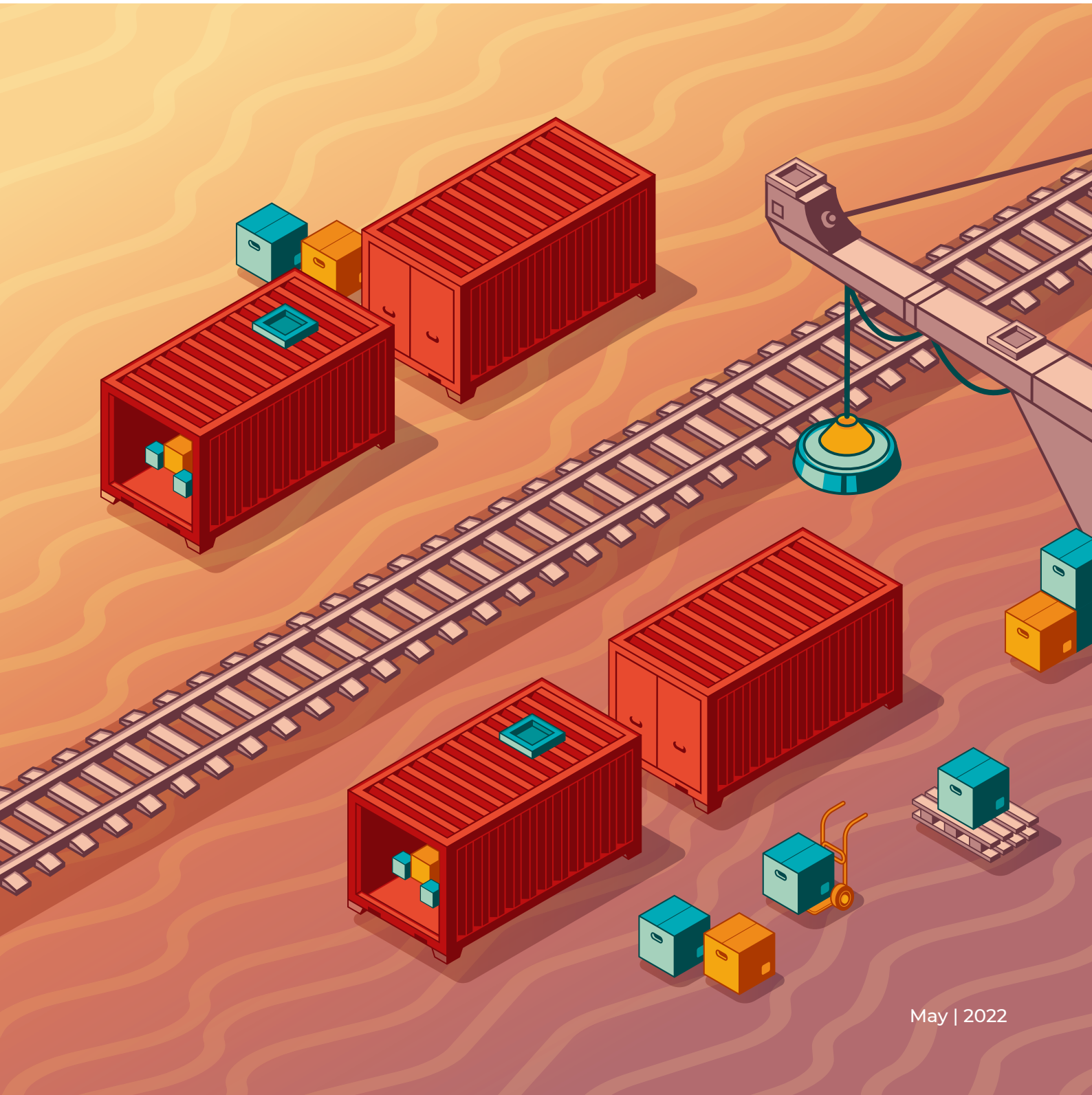
ERAI
Eurasian Rail Alliance Index

Information and analytical Report

PROMOTION OF EXPORT RAIL TRANSPORTATION IN CHINA: RESULTS AND PROSPECTS



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INTRODUCTION

Continental routes for the delivery of goods from China to Europe and back over the past decade have come a long way, from test train shipments to the creation of stable, full-fledged railway container transportation routes. By the end of 2021, the Eurasian transit railway route through Kazakhstan, Russia and Belarus alone accounted for about 5.5% of the annual trade turnover between China and Europe in value terms.

