many organisations are making money and skills available for transport infrastructure projects. Indications are that material improvements are taking place. Yet infrastructure is only one aspect of the supply chain: customs clearance times at borders are a major constraint, as are impromptu road side stoppages. The temptation to extract rents from landlocked neighbours may persist. However, ventures which were previously unviable due to costly, lengthy and unpredictable delays are worth reconsidering.

**Keywords:** AF, Africa, Burkina Faso, Burundi, Central African Republic, Djibouti, Ethiopia, Ghana, Kenya, Mali, Mozambique, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe, economy, politics, corruption, foreign policy, foreign trade, infrastructure, integration, investment, policy, prices, reform, regulation, shipping, trade, transport

*Word Count (approx): 2311*