Increased trade between African countries holds promise for shared growth and development in the region. However, before African countries can fully exploit the benefits associated with increased trade with each other, they must first address the barriers to the movement of goods and people within their countries. It is difficult to imagine how Africa will be able to move goods from Cape Town to Cairo when it is unable to move goods from one city to another within the same country. Take the case of Kenya: while parts of northern Kenya were experiencing major food shortages in January 2011, farmers in the Rift Valley had food surpluses and were imploring the government to buy their excess crops before they went to waste.

Businesses must be able to exploit domestic markets and develop competitive edges before they can expand internationally. Unfortunately, African firms are yet unable to fully exploit resources within their own countries due to physical, ethnographic and institutional barriers.

**Physical Barriers: The Infrastructure Deficit**

Africa’s infrastructure deficiencies—lack of adequate road, rail, water and other physical infrastructure—continue to hamper trade within and between African countries. According to the World Bank’s Rural Accessibility Index, only 34 percent of the rural population in Sub-Saharan Africa lives within 2 kilometers of a road that is passable in all weather. Similarly, the region has some of the worst urban connectivity in the world, with only 128 meters of road per 1,000 residents, compared with 700 meters per 1,000 residents in other low-income regions (Carruthers et al., 2010).

Roads account for 80 to 90 percent of all freight and passenger movement in Africa. Road density is an effective proxy of how well connected areas of a country are. Africa has a road density of only 16.8 kilometers per 1,000 square kilometers, compared with 37 kilometers per 1,000 square kilometers in other low-income regions (table 1). Likewise, rail density in Africa is only 2.8 kilometers per 1,000 square kilometers—much lower than the 3.4 kilometers per 1,000 square kilometers in other low-income regions. Air travel within Africa continues to be more expensive per mile than intercontinental travel. Africa’s inland waterways present an excellent opportunity to connect cities and countries. Five rivers—the Nile, Congo, Niger, Senegal and Zambezi—and three lakes—Victoria, Tanganyika and Malawi—could be utilized to move goods across the region. However, due to political instability, social unrest, and the lack of high-level government support for such projects, Africa’s waterways remain the region’s greatest untapped connectors.

Addressing Africa’s transportation infrastructure deficiencies will require an innovative combination of strategies, including prioritizing maintenance, creating mechanisms to engage the private sector, leveraging China’s growing interest in the region, and increasing connectivity between existing infrastructure (see box 1).

**Maintenance**

Policymakers should come to terms with the importance of the infrastructure maintenance. Maintenance projects are often neglected and underfunded, even though they are significantly more cost-effective than creating new infrastructure or rehabilitating decrepit infrastructure.
Table 1. Road and Rail Density in Sub-Saharan Africa Compared with the Rest of the World

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sub-Saharan Africa</th>
<th>Rest of the World</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low-Income (Fragile)</td>
<td>Low-Income</td>
</tr>
<tr>
<td>Paved roads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road density by area, kilometers per 1,000 square kilometers</td>
<td>16.8</td>
<td>9.9</td>
</tr>
<tr>
<td>Road density by population, kilometers per capita</td>
<td>533</td>
<td>275</td>
</tr>
<tr>
<td>Road density by GDP, kilometers per $1 billion</td>
<td>483</td>
<td>253</td>
</tr>
<tr>
<td>Railway density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>By land area, kilometers per 1,000 square kilometers</td>
<td>2.8</td>
<td>1.6</td>
</tr>
<tr>
<td>By population, kilometers per million people</td>
<td>83.1</td>
<td>45.9</td>
</tr>
<tr>
<td>By GDP, kilometers per $1 billion</td>
<td>100</td>
<td>173.1</td>
</tr>
</tbody>
</table>

Source: Carruthers, Krishnamani and Murray (2010).

A 2008 joint report by the Organization for Economic Cooperation and Development (OECD) and the New Partnership for Africa’s Development (NEPAD) found that “due to poor maintenance, many African countries have lost half of their road networks over the last 40 years” (Biau, Dahou and Homma 2008). This trend is likely to continue unless African governments reverse their views on infrastructure maintenance.