One of the key drivers of the upsurge in Eurasian railroad freight traffic at the initial stage of development was subsidies to Chinese producers for exporting and importing goods through rail container traffic. Such incentives were most developed in 2018, when the subsidy for one container (SFE) could reach up to 5 thousand dollars, accounting for 50% of the cost of delivery. The use of subsidies from local authorities in China made it possible to accelerate the development of trans-Eurasian railway transportation — to fine-tune cooperation mechanisms, build transport and logistics links and scale them up in order to create a competitive alternative to the sea delivery method.

First of all, it is necessary to understand the political significance that was attached to the stimulation of continental methods of delivery of goods. The development of the transport component is a necessary condition for the implementation of the Silk Road Economic Belt initiative. From this point of view, the promotion of railway transportation has two goals: the socio-economic development of the regions of Western China and the organization of alternative ways of delivering goods while building relations with countries along the way. Thanks to the existence of a unified conceptual framework, the efforts of regional authorities in recent years have been primarily aimed at supporting rail container transport, which was encouraged and supported by local and central authorities.

The development of transit rail transportation as an alternative to sea freight is forcing China to gradually move away from this practice, but it is unlikely that the reversal will be abrupt, given also the sustainability of the Chinese decision-making culture. The indicated reduction in the subsidy from 50% in 2018 to 10% in 2022 reflects this logic, as does the postponement of the decision to cancel the subsidy in 2022 due to anti-COVID measures. Reducing or eliminating subsidies, which are now estimated to be in the order of $1,000 per FEU, will make some difference, but their scale is unlikely to reverse the established development trajectory.

Subsidizing seems to be a rather flexible tool for solving problematic issues of development of continental railway routes. Appropriate subsidies allow to accelerate the return of empty containers to China, the shortage of which in China led, among other things, to a sharp increase in the cost of shipping cargo in 2020. In addition, subsidies can be targeted for the development of certain export/import segments or routes.

Finally, the policy of the Chinese authorities in the field of subsidies, the gradual abandonment of the most large-scale forms of subsidies is influenced by the non-market nature of such a mechanism. According to the rules of the World Trade Organization, such subsidies are distortions in trade, in connection with which the desire of the Chinese authorities to move to more nuanced forms of support for an already quite successful project is obvious.

CURRENT STATUS OF EXPORT RAIL PROMOTION IN CHINA

Since 2012, China has implemented a decentralized subsidy system for rail transportation. The Ministry of Finance of the People's Republic of China sets threshold limits on the share of subsidy in the cost of transportation, within which local governments can vary the levels of support provided in the current period.

Subsidies are divided into direct subsidies paid to cargo-owning companies by the PRC regional authorities, and indirect subsidies intended for local railway companies in order to achieve a certain volume of traffic in order to reduce tariffs. Direct subsidies are distributed by the municipal people's government under regional railway freight train subsidy plans to exporting enterprises that apply for subsidies within a specified period of time. Railway companies receive funding by applying to municipal trade bureaus.

Rail subsidies are of particular importance for China's provinces far from seaports: support only applies to transcontinental rail container traffic, while shipping to ports is not subsidized. Most of the subsidies are in the provinces and cities of Central China (Chongqing, Sichuan, Hubei, Henan), which is due to the geographical factor — the greater distance from ports and the shorter distance to Europe by land than by any sea route. The subsidization of China's rail transport towards the EU has spurred demand for this mode of transport, providing certain advantages over maritime transport.

The formation of the route, as well as the desire to use market mechanisms for the development of container transportation, cause a gradual departure from the practice of subsidizing transportation. In recent years, the Chinese government has purposefully cut subsidies as demand rises and supply strengthens. If in 2018 the share of subsidies was up to 50% of the "economically justified" cost of cargo transportation, which is approximately $10,000, then by 2022 it has decreased to 10%. In absolute terms, subsidies were $5,000 per 40-foot container (at the peak of the program) and have now dropped to $1,000.

Table 1.

