Transportation industry patterns and strategy for the countries along “The Belt and Road”

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Abstract. “Silk Road Economic Belt” and “The 21st Century Marine Silk Road” are the major strategic concepts of China to build a new sustainable international political and economic order, to face the complex and changeable international geopolitical economic patterns and combat the global economic crisis. Transportation is the dominant force to shape and change economic spatial patterns. In this research, through the study of existing literature and data, the author built the transportation patterns of the countries along “The Belt and Road”, revealed that among the countries along “The Belt and Road”, the infrastructure constructions were perfect, the trade development of transportation industry was not balanced, the developed countries had obvious advantages, and the developing countries were developing rapidly. Then, the author established the transportation measures of the countries along “The Belt and Road”, which were that China should innovate cooperation mechanism, establish cooperation platforms, play a vanguard role of the civil aviation, set high-speed rail construction as the breakthrough point, establish international logistics system, set up International Logistics Association, and so on. This research took the international perspective and scientific analysis to support the national strategy of “The Belt and Road”, and the conclusions will provide a strong theoretical basis and strategic support for the construction of “The Belt and Road”.

1. Introduction
As a historical concept, the silk road has been a channel and bridge for exchanges and economic cooperation between eastern and western civilizations since ancient times. “Silk Road Economic Belt” and “The 21st Century Marine Silk Road” are the major strategic concepts of China to build a new sustainable international political and economic order, to face the complex and changeable international geopolitical economic patterns and combat the global economic crisis [1]. “The Belt and Road Initiative” is a major strategic concept for comprehensively strengthening China's international economic and trade cooperation with central Asia, the Middle East, Europe, north Africa, South Asia and southeast Asia, benefiting countries along “The Belt and Road, combating the international economic crisis and building a new international political and economic order of sustainable development [2]. “The Belt and Road” includes 65 countries in Asia, Europe and Africa. In addition, there are 29 other countries within the radiation range. The total area accounts for 53.6% of the world [3].

Transportation is an important force to create economic spatial pattern and dominate economic spatial pattern evolution [4]. In May, 2017, in the opening ceremony of Belt and Road Forum for International Cooperation, Chinese President Xi Jinping declared that: the interconnection of
infrastructure is the foundation for the cooperation of “The Belt and Road”, we will promote the interconnection of land, sea, airspace and internet, and connect the highways, railways, shipping lines and air lines network in future [5]. Construction of transportation system within the countries along “The Belt and Road” is the precondition and important basis for implementation and development of “The Belt and Road Initiative”, the essential bond and bridge for the interconnection of infrastructure, trade and people, and the priority task that must be broken through [6].

2. Models and Methods
This study set the 65 countries along “The Belt and Road” as the study area. According to the analysis on the transportation infrastructure index and the difference between import and export in transportation trade, we obtained the transportation industry patterns for the countries along “The Belt and Road”, and put forward the transportation industry development strategy for the countries along “The Belt and Road”.

3. Results and Discussion

3.1. Transportation Industry Patterns for the Countries along “The Belt and Road”

3.1.1. Transportation facilities are complete, and the condition of coastal areas are better than inland areas. The transportation infrastructure of countries along “The Belt and Road” is relatively perfect, such as railways, roads, air and sea transport. The index of transportation facilities in coastal areas such as Western Europe, southern Europe, the Middle East, southeast Asia and east Asia is significantly better than that in inland areas (Figure 1). Among them, the railway and road transport networks in Western Europe, southern Europe, east Asia and South Asia have taken on a large scale. The maritime transport networks on the east Asia-southeast Asia - South Asia - west Asia - Middle East - south Europe are extremely developed, and the density of civil aviation infrastructure in Western Europe, southern Europe, east Asia and southeast Asia is significantly higher than that in other regions.

![Figure 1. The transportation infrastructure index for the countries along “The Belt and Road” in 2013 (Data source: BBS global competitiveness report 2014-2015).](image)
3.1.2. The development pattern of the transportation trade is unbalanced, the developed countries dominated it. According to 2013 data from the world bank database, among countries along “The Belt and Road”, western European countries have the highest share of transportation exports, 29.15%. Eastern Europe was next at 17.45 per cent. East Asia and central Asia accounted for 10.14% and 0.82% respectively. Compared with the import volume, it is found that the import share of the transportation industry in western European countries is 21.14%, and the import status is lower than the export status. The import shares of transportation industry in southeast Asia, South Asia and east Asia are 19.20%, 15.00% and 12.26% respectively. It can be seen that in the transportation trade of countries along the “The Belt and Road”, the development between regions is extremely unbalanced. Europe is the main export region of transportation industry, and it is also the source of trade surplus of transportation industry (figure 2).

![Figure 2](image)

**Figure 2.** The difference between import and export in transportation trade for the countries along “The Belt and Road” in 2013 (Data source: The World Bank Database).

3.2. Transportation Industry Strategy for the Countries along “The Belt and Road”

3.2.1. We will innovate cooperation mechanisms and establish a transportation cooperation platform between China and central Asian countries. It is of great significance to innovate the cooperation mechanism for coordinating and developing the development of transportation industry between China and central Asian countries along “The Belt and Road”. The establishment of the china-central Asia transport cooperation mechanism should be divided into two aspects: first, the establishment of the transport system, namely the adjustment and allocation of the functions and responsibilities of the transport cooperation organization; Second, the establishment of transportation system, including traffic laws and regulations and various rules and regulations [7].

3.2.2. Give play to the vanguard role of civil aviation transportation, high-speed rail construction as an important breakthrough. For central Asia, west Asia and other regions along “The Belt and Road”, it is easier to open air routes than road, railway and other land routes in terms of technology and existing civil aviation infrastructure. According to the strategic layout of “The Belt and Road...
Initiative”, the leading role of civil air transport in the delivery of goods is to give priority to east Asia - central Asia - west Asia - Middle East and east Asia - central Asia - eastern Europe, to open air routes and flights between important cities along the route as soon as possible, and to build a new Eurasian land bridge in the air [8].

According to the theory of late-development advantage, emerging economies and low-income countries can directly use the latest technologies when they catch up in infrastructure construction. Therefore, high-speed rail has become the infrastructure choice of many emerging economies and low-income countries. China can take high-speed railway construction as an important breakthrough for the external development of the transportation industry [9].

3.2.3. We will open seven international logistics channels and build a modern international multimodal transport logistics system. Cooperate with all the way "area" development and action guide, strengthen the "area" all the way along the regional logistics infrastructure construction, regional logistics hub city as the core, to the coastal port, station, port of customs clearance for the portal, actively to strengthen the construction of highway, railway, port, logistics, comprehensive through 7 international logistics channels, docking of the countries along interstate and international transportation corridors.

4. Conclusions

Among the countries along “The Belt and Road”, the infrastructure constructions were perfect, the trade development of transportation industry was not balanced, the developed countries had obvious advantages, and the developing countries were developing rapidly. We established the transportation measures of the countries along “The Belt and Road”, which were that China should innovate cooperation mechanism, establish cooperation platforms, play a vanguard role of the civil aviation, set high-speed rail construction as the breakthrough point, get through international logistics corridor, establish international logistics system, set up International Logistics Association, confirm international standards of logistics, construct international logistics information network, and so on. This research took the international perspective and scientific analysis to support the national strategy of “The Belt and Road”, and the conclusions will provide a strong theoretical basis and strategic support for the construction of “The Belt and Road”.

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