



INTERMODAL TRANSPORT PREPAREDNESS IN TURKEY AND BULGARIA

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Abstract: *The transportation system, which is regarded as an indispensable part of our daily life, has a structure that affects the community economically and socially. People carried loads on back and with animals formerly. The wheel was invented and people started loading vehicles. In this way, loads were carried quickly, easily and in a greater amount from one point to another.*

The concept of transportation was born with the development of industry and commerce. With the increase of production, the transportation of goods and commodities and also with the introduction of the concept of time, the infrastructural requirements and types of transportation have been diversified. Over the last 20 years there has been an increase in the number of products transported using more than one mode of transport. International transportation is a driving force of the countries and leads to economic benefits. In intermodal transport two or more different modes of transport are interlocked in order to carry loads from the point of departure to the point where the carrier is responsible for the carriage. This type of transportation has become preferred due to the cost and environmental factor. Intermodal freight transport infrastructure in Turkey and Bulgaria was investigated. Researches and suggestions for both countries have been presented.

1. INTRODUCTION

The purpose of transportation is to transport people and goods in a cheap and safe way as soon as possible. The main task of the state is to establish and coordinate appropriate transportation systems that create transportation capacity to meet our needs.

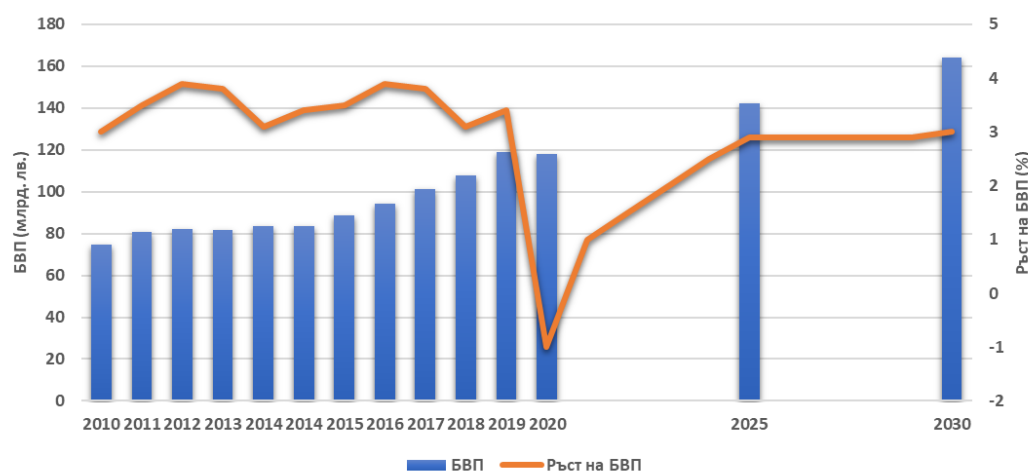
The 21st century will see a renewed focus on intermodal freight transportation driven by the changing requirements of global supply chains. Each of the transportation modes (air, inland water, ocean, pipeline, rail, and road) has gone through technological evolution and has functioned separately under a modally based regulatory structure for most of the 20th century. With the development of containerization in the mid-1900s, the reorientation toward deregulation near the end of the century, and a new focus on logistics and global supply chain requirements, the stage is set for continued intermodal transportation growth.

The growth of intermodal freight transportation will be driven and challenged by four factors: (a) measuring, understanding, and responding to the role of intermodalism in the changing customer requirements and hypercompetition of supply chains in a global marketplace; (b) the need to reliably and flexibly respond to changing customer requirements with seamless and integrated coordination of freight and equipment flows through various modes; (c) knowledge of current and future intermodal operational options and alternatives, as well as the potential for improved information and communications technology and the challenges associated with their application; and (d) constraints on and coordination of infrastructure capacity, including policy and regulatory issues, as well as better management of existing infrastructure and broader considerations on future investment in new infrastructure. (DEWITT, CLINGER,)

The flexibility of road transport allows to take advantage of the advantages of different modes of transport, such as the high volume carrying capacity of the railway and the low cost of sea transport. It creates lower cost alternatives. With the increased use of rail, sea and inland waterways, it has more environmentally friendly transportation opportunities and alternatives and thus reduces the environmental impact of transportation activities. It can offer personalized service and options. It contributes to road safety (TUSIAD, 2014).

2. BULGARIA

In the period after EU accession, Bulgaria recorded significant GDP growth.



Source: nsi.bg

Graphic.1 Gross Domestic Product

Structurally, the Bulgarian economy is dominated by the services sector, and the relative share of the services sector continues to increase in the analyzed period - from 66.0% in 2011 to 70.4% in 2019.