FORECAST OF THE SHARE OF SUBSIDIES IN THE COST OF RAIL FREIGHT IN CHINA

	2018	2019	2020	2021	2022	2023	2024
Maximum allowable share of subsidies in the cost of rail freight[1]	50%	40%	30%	20%	10%	10%	0
"Economically justified" cost of railway transportation, on average per 1 FEU[2]	10 000	10 000	10 000	10 000	>10 000	>10 000	>10 000
Subsidy amount, on average per 1 FEU[3]	5 000	4 000	3 000	2 000	1 000	1 000	0
Actual tariff, on average for 1 FEU[4]	5 000	6 000	7 000	8 000	>9 000	>9 000	>10 000

Source: compiled by the authors

Thus, the logic of the subsidy mechanism was to stimulate Chinese exports to Europe, primarily exports from the regions of Western and Central China, through rail transport. Trans-Eurasian methods of cargo delivery were supposed to both open up new prospects for China's offshore regions and become a competitive alternative to maritime transport. The issue of removing subsidies is causing a significant reaction in the market and concerns in the industry. In 2022, the subsidies were supposed to be cancelled, but due to a new wave of the pandemic in China and a zero-tolerance policy for COVID-19, the end of the program was pushed forward a year. At the same time, it is clear that the reduction in subsidies does not lead to any noticeable reduction in freight traffic in the China-Europe-China traffic. Over the past decade, the number of trains between China and Europe has increased almost 900 times, from 17 trains in 2011 to 15,183 trains in 2021. Despite cuts in subsidies, logistics issues, the ongoing pandemic and other factors, demand for rail travel has continued to skyrocket over the past three years.

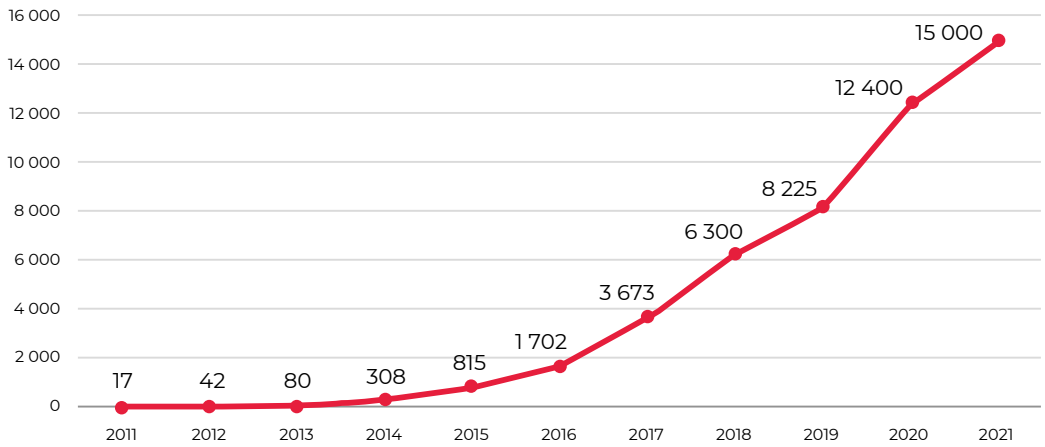
1 https://www.railfreight.com/beltandroad/2021/12/10/china-continues-subsidies-on-new-silk-road-next-year/

2 Shipping cost without subsidy. Calculated as actual rate plus subsidy based on expert information: https://seanews.ru/2020/02/21/ru-vyrastut-li-tarify-na-kontejnernye-zh-d-perevozki-iz-kitaja/

3 Calculated on the basis of data on the maximum allowable subsidy share in the cost of railway transportation and the economically justified cost of railway transportation

4 Calculated on the basis of data on the maximum allowable subsidy share in the cost of railway transportation and the economically justified cost of railway transportation

