

Serbian rail cargo transport market

Final report

10 June 2020

Preface

This study was prepared by the consortium of Compass Lexecon and Karanović & Partners on behalf of the World Bank Group and the Commission for Protection of Competition of the Republic of Serbia. The study is a part of the Serbia Investment Climate Program. The Serbia Investment Climate Program is implemented by the IFC in partnership with the UK Good Governance Fund and the British Embassy in Belgrade.

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Acknowledgement

We would like to thank for cooperation and support to Vida Jerković, Miloš Stanojević, Lazar Radaković and Misela Nikolić from the Ministry of Construction, Transport and Infrastructure; Zorica Radović from Railways Directorate; representatives of Serbia Cargo and Serbian Railways Infrastructure for supplying necessary information for the market analysis and for participating in interviews; representatives of Kombinovani prevoz, Eurorail and Milšped for cooperation and interviews; all market participants that provided responses to the questionnaire sent by the Commission for Protection of Competition and which participated in a discussion on the draft study; and Jelena Bralić from the IFC for organisation and administrative support.

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List of Abbreviations

ATM	Automatizacija, Energetika i Tehnika merenja
CL	Compass Lexecon
CPC	Commission for Protection of Competition of the Republic of Serbia
DB	Deutsche Bahn
EPS	Elektroprivreda Srbije
EU	European Union
FIAT	Fabbrica Italiana Automobili Torino
GBER	General Block Exemption Regulation
GDP	Gross Domestic Product
HBIS	Hesteel Serbia Iron & Steel - Beograd
ISR	Serbian Railways Infrastructure
KP	Kombinovani Prevoz
LPI	Logistics Performance Index
MCPAT	Markets and Competition Policy Assessment Tool
MCTI	Ministry of Construction, Transport and Infrastructure of the Republic of Serbia
NCL	Neo Cargo Logistics
NIS	Naftna industrija Srbije
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
PCS	Path Coordination System
PMR	Product Market Regulation
PSO	Public Service Obligation
RD	Railway Directorate
RFI	Request For Information
RNE	RailNetEurope
RSD	Serbian Dinar
SACC	State Aid Control Commission
SEE	South-Eastern Europe
SGEI	Services of General Economic Interest
SK	Srbija Kargo
TCL	Trans Cargo Logistic

TEA	Maximum applicable tariff
TENT	Termoelektrana Nikola Tesla
TFEU	Treaty on the Functioning of the European Union
WBG	World Bank Group
ZGOP	Privredno društvo za građenje, remont i održavanje pruga

Section 1

Introduction and main conclusions

Introduction

- 1.1 This draft report presents competition assessment of the rail freight transport market in Serbia (the “Study”) that Compass Lexecon and Karanovic and Partners have carried out.
- 1.2 WBG has developed a program in support of the Government of Serbia to improve the country’s business environment. The project aims to decrease the existing administrative burden that businesses face and to open markets by addressing competition restrictions in key sectors of the economy. The project has several components which work together to achieve the overall objective, amongst them the support to boost competition in key Serbian markets. One such market is for freight transport on railways and it is the focus of our Study.

Objectives of the Study

- 1.3 The objectives of the Study are to:
- Understand what stifles effective competition in rail cargo markets in Serbia and how incentives for firms to compete and invest are shaped by government interventions and conduct of market participants;
 - Provide recommendations on the design of more effective policies that could foster competition in the market, including removing or re-designing government interventions or/and enforcing competition laws;
 - Identify reforms that should be prioritized.

Main conclusions

Approach

- 1.4 Our approach follows the WBG’s Guidance paper for assessing market dynamics and government interventions from the competition policy perspective.¹ As the main framework

¹ WBG (2019), “Guidance for assessing market dynamics and government interventions that restrict competition: Focus on Cargo Transport and Logistics”.

for our analysis, we use WBG's Markets and Competition Policy Assessment Tool ("MCPAT") spanning three stages of the Study as follows.