The share of agriculture in gross value added (GVA) in the period 2010 - 2019 ranges from 5.4% (2013) to 3.7% (2019). Farms with small standard production volumes of up to 8,000 euros predominate. Farms with a production volume of over 250,000 euros mostly specialize in grains and oilseeds. In the years after accession to the EU, there has been an increase in crop production and a decrease in the relative share of livestock.

The share of the mining and manufacturing industry remains relatively stable during 2011 - 2017 - about 23%, but fell to about 21.5% in 2018 and 2019. The share of capital-intensive industry in Bulgaria is above the EU average. The value added generated by this group of sectors accounts for 25% of the total value added in the industry, while for the EU it is about 20%.

Bulgaria's exports are growing steadily and as of 2019 the growth is just over 80% compared to 2010. Exports from Bulgaria with a share of 66.5% are mainly destined for EU countries, with 40.7% being drawn to Central European member states and to neighboring Romania and Greece at 8% and 6.5% respectively. The most important trading partner is Germany with 14% in exports, followed by Italy with a relative share of 9%, close to Romania and Turkey, which rank third and fourth.

Currently there are no regular blocks of train services to/from ports, as domestic containers are mostly transported by road and less frequently - by rail as single wagon shipments. Analysis of data from NSI for ITE transport in internal communication with road transport at the port of discharge shows a strong disparity and, in some places, a clear discrepancy with data from IAMA.

Container cargo was not exported from river ports in 2017 and 2018. The latter is exported via the port of Ruse as follows:

- 1,169 tons in 196 units. TEU in 2015 representing 0.09% of total exports in inland waterway transport
- 69 units of 68 tons. TEU or 0.01% of total inland waterway exports in 2016.

Conversely, Ro-Ro traffic passing through river ports has increased significantly, as shown in the diagram below. However, these shipments cannot be classified as combined because the inland waterway section, i.e. The crossing of the Danube from Bulgaria to the Romanian coast and vice versa is much shorter than the distance traveled by the highway.

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The relative share of combined transport of all services against payment for the period 2015-2018 is about 3.1%. Currently, the freight transported by rail in ITE is greater because in 2019 and 2020 the number of intermodal trains between IMT Plovdiv and the terminal in Cerkezkoy increased compared to 2018 and a new block train was launched from BMI to Wales (Austria). The growth of traffic through IMT Plovdiv proves that the availability of terminals and the organization of block train services are key to the development of combined transport.

The very low level of domestic combined transport and its presence in international traffic is normal given the size of the country. During the entire period from 2010 to 2019, the average rail transport distance is less than 260 km, which is too short for efficient rail transport as part of a combined transport chain. The International Association of Rail-Road Combined Transport (UIRR) sets the 300 km limit for combined transport as a minimum transport distance (services below 300 km are included in the short distance / urban transport segment). According to the same source, which brings together more than 70 carriers and operators of rail-road combined transport terminals, the average combined transport length in Europe for 2017 is 871 km, 841 for 2018 and 860 km for 2019, respectively. The graph shows the distribution of work performed by combined transport by transport distance classes and confirms the minimum relative share of combined transport at a distance of less than 300 km (an average of 1.7% of work done in tkm). Even where the combined transport chain is entirely within a country's territory, the average transport distance for 2019 is 434 km.

3. TURKEY

In the assumptions made about the size of the Turkish logistics sector, its share is considered to be approximately 12%. 50% of this rate. It is evaluated that it arises from the activities of the companies that provide direct logistics service, and the remaining 50% share comes from the logistics activities carried out by the companies that trade goods.

In the last 10 years, the contribution of the Transportation and Storage (H) field of activity to GDP is approximately 8%. It is seen that the share of the Transportation and Storage (H) activity area in GDP has increased since 2017 and reached 8.6% in 2019, which is the highest rate in the last ten-year period.

Turkey's 13 ports in total have railway connections and these ports

Haydarpaşa, Derince, İzmir, Bandırma, Mersin, Samsun, İskenderun, Tekirdağ, Zonguldak, Yılport, Evyap, DP World and Nempont Ports.

While the number of freight wagons serving on Turkish railways was 16,070 in 2003, it reached the highest number in 2016 and rose to 19,750; In August 2020, the number of freight wagons was 16,956. The capacity, which was 624,405 tons in 2003, reached 882,928 tons in 2016, when the number of wagons was the highest. While the rate of increase in the number of wagons was approximately 5.5% in the period from 2003 to 2020, the capacity increase on a ton basis was approximately 41% during the same period.