DYNAMICS OF THE NUMBER OF FREIGHT TRAINS BETWEEN CHINA AND EUROPE IN 2011–2021

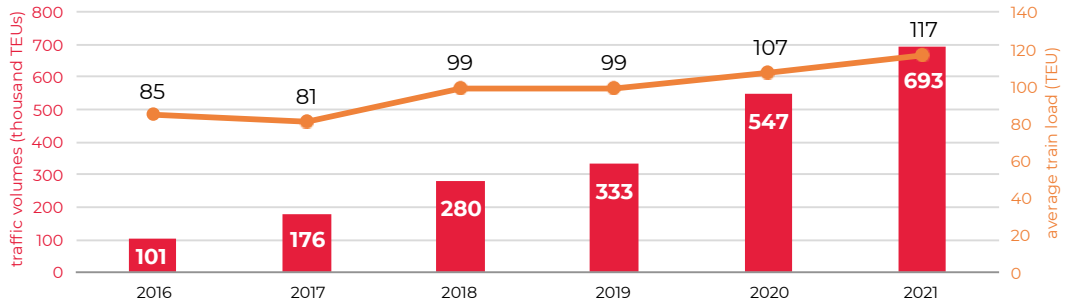


Source: China Railway Group

During the first half of 2022, the positive dynamics continued: the number of China-Europe freight trains increased by 2% compared to the same period of the previous year, amounting to 7,473 trains.

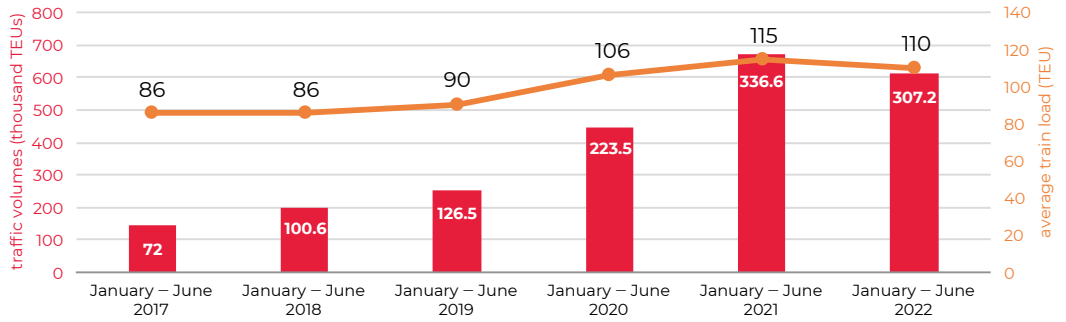
According to the ERAI index, an indicator of the state of Eurasian transit rail container traffic, cargo traffic along the Eurasian route continued to grow steadily despite the reduction in subsidies in China: by 2021, the volume of rail traffic reached 693 thousand TEU, increasing from 101 thousand TEU in 2016. The average train load also increased predominantly during this period, reaching 117 TEU in 2021, up from 85 TEU in 2016. This indicates an increased interest in Eurasian rail transport. The new advantages of rail transport over sea transport, such as reliability, speed of delivery of goods, as well as the cost of transportation — a relatively recent advantage arising from the disruption of shipping lines and ports during the corona crisis — ensure the further development of continental routes to Europe.

