

## INLAND FREIGHT TRANSPORT IN SERBIA: TRENDS AND CHALLENGES

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**Abstract:** Road freight transport is a dominant mode of transport in Serbia, and during the period 2005-2015 its share increases. Rail transport is constantly falling while inland waterway transport is oscillating around same value. The records for pipeline transport have the biggest decrease. Empirical evidence, using the Logistics Performance Index (LPI), confirms that some of the indicators can be used as input for improvement of inland freight transport performances. The paper provides an analysis of inland freight transport market and its comparative sighting with rank of LPI. This paper will provide useful knowledge to policy makers and other interested in where are the possible challenges.

**Keywords:** transport market, freight flows, Logistics Performance Index

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### 1. INTRODUCTION

The Eastern Europe has been the cross road for international freight transport from and to the European Union for decades. Three TEN-T Freight Corridors pass through this region but the Serbia has not been connected yet. Due to the relatively limited surface area of the Eastern Europe countries, as well as to the position in the Europe continent, freight transport in these countries is highly international and can be competitive, as inland freight transport has been connected by corridors. This position is marked by freight volume in hubs in Croatia, Serbia, Romania and Bulgaria and, among other things, by the river ports on Sava and Danube and main sea port Constance.

Serbia is one of the Eastern European countries that intend faster to increase competitiveness in the contest of co-modality over the coming years. Today, international inland freight transport in Serbia reaches about 27 million tonnes, the level before world economic crisis. The question is: What are the challenges for freight transport development in Serbia over the coming years? Better and competitive inland freight transport is important for international trade and economic growth but constrains as transport infrastructure quality and development, miscellaneous obstacles during transport operation and governance issues may slow down developments within Serbian freight transport sector. One answer can be found by analyzing inland freight transport performances using LPI ranks to detect the places for improvements. This paper is attempt to do so by analysis of inland freight transport market in Serbia in chapter 2 and LPI scores in chapter 3. In chapter 4 some conclusions are given.

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## 2. ANALYSIS OF INLAND FREIGHT TRANSPORT MARKET IN SERBIA

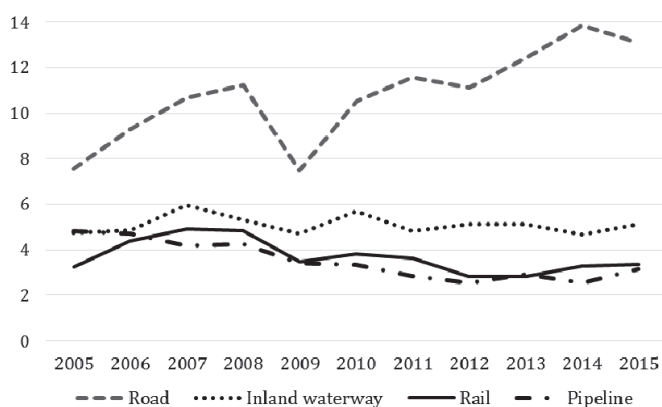
Total volume of Serbia's external trade in tonnes for the period 2005 – 2015, after falling in 2009 and 2012, increased slightly in 2015 and reaches a maximum of about 27 million tonnes (Table 1). Similar trend can be seen for inland transport. The differences can be explained due to methodological differences for the external trade and transport statistics. Additionally, the difference in 2015 can be explained with lack of data in transport statistics, data on goods cleared within the New Computerized Transit System (NCTS).

Table 1. Total volume of external trade and inland transport, Serbia 2005-2015 (million tonnes)

| Year             | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013 | 2014  | 2015  |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| External trade   | 19.16 | 23.57 | 25.96 | 26.58 | 22.07 | 24.41 | 24.66 | 22.48 | 23.3 | 24.5  | 27.07 |
| Inland transport | 20.38 | 23.32 | 25.71 | 25.65 | 19.09 | 23.35 | 22.92 | 21.61 | 23.3 | 24.33 | 24.76 |

Source: Based on SORS Statistical Database, SORS Bulletins and SORS Statistical Releases SV31