Source:TÜİK

Graphic. The Share of Railways in Foreign Trade Transport (%)

In the period from 2010 to the end of the third quarter of 2020, Turkey's foreign trade share of rail transport in value-based trade is greater than the share of all other transport modes. Due to the coronavirus pandemic, the share of rail freight transport, which is preferred in 2020 and enables "contactless trade" activities, has increased marginally. In a ten-year period, 2011 was the year in which rail freight transport had the highest share in terms of value compared to other years, both in imports and exports.

In 2018, the share of railway import shipments was 1.57% and the share of export shipments was 0.93% on value basis. The rate of rail transportation in import shipments after 2012 remained below 1% until the first three quarters of 2020; At the end of the first three quarters of 2020, it could go over 1%. In the examined period, it was observed that railway transportation its share was consistently below 1%; In 2019, 0.54% of rail freight transportation share rose to 0.80% at the end of the first three quarters of 2020.

The share of railways in terms of value in import transports is consistently higher than the share of export transports. It is observed that after 2017, rail freight transportation tends to increase its share in both imports and exports in terms of value.

With the exception of the years 2012 and 2019, the number of tow trucks, TIRs, TIR tankers, trailers and freight wagons departing from Turkey with regular Ro-Ro lines with

international connections is increasing linearly towards Europe. While the total number of vehicles traveling with Ro-Ro was 170.492 in 2011, this number increased by 89% in 2019 and became 321.700. In the same period, the increase in the number of vehicles going towards Europe was approximately 74%, 146% in the Black Sea and 127% in the Mediterranean. While the total number of outgoing vehicles was 321,700 at the end of 2019, the total number of outgoing vehicles was 177,393 at the end of the first three quarters of 2020.

The total number of tow trucks, lorries, truck tankers, trailers and freight wagons arriving in Turkey by Ro-Ro increased only 40% between 2010 and 2019. Development between 2011 and 2019 examined, the number of vehicles arriving in Turkey by Ro-Ro from European ports increased by approximately 52% and the number of vehicles arriving in Turkey from European ports by Ro-Ro was 224,253.

The number of vehicles arriving in Turkey from Black Sea and Mediterranean ports did not show a linear development and European ports had a share of 77% of all vehicles arriving in Turkey in 2011; This rate was 83% in 2019 and 70% at the end of the first three quarters of 2020.

CONCLUSION

Delays in the preparation and implementation of legislation, policy/strategy documents also constitute a serious deterrent for investors, especially sector entrepreneurs and logistics service providers, in terms of predictability. It is of great importance to maintain the bilateral agreements that will increase the transportation potential in a planned manner. Inclusion of regional and sectoral/product characteristics as primary parameters in the planning of logistics centers and transport networks and connections. investments should be planned holistically together with line and station/port investments.

In addition to the interoperability of railway networks at border crossings, it is important to determine the lines and stations where the intermodality of maritime and railway and/or road transport will need to be taken into account, and to include them in the planning. Uniformity in the context of all transport documents and bureaucracy in customs procedures should be reduced. In addition to logistics systems, it needs trained/certified personnel, especially in railway/rail systems. It is of great importance to take the evaluations of the private sector in all processes, from the preparation of legislation to the projections/planning of investments.

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ИНТЕРМОДАЛНИ ТРАНСПОРТНИ ВЪЗМОЖНОСТИ НА ТУРЦИЯ И БЪЛГАРИЯ

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Ключови думи: Турция и България, ЕС, Интермодален транспорт

Резюме: Транспортната система, считана като необходима част от ежедневието ни, притежава структура, която засяга човешката общност в икономически и социален аспект. Първоначално хората пренасяли товари на гръб и с помощта на животни. След като колелото било изобретено, хората започнали да пренасят товари с превозни средства. Така, товарите били вече транспортирани бързо, лесно и в по-голям обем.

Идеята за транспорт се появява паралелно с развитието на промишлеността и търговията. Инфраструктурните изисквания и видовете транспорт се диверсифицират с нарастването на производството, транспортирането на артикули и стоки за широко потребление, както и с въвеждането на идеята за време. През последните 20 години сме свидетели на нарастването на броя на транспортираните продукти посредством повече от един вид транспорт. Международният транспорт е движеща сила на страните и води до икономически ползи. В рамките на интермодалния транспорт два или повече различни вида транспорт са взаимно свързани с цел пренасяне на товари от отправната точка до точката, до която превозвачът носи отговорност за преvoза. Този вид транспорт е предпочитан в днешно време поради цената и фактора околна среда. Изследвана е интермодалната инфраструктура за товарен транспорт в Турция и България. Представени са изследвания и предложения за двете страни.