It is time for infrastructure maintenance to become a national priority in African countries. National agencies should be created to ensure the maintenance of infrastructure and draw upon infrastructure usage fees and/or government earmarked funds. For effective oversight and management of resources, these national agencies need to have certain institutional features. They need an independent auditing process, mechanisms that allow for transparency in decision making and revenue collection, the ability to coordinate with local governments, and the obligation of providing full public information on contracting and operations. In addition, citizens should be informed through public notice boards detailing how much has been allocated for infrastructure maintenance in their given locale, so that they can hold governments accountable when the quality of infrastructure declines.

The Private Sector

The private sector must be part of the solution to address Africa’s infrastructure challenges. Governments in the region should adopt new and innovative approaches to public-private partnerships (PPPs). In fact, infrastructure projects that are only undertaken by the public sector should be a thing of the past. Instead, African governments should use PPPs to leverage their infrastructure stimulus spending by coupling government resources with private sector resources. The private sector can be engaged at multiple and different stages of projects, ranging from design to construction, service operation, maintenance and finance. To maximize public value, policymakers should try to find an optimal mixture of public and private sector participation in infrastructure projects. They should make use of the private sector in areas where it has a comparative advantage, such as service provision, and make use of the public sector when it has a comparative advantage, such as underwriting risk or credit provision (Deloitte 2010).

Integrating the private sector will also require increased coordination across government agencies involved in these projects. It is important to maintain a competitive environment within the infrastructure development...
sector to minimize costs and maximize the quality of projects. The presence of localized monopolies in the infrastructure development sector threatens infrastructure improvement efforts in the region. Therefore, African governments should develop a regulatory framework that facilitates competition between new entrant companies and incumbent firms.

**China**

China has emerged as an important investor in African infrastructure projects. The Infrastructure Consortium for Africa reports that China’s investment in African infrastructure increased from $4.5 billion in 2007 to $9 billion in 2009. Consequently, China’s share of external infrastructure support in Africa increased from 12 percent in 2007 to 18 percent in 2009. African governments should continue to engage China in their efforts to improve the region’s infrastructure. African governments need to take the lead and steer China’s infrastructure investments toward projects of national interest—not just those that facilitate the extraction of natural resources. Unfortunately, much of China’s infrastructure investment in Africa continues to be concentrated in the natural resources sector.

It is up to African governments that want to diversify their economies to steer China’s infrastructure investment to other areas of national importance. For instance, rural connectivity infrastructure projects should be prioritized for the development of the agricultural sector, which employs 70 percent of Africa’s labor force. Research suggests that improving local roads in Africa could double agricultural productivity in the region (Biau, Dahou and Homma 2008).

**Connectivity**

Although long-term and large-scale infrastructure projects are needed, part of the solution to Africa’s infrastructure deficiencies lies in better connecting the region’s existing infrastructure. International connectivity builds on local connectivity. Unfortunately, local connector/feeder projects with significant potential to boost trade are often overlooked because they lack the fanfare associated with large new infrastructure projects. For example, while the government of Ethiopia works to construct a new railway between Addis Ababa and Me’eso, immediate benefits can be derived from connecting existing rail and road networks between these two cities in the interim.

**Cultural Barriers: Consolidating Citizenship**

As a result of ethnic fragmentation, citizenship is in practice defined not by nationality but rather by “ancestral land” in many African countries. For instance, much of the violence observed in and around the city of Jos in northern Nigeria occurred because the Hausa/Fulani lay claim to the territory by virtue of possession, while other groups lay ancestral claims to the land for which they believe they are true “native sons.” Similarly, in Kenya much of the post-election violence observed in 2008 in the Rift Valley was due to “unresolved grievances by groups that believed that their rights to their ancestral lands were being infringed upon or usurped by members of other groups that had settled on those lands” (Kimenyi and Mbaku 2011). The potential for conflict limits the ability of individuals to settle in or secure property outside one’s ancestral home and presents a significant obstacle to trade within and across African countries.

Ethnic fragmentation has broader implications for productivity and trade. Easterly and Levine (1997) found analytic links between ethnic fragmentation and insufficient infrastructure. Alesina and Ferrara (2005) found that given a supply of credit, ethnic fragmentation leads to inefficient credit allocation along ethnic lines. Reduced mobility within a country not only stifles knowledge exchange and skills development but also makes it difficult for businesses to acquire the types of resources that they need to produce competitively.

