

Karatović, Ivan; Miloloža, Helena

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# The Role of Croatia in Pan-European Corridors: Impact on Croatian Export

Ivan Karatović

Opereta Nekretnine, Zagreb, Croatia

Helena Miloloža

University of Zagreb, Faculty of Economics & Business, Zagreb, Croatia

## Abstract

International exchange provides the implementation of significant cargo flows that connect the largest industrial, transportation and commercial world centers. By joining the European Union, Croatian transport infrastructure has become a part of the European transport network. Pan-European transport corridors are defined traffic routes in Central and Eastern Europe that contribute to cohesion of the countries through which these routes pass. Croatia, as part of Pan-European transport corridor network, is intensively involved in the plans for its development. Additionally, Croatia has finally acquired preconditions to start the implementation of an intensive linkage of the reference points of which Croatian economy, but also the whole region, will have benefits. However, without investing in the reconstruction of railways, roads and inland waterways, it is impossible to improve the international activity of Croatia. Therefore, the emphasis of this paper is in pointing out the importance of generation the single program which includes complete Croatian transport system. The great plan must be based on coherent policy and long-term strategy because only such an approach can transfigure Croatia into a serious and equal partner in the European Union.

**Keywords:** Pan-European corridors, transportation, goods flow, Croatia, economy, development, Croatian export

**JEL classification:** R40, F02

## Introduction

Pan-European transport corridors are designed as a transport system in order to achieve better connections between new and potential members of the European Union in order to solve the problem of obstructions in the international transport of goods and services (Priemus et al., 2003). Ten Pan-European transport corridors in the area of the territory of the newly formed independent states, associate members or potential candidate countries are part of the Pan-European Transport Network (known as PETrN). Great PETrN system is composed of the states of Eastern, South-Eastern and partially of the countries in Central Europe. They represent the Trans-European Transport Network (known as TEN) on the territory of the European Union. The Pan-European transport network also includes the TINA network, consisting of additional components of the transport network in the potential candidate countries for accession to the European Union, four Pan-European transport areas for the field of maritime transport (known as PETrA) and four Eurasian Transport Corridors (known as TRACECA) (Štrk, 2007).

As the country of the southeastern part of Europe, Croatia forms a part of Pan-European network of roads. Through Croatia passes the fifth, seventh and tenth corridor (Table 1). Of these, the most significant is the branch of Corridor Vb (Rijeka-

Zagreb-Budapest) because it enables Croatian inland and the Central European countries unhindered access to maritime routes and thus easier access to the global market. It is of strategic importance for Croatian export because maritime transport is the most important mode of transport which transports the largest amounts of cargo. Due to the high capacity and efficiency of transportation, maritime transport has become the main carrier of international trade (Šakalys, 2006).

Table 1

Countries through which the Pan-European Corridors passes

Pan-European Corridors	Countries
I.	Estonia, Finland, Latvia, Lithuania, Poland, Russia
II.	Belarus, Germany, Poland, Russia
III.	Germany, Poland, Ukraine
IV.	Austria, Bulgaria, Czech Republic, Greece, Germany, Hungary, Romania, Slovakia, Turkey
V.	Italy, Slovenia, Hungary, Ukraine, <b>Croatia</b> , Bosnia and Herzegovina, Slovakia
VI.	Czech Republic, Slovakia, Poland
VII.	Austria, Bulgaria, <b>Croatia</b> , Serbia, Montenegro, Hungary, Germany, Moldova, Romania, Slovakia, Ukraine
VIII.	Albania, Bulgaria, Macedonia (to the border of Greece, Italy and Turkey)
IX.	Belarus, Bulgaria, Finland, Greece, Lithuania, Moldova, Romania, Russia, Ukraine
X.	Austria, Bulgaria, Greece, <b>Croatia</b> , Serbia, Macedonia Hungary, Slovenia

Source: International Transport Workers' Federation (2014)

In the process of research and creation of this article many different articles and books were used, such as Miloš, I. et al. (2011), Hobbs, R. J. (1992), Artek, Z. et al. (2008), Božičević, J., et al. (2001) as well as Web pages of the Croatian Bureau of Statistics.

