



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

The pursuit of industrialization in the EAC region: The role of trade facilitating infrastructure in promoting exports of manufactured goods

Executive Summary

Infrastructure services are recognised as fundamental elements of productivity and economic growth of any country. This brief examines the impact of economic infrastructure on the export of manufactured products in the East African Community (EAC) region using a gravity model and data from the COMTRADE and World Integrated Trade Solutions (WITS) database. Results indicate that the largest gain in manufactured exports is realized through investment in the stock of road infrastructure, electricity and public transparency for the individual EAC countries.

Introduction

Quality infrastructure and infrastructure services are well recognised as fundamental elements of productivity and economic growth. Investments and improvements in infrastructure can significantly lower production and transaction costs, thereby increasing competitiveness and expanding market access. Furthermore, there is evidence to show that improvement in trade facilitation in sub-Saharan Africa can boost merchandise exports by as much as 27 percent equivalent to US\$ 60 billion in 2010.

Economic infrastructure has the greatest effect on the improvement of exports and competitiveness. Trade flows in most developing countries encounter time delays created by laborious administrative procedures which prevent and discourage local manufacturers from exporting time-sensitive goods. Similarly, there is a positive relationship between poor institutional quality and low-quality manufacturing exports. Specifically, the lack of transparency and the persistence of corruption can affect the export of manufactured goods. For example, in

Cameroon infrastructure constraints are potentially responsible for about 42 percent of the productivity gap faced by firms.

Poor quality of infrastructure increases the risk of damaging goods therefore increasing the cost of the whole transaction. Shipment holdups, overcrowding and congestion at the ports in Kenya hinder the ability of firms to acquire imported production inputs, resulting in production losses and higher production costs. These kind of costs can spill over into the rest of the region particularly in the landlocked countries (Uganda, Rwanda and South Sudan) whose exports and imports transit through these ports. Therefore, it is important to keep in mind that at the regional level, institutional differences across countries are often key determinants of trade patterns and volumes.

This brief is based on a titled study “**The Role of Economic Infrastructure in Promoting Exports of Manufactured Products: Trade Facilitation and industrialisation in the EAC**”. The study examined the role of economic infrastructure on exports of manufactured products from the EAC Member

States using a gravitation model. The panel data used was export trade data from the COMTRADE and World Integrated Trade Solutions (WITS) database which covers 70 countries that each of the EAC Member State exports to manufactured products.

Extent of infrastructure gaps in the EAC

The EAC Treaty recognises the provision of basic infrastructure as one of the operational principles of the community. Given that traditional trade barriers such as tariffs have significantly come down, trade facilitation to address other obstacles to trade in goods and services has become even more important.

Transport Infrastructure: In a bid to lower the high transportation costs, the partner states of the EAC have undertaken various sector reforms. Accordingly, with a view to supporting and regulating infrastructure development, a number of Tripartite Agreements concerning road transport and inland waterway transport on Lake Victoria have been reached. The EAC 2010-15 Transport Strategy has a specific focus on railways. On the whole, the strategy lists up to 247 projects in all transport modes that will cost up to US\$21 billion.

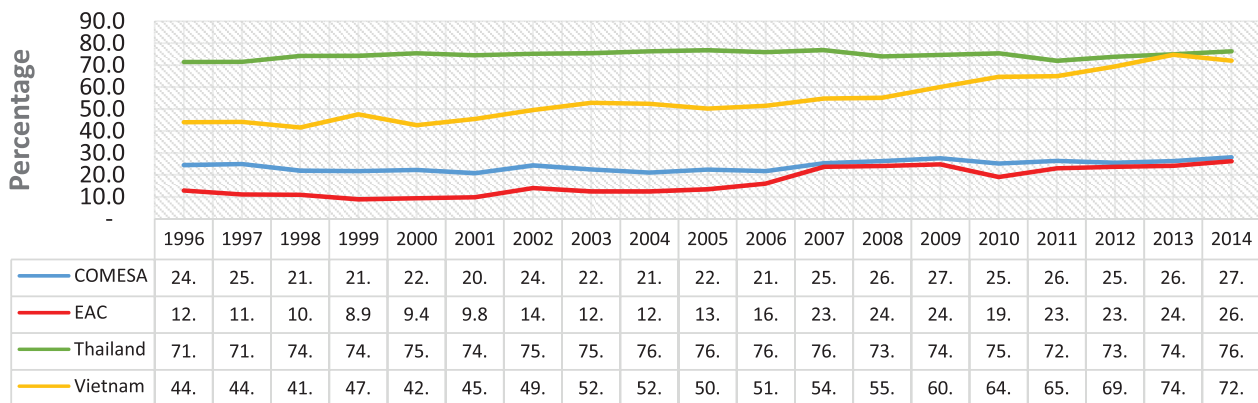
ICT/Communication infrastructure: The number of internet hosts per 1000 persons has steadily been on the rise. This is keeping with the spectacular growth in broadband ICT infrastructure in the EAC, largely attributed to the connections to four under-sea cables (EASSY, SEACOM, TEAMS and LION 2) on the East African Coast. Although the EAC region has significant mobile cellular subscription rates, the use of internet is still low by international standards.