- 1.5 In the first stage, we build up a deep understanding of the rail transport value chain and identify key (related) markets for cargo transport. We characterize the structure of the market, the way market players interact, extent and role of state participation, and market dynamics.
- 1.6 In the second stage, we explore how demand and supply characteristics, government intervention and regulation in Serbian cargo transport markets (mostly in rail, but also in road and water transport sectors), and the state ownership of some key market players, shape competition in rail freight markets. We focus on identifying constraints to effective private sector participation.
- 1.7 In the third stage, we identify government interventions or rules that are likely harmful to effective competition and that could be replaced with alternative arrangements to achieve national development objectives while promoting competition in the rail freight segment. Having identified such interventions and rules, we set a prioritization path for the implementation of reforms based on their likely impact and feasibility.

Results

- 1.8 We did not find much of classical antitrust concern in the rail freight transport industry in Serbia. The regulations do not hinder competition with MCTI, RD, and CPC effectively tackling the challenges of liberalizing this market.
- 1.9 Instead, the main reasons for the underdevelopment of the market identified through our analysis are:
 - *Infrastructure quality*: mentioned as the major issue by most market players, the low quality of railway infrastructure, the outdated procedure for allocating routes and the lack of intermodal terminals seem to be acting as a significant obstacle to market entry and expansion;
 - *Recent market opening*: the Serbian rail freight market is still in its early stages of development, as it was only opened to competition in 2016 (this is a circumstance rather than an element of concern);
 - *Price regulation in the domestic market*: the tariffs of Srbija Kargo for the domestic transportation services do not reflect its costs and make price competition impossible;

Recommendations

- 1.10 Our recommendations are based on the results that we have obtained:
 - *Infrastructure investment*: upgrading railway infrastructure is a necessary condition for the development of effective competition in the rail freight transport market: with low infrastructure quality competition is bound to be limited to smaller competitors;

- *Path allocation*: the current path allocation system could be modernised by using path allocation software that provides more flexibility to railway undertakings;
- *Smart operational procedures*: new operational procedures would improve traffic planning and generate significant time savings;
- *Price liberalisation and access fee reform*: gradual price liberalisation could increase competition on domestic routes; charging access fee at cost would improve allocative efficiency;
- *Market monitoring*: in order to swiftly identify current and potential future competition issues, it is essential that regular market monitoring activities are carried out by CPC and RD;

Organization of the report

- 1.11 This report is organised as follows. In Section 2, we provide a background to the Serbian rail freight transport market in terms of main statistical indicators, railway network description, its integration into the broader European system and selected (main) routes.
- 1.12 Section 3 describes the value chain in which the market is integrated, the role of the different elements of this value chain, as well as both supply- and demand- side characteristics of the market.
- 1.13 Section 4 is devoted to the regulatory environment in Serbia.
- 1.14 Section 5 is dedicated to the analysis of several market performance indicators, ranging from financial variables to the quality of railway infrastructure. Whenever possible, we provide cross-country comparisons.
- 1.15 Section 6 examines the competitive structure of the market through our analysis of the information obtained from submissions by stakeholders and our own research. In particular, we focus on the elements that could negatively affect competition.
- 1.16 In Section 7, we use our findings on the main issues present in the market to provide a set of recommendations to be implemented jointly by the CPC, RD and Serbian State.
- 1.17 In Appendix A, we suggest a methodology for empirical assessment of demand to be used by the CPC once sufficient data are collected.
- 1.18 Appendix B summarises the EU legislative framework and discusses how Serbian legislation is aligned with it.

Section 2

Background to the Serbian rail freight transport market

Introduction

- 2.1 A competitive environment is characterized by: (a) the number of (efficient) companies in the market, (b) the degree of product or service differentiation, (c) the number of buyers and how they interact with sellers to influence price and quantity, (d) the relationships (nature of interaction) between the firms in the value chain, and (e) barriers to entry and/or exit. All these factors are influenced by (f) the regulatory framework.
- 2.2 In this section, we detail these characteristics of the freight transport market in Serbia by gathering and reviewing the relevant qualitative and quantitative information from various market participants. Based on the information gathered,
- we provide a high-level overview of the overall Serbian rail freight transport market;
 - we identify market participants along the value chain and interaction between them;
 - we describe demand and supply characteristics in the Serbian wholesale market for freight transport services;
 - we describe the regulatory environment in rail freight transport and identify potential policy rationales for regulatory interventions; and
 - we describe the competitive environment (and outcomes) in rail freight transport and identify potential hurdles to effective competition to be analysed in detail in later stages.

