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White Paper (final version)

Project Title: Trans-China railway, New Silk Road and Maritime Silk Road: Trade Opportunities and Challenges in Central and Eastern Europe

Author: Petr Kolar, Ph.D.

Co-authors: Martin Jancalek, Radek Novak

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Abstract

Since the late 2000s, Trans-Asian Railway (TAR), including the links of Trans China Railway (TCR) and Trans-Siberian Railway (TSR), started to serve as inland transport routing alternative to the predominant container shipping on by maritime shipping between Far East Asia and Europe. However, once aiming on further integration of all the segments in order to speed up transit times, reduce high transport costs compared to maritime RR, and improve service reliability, these complex Eurasian intermodal transport chains face challenges. Together with Chinese Belt Road Initiative (BRI) as the policy background, the research elaborates on the rail corridors within New Silk Road (NSR) as BRI part including transport chains and their stakeholders active in the landlocked market in Central and East Europe (CEE), namely the Czech Republic. The research questions if competitive pricing, service time reliability and transit time sensitivity determine changes in service supply by freight forwarders and transport service providers to their customers. The paper elaborated on the position taken by shipping lines and freight forwarders as their customers and competitors together with cargo beneficiaries regarding NSR rail corridors and viewpoint by Czech policy makers. The research data analysis and findings complement, question or challenge conclusions by other researchers dealing with TAR and its linkage to BRI framework as emerging research subject in the field of transport geography and transport economics. Besides, the project focus is on digitalization and logistics 4.0 related aspects and their potential within NSR and its positioning in global trading environment.

1. Introduction

Global transportation of the containerized goods´ exports and imports highly depends on maritime shipping. For containerized freight distribution, road haulage and rail (or air cargo for high-value goods) play a vital and complementary role of intermodal door-to-door transportation while using different cargo routings for different cargo beneficiaries.

Most transport research project and studies focus on the European intermodal transport markets with direct access to maritime ranges but completely neglect inland markets and hinterlands. However, in the case of landlocked markets such as the Czech Republic, beneficial cargo owners, transport providers and intermediaries such as freight forwarders face a different mix of additional constraints while participating in the global supply chains (Lam and Gu, 2015). The issues include for instance lack of economies of scale due to relatively smaller traffic volumes between seaports and Central and Eastern Europe (CEE) hinterland origins and destinations, involvement of a higher number of market players in the transport chain, more distant consumption and production centres together with lower competition levels for transport providers and intermediaries (Kolar, 2017, Kolar, 2019).

In recent years, Trans-Asia rail (TAR) started to act as a vital routing alternative for intermodal transportation between Far East Asia, namely the People´s Republic of China (PRC) and European Union (EU) markets. Under the TAR, there are different existing classifications and routing descriptions that include (Song and Na, 2012):

- Trans-Siberian Railway (TSR) together with additional connections via Baikal Amur Mainline (BAM), Trans Manchurian Railway (TMR) or Trans Mongolian Railway (TMGR) and
- Trans China Railway (TCR) connecting to New Eurasian Land Bridge (NELB) established in 1992.

For the TAR illustration, see Figure 1. In regard to intermodal transport between Far East Asia and Europe, container shipping via RR (and Suez Canal) with the length of 22,000 km is the most dominant transportation mode covering almost all Twenty-foot-Equivalent Units (TEU) that are shipped on this route annually (UNCTAD, 2017a). The key Far East Asia hub container ports include Shanghai, Hong Kong, Tianjin, Ningbo, Pusan or Kobe. In Europe, the key container shipping origins and destinations are Rotterdam, Antwerp, Hamburg and Bremerhaven with a port-to-port transit time ranging from 26 to 35 days. Regarding TAR links, intermodal rail operators are primarily active within TSR and NELB connecting the People´s Republic of China (PRC) inland economics centres via Kazakhstan, Russia and Belarus with Poland and Germany (Arduino, 2016).