Electricity: Throughout the EAC, installed capacity for electricity generation has been increasing in line with the vast investments made in electricity generation infrastructure. However, compared to industrializing and more industrialized economies, the EAC regional electricity generation is extremely low and still requires massive investment. Countries with high per capita consumption of electricity are likely to be more industrialised than those with lower per capita consumption. Whereas the Common market of Eastern and Southern African countries have an average of 437 kWh per capita and the Association of Eastern Asian Nations are at 2,382 kWh per capita, the EAC is at 71 kWh per capita. Thus, EAC Member States electric power consumption suggests a level below the global average consumption.

Manufactured exports in the EAC

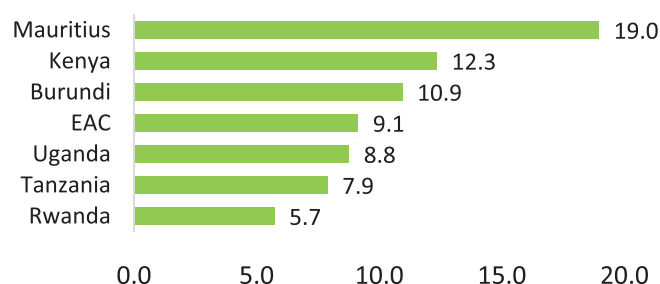
The manufacturing sector in the EAC region is predominantly centred on primary production. In fact, the proportion of exports that is manufactured is significantly small as illustrated in Figure 1 below. Although over the years, there was an increase in the proportion of manufactured exports by the EAC Member states, the performance is weak when compared with other regions. Compared to Thailand and Vietnam (Both Middle income countries), the EAC and COMESA regions have significantly lower shares of manufactured exports. For the last two decades Thailand has maintained an average above 70 percent of exports as manufactured and Vietnam experienced a tremendous growth from 44 to 74 percent. When the individual countries in the EAC region are considered, Kenya (36 percent) exports the highest proportion of manufactured products followed by Tanzania and Uganda (28 and 25 percent

Figure 1: Manufactured exports (% merchandise exports (1996 – 2014))



Source: WDI

Figure 2: Average manufacturing value added (% of GDP) 2001- 2014



Source: WDI

respectively).

Furthermore, the Manufacturing Value Added (MVA) as a proportion of the gross domestic product (GDP) is also quite low in the EAC region with only Kenya and Burundi scoring above 10 percent (Figure 2). When compared to countries like Mauritius which has 19 percent, Thailand at over 26 percent and Vietnam at 18 percent, the EAC Member states still perform dismally. Notwithstanding the noted progress made in the last two decades, the EAC member states still lag behind in exports of manufactured products. Trade facilitation

through infrastructure development can make a contribution to industrialisation.

Impact of economic infrastructure on manufacturing

The results in the panel of Figure 3 show the estimated change in the proportion of manufactured exports for the EAC when different infrastructure categories are improved by 10 percent. The largest gain in manufactured exports is realized through investment in the stock of road infrastructure, electricity and public transparency for the individual EAC countries analysed. A 10 percent increase in road infrastructure investment is estimated to increase manufactured exports by 48 percent for Uganda, 7 percent for Kenya and 111 percent for Tanzania. This can be explained by existing infrastructure gaps that are higher among the EAC Member states. When contrasted with railway infrastructure, results suggest that a 10 percent increase in its investment lead to an increase of between 6 to 10 percent of manufactured exports for the three countries. This is explained by the fact that most of the region is interlinked by road networks and not necessarily railway lines,

Figure 3: Impact of 10% infrastructure improvement on EAC manufactured exports



Recent Policy Briefs

“Using taxation to control Tobacco consumption in Uganda”
No. 100 February 2018
Anita Ntale and Dr. Ibrahim Kasirye

“Overcoming the reproductive health challenges to young women’s employment prospects in Uganda”
No. 99 December 2017
Gemma Ahaibwe and Ibrahim Kasirye

“Beyond Input distribution: Requirements for agricultural transformation in Uganda”
No. 98 November 2017
Florence Nakazi, Swaibu Mbowa and Paul Lakuma

About the Authors

Isaac Shinyekwa is a Senior Research Fellow at the Economic Policy Research Centre, Kampala, Uganda.