The size of Serbian rail freight transport market

- 2.3 In 2018, 12.3 million tons of goods were transported on Serbian railway network, totalling more than 3.19 billion ton-kilometres. International traffic contributed about 80% to this figure. In this respect, Table 1 shows the volume of goods transported for years 2016-2018, broken down by type of traffic (internal or international).

Table 1: Serbian rail freight market, key performance indicators, 2016-2018.

Transported goods	2016		2017		2018	
	Value	Share	Value	Share	Value	Share
Thousand tons	11,896		12,352		12,317	
Internal traffic	3,635	31%	3,202	26%	3,707	30%
International traffic	8,261	69%	9,151	74%	8,610	70%
-Export	2,429	20%	2,625	21%	2,796	23%
-Import	2,918	25%	3,468	28%	2,848	23%
-Transit	2,914	24%	3,057	25%	2,966	24%
Ton-kilometres, million	3,087		3,288		3,197	
Internal traffic	640	21%	532	16%	628	20%
International traffic	2,447	79%	2,756	84%	2,569	80%
-Export	506	16%	567	17%	546	17%
-Import	528	17%	690	21%	561	18%
-Transit	1,413	46%	1,499	46%	1,462	45%

Source: Statistical office of the Republic of Serbia, [Statistics of Transport and Communication](#), Number 169 • Year LXVIII, 28/06/2019, and Number 179 • Year LXVIII, 29/06/2018.

2.4 Contrasting rail freight and road/waterway freight/cargo transport markets, Table 2 below shows volume carried for each of these transport modes over the period 2016-2018. The railway and road transport accounted for the large majority (more than 85%) of traffic, with pipelines and waterways being less important. The rail freight traffic slightly declined in 2018 compared to 2017, while road traffic grew significantly. Inland waterways traffic was steadily declining in 2016-18.

Table 2: Serbian cargo transport market, key indicators, 2016-2018.

Transported goods	2016		2017		2018	
	Value	Share	Value	Share	Value	Share
Thousand tons	29,434		30,010		33,232	
Railway transport	11,896	40%	12,352	41%	12,317	37%
Road transport	9,897	34%	10,120	34%	13,056	39%
Pipeline transport	5,622	19%	6,083	20%	6,293	19%
Inland waterways transport	2,014	7%	1,448	5%	1,559	5%
Air transport	5	0%	7	0%	7	0%
Ton-kilometres, million	9,277		10,064		11,295	
Railway transport	3,087	33%	3,289	33%	3,196	28%
Road transport	4,299	46%	4,980	49%	6,443	57%
Pipeline transport	954	10%	1,049	10%	1,056	9%
Inland waterways transport	927	10%	725	7%	580	5%
Air transport	10	0%	21	0%	20	0%

Source: Statistical office of the Republic of Serbia, [Statistics of Transport and Communication](#), Number 169 • Year LXVIII, 28/06/2019, and Number 179 • Year LXVIII, 29/06/2018.

- 2.5 In 2018, railway transport accounted for 28% of the traffic in tonne-kilometres, against 57% for the road transport. At the same time, railway accounted for 37% of freight volume in tonnes, whereas road contributed with 39%. Serbia has seen a decline in the share of rail freight transport compared to other modes of freight transport over the three years considered.² Nevertheless, the percentage of inland freight transport for which rail transport is used is still high compared to the vast majority of EU Member States (see Figure 9).
- 2.6 Table 3 shows the volume of goods transported for years 2016-2018, broken down by type of goods.

Table 3: Goods transported by rail in Serbia, 2016-2018.

