Development of “New Silk Road” Northern branch through seaport of Riga in Latvia

Aldis Bulis\textsuperscript{a}*, Roberts Skapars\textsuperscript{b}

\textsuperscript{a,b}University of Latvia, Riga, LV-1050, Latvia

Abstract

The study reveals opportunity to develop the “New Silk Road” Northern branch from North-West China (the People’s Republic of China) via seaport of Riga in Latvia to Europe. The methods of the study are the monographic method, the statistical analysis, the expert method and a case study. The study shows that the shortest route for the “New Silk Road” Northern branch is through seaport of Riga (Latvia) which is the shortest way from China to the seaport in the European Union. The existing railway infrastructure can be used from Urumqi (North-Western China) to the seaport of Riga. Transit countries for this route are Kazakhstan and Russia. This route could be beneficial for distribution of goods in containers from the North-West China to Scandinavian countries and vice versa. This study contributes to the discussion about trade routes between Europe and China, as well as introduces with development of “New Silk Road” Northern branch.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/3.0/).

Peer-review under responsibility of the 10th International Strategic Management Conference.

Keywords: China, Latvia, New Silk Road, New Silk Road Northern branch, seaport of Riga

1. Introduction

International trade and the share of containerized cargo in the world’s total dry cargo movement have increased significantly during recent decades. The rapid development of East Asia countries, especially People’s Republic of China (China), has contributed to growth of cargo flows among European countries...
and the East Asia. These positive trends are accompanied by situation that transport costs are expected to increase due to rising oil prices, increased congestion around ports and economic centres, and public policies aimed at internationalizing the external costs related to transport (Tavasszy, Minderhoud, Perrin and Notteboom, 2011). The main route between China and Europe is water way via the Suez Canal. One of the alternative routes that could be developed in the future is the rail land bridge between China and Europe, e.g. rail route from the North-West China to Europe through seaports of Riga in Latvia. The opportunity to develop rail route from the North-West China through seaport in Latvia or other Baltic countries (Estonia and Lithuania) has not been sufficiently studied so far. This option becomes relevant because of rapidly progressing development of economy in the continental Western part of China that appeal to set up some new transportation patterns instead of the traditional sea transportation used usually during the recent decades (Kabashkin, 2012).

Kabashkin (2012, p.37) argues that “Baltic countries (Estonia, Latvia, and Lithuania) due to the external circumstances have an unique opportunity to complete their mission of being an important linking element between two major economic unions (the European Union and the Customs Union of Russia, Kazakhstan and Belarus) in the frameworks of the Trans-continental international logistic chain”. The Baltic countries could provide beneficial international freight transit route between continental China and Europe because it is shorter and faster for transportation of goods from Western China to Europe by rail than to transport goods, firstly, to the seaport in the Eastern part of China and, secondly, then to Europe using the sea transport.

The aim of this study is to investigate opportunity to develop trading route from the North-West China to Europe through seaport of Riga in Latvia (the “New Silk Road” Northern branch). The monographic method, the statistical analysis, expert method and a case study are applied in this study. As a case the first demonstration container block train from China to the European Union (via seaport of Riga) is analyzed. It was a joint project realized by “DB Schenker” and “Riga Container Terminal” in 2008. The train was dispatched from Urumqi (the North-West China) station and travelled 6000 kilometers in 8 days to reach the Riga Container Terminal, then containers were trucked to the warehouses in Hamburg (Germany). Focus group discussion with 8 experts was conducted to get in-depth knowledge about East-West rail corridors between China and Europe and development of the “New Silk Road” Northern branch via seaport of Riga in Latvia.

2. Literature Review

There are numerous studies on container transportation issues between seaports of China (mostly Shanghai) and Europe (mostly Rotterdam, Antwerp, Hamburg), but there are lack of studies where container transportation between Western part of China and Europe are investigated. Nowadays the main route in trade between Europe and China is the Suez Route, but other alternatives are the East-West rail corridors, the Cape Route and the Northern Sea Route, see Fig. 1 (e.g. Lee et al., 2014; Notteboom, 2012; Kabashkin, 2012; Wang and Meng, 2011; Kopytova and Abramov, 2012; Tavasszy et al., 2011; Verny and Grigentin, 2009). Over the last 50 years, the upgrading of the Suez Canal undermined the competitive position of the alternative routes between the Asia and Europe. Due to the increasing congestion in the Suez Canal, changes in climate and energy policy, security threats linked to piracy near Somalia and the Gulf of Aden, the alternative routes, as the East-West rail corridors, the Cape Route and the Northern Sea Route, are developed for transportation of containers between Europe and the East Asia.
Notteboom (2012) argues that for container vessels operating on the Europe-Far East trade, vessel rerouting via the Cape Route is an expensive solution, because more vessels are needed to guarantee weekly call in each port along the loop, as well as additional voyage and bunker costs, additional cargo inventory costs would not outweigh the saving in Suez Canal fees and security costs. The main advantage of the Northern Sea Route is that it reduces the length of voyages from North Asia (e.g. seaports of Japan, South Korea, and China) to the Northwestern Europe (e.g. seaports of Hamburg, Bremen, and Rotterdam) by about 2500 nautical miles; this translates into a gain of approximately 10 days, which is one-third of the time required for maritime transport by the Suez Route (Verny and Grigentin, 2009). There are no regular container lines on the Northern Sea Route yet.