Anita Ntale is a Research Analyst at the Economic Policy Research Centre, Kampala, Uganda.

The views expressed in this publication are those of the authors and do not necessarily represent the views of the Economic Policy Research Centre (EPRC) or its management.

Copyright © 2018

Economic Policy Research Centre

although the latter is extremely important as well. Electricity remains an important category of infrastructure with a 10 percent increase in investment likely to lead to a 15 percent increase in exports of manufactured products in Uganda, 35 percent in Kenya and 12 percent in Tanzania.

Furthermore, Figure 3 shows that investment in air transport will bear significant gains in manufactured exports of about 7 percent. Increasing transparency and accountability and reducing corruption (a form of soft infrastructure) by 10 percent leads to an increase in manufactured exports by 8 percent in Uganda, 9 percent in Kenya and a massive 34 percent in Tanzania. Improving trade facilitation by reducing the number of documents and days in the exportation process generates large gains in increasing exports of manufactured goods. A 10 percent reduction in the number of documents increases exports of manufactured goods by 10 percent in Uganda, 3 percent in Kenya and 5 percent in Tanzania. Uganda being land locked makes the most gains. Similarly reducing the number of days to export by 10 percent leads to 6 percent increase in exports of manufactured products in Uganda, 5 percent in Kenya and 1

percent in Tanzania.

Policy implications

The results suggest that improving economic infrastructure quality generates huge gains in terms of exports of manufactured products from the EAC Member States. Specifically, hard physical infrastructure has more potential to generate a greater impact on manufactured exports compared to soft infrastructure. It is evident for soft infrastructure—through transparency and accountability; internet connectivity and telephone subscription improve the efficiency and business environment which supports exports of manufactured products.

To attain the desired industrialisation outcomes, the EAC as a whole should focus on: Improving and increasing road networks; improving public transparency; and developing air transport infrastructure. At the individual country level, all countries must invest more in road infrastructure, increase electricity consumption per capita, improve the quality of rail infrastructure and improve public transparency.

Endnotes

- Infrastructure can be quantified and categorised as either hard or soft. Hard infrastructure covers ports, airports, roads and rail lines— all critical for connecting a country to the rest of the world. Soft infrastructure constitutes border and logistics management (shipping, air transport, and telecommunications and business environment).
- Calderon, C. and Serven, L. (2014). ‘Infrastructure, Growth and Inequality: An Overview’, *Policy Research WP*, Series No.7034, World Bank.
- Portugal-Perez, Alberto and John S. Wilson (2010) “Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure” World Bank Policy Research Working Paper Number 5261
- Cooper, T. (1999). ‘Creating an economic infrastructure for sustainable product design’, *The Journal of Sustainable Product Design*, Issue 8
- Milner, C., Morrissey, O. and Zgovu, E. (2008). Trade facilitation in developing countries. CREDIT Research Paper No.08/05, University of Nottingham. Available at
- Méon, P., and K. Sekkat. (2006). ‘institutional Quality and Trade: Which Institutions? Which Trade?’ DULBEA Working Paper Series. No. 06-06. Brussels: Université Libre de Bruxelles.
- (Méon & Sekkat (2006)
- Dominguez-Torres, C.D. and Foster, V (2011). ‘Cameroon’s Infrastructures: A Continental Perspective’, *Africa Infrastructure Country Diagnostic Report 2011*
- Nordås, H., R.J. Piermartini (2004), Infrastructure and Trade: World Trade Organization Economic Research and Statistics Division Staff Working Paper ERSD-2004
- USITC (2009). ‘Sub-Saharan Africa: Effects of Infrastructure Conditions on Export Competitiveness’, *United States International Trade Commission, Third Annual Report*, Investigation No. 332-477.
- Levchenko, A. (2007). Institutional quality and international trade. *The Review of Economic Studies*, Vol.74 (3), 791–819.
- EAC Secretariat. 2011. East African Trade and Transport Facilitation Project: Final Report. Arusha: EAC Secretariat
- EAC Secretariat. 2011. East African Trade and Transport Facilitation Project: Final Report. Arusha: EAC Secretariat

The Economic Policy Research Centre (EPRC) is an autonomous not-for-profit organization established in 1993 with a mission to foster sustainable growth and development in Uganda through advancement of research –based knowledge and policy analysis.

Learn more at:

 www.eprcug.org

 TWITTER: @EPRC_official

 www.facebook.com/EPRCUGanda

 eprcug.org/blog

Address:

Economic Policy Research Centre
51, Pool Road, Makerere University Campus,
P. O. Box 7841 Kampala, Uganda
Tel: +256414541023/4 Fax: +256414541022
Email: eprc@eprcug.org, Website: www.eprc.or.ug