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Euro-Asian land transport links – opportunities for rail[1]

Growing trade volumes between Asia and Europe, changes in the goods structure and new localization patterns of industries and businesses in Asia and to some extent even in Europe in combination with strategic infrastructure and operational improvements on Euro-Asian land-routes, in particular by China and Russia, are key causes behind increasing rail freight volumes on the Euro-Asian landbridge. There are two groups of land route options, the Northern Routes, passing on some part over Russian territory, and the Southern Routes, bypassing Russia to the South (partly involving sections with ferry/short-sea-traffic via the Caspian and/or the Black Sea).

For the time being,

*only the Northern Routes are fully functioning for rail traffic between China and Europe and there are reasons to assume that they will stay highly competitive against the Southern Routes even once the latter will have been established in full length, i.a. due to a distance advantage to large parts of China.

*the Southern Routes contain important development perspectives i.a. through the possibility to connect to regions and emerging economies in Southern and South-Eastern Asia currently not linked to the Euro-Asian rail landbridge.

Thus, while a certain route competition certainly may arise, the Northern and Southern Routes are also complementary; their (geographical) market focuses have a certain overlap, but are not identical, and their development should be considered with this perspective in mind.

At the same time, there are still serious challenges of infrastructural, organizational and political nature to overcome, until the Southern Routes will be able to show a performance comparable to those of the Northern Routes.

Together the ongoing improvement of the Northern Routes and the gradual evolution of new Southern Routes can be an important impetus and generate a new momentum for the development of rail freight between Asia and Europe.

[1] The Policy Brief authored by Dr. Gerhard Troche is based on his presentation at the Northern Dimension Future Forum on Transport. The Forum was organized by the Northern Dimension Institute on 20 November 2018 in Brussels. It brought together top researchers, decision-makers and leading transport companies to discuss the future developments in land and Arctic maritime connections between Europe and Asia. For more information visit http://www.northerndimension.info/news/news/823-emerging-euro-asian-land-and-arctic-maritime-trade-routes-open-new-business-opportunities

Development trends in Euro-Asian transport and relevance for Europe

There are four major development trends in the field of land transport between Asia and Europe:

- Increasing **trade volumes** between the EU and China as well as other economies in Asia
- Increasing interest by shippers and freight transport operators in rail transport between China/Asia and the EU as a **complement to maritime transport**
- **Russian initiatives** to improve the Trans-Siberian rail landbridge in terms of capacity, transit time and transport efficiency
- **Chinese initiatives** to develop new Euro-Asian transport routes in the framework of the Belt-and-Road Initiative (e.g. the "Iron Silk Road")

The growing share of Asia and particular China in the EU's external trade, and the increasing relevance of landbridge traffic for certain types of goods and logistical transport chains call for giving more attention and showing **stronger engagement by European policy and decision-makers** - in particular since this role has for a long time been left to Russia and China. For the EU, also the **connectivity of the EU (rail) transport network with the Euro-Asian rail landbridge routes** deserves particular attention.

Features and challenges of different route options on the Euro-Asian landbridge

There is a multitude of route options for land transport between China/Asia and Europe. Due to the distances involved, the rail is often the most relevant transport mode. In broad terms the different rail routes can be assigned to one of the following two groups: The **Northern Routes**, where at least one section always is running via Russian territory, and the **Southern Routes**, bypassing Russia to the South (and some of them involving a shorter section of sea transport).