Tavasszy et al. (2011) have identified in their study by applying scenario analysis, firstly, that the costs linked to the routes (e.g. from Shanghai to Hamburg) using the railway link are higher than on the all-water routes, but the transit time is lower, and, secondly, this route is relatively price-sensitive, and the
flows are larger in the direction from Asia to Europe. Kopytov and Abramov (2012), applying multiple-criteria analysis and calculating different routes between Shanghai and Moscow, have found that advantage of different sea routes is the lower costs than by rail, but advantage of rail route is significant time savings – approximately two weeks. Verny and Grigentin (2009) conclude in their study that shipping route through the Suez Canal is still by far the least expensive option, the Northern Sea Route and the East-West rail corridors appear to be roughly second-tier alternatives.

Significant problems in China are regional imbalance in its economic development and transport congestions (Lu, Chen, Zhu and Xu, 2013). Development of rail route between Europe and China can serve to overcome the congestions to the seaports of China, as well as heterogeneity among regions in China facilitating development of the North-West China (especially the Hinjiang province).

3. Development of “New Silk Road” Northern branch via seaport of Riga

3.1. New Silk Road

The railway route China-Kazakhstan-Russia-Belarus-Poland-Germany is called “New Silk Road”, because this route has similar ideology as an ancient “Silk Road” and its geographical origins are similar – significant crossroad is Urumqi city in the Hinjiang province, see Fig. 2. The Silk Road trading route had been opened at least since 130 B.C. and it had been well-established trading corridor (Toniola, D’Amato, Saccani, Gulotta, and Righetti, 2012). China exported silk fabric, whose production was then a Chinese secret and monopoly, and in return obtained horses and other trade goods (Kotker and Fitzgerald, 1969).

Fig. 2. Routes of Ancient Silk Road and “New Silk Road”
Rail freight routes between China and Europe have become a real alternative to the traditional Suez Route in recent years. It has become possible due to the investments in rail infrastructure, growing demand for those freight transportation solutions and development of production in the Central and West China. The two main rail corridors with regular freight traffic operate to connect China and Europe. Firstly, the Trans-Siberian rail is used to connect Northeast China and Europe (China-Russia-Belarus-Poland-Germany). Secondly, existing route China-Kazakhstan-Russia-Belarus-Poland-Germany are used for freight logistics (so called “New Silk Road”).

3.2. “New Silk Road” Northern branch via seaport of Riga

The rail route from the North-West China to Europe through seaports of Riga in Latvia could be called “New Silk Road” Northern branch (China-Kazakhstan-Russia-Latvia) because this route has similar ideology like ancient “Silk Road” focused on trade relations between China and Europe, it is northern branch in existing, so called, “New Silk Road” and geographical origins in China are similar – important crossroad is Urumqi city in the Xinjiang province. Alternative seaports in the European Union could be found also in Estonia (seaport of Tallinn) and Lithuania (seaport of Klaipeda) which are neighboring countries of Latvia. The seaport of Riga is analyzed as a case in this study because it is the shortest way from the North-West China to the seaport in the European Union.

The seaport of Riga has been the largest seaport in Latvia, and it has been the biggest seaport in the Baltic States in 2013 when more than 35 million tons cargo was handled, see Fig. 3. It is a multifunctional seaport handling dry bulk, general cargoes and liquid bulk, see Fig. 4. The seaport of Riga is connected to TENT-T (Trans-European Transport Network) road and rail. The seaport of Riga operates as a free economic zone more than 10 years therefore its official title is the “Freeport of Riga”. The Freeport of Riga Authority is a public entity, which enters into contractual agreements with private operators for land use, development activities and in some cases providing general (common) services (Laaksonen and Makinen, 2012).