International traffic	2016		2017		2018		2019*	
	000 tons	%	000 tons	%	000 tons	%	000 tons	%
Containers	1,122	8.9	1,090	8.8	1,374	11.5	1,115	13.9
Empty wagons	2,338	18.6	2,174	17.6	2,073	17.3	1,300	16.2
Cereals, products of the milling industry, grains, seeds and fruits	345	2.7	394	3.2	344	2.9	356	4.4
Oil and its derivatives	1,270	10.1	1,004	8.1	799	6.7	435	5.4
Vehicles	244	1.9	181	1.5	124	1	70	0.9
Metals	1,469	11.7	1,713	13.9	2,010	16.8	1,389	17.3
Bulk cargo, ore and minerals	3,349	26.6	3,142	25.4	2,864	23.9	2,077	25.9
Chemicals	1,520	12.1	1,710	13.8	1,489	12.4	797	9.9
Sugar, residues and waste from the food industry, etc.	369	2.9	383	3.1	375	3.1	143	1.8
Wood, cellulose, paper	331	2.6	265	2.1	284	2.4	185	2.3
Building Materials	97	0.8	82	0.7	99	0.8	35	0.4
Others	149	1.2	223	1.8	128	1.1	130	1.6
Total	12,602	100	12,361	100	11,962	100	8,032	100

Notes: The totals are below the figures from the statistical office of the Republic of Serbia (Table 1). We are agnostic about the source of discrepancy. SK did not respond to our request to resolve it. Our guess is that it comes from the goods transported by enterprises for their own use.

*Jan-Sept 2019.

Source: "Vrste roba - po vrstama saobraćaja 16, 17, 18 i 1-9 19.xlsx" from MCTI, received by CL on 13 January 2020. The data are based on SK figures.

- 2.7 In 2018, the majority of the volume transported is bulk cargo, ore and minerals (23,9%), followed by metal products (16,8%).

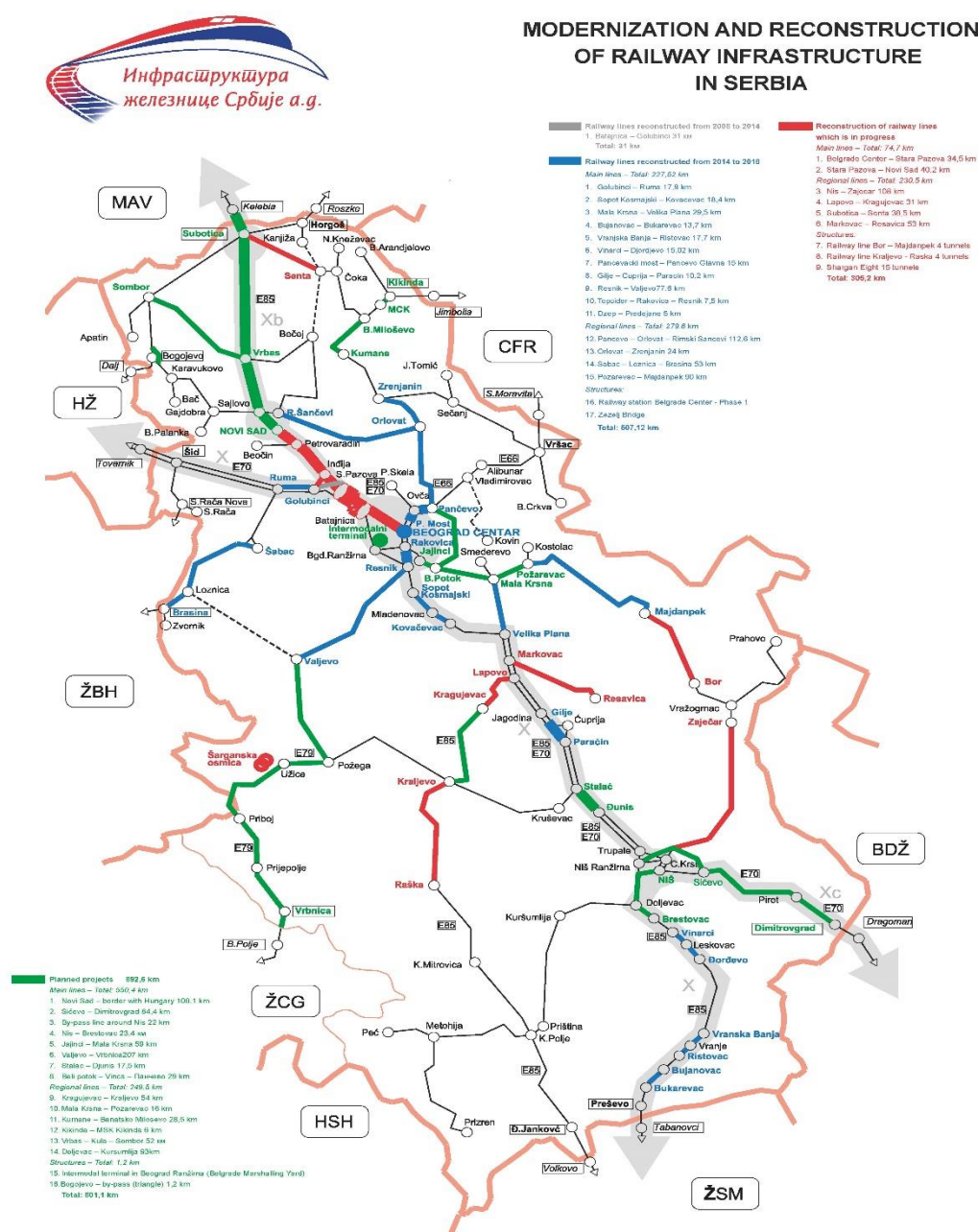
² This may be explained by extensive infrastructure works in this period.