The aims of this article are: (i) to highlight the importance of Croatia as a part of Pan-European Corridors (ii) to present the future plans for the extension of Pan-European Corridor and (iii) to point out the possible impact of Pan-European Corridor on Croatian export.

## Croatia as a Part of Pan-European Corridors

Croatia has strategic geographical position that represents an important factor in connecting the Western and North-Western Europe with Eastern and South-Eastern Europe. Croatia also links Northern and Central Europe with Southern Europe and the Mediterranean. Excellent geographic location has enabled Croatia to acquire the role of an important transit area for all Europe. Considering that the largest share of world trade exchange occurs by maritime transport, Croatia, as part of the maritime system, have access to the major world trade flows. Croatia's possibility of linking sea ports to the network of inland waterways opens the door to numerous opportunities for the growth of all forms of transport.

Adriatic Sea, as part of the Mediterranean which is dovetailed far into the European continent, is of utmost importance for the Croatian geographic position. 200 thousand ships a year are sailing the Adriatic Sea carrying 200 million tons of cargo.

Of the approximately 350 ports and harbors which are located on a total of 1,777.7 kilometers of coastline, seven can take large ocean-going ships and all are located on the mainland coast (Hlača, 2011). Pula, Rijeka, Zadar, Šibenik, Split, Ploče and Dubrovnik are the most important Croatian ports. Of all these, with over 50% generated total turnover, *the port of Rijeka* has the best location and the largest transit potential. This is why Legislation of the Republic of Croatia aligned the port of Rijeka as a port of international economic significance that is opened for International freight transport. The port territory gained the status of maritime prosperity (Dundović et al., 2007).

Of special importance is the *Zagreb transportation hub* that represents a major transportation center of Croatian and European transport network and the intersection of two main routes that passes through Croatia. These are the directions of the Bregana-Zagreb-Slavonski Brod and Rijeka-Zagreb-Budapest. Zagreb, as the capital and major economic, cultural and administrative center, has strong transportation infrastructure needs and comprehensive offer of all forms of transport branch (except waterway traffic). Since economy of Zagreb produces about 35% of its exports to overseas countries and is an unavoidable point in linking the north and south, respectively the Danube and the Adriatic, it is explicable by the close links with the nearest point of maritime transport - the port of Rijeka.

Establishment of an optimal container system in the Rijeka traffic route presents Zagreb as the principal hub of transport and manipulation activities with the dominant gather-distribution function. The main role of land container terminal, in the context of Zagreb transportation hub, is defined in relation to the port of Rijeka in the context of the interdependence of these two points of Corridor Vb. The link between Zagreb and Rijeka is a prerequisite for the functioning of the transport chain and distance of about 180 km enables organized shipments on a daily basis (Hauselmaier et al., 2008).

With respect to transport capacities, transport prices and more favorable environmental impact than the road transport, railway transport has developed into a main way to connect those two centers. Almost 90% of the total freight traffic from Rijeka basin to the interior takes place just by rail. With planned upgrading and modernization of the railway line, the importance of rail connections on this route will further gain in value. Knowing the problems about lack of adequate surface of port of Rijeka, and therefore the impossibility of marshalling and assembling trains in Rijeka basin, and additionally as between Rijeka and Zagreb has no significant and important centers that attract the flow of goods, the Zagreb marshalling yard accepts most of the Rijeka marshalling operation. Therefore, in terms of needs of the port of Rijeka and the Rijeka railway line, Zagreb should be given great attention in order to facilitate technology of railway transport in the corridor Danube-Adriatic (Kovačević, 1998).

The geographical position of corridor Danube-Adriatic has some peculiarities that distinguish it from other areas in the region and that predetermine the conditions of its functioning. Danube abounds lowland expanse that enabled the production of more goods than is necessary, therefore that area has a large volume of exports. On the other hand, due to the large production capacity and a lack of sufficient quantities of certain raw materials, Danube largely depends on import of certain types of goods. In the area, goods are mainly transported in all directions so the

natural properties of Danube generate traffic independently. Production of agricultural and livestock products and the import of raw materials needed by these branches of production (such as animal feed and fertilizer) in particular stand out. The exchange of goods is carried out mainly to the north, somewhat to the east and mostly south to the Adriatic Sea and through him (Dundović et al., 2005).