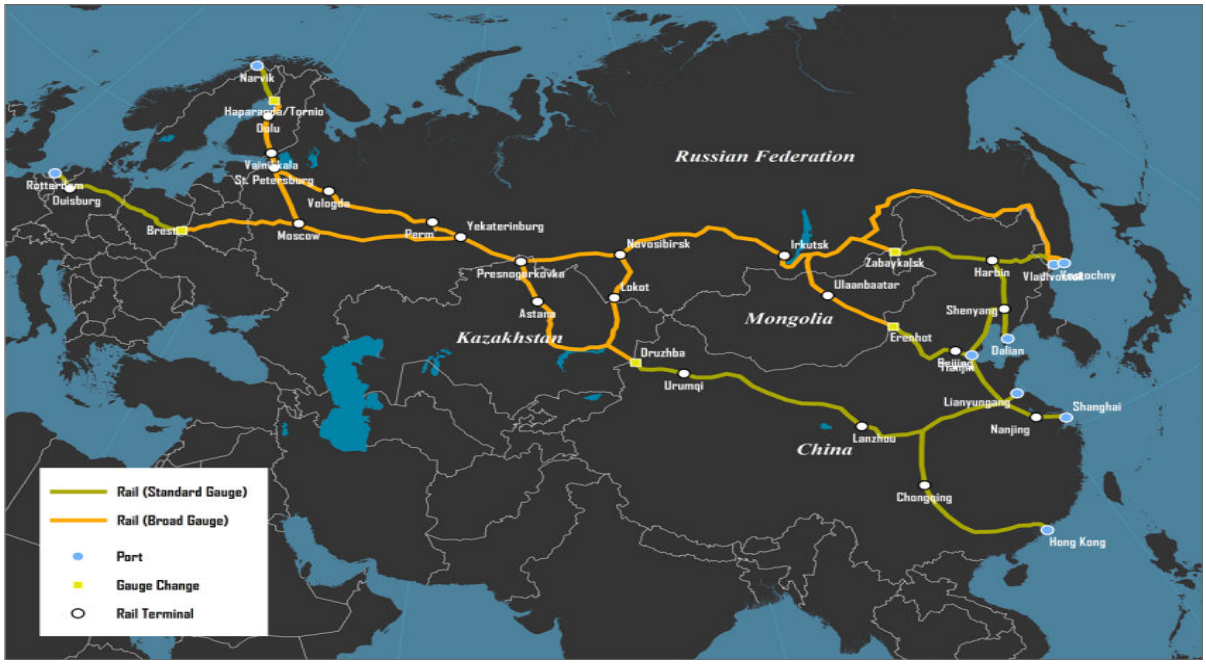

Figure 1: Asia – Europe transport connectivity by rail
Source: Rodrigue, 2017

Table 1 provides numbers on the latest development and comparison of rail door-to-door (terminal-to-terminal) transit times for Forty-Foot Equivalent Unit (FEU) booked as Full Container Load (FCL) Freight-of-All-Kind (FAK) between PRC ports or inland destinations and the Czech Republic while comparing maritime shipping to TAR.

Table 1: Comparison of selected TAR routings and their door-to-door transit times

Routing	Transit time TAR (days)	Transit time including maritime shipping (days)
Zhenghou (PRC) via NELB – Frankfurt (DE)	19	30-37
Chongqing (PRC) via NELB – Duisburg (DE)	18	32-36
Shanghai (PRC) via NELB – Prague (CZ)	19	33-40