Serbian railway network

Key characteristics of the Serbian railway network

2.8 According to MCTI, as of 2020, the Serbian railway system has total length of 3,724.46 km, of which 288.67 km are double track (7.75% of the network). 1,272.69 km (34.17% of the network) are electrified. Figure 1 below shows the Serbian rail network.

Figure 1: Serbian railway network, 2018.



Source: MCTI, received by CL on 6 August 2019.

- 2.9 Pursuant to the Law on Railway, railway lines are classified into (i) main lines of importance to international and domestic service, (ii) regional lines of importance to regional and local service, (iii) local lines of importance to local service, (iv) shunting lines of importance to business entities; and (v) touristic and museum lines. The list of these lines may be found in the Network Statement of Serbian Railways Infrastructure (henceforth ISR).

Role of the railway network in intermodal transport

- 2.10 The Serbian rail network plays an important role for intermodal freight transport. Though there is no available statistic for the share of cargo transported intermodally, we can use at least two indicators that proxy the importance of intermodality. Firstly, from Table 3, we observe that the share of containerized transport in total volume of international traffic was at 8,9% in 2016., growing to 13,9 in 2019. Second, Table 4 provides information on the volume of transshipment of cargo at river ports, stations and other places. We observe a similar trend, with transshipment volume growing in both absolute and relative terms in 2018 relative to previous years, indicating increasing importance of intermodal transport.