## Future Plans for the Extension of Pan-European Corridor

Croatia is actively involved in the process of mutual cooperation between the countries in the region in order to intensify cooperation, to improve transport infrastructure and comprehensive development. With inclusion in the development plans of the European transport networks, Croatia has received confirmation of its traffic importance. European interest for the Croatian integration in the trans-European transport corridors is significant. Corridors running through Croatia represent an important segment in the program of the Croatian Government, which aims to modernize the transport infrastructure, particularly in the branch of the corridor V as part of the route that connects the Danube and Adriatic.

When forecasting transport demand in Croatia, a relatively weak starting position should be considered with regard to just revamped the basic port infrastructure and the possibility of generating additional transport demand due to planned investments in infrastructure. Because of the specificity of the Sava waterway, ports on river and their isolation in relation to the Danube, fixed rate of growth for all ports within the system cannot be applicable. Instead, based on the results of master plans and feasibility studies of individual ports, it has been made an estimation of the expected traffic load in the inland ports open to public traffic for the period until 2015.

This assessment was taking into account the necessary procedures on the infrastructure of waterways and port infrastructure, which are specified in the programs for the individual ports and waterways, and that are necessary for the functionality of those ports. Already approved plans and programs have been taken into account. According to those forecasts, the total cargo traffic in Croatian inland ports should be at the level of 3.4 million tons in 2015. However, due to failure in achieving the goals set for the expansion of ports and expansion navigability of certain rivers, projections will not be accomplished.

In the White Paper on European transport policy by 2010, it was found that transport demand in Europe over the past decade has grown faster than the economy. Economic growth in the GDP had an average growth of 2.4% per year while the turnover growth was over 2.7% per year. Demand for transport services depends on the growth or decline of the economy. It is significant that the economic growth in "new" Member States was higher than the European average. The demand for freight transport forecasted for all modes of transport should, according to the Austrian Institute for Statistics, be at the annual growth rate of about 2.6% per year. Some estimates put the growth of transport demand on the Danubian corridor at an average annual rate of up to 7% (Ministry of Maritime Affairs, Transport and Infrastructure, 2008).

According to the forecasting model of the Austrian Institute for Spatial Planning, projected growth in traffic on the Danube is at an average annual rate of 2.37% in the period up to 2015 for the, so-called, baseline scenario. The optimal scenario includes measures to establish a framework for a comprehensive development of inland waterways such as the improvement of infrastructure on the Danube corridor, removal of bottlenecks and the introduction of IT support for logistics services (RIS -

River Information Services) which could lead to annual growth of traffic on the Danube Corridor of 7.06%.

## The Possible Impact of Pan-European Corridor on Croatian Export

The Pan-European corridors that are running through Croatia bear out a large part of trade and transport of goods and passengers between the countries of the European Union and the South East European region and within the region. General development of Croatian economy in this respect is indisputable if one takes into account the fact that the European Union is the most important export market of Croatia. Namely, Croatia has every year, since its inception to date, placed around 60% of its goods and services intended for export on the market of European Union. On the other hand, Croatian exports has been dominated by the market of CEFTA (Albania, Bosnia and Herzegovina, Montenegro, Kosovo, Macedonia, Moldova and Serbia) with a share of around 20%, which, as a regional market, is also a significant importer of Croatian products.

It is realistic to expect that the enlargement of the European Union and the creation of a single market will further encourage the development of trade and stimulate the development of economic activities and transport. Considering the Croatian accession to the European Union, similar growth in traffic demand as well as in other new members can be expected. Bearing in mind that Croatia is located in the Danubian corridor, increase in demands for transport by inland waterways is also consequently expected. Predictions of future quantities and concentrations of future maritime cargo flows are shown in Table 2.