Source: DB Schenker, 2016, Rodrigue, 2017

2. Policy and Legal Framework

Regarding the Chinese policy makers, they have indicated a prominent level of activities about various initiatives of the international and global economic scope (e.g., the Eurasian Economic Union, EEU). Some of them refer to the concept of the New Silk Road (NSR) implemented as a part of a comprehensive development framework, which was introduced and asserted by Chinese government formerly titled as One Belt One Road Initiative (OBOR). The name refers to the trade routes, which used to connect China with Europe, starting from the 3rd century to the 15th century. Following NDCR (2015), the current title for this Chinese development framework is Belt Road Initiative (BRI). The necessary assumption of the NSR is the development of a network involving infrastructural connections between the People´s Republic of China (PRC) and the European Union (EU) as PRC´s most important foreign trade partner (EC, 2017). Financially, the AIIB (Asian Infrastructure Investment Bank) and Silk Road Fund (since 2014) support the initiative. Figure 1 illustrates the concept of the main BRI infrastructure corridors including the NSR and the Maritime Silk Road (MSR). The research project elaborates the BRI impact on actions of intermodal transport chains stakeholders in the EU and question the disruption potential of BRI transport infrastructure projects on the current architecture of intermodal chains in the EU.

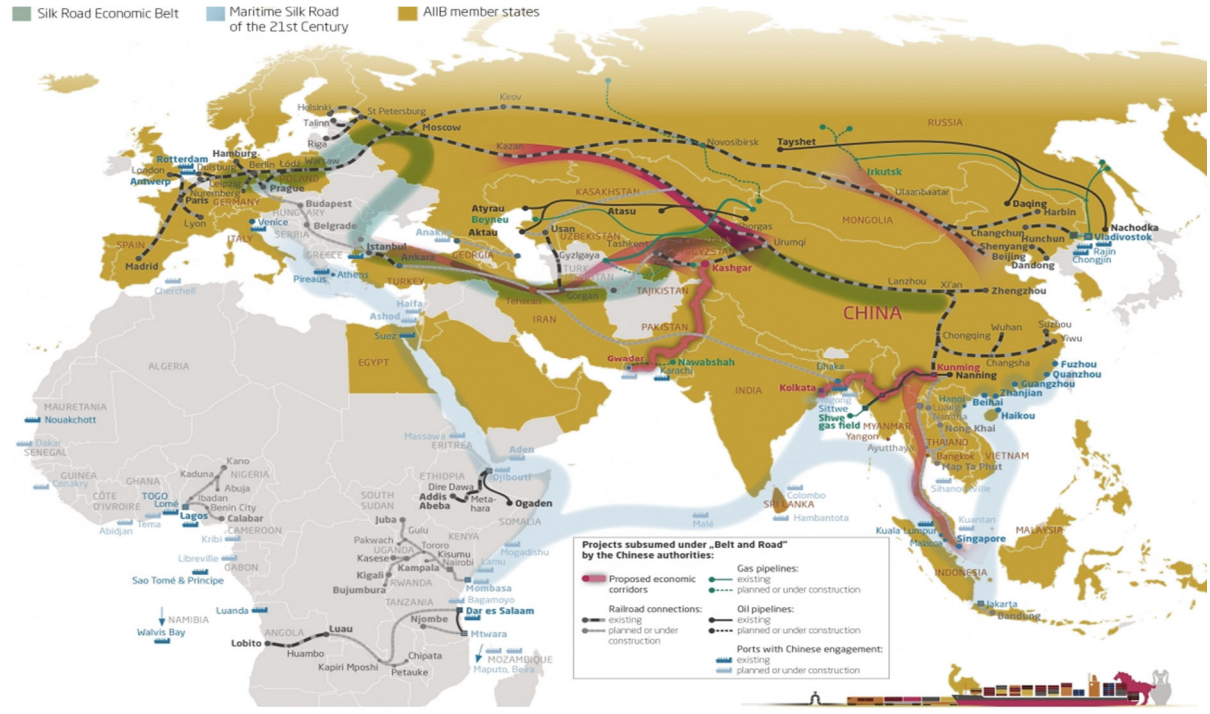

Figure 2: BRI projects planned and completed

Source: Mercator Institute for China Studies (MERICS), 2017

By conducting the research, the author seeked to challenge the very relevance of the BRI framework for the overseas trade dynamics and routes for the Czech Republic containerized goods including the imports from Far East Asia. The research questions if and to what extend there is a linkage between the emerging importance of digitalization in the economy as the application of logistics 4.0 and the BRI framework based mostly on transport infrastructure projects.

