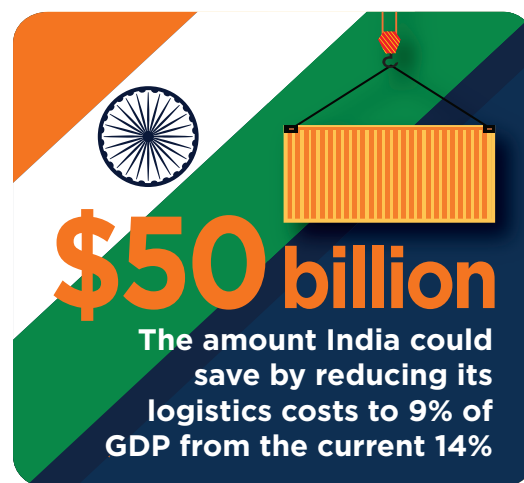


Unlocking the Potential of Freight Logistics in India

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New, comprehensive analysis of data on the current routing of goods in India have positioned the country to break through its freight transport gridlocks and logistics inefficiencies. With a growth rate of more than 7% since 2014, India is the fastest growing major economy in the world. But as a share of its GDP, its logistics costs for moving freight are as high as 14% percent of GDP, markedly more than the 8–10% for most advanced economies. The gap arises from excess costs generated by inefficiencies in the transport system, greater costs of storage and inventory and procedural delays. Closing that gap would give a major boost to India's growth prospects. Studies of logistics improvements in advanced economies have shown that, with sufficiently detailed data on freight flows, targeted interventions in specific corridors and subsectors can enable transformational changes in freight logistics performance. Researchers and logistics experts from the World Bank and South Africa's Stellenbosch University have assembled and modeled such data for India, identifying bottlenecks and opportunities for more strategic investment and collocation of activities to achieve production synergies and lower the costs of logistics and trade.



Introduction

The ability to move goods seamlessly and cost effectively from centers of production to domestic and international markets is a key driver of growth and jobs. High logistics costs mean that firms are less competitive and consumer prices are unnecessarily high. At the national level, logistics inefficiency means that the cost of achieving improvements in GDP is much higher than it should be. Logistics costs encompass expenses associated with the movement, storage, and documentation of raw materials, intermediate goods, in-process

inventory, and finished goods from point of origin to point of consumption.

India has made notable strides lately. In 2016, after a long period of decline, it improved from 54th to 35th among 160 countries analyzed in the [Logistics Performance Index](#), prepared every two years by the World Bank. To accelerate such gains, the World Bank and Stellenbosch researchers have created a disaggregated model of freight flows for India to help policy makers better understand cost drivers and further address barriers to logistics performance.

What the Data Show

The model maps the supply and demand for all commodities and goods and the consequent flows and logistics costs across India. The data uncover the answers to the following basic question for key commodities in India.

How *much* of *what* moved *where* and *how*?

- How much: in tons, TEUs (a container-ship measure), or ton-kilometers
- What: all domestic and import or export freight
- Where: origins and destinations
- How: by mode—rail, inland waterways, coastal shipping, and roads

Decomposing freight flows provides evidence for decision making on a number of levels.

- Total freight flows reveal bottlenecks on corridors or in last-mile connectivity. The data support infrastructure investment decisions, as they have shown that 58% of freight transport (in ton-kilometers) is in corridors, but those corridors receive only 40% of transport infrastructure spending.
- Understanding freight flows allows data-based discussions with shippers, freight forwarders, and transport operators about addressing specific cost drivers.
- Disaggregated flows help advance efforts to reduce greenhouse gas emissions by providing the data necessary to increase the share of freight moved by rail and waterways.

India aims to reduce emissions by increasing the share of freight moved by rail from 35% to 45%, and reaching that goal depends on offering shippers, cargo owners, and freight forwarders proposals that are commercially viable from a logistics perspective. The disaggregated freight flows are being used to support the government in identifying freight suitable for rail and waterways and to make the business case to shippers and freight forwarders.

How the Freight Flow Model Will Support Logistics Solutions

Detailed knowledge of freight flows will assist in developing important solutions for India:

Collocating: Warehousing and logistics clusters have to be optimally located. Knowing the nature of the

supply chain and understanding the flow of freight can point the way to collocation of primary and intermediate suppliers and ancillary services.

Maximizing use: The data will help exploit the full capacity of new dedicated railways and inland waterways as part of a multimodal solution. Transport patterns will reveal the opportunities for optimizing different modes and shifting freight that should naturally be on rail and waterways.

Creating more efficient networks in the private and public spheres: Understanding detailed freight flows is crucial for designing distribution and storage networks for e-commerce, high-value manufacturing, and fast-moving consumer goods industries. The public sector can better align complementary investments such as urban transport, housing, and social services.

Boosting the growth of micro, small, and medium-size enterprises: The freight data can reveal the best areas in which to locate start-up incubators and the points of freight agglomeration that allow smaller businesses to ship at competitive rates.

Siting “extended gates” for ports: With the data developed on shipment patterns, India is in a strong position to solve the problem of congestion at its 12 major seaports with innovative solutions such as the creation of remote terminals known as extended gates.

Extended gates are usually inland terminals 20–200 km away from the port, at a site with sufficient space for port services, including freight handling, inspection, consolidation, documentation, warehousing, and multimodal transport linkages. Purpose-built waterways and rail shuttles convey all goods between the extended gate and the port, which is essentially transformed into a “valve” for the quick transition of goods into and out of the hinterland. The results include greater urban mobility in port cities, reduced waiting time for ships, and dramatic improvements in shipping capacity, efficiency, and function.

► For more information on this topic:
Logistics Performance Index: <http://lpi.worldbank.org/>
Stellenbosch Univ. Dept. of Logistics: <http://www.sun.ac.za/english/faculty/economy/logistics>

Connections is a series of knowledge notes from the World Bank Group's Transport & Information and Communication Technology (ICT) Global Practice. Covering projects, experiences, and front-line developments, the series is produced by Nancy Vandycke and Shokraneh Minovi.

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