The **Northern Routes** can be characterized as follows:

- Most running via Trans-Siberian Main Line incl. branches (major branches being the Trans-Mandchurian Route, the Trans-Mongolian Route and the Trans-Kazakh Route)
- All northern routes pass on a shorter or (most often) longer section through Russia
- Few border crossings
- Distance advantage from most parts of China to most parts of Europe
- Often high standard and good state of infrastructure that is continuously improved
- High transport efficiency due to relatively generous infrastructure standards
- High operational performance in terms of quality (punctuality) and reliability
- Use of joint CIM/SMGS consignment note facilitates transport operations

However, there are also a few **challenges** connected to the Northern Routes:

- Need for change of gauge (1435 mm → 1520 mm → 1435 mm)
- Geographical alignment less suitable to serve economies in Southern Asia, e.g. Middle East and India (though possibility currently emerges to combine Northern Routes with new RU-AZ-IR North-South corridor)

The **Southern Routes** share the following features:

- Possibility to create a complement / alternative to Northern routes (creating certain ”route competition”)
- In certain route options in the long term potentially no need for change of gauge (potential future all standard-gauge route (1435 mm))
- Geographically suitable to link economies even in Southern Asia (e.g. Middle East and India)
- Implementation facilitated under the Chinese Belt-and-Road-initiative

At the same time, there are for the time being a number of – often quite severe – **challenges** connected to the Southern Routes:

- Missing links – currently no (convenient) continuous rail route EU – China available!
- Weak links – parts of current rail links are of low standard
- Distances – in many cases transport distances EU – China are longer via the Southern routes
- Political instability along certain route sections
- Topography – major mountainous areas to be passed
- Certain route options require combination with sea transport (across Black Sea and/or Caspian Sea)
- Many border crossings – creating interoperability and management issues
- Lack of harmonised regulatory framework
- No commonly agreed target standard for entire routes

To conclude, today the **Southern Routes do not (yet) present a logistically viable option** for most of the traffic between Asia and Europe (with exception of certain transports from the Middle East to Europe). However, there is an **interesting development potential** in the Southern Route, maybe primarily not in a role as alternative to the Northern Routes, but rather through their ability to **connect to new geographical markets** in Southern Asia.

Connectivity of Euro-Asian rail links with the EU rail network

Entry points for Euro-Asian rail links to the EU are (from North to South and including routes involving ferry transport):

- Baltic seaports
- The EU eastern land border
- Black Sea seaports
- The EU-Turkey land border
- Eastern Mediterranean seaports

The rail backbone of the EU transport network is formed by the **EU Rail Freight Corridors (RFCs). Six** of the in total eleven RFCs in the EU actually **connect to entry points of Euro-Asian rail links to the EU** and four of these six to entry points at the EU eastern land border. All major entry points are also connected by TEN-T network.

However, regarding the connectivity of Euro-Asian rail links with the EU rail network there are nonetheless a number of **weaknesses** to be highlighted:

- The technical standard on EU railway lines (regarding parameters relevant for freight, esp. train length and axle-load) is usually lower than east of the EU border'
- The incompatibility of train parameters hampers the efficiency of train operations
- Transshipment is necessary between broad and standard gauge
- Border procedures at the EU border are still often time-consuming
- Important operational, administrative and interoperability barriers also exist at many EU internal borders

To conclude, the **EU section** of Euro-Asian rail transports often forms a **bottleneck in terms of standard, transport efficiency and reliability**.

Recommendations

To improve the connectivity of the EU (rail) transport network with the Euro-Asian rail landbridge routes, it is recommended to

- Improve capacity and operation of transshipment terminals 1520-1435
- Solve border crossing issues, i.a. at EU-Turkey border
- Investigate target standard beyond TEN-T and TSI minimum requirements on relevant rail links in EU to strategic border crossings
- Investigate optimised integration and connectivity of 1435- and 1520-networks/lines in Central-Eastern Europe
- Develop cooperation with OSJD corridors (promoted by promoted by the Joint Eastern Partnership Declaration, Riga 2015, and the Memorandum of Understanding on cooperation in technical, operational and commercial development of OSJD Rail Corridors from 2013)

At the same time, the EU could within the framework of suitable policy initiatives. such as the Eastern Partnership, Northern Dimension or Euro-Asian Connectivity policy, offer its experience in freight corridor management and governance, in particular along the Southern Routes with their many borders, for which the experience in the EU could be of particular interest.

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