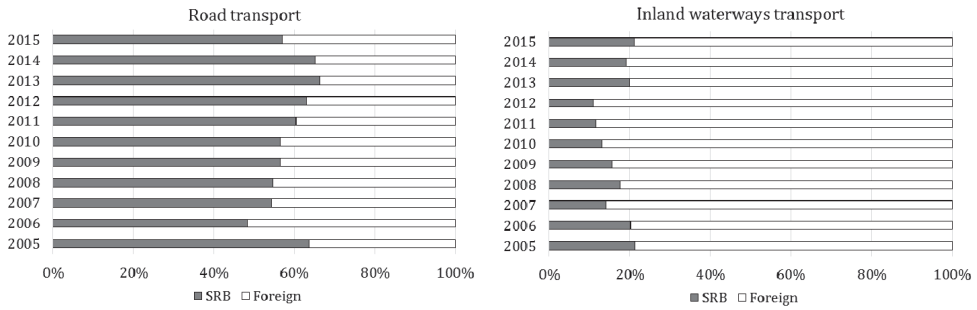
Road freight transport is a dominant mode of transport (Figure 1), and during the same period its share increases. Since 2011 road transport share is higher than 50%. Rail transport is constantly falling, although after biggest dropping in 2012, it has slow, but constant grow having a share of 13.6% in 2015. Inland waterway transport is oscillating around 5 millions of tonnes and 20% market share. The records for pipeline transport shows decrease except for the 2015. In further analysis the pipeline transport will not be considered due to its share just in import flows and low impact on other inland transport markets.



Source: Based on SORS Bulletins and SORS Statistical Releases SV31

Figure 1. International inland freight transport in Serbia, 2005-2015 (million tonnes)

The share of Serbian transport operators in total volume of foreign trade is more than 60% but there are significant differences between modes. In railway transport all goods have been transported by national operators as the transport market wasn't open yet. Last years, Serbian hauliers transported by road around 60% of goods, and in waterway transport, Serbian flag vessels transported around 20% (Figure 2). In road transport more than 30% goods transported by foreign from Bosnia and Herzegovina, followed by Montenegrin (~15%), Macedonian (~10%), Croatian (~7%), and Slovenian (~6%) – the hauliers from ex-Yugoslavia republics dominate among foreign hauliers (Medar et al., 2016). Situation is different in inland waterways where more than half of goods are transported by Romanian and Ukrainians vessels, 41% and 20% respectively in 2015.

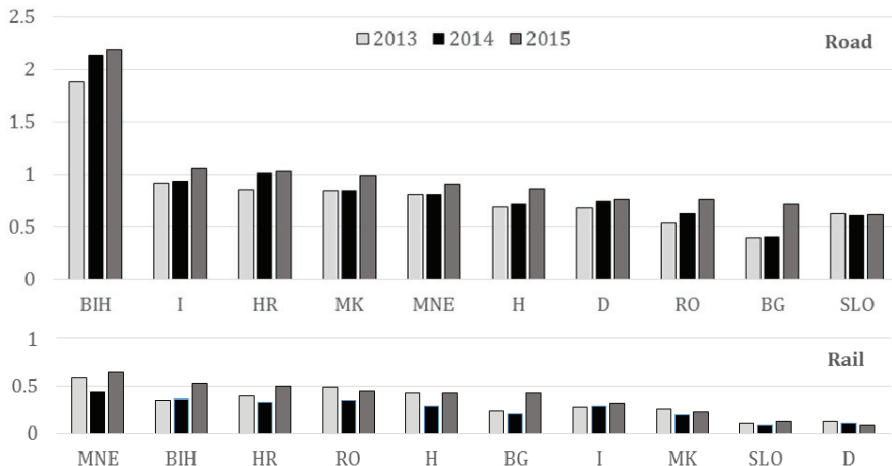


Source: Based on SORS Bulletins and SORS Statistical Releases SV31

Figure 2. Share of Serbian and foreign operators in road and inland waterway transport

At the end of 2016, more than 1000 Serbian hauliers performed international road transport operations having vehicle fleet of more than 10000 vehicle combinations with drawing vehicles average age of about 7.8 years. At the same time 11 railway operators has been licensed, and one of them is national operator – Serbia Cargo. Serbia Cargo performs around 95% operations, and has more than 260 locomotives and 8500 wagons. Average age of locomotives is around 30 years. In inland waterways Serbia has 9 licensed carriers for international transport, with less than 180 vessels average age more than 35 years.

Other performances important for the market analysis are transport flows. The main flows of goods transported by road, rail and inland waterways are with neighboring countries, especially ex-Yugoslavia, Italy and Germany. The biggest trade volume is between Serbia and Romania of around 3 million tonnes in 2013, 2014 and 2015, followed by Bosnia and Herzegovina (~ 2.7 mil.) and Italy (~ 1.7 mil.) (SORS Database). Goods from and to Romania are transported mainly by inland waterways. Actually, trade volume between Serbia and Romania makes more than 70% of goods moved in inland waterway transport, followed by Ukraine (14.4%), mainly in imports, and Hungary (~5%) (SORS Bulletin). Cereals and cereal preparations make 75% of commodities transported by inland waterways from Serbia, and 95% of them are transported to Romania. In import, coal, coke and briquettes make about 20% of goods transported to Serbia by inland waterways. Situation is different in road and rail transport (Figure 3).