TRANSPORTATION VOLUMES AND TRAIN LOADING WITH CONTAINERS: CHINA — EUROPE — CHINA



Source: ERAI index

TRAFFIC VOLUMES AND LOADING OF TRAINS WITH CONTAINERS (HALF-YEAR): CHINA — EUROPE — CHINA



Source: ERAI index

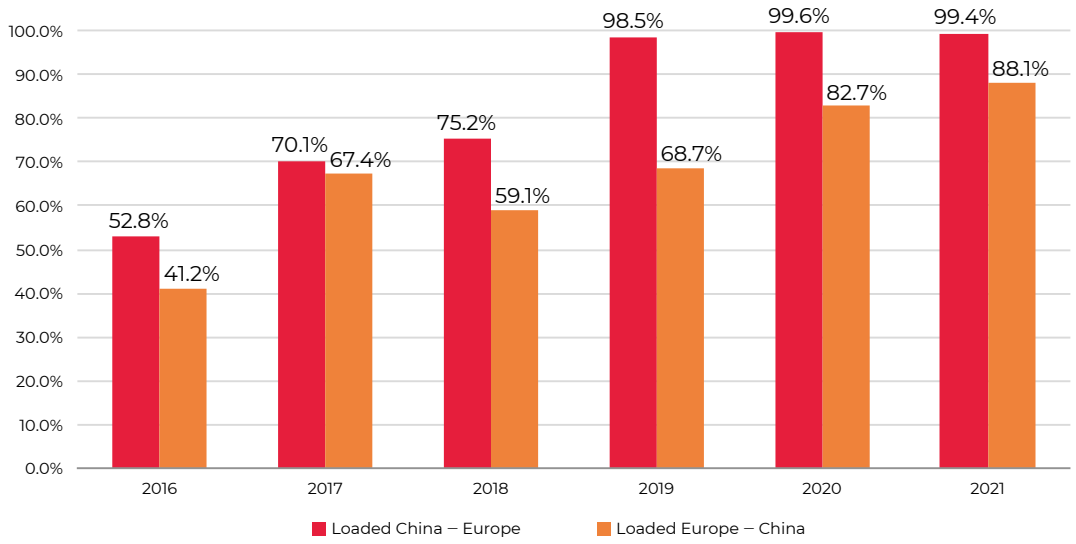
In the first half of 2022, the volume of trans-Eurasian cargo transportation decreased by 8.7% from 336.6 to 307.2 thousand TEUs. Political turbulence and sanctions affected supply chains in both directions, but more so from Europe to China, where the reduction was 15%, while from China to Europe only 5%. Against this background, the average train load also decreased, from 115 TEU in the first half of 2021 to 110 TEU in the same period of 2022.

To date, the main problem of continental delivery methods is not an increase in the supply of transportation, but infrastructure limitations. In 2022, the capacity of the container terminal at the Dostyk border crossing in Kazakhstan was expanded. Opportunities for further infrastructure expansion are being explored.

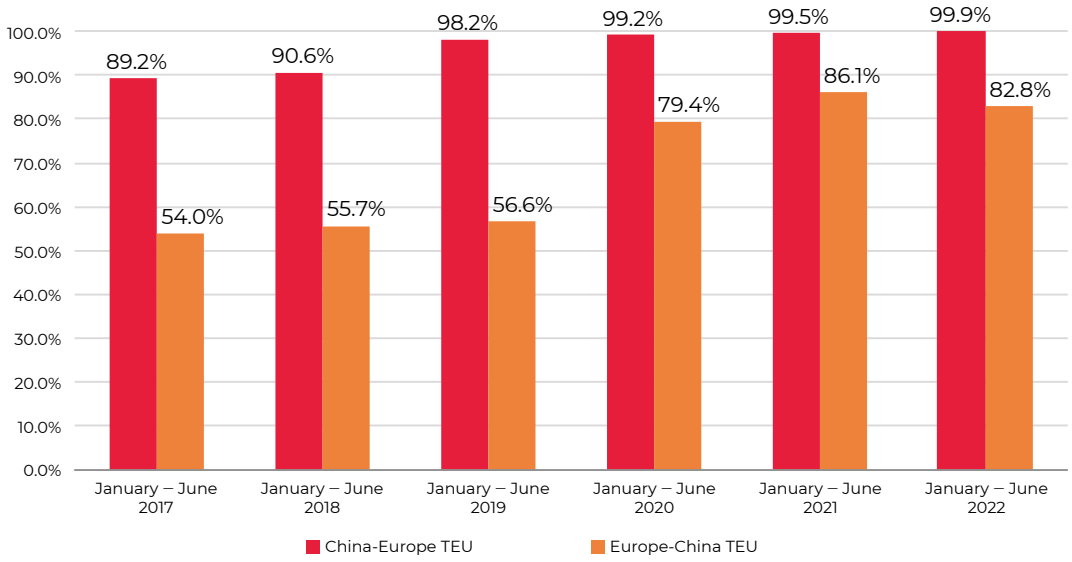
In addition to infrastructure development, the most important area is the balancing of cargo flows due to the dominance of shipments in the western direction - from China to Europe. The share of loaded containers in both western (westbound) and eastern (eastbound) directions showed an increase in the period 2016–2021. In the first half of 2022, there is a slight decrease in the load rate in the east direction — from Europe to China. Given the disproportions in China's trade with the EU, the issue of empty containers remains relevant.