It is essential that African governments implement strategies to consolidate citizenship. Tanzania has had some success in this area; after independence, the government implemented a series of programs that emphasized nationalism and downplayed individual ethnicities. These policies have yielded positive dividends in terms of political stability and greater mobility (Miguel 2004). While there are no one-size-fits-all solutions, African governments must address these barriers.

**Institutional Barriers: Coordination Failures**

It is important that African countries harmonize interstate/interprovincial commerce rules and regulations.
Some African countries have embraced federalist and decentralized systems of government that diffuse power to states and provinces. While decentralization holds promise for increased competition and efficiency, it also requires greater effort to coordinate interstate commerce. This includes harmonizing legislation and procedures to ensure smooth transition between national and subnational infrastructure. For example, in Nigeria, the governor of Lagos State has undertaken numerous infrastructure improvement projects in his state only to face bottlenecks when the state’s infrastructure connects with poor federal infrastructure (El-rufai 2011). Effective coordination of national and state/provincial policies could help to ease these bottlenecks.

Police roadblocks and checkpoints are often cited as major barriers to commerce within and across African countries. At these checkpoints businesses are required to pay taxes, transit fees and bribes. For example, there are about 47 roadblocks between Douala and Bertoua in Cameroon. Similarly, one must pass through 27 police checkpoints when traveling from Mombasa, Kenya to the Ugandan border. Businesses are often unable to predict how many roadblocks they will encounter and how much it will cost to get through them (The Economist, 2002). This uncertainty deters them from engaging in commerce outside their local area of operation. Part of the strategy to consolidate the rules and regulation for commerce must include processes to eliminate these roadblocks.

**Recommendations**

In order to address Africa’s infrastructure deficit, the region’s policymakers must prioritize maintenance, integrate the private sector in infrastructure development and leverage their engagement with China. Although large-scale new infrastructure projects are needed, Africa could reap significant gains by increasing connectivity between existing infrastructures. In an effort to remove non-infrastructure barriers to commerce, policymakers should redefine citizenship, harmonize interstate or interprovincial commerce rules and regulations, and minimize the incidence of roadblocks within their territory. African countries will not be able to exploit the full benefits associated with intraregional trade until they eliminate barriers to the movement of goods and people within their own borders.

**References**


The low level of intra-African trade is in large part a result of the dismal state of infrastructure on the continent. Unfortunately, developing the quality and quantity of infrastructure to increase intra-African trade requires a great deal of political will and is enormously expensive. Some estimates suggest that addressing Africa’s infrastructural deficiency requires more than $250 billion during the next 10 years.

There are encouraging signs, however, that these resources are being marshaled. A number of regional infrastructure projects are underway in Africa, reflected in bilateral, subregional and regional agreements. These include projects like the Spatial Development Initiative, which utilizes public-private partnerships to foster development of areas of poor socioeconomic conditions; and private sector-led initiatives, like the undersea cable project created by Main One Cable Company that has begun to improve telecommunication linkages.

The African Export-Import Bank, or Afreximbank, hopes to further these and other similar efforts. To this end, it has developed numerous financing programs designed to reduce the existing infrastructure deficiencies in Africa.

Attracting foreign investment often requires host governments to make certain financial, fiscal and/or legal commitments to potential investors. Through its guarantee program, Afreximbank supports African governments in meeting these commitments. The Export Development Finance Program offers a wide range of services geared toward creating noncommodity exports for regional markets and aims to implement regional infrastructural projects useful toward this end. Afreximbank’s Advisory Services and Investment Banking Program supports the promotion of ventures that encourage intraregional trade, like those in the air transportation industry. Financial support has been extended to new airlines, such as Arik Air in Nigeria and Fly 540 in Angola. The program also encourages the development of the energy sector by supporting the Egyptian electrical company El Sewedy in its operations in Cameroon, Ethiopia and Zambia.

Promoting this type of intra-African commerce is one way of diversifying the continent’s products and export markets. Such a diversification is crucial in attaining the full benefits that trade can offer. In pursuing this goal, Africa will need to overcome various challenges, including the paucity and poor quality of its trade-facilitating infrastructure. But thanks to a number of initiatives, and the political will and financial resources needed to back them up, progress is being made in dealing with the obstacles.