Fig. 3. Volume of handled cargo in the seaport of Riga (Source of data: the Central Statistical Bureau of the Republic of Latvia)
The seaport of Riga is the only seaport in Latvia where specialized container terminals are operating. They are Baltic Container Terminal and Riga Container Terminal. In 2013 the Baltic Container Terminal handled more than 300,000 containers TEU, but the Riga Container Terminal handled 63,949 TEU (data from the Baltic Container Terminal and the Riga Container Terminal). In total, free capacity of those terminals are 0.5 million containers TEU. The advantages of the seaport of Riga are that a) geographically it is the closest foreign seaport to Moscow; b) it has business competence in freight transportation between the European Union and Russia/CIS (Commonwealth of Independent States) countries; c) the seaport of Riga is a multifunctional seaport with well-developed infrastructure; and d) it has high quality services and competitive port charges (Laaksonen and Makinen, 2013; Bulis and Škapars, 2013).

The seaport of Riga could be engaged in the operation of the “New Silk Road” developing “New Silk Road” Northern branch, because the results of conducted focus group with 8 experts from academic institutions, logistics companies and state authorities show, that the first demonstration container block train from China to the European Union via seaport of Riga was realized, and it was successful. This demonstration container block train was a joint project realized by “DB Schenker” and “Riga Container Terminal” in 2008. The train was dispatched from Urumqi (the North-West China) station and travelled 6000 kilometers in 8 days to reach the Riga Container Terminal, and then containers were trucked to the warehouses in Hamburg (Germany). This rail road consists of China-Kazakhstan-Russia-Latvia route, see Fig.2. There is 1520 mm wide gauge rail in Latvia, Kazakhstan and Russia, but in China, Poland and Germany – 1435 mm normal gauge rail.

The experts stresses that there are some challenges for development of “New Silk Road” Northern Branch. Firstly, development of this route depends on relations between Russia and the European Union, the Customs Union (Russia, Belarus, and Kazakhstan) and the European Union in the transport field. This argument is a controversial one because the “New Silk Road” China-Kazakhstan-Russia-Belarus-Poland-Germany is existing route with regular container traffic. Secondly, the significant question is about width of railway tracks because their differences increase costs of freight transportation. Latvia, Kazakhstan and Russia have 1520 mm wide gauge rail, but China has 1435 mm normal gauge rail. Thirdly, there is doubt about utility of “New Silk Road” Northern branch via Riga for distribution of the Chinese goods in the European Union countries, because there is already direct railway route from China to Germany. Experts

Fig. 4. (a) types of cargo handled in the seaport of Riga in 2013; (b) structure of cargo handled in the seaport of Riga in 2013 (Source of data: the Freeport of Riga Authority)
are convinced that specialization of the seaport of Riga could be distribution of the Chinese goods to Scandinavian countries (Sweden, Norway and Finland) and consolidation of Scandinavian goods for transportation to China by regular container block train. Some other opportunities for Latvia are to provide additional logistics services for transit goods, e.g. customs broker services, warehousing, containerization of cargo, completion of manufacturing goods. An expert with more than 5 years’ experience in developing cooperation between Latvia and China thinks that partners from China do not know about freight logistics opportunities via Latvia. He believes that development of “New Silk Road” Northern branch via the seaport of Riga depends on development of manufacturing in the North-West China, especially in Xinjiang province. The Xinjiang province is not a manufacturing centre in China yet. An expert from academic sector points out that Latvia should provide competitive offer (cooperation, investment opportunities) for partners from China, as well as develop relations based on mutual trust and respecting Chinese business practices. Experts suggested to develop solution of “New Silk Road” Northern branch a) deepening cooperation between Latvia and the Xinjiang province in the North-West China; b) developing existing regular container block train “Baltic-Transit” (Latvia-Russia-Kazakhstan) extending it to China; c) developing complex offer for distribution of Chinese cargo in the European Union and consolidation of cargo for transportation to China providing additional services as well.

4. Conclusion

This paper contributes to the discussion about alternative routes for transportation of goods between Europe and China investigating development of “New Silk Road” Northern branch via seaport of Riga in Latvia. This issue is relevant because the rapid growth of China increases volume of cargo flows among European countries and China, as well as congestions increase in the Suez Route which is the dominant route in trade between Europe and China.

The main and the cheapest route for transportation of goods between China and Europe is the Suez Route. Other alternatives are the East-West rail corridors, the Northern Sea Route and the Cape Route. The advantages of the Suez Route are time and cost in comparison with the Cape Route, as well as economy of scale cost advantage in comparison with all alternative routes.