The year 2020 has been an exceptional year for trans-Eurasian rail routes in terms of their emergence as a full-scale alternative to maritime transport, which in turn has experienced supply chain disruptions. Increasing the time and cost of delivering goods by sea continues to be a significant factor in the transition of shippers «to the rails». And this factor seems to play a larger role in accelerating the modal shift than subsidies, which had a particular impact on the process at an early stage in relation to Chinese cargo origins.

SHARE OF LOADED CONTAINERS IN CARGO TRAFFIC BY DESTINATION



THE SHARE OF LOADED CONTAINERS IN THE CARGO TRAFFIC BY DESTINATION (HALF YEAR)



Source: ERAI index

However, as early as 2021, rail freight «has suffered its own success» as it faces unprecedented demand amid limited capacity coupled with additional border checks to prevent the spread of the coronavirus. Thus, from the point of view of factors for the development of continental routes, it is not the subsidization of demand for freight transportation by rail from Chinese shippers that comes to the fore, but the expansion of infrastructure bottlenecks while harmonizing transportation regulation, for example, through the use of a unified CIM/SMGS consignment note and the rejection of paper document management. (digital transport corridors).

The provinces of China do not subsidize all existing routes for transporting goods to the EU, but only those that are of value from the point of view of the development interests of China and its regions. It can be assumed that the direction of subsidizing from the Chinese authorities will not be transportation along the trans-Caspian route, since the provinces of the PRC do not consider this route an attractive alternative to others due to the distance from the provinces of northern China. At the same time, transit routes through the territory of the EAEU seem to be more expedient both from an economic and political point of view.

REMOVAL OF SUBSIDIES AND ITS CONSEQUENCES

The probability of a complete abolition of subsidies by the end of 2023 is quite high, however, according to participants in the container rail transportation market, this will not have a significant impact on container rail freight traffic, since the intensity of market demand for continental delivery methods already far exceeds the intensity of subsidizing, that is, subsidies no longer have a fundamental influence on the development of continental railway routes.

The rise of rail transport has meant that China's provinces have begun to compete with each other for freight traffic, providing ever more profitable transportation alternatives through heavy subsidies. In this regard, the "principle of low price" began to dominate over the "principle of proximity", and political logic — over economic. The removal of subsidies is likely to bring logistics back to the optimal state in terms of distances, and cargo flows will be redistributed along the most efficient and shortest routes. The market will inevitably take time to adapt and cope with such a shift.

From an economic point of view, the abolition of subsidies that distort the economic logic will lead to the transfer of cargo traffic to those routes and hubs that work more efficiently. An increase in the concentration of goods at the largest nodal points should be expected. There is also the risk of closing small rail terminals that cannot compete on price with larger rail terminals such as Chengdu, Chongqing or Xi'an without government support but are essential for the economic connectivity of the territories.

Another impact of the removal of subsidies is expected to be the current and future elimination of low value-added goods by rail. Given the specifics of containerization, in the case of the Eurasian railway route, this will mean an increased focus on the current range of goods — electrical devices, mechanical equipment, vehicles, etc., as well as less room for maneuver in terms of new categories of goods, especially bulk and with low added value.

The removal of financial subsidies in the rail sector would mean higher fares and lower benefits relative to other modes of transport. Thus, it is likely that the complete elimination of subsidies will lead to equalization of prices for road and rail transport, and in some areas rail tariffs may even exceed them. Thus, China-Europe-China rail freight will have to go through a certain transformation in order to compete on the cost of transportation, namely to reduce costs and provide the best value for money. Digitization and modernization, as well as cooperation and consultation between various stakeholders, will become increasingly relevant tools to remain competitive.

However, the effect of the removal of subsidies, which worries the transport and logistics sector, appears to be limited. First, subsidies are already at historically low levels, which has not led to any significant reduction in demand. Secondly, the abolition of subsidies to Chinese producers in the face of imbalances in trade in favor of exports from China to Europe will not worsen, and perhaps even improve the position of continental routes in terms of the balance of container traffic. Thirdly, the basis of the route from China to Europe is the cargo base of the western and central regions of China, which by default gravitate towards continental delivery methods, also taking into account the continued high sea freight rates — more than $ 7,650 per FEU as of May 2022.