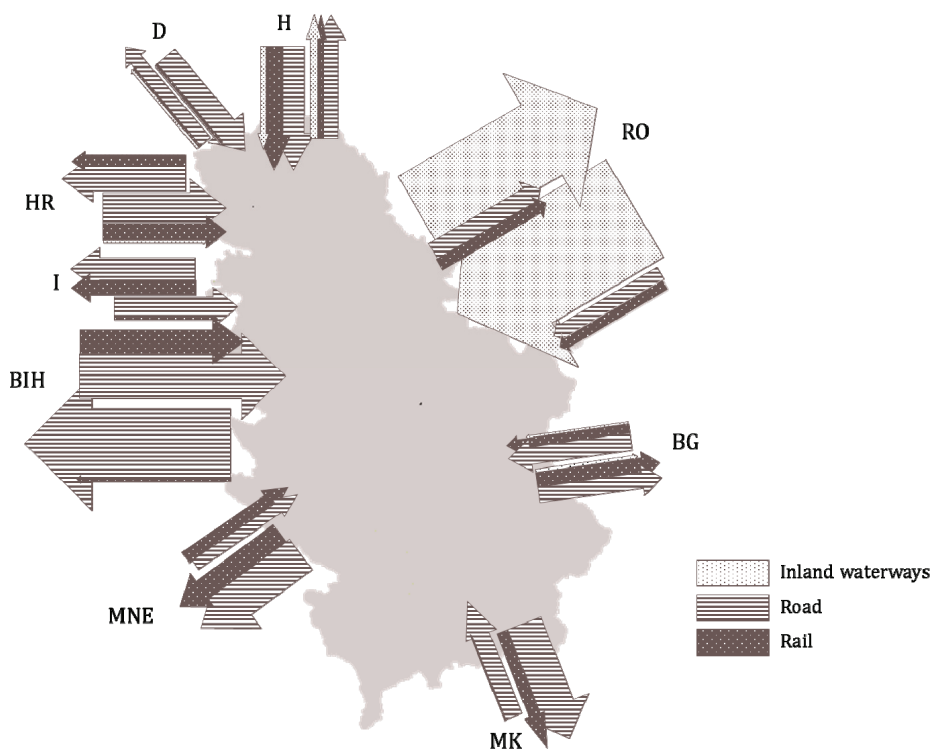


Source: Based on SORS Bulletins

Figure 3. Main road and rail flows from/to Serbia (million tonnes)

In road transport the biggest flows are with Bosnia and Herzegovina (15% of all tonnes transported by road) followed by Italy and Croatia with around 7% each, and in rail transport Montenegro (more than 15% of all tonnes transported by rail), followed by Bosnia and Herzegovina (12,6%) and Croatia (~12%).

Further analysis of transport flows from and to Serbia for 2015 show imbalance between import and export flows (Figure 4). The biggest differences are with Montenegro and Macedonia where exports are around 60% greater than imports. Next are Italy, with 36% greater exports, and Hungary, with 36% greater imports. Looking at individual modes, the most significant differences are in inland waterways import from Ukraine (more than 99%), in rail transport exports to Macedonia (~ 90%), Italy (~ 82%) and Slovenia (~76%), and in road transport exports to Montenegro (~ 71%).



