Policies and infrastructure for better regional connectivity

ENHANCING FREIGHT CONNECTIVITY IN CENTRAL ASIA

Jari Kauppila
Head of Quantitative Policy Analysis and Foresight
Benefits of improved freight connectivity

• Provides access of peripheral areas to markets
• Reduces costs for domestic economy – improving quality of infrastructure and services
• Access to international markets for trade
• Revenues from expanded transit
• Lays foundation for future economic growth - agglomeration effects
Three parts

1. Benchmarking performance

   - Infrastructure
   - Transport and logistics
   - Customs

2. Regional connectivity gap and future investment plans

3. Transport planning and governance
ITF International Freight Model

International Trade (world regions)*

Regional breakdown (centroids)

Mode choice and weight conversion

Route assignment

International trade volumes

Between 404 world regions

Scenarios for trade liberalisation

* Source: OECD Environment Directorate
Network model

- Infrastructure and routes
  - a) Road (highways or main roads)
  - b) Rail (station, network)
  - c) Sea (ports, routes)
  - d) Air (airports, commercial flights)
    - Differential speeds by mode, infrastructure and continent
- Routable O-D network
- Links between modes and to centroids
- Includes dwelling and border crossing times
- Port capacity

Source: ITF International Freight model, OpenStreetMap, OpenFlights, Sea Project, UCL
Central Asia: Population density is extremely low

Source: ITF computations based on the Global Human Settlement Layer, (Pesaresi et al., 2013)
Central Asia is far from production and consumption centers.
Increasing economic concentration

Source: ITF computations based on GIS data from (Kummu, Taka, and Guillaume, 2018)
Infrastructure is scarce
High cost of being landlocked

Connectivity indicator
- From 85% to 100%
- From 80% to 85%
- From 70% to 85%
- From 60% to 70%
- From 45% to 60%

Source: ITF
Need to compensate impact of distance with appropriate policy measures

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Source: ITF
Decomposing the connectivity gap
Several investment plans are made to improve connectivity

Source: Mercator Institute for China Studies
Several investment plans are made to improve connectivity

Source: CAREC, 2018
Central Asia road network
Existing investment plans will reduce connectivity gap...
... but are not sufficient alone to maintain existing performance

Freight flows 2030 and potential bottlenecks
Improving border crossing can bring comparable connectivity benefits with infrastructure improvement

% of German LPI performance level achieved

- 2015
- With expanded infrastructure
  - 2050 - new infrastructure but no border crossing improvement
- By better borders
  - 2050 - no new infrastructure but border crossing improves
  - 2050 - both new infrastructure is built and border crossing is improved
But may affect route choice

Change in traffic at border crossings
Towards improved regional connectivity

• Distance and being landlocked can never be fully eliminated: Compensate through appropriate policy measures
  – Rail corridors as the backbone
  – Road for intra-regional connectivity
• Focus also on local connectivity (firms’ access to corridors)
• Transit not only benefits – manage negative outcomes
• Border crossing is as important as transport infrastructure
• Modelling suggests bottlenecks in relation to investment plans
• Institutional capacity important to plan under uncertainty
• Continue strengthening regional cooperation to remove bottlenecks (infrastructure and non-infrastructure)
Thank you

Jari Kauppila
Jari.kauppila@itf-oecd.org

2 rue André Pascal
F-75775 Paris Cedex 16