For feasible, sustainable and functioning of any transport infrastructure or international logistics and policy related project, the efficient employment and ongoing development of information and communication technologies (ICT) including the application of digitization and digitalization is a must (UNCTAD, 2017b). Efficiently performing and institutionalized (by legal frameworks) mode of transport such as rail is requisite for the international trade links between PRC and EU long-term and sustainable development.

One of the project pivotal research objectives was to elaborate on the application and potential of digitalization solutions based on e-friendliness of legal instruments in international transport of cargo and if the BRI related policy makers seek to support and enhance business opportunities by operators active in the intermodal transport routes framed by NSR.

3. Research findings

The qualitative research stage findings show how much interlink layers between current dynamics within logistics 4.0, digitalization and BRI development are present driven both by economic and political forces. The author´s content analysis of RQs responses confirms that the competitive potential of NSR corridors as second tier alternative to the MSR corridor is not by a shorter and more reliable transit time but thanks to a faster pace of digital innovations and legal development among inland modes of transport in comparison to maritime shipping. From a containerized shipments volumes and intermodal market stakeholders' perspective, NSR corridors between PRC and the EU will not affect fundamentally the importance and positioning of maritime shipping corridors framed by MSR.

For the quantitative research stage focused on scenario analysis of the data provided primary by a freight forwarder, the data was provided by a German based local subsidiary of traditional logistics provider (3PL) and freight forwarder present in the Czech Republic, Germany. The detailed data set was processed and analysed to address the research scope. For details, see the document Final Research Paper Trans-China railway, New Silk Road and Maritime Silk Road: Trade Opportunities and Challenges in Central and Eastern Europe.

4. Conclusion

Freight rail provides shorter transit time in comparison to maritime shipping and much lower unit costs in comparison to airfreight. Its niche might be the shipping of high-value and delivery time-sensitive goods. The value of transit time assesses the relation between transport costs, transit time and overall logistics costs possible. The average shipment weight is 12 tons in a FEU FCL container.

From the performed data analysis it is only possible to say so far that NSR as part of BRI is relevant to all range value cargo such as luxury products, machinery, automotive car parts,

commodities such as textile and time-sensitive goods such as food and beverages. Other NSR competitive potential might be for relatively low value cargo with high time sensitivity of delivery such as low valued appliances.

Based on current usage and potential of rail links within NSR corridors, is it vital to show the dynamics and perception of this set of intermodal transport options from the perspective of inland logistics markets and their players located in the European landlocked hinterland. Since, they generate substantial demand for TAR services within NSR corridors that in turn plays a pivotal role in the BRI initiative further success.

The empirical findings show that intermodal transport via NSR links is offered by a range of different type service providers to a limited number of cargo beneficiaries originating from industries such as automotive or electronics where transport cost account for relatively lower share of the product´s sales price.

On the one hand, there was a major limitation of the project as it only focuses on interviews with top management in one of the European markets. Besides, those managers represent only multinational companies so that opinions of small and medium-sized companies are missing. Yet, such a sample of the EU member state economy located between such mature transport and logistics EU markets such as Germany or the Netherlands and emerging ones outside the EU such as Ukraine or Belarus illustrates typical market structure controlled by transport and logistics service providers headquartered in Western EU member states.

Regarding managerial and policy implication by Eurasian rail freight service development in the implementation BRI and related corridors such as NSR, there are two follow ups. Firstly on strategic level, the cooperation between countries´ governments related to the B|RI and inland logistics (rail) stakeholders must take place to found and further develop legal framework to facilitate the rail operations and boost rail market activities in Asia-Europe region. Secondly on business level, it is vital to offer price competitive rail freight rates to further optimize the routing to lower transit times based on the decision making by rail operators. Such dynamics will foster business to business visibility of rail options for cargo beneficiaries and intermediaries to in the emerging BRI and its corridors such as NSR

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