Source: Based on SORS Bulletins and SORS Statistical Releases SV31

Figure 4. The most important transport flows from and to Serbia, 2015

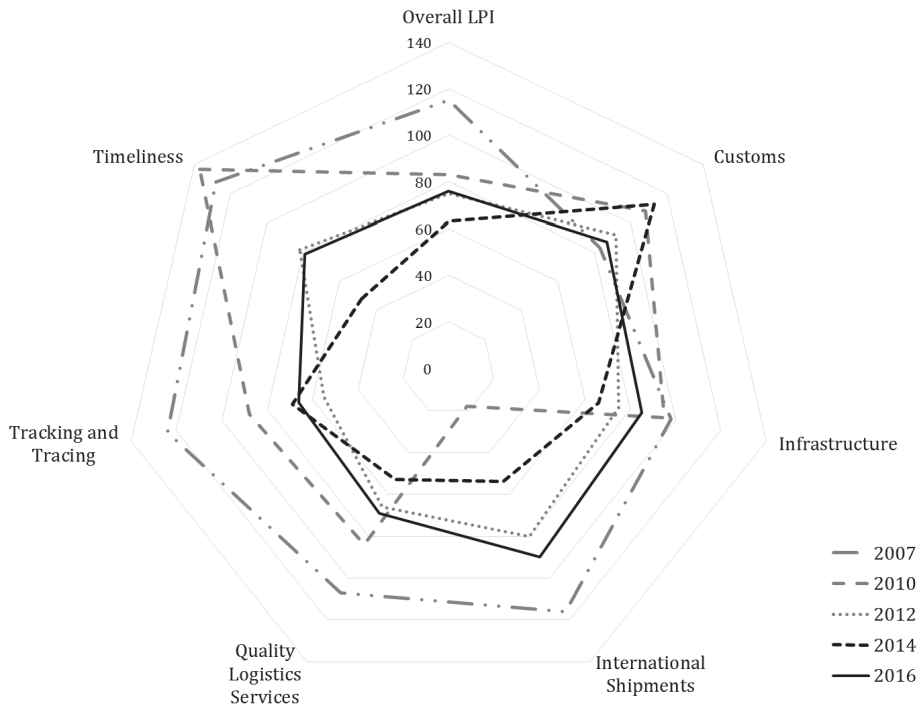
### 3. LOGISTICS PERFORMANCE INDEX

In order to identify the challenges and opportunities in the Serbian transport market the Logistics Performance Index (LPI) will be considered as an interactive benchmarking tool. LPI will help to face in with performance on trade and what it can do to improve its performance. The LPI was created by the World Bank in 2007 (WB, 2016). The logistics performance of a country is measured via a series of figures as indicators, while at the same time a global survey is held among more than 1,800 logistics managers that are active worldwide. The overall LPI rank and score of a country is composed based on 6 sub-indicators considered into two main categories. The first one represents areas for policy regulation, indicating main inputs to the

supply chain (customs, infrastructure, and services), and second one denote supply chain performance outcomes (corresponding to LPI indicators of time and reliability: timeliness, international shipments, and tracking and tracing).

In respective period, only three Eastern European countries are in the range between 40 and 60 of overall LPI, and unfortunately Serbia is at the lower position. Serbia needs to take measures in direction to catch up better position, especially comparing respective performances with Romania and Bulgaria. By that, Eastern Europe region's LPI score will be harmonized. This will enable Serbia to develop a policy within the Eastern Europe aimed at learning from each other's performance in inland freight transport and further improving the position of the Eastern Europe region in global freight transport over the coming years.

Serbia's LPI rank has deteriorated in 2016 comparing to 2014 and 2012 (Figure 5). Challenges for the competitive position and co-modality for Serbian inland freight transport will be considered by looking at the quality of the physical infrastructure, efficiency of customs procedures indicators, international shipments and timeliness. In 2016 the rank of customs procedures has been improved in contrast to the rank of quality of the physical infrastructure and international shipments which are worst.



Source: Based on WB LPI Global Rankings

Figure 5. Serbian LPI rankings, 2007-2016

Serbia is small open economy which depends, or will need to depend, to varying degrees, on trade for sustainable economic growth. In that sense it is possible to follow up indicators used as main inputs to the supply chain (areas for a policy regulation). Customs procedure efficiency and international shipments require significantly lower financial resources than the construction of costly infrastructure. Improvement of ranking is presented only at customs procedure efficiency even though international shipments also require law financial resources. But, enhancing the quality of the physical infrastructure, as more attractive for international finance institutions,

will influence and attract flows of goods and enable connectivity of Serbia freight transport to Southeast Europe and EU corridors. At least, the timeliness as an index which pointed out to the service delivery performance also demonstrates deterioration. This will be next challenge for Serbia if it needs to influence on the trade position.

#### 4. CONCLUSIONS

Policy attention is needed on volume of goods in order to be able to continue to handle the modest and still growing volume of freight transport in the Serbia in an efficient and sustainable manner in the future as well. The smooth and sustainable handling of the flows of goods must be maintained high on the policy agenda in terms of infrastructure, multimodal transport, regulations and traffic management (e.g. ITS). The focus is on active collaboration and coordination of policies in the Eastern Europe region in order to in particular make possible the administrative simplification of the documents associated with the various modes of transport. An active participation in and fast execution of activities in the three EU freight corridors are also desirable in order to achieve the greater export.

Finally, the analysis of the competitive position of the Serbia shows the varying performance in annual world ranking of LPI and its indicators. 'Best practices' within the Western Europe in the area of transport infrastructure should be mutually recognized, and common policy to implement these should be developed. As well as, we should not forget that expensive transport infrastructure will not be fully effective if non-physical barriers, which include regulatory and procedural constrains at border crossings and along corridors are not removed (REBIS, 2015).

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