Finally, the most likely scenario is not the complete abolition of subsidies, but their transformation or transition to a more targeted approach — by industry or individual routes. The introduction of incentives was due to the logic of the accelerated building of transport and logistics links and the very launch of the transport component of the Silk Road Economic Belt. Now this logic is giving way to a nuanced approach with the involvement of the state where it is necessary to introduce advanced development tools.

In 2020, scholars from China's Central South University examined China's rail freight subsidy model based on game theory and concluded that moderate government subsidies are necessary to implement the Belt and Road Initiative. As part of the study, modeling and solving the problem of the optimal amount of subsidies for the China Railway Express Wuhan-Hamburg line was carried out. An analysis of the impact of various subsidy amounts on the profits of the China Railway Express operator, taking into account the highest freight rate that the shipper is willing to pay, showed that the most acceptable level of subsidy is between $2,000 and $2,500 per FEU, which is below the peak values of 2018.

China's practice of subsidizing rail transport towards the EU has given the rail an advantage over maritime transport. The further functioning of the freight transportation system on market principles presents new challenges for all its participants: tariff increases, the risk of leaving small railway terminals, forced changes in logistics, route optimization, and a review of the structure of transport costs for companies. At the same time, it seems that at the moment the issue of eliminating subsidies ceases to be a key factor in ensuring the development of the Eurasian railway transit route, given the infrastructural constraints, as well as the new international political reality.

CONCLUSION. THE FUTURE OF INCENTIVES FOR CONTINENTAL TRANSPORTATION

The appearance of subsidies was due to the geo-economic strategy of China and is aimed both at the internal development of the territories of the west of the country and at providing alternative export-import routes through Eurasia. Changes in the international political environment are leading to a review of this policy, as well as a review of the economic feasibility of subsidies. Sanctions against Russia and political tensions on the western borders of the Eurasian rail route are also leading to a more nuanced approach from the Chinese authorities.

In this regard, the new factor is not subsidies per se, but potential and promising areas that will be supported by the Chinese state after the inevitable abolition of «carpet» subsidies. So, at the moment, the construction of new railway lines towards Southeast Asia is underway. The opening of the China - Laos railway will theoretically make it possible to connect the countries of Southeast Asia, which rank first for China in terms of foreign trade, to the Eurasian transit grid.

Russia is actively exploring both the possibility of increasing exports to China via the current infrastructure, and the creation of new routes for the delivery of goods. In 2021, container traffic through border crossings in the Far East increased markedly. Possibilities for building routes through Altai are being studied. The aforementioned projects are united by the fact that their implementation will require a shift in the focus of government attention and the introduction of new incentive mechanisms, including subsidies.

OPERATING ROUTES OF CHINA RAILWAY EXPRESS

Source: Belt and Road Portal (https://eng.yidaiyilu.gov.cn/)

The most important specific feature of the topic under consideration is the certain closeness of the topic of subsidizing Chinese freight shipments by rail. Under the rules of the World Trade Organization, such subsidies are difficult to justify, which puts them in the category of trade distortions prohibited by the organization. Several conclusions follow from this.

Firstly, a detailed study of the mechanisms for the implementation of subsidies and the development of a forecast for their abolition is impossible due to the lack of availability of any regulatory legal acts in this area and the lack of any mention of subsidies in regulatory documents.

Secondly, since subsidies require cash transfers, and the initial tasks associated with organizing this mechanism have been completed, now the agenda, apparently, is the issue of creating a more targeted support mechanism that would be more justified in terms of WTO rules and China's desire to be the new driver of globalization (or at least a regional leader).

The targeted approach is also supported by the fact that the trends towards protectionism in the global economy and the peculiarities of the economic model of China, which is starting to produce goods with greater added value against the backdrop of economic development and rising labor costs, remain relevant to support exports, including through trans-Eurasian routes. An example of an industry where China will seek to defend its position is ferrous and non-ferrous metallurgy, and then metal products. In this regard, the need to subsidize export rail container transportation as an element of maintaining China's competitiveness will remain.

Thus, the transformation of Chinese subsidies will be driven by both economic and political logic. Particular attention should be paid to the priority areas of China's western transport policy and industrial policy in terms of government-supported industries. In addition, one should keep in mind the dynamics of the development of the Silk Road Economic Belt project, the practical implementation of which has determined and will continue to determine the future of stimulating methods of delivering cargo via continental rail.