Table 2

Maritime Transport (import/export) in 2010 and forecasts for 2015 and 2024 (in mil. Tones)

Region/Group of Countries	Export			Import		
	2010.	2015.	2024.	2010.	2015.	2024.
North America	782	874	1.031	1.047	1.157	1.359
Northern Europe	313	361	448	799	882	1.046
North – East Asia	883	1.117	1.611	2.899	3.373	4.080
South – East Asia	711	810	964	565	637	757
Mediterranean	249	292	373	685	762	903
Middle East	1.281	1.385	1.32	264	323	449
Indian Subcontinent	277	353	484	505	596	721
Australia	831	940	1.097	104	115	136
Africa	818	908	1.038	395	467	602

Source: Poletan, T. et al. (2010)

North America, Asia and the Middle East are top three group countries in international exchange through Maritime transport. Table 2 shows that the leading regions, by the amount of trade in goods, will remain the same, but the role of Mediterranean region will significantly increase. Maritime transport on the Mediterranean will only slightly lag behind Northern Europe, and to 2024 should



reach the import of over 900 million tons, which will greatly affect the North Adriatic ports, especially the port of Rijeka.

## Conclusion

In today's modern world of globalization, trade relations cannot be achieved without quality transport infrastructure and free flow of goods and services. Since more than 65% of world trade is carried by sea, the intensity, directions, structure and dynamics of marine cargo flow are relevant indicators of concentration of world turnover, which highlights the importance and positioning of the world's centers of production and consumption. Croatia has access to the world's maritime routes, and there are many positive factors that Croatia would be able to take advantage of, with better connectivity to these pathways. Given that the increase in the volume of world trade is stronger than global industrial production, the importance of maritime goods flows is even more important in the transport and economic development on a global, regional and local level.

The port of Rijeka, as the largest and most important port in which freight traffic accounts for over 50% stake, has a very important role in drawing maritime routes in this region. Although not competitive in the global and European context, there is a great potential that could be used. On the other hand, the Danube region as a great region with vast agricultural and industrial production, and consequently the demand for certain raw materials, makes a large potential market that could be supplied over individual routes, which are passing through the Croatian territory. One of these routes is the Pan-European Corridor Vb, which primarily link the port of Rijeka with the interior and Zagreb, and further down the river Sava to the longest European waterway, channel Rhine-Main-Danube by railway.

By connecting the maritime boundary roads to the region of the Danube basin and Central Europe numerous possibilities will open up. Consequently, that will increase international trade in the region and the most important transit hub of these routes would be the port of Rijeka. In that way, the level of transport through Croatian territory will be boosted several times. Likewise a number of businesses would directly or indirectly have benefit from this connection. Namely, this will open about 150,000 new jobs and stimulate the overall development of the Croatian economy.

In order to achieve this, it is necessary to invest considerable resources in the modernization and expansion of port of Rijeka and railway system and connect rivers Sava and Danube with multipurpose channel. These projects, along with some other secondary projects are the basis of linking the Danube and the Adriatic Sea and the establishment of a competitive position on the world and European trade flows, where the port of Rijeka will be a point of reference linking.

Croatia must base its development on existing traffic and geographical advantages by developing a single program which would include all sectors of transport that are part of a great transport system, including the development of multimodal transport. This requires a coherent policy thorough long-term strategy. Only such an approach could allow Croatia to become a serious and equal partner in the European Union whose development projects would stop circumvent Croatian territory.

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## About the authors

Ivan Karatović was born July 17<sup>th</sup>, 1986 in Zagreb, Croatia where he finished elementary school, gymnasium and Faculty of Economics & Business. He is working in real estate agency Opereta Nekretnine. Author can be contacted at [ivan.karatovic@hotmail.com](mailto:ivan.karatovic@hotmail.com)

Helena Miloloža was born December 27<sup>th</sup>, 1987 in Zagreb, Croatia, where she finished elementary school and gymnasium. After completing her graduate studies at the Faculty of Economics and Business of the University of Zagreb she enrolls in postgraduate study – The doctoral programme– at the Faculty of Economics and Business Zagreb. She had been working in Croatian Bank for Reconstruction and Development, in Export Credit Insurance Department, for two years, after which she got the job as a Teaching assistant at the Faculty of Economics and Business Zagreb, Department of Trade. Author can be contacted at [hmiloloza@efzg.hr](mailto:hmiloloza@efzg.hr)