Due to the investments in rail infrastructure, growing demand for transportation by rail and development of production in the Central and West China, rail freight routes between China and Europe have become a real alternative to the traditional Suez Route in recent years. The two main rail corridors with regular freight traffic operate to connect China and Europe: a) Trans-Siberian rail is used to connect Northeast China and Europe (China-Russia-Belarus-Poland-Germany); b) route China-Kazakhstan-Russia-Belarus-Poland-Germany are used for freight logistics (so called “New Silk Road”).

The rail route from the North-West China to Europe through seaports of Riga in Latvia could be called “New Silk Road” Northern branch (China-Kazakhstan-Russia-Latvia) because this route has similar ideology like ancient “Silk Road” focused on trade relations between China and Europe, as well as it is northern branch in existing, so called, “New Silk Road” and geographical origins in China are similar – important crossroad is Urumqi city in the Xinjiang province.

The seaport of Riga could be engaged in the operation of the “New Silk Road” developing “New Silk Road” Northern branch, because, as it shows results of conducted focus group with 8 experts, the first demonstration container block train from China to the European Union via seaport of Riga was realized in 2008, and it was successful, as well as the seaport of Riga is the shortest way from China to the seaport in the European Union. This rail route consists of China-Kazakhstan-Russia-Latvia route. In total, free capacity of container terminals in the seaport of Riga are 0.5 million containers TEU. Specialization of
the seaport of Riga in the “New Silk Road” could be distribution of the Chinese goods to Scandinavian countries (Sweden, Norway and Finland) and consolidation of Scandinavian goods for transportation to China by regular container block train. Other opportunity for Latvia is to provide additional logistics services for transit goods, e.g. customs broker services, warehousing, containerization of cargo, complectation of manufacturing goods.

The concepts of the “New Silk Road” and the “New Silk Road” Northern branch should be studied scientifically in the future because there is a lack of scientific investigation on those issues. The results of this study shows that the “New Silk Road” Northern branch could be developed a) deepening cooperation between Latvia and the Hinjiang province in the North-West China; b) developing existing regular container block train “Baltic-Transit” (Latvia-Russia-Kazakhstan) extending it to China; c) developing complex offer for distribution of Chinese cargo in the European Union and consolidation of cargo for transportation to China providing addition services and innovations in supply chain.

Acknowledgements

This work has been supported by the European Social Fund within the project «Support for Doctoral Studies at University of Latvia».

References

Bulis, A., & Škapars, R. (2013). Development of international freight transit in Latvia. Procedia – Social and Behavioral Sciences, 99, 57-64.

Kabashkin, I. (2012). Freight transport logistics in the Baltic Sea region. Regional aspects. Transport and Telecommunication, 13, 33-50.

Kopytov, E., & Abramov, D. (2012). Multiple-criteria analysis and choice of transportation alternatives in multimodal freight transport system. Transport and Telecommunication, 13, 148-158.

Kotker, N., & Fitzgerald, C.P. (1969). The Horizon History of China. New York: American Heritage Publishing Co., (Chapter 9).

Laaksonen, E., & Makinen, H. (2012). Maritime cluster analysis on the Central Baltic region. Turku: University of Turku, p. 51.

Laaksonen, E., & Makinen, H. (2013). Maritime companies and their business networks in the Central Baltic region. Turku: University of Turku, p. 41.

Lee, E., Oduor, P.G., Farahmand, K., & Tolliver, D. (2014). A coupled linear programming model with geospatial dynamic trip assignment for global-scale intermodal transportation. Maritime Economics and Logistics, 16, 33-54.

Lu, M., Chen, Z., Zhu, X., & Xu, X. (2013). China’s Regional Development: Review and prospects. London and New York: Routledge.

Notteboom, T.E. (2012). Towards a new intermediate hub region in container shipping? Relay and interlining via the Cape route vs. the Suez route. Journal of Transport Geography, 22, 164-178.

Tavasszy, L., Minderhoud, M., Perrin, J-F., & Notteboom, T. (2011). A strategic network choice model for global container flows: specification, estimation and application. Journal of Transport Geography, 19, 1163-1172.

Toniola, L., D’Amato, A., Sacceneti, R., Gulotta, D., & Righetti, P.G. (2012). The Silk Road, Marco Polo, a bible and its proteome: A detective story. Journal of Proteomics, 75, pp. 3365-3373.

Verny, J., & Grigentin, C. (2009). Container shipping on the Northern Sea Route. International Journal of Production Economics, 122, 107-117.

Wang, X., & Meng, Q. (2011). The impact of landbridge on the market shares of Asian ports. Transportation Research Part E, 47, 190-203.