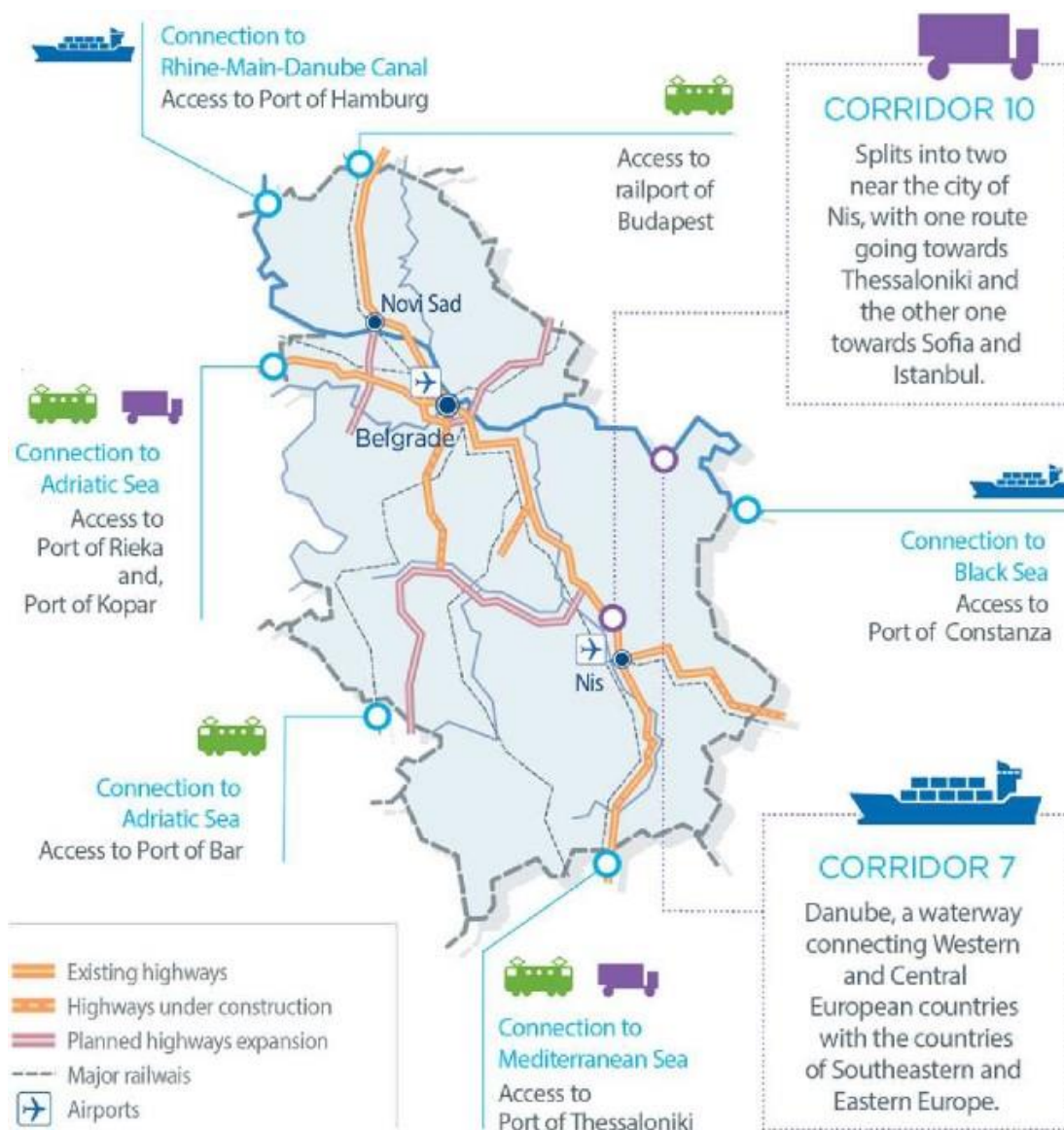
Table 4: Transshipment of cargo in Serbia

	2016	2017	2018
Transshipment volume, ktonnes	3,309	3,264	4,003
Transshipment relative to total traffic (excl. transit) on the railway	36.8%	35.1%	42.8%

Source: Statistical office of the Republic of Serbia, [Statistics of Transport and Communication](#), Number 169 • Year LXVIII, 28/06/2019, and Number 179 • Year LXVIII, 29/06/2018.

- 2.11 Figure 2 below presents a schematic overview of how railway network, road network and inland waterways are interconnected in Serbia and integrated into a larger European network.

Figure 2: The main rail, road, and water connections in and through Serbia



Note: The connection to Mediterranean Sea also provides access to Port of Piraeus. There is also possibility to reach Turkish ports, but this is not currently used due to congested Turkish railway infrastructure.³

Source: Compass Lexecon based on http://serbia-investment.com/optimal_geographic_location, last accessed on 9 October 2019

It is worth noting that for both East Asian and North American imports, the Northern Adriatic ports (Rijeka, Koper, Trieste) are the most common choice for the majority of Serbian freight

³ See J.M. Pepe (2016), Beyond Energy: Trade and Transport in a Reconnecting Eurasia, Springer, p.384.

forwarders. The choice of Northern Adriatic ports over Thessaloniki for East Asian and Rotterdam for North American shipments may be interpreted as a choice of cost savings over speed by freight forwarders. Shipments traveling from East Asia to Belgrade via the Suez Canal would arrive more than one day sooner if routed through Thessaloniki. Moving North American goods through Rotterdam to Belgrade would save three days of transit time.⁴

Port of Piraeus has been expanding in recent years and currently is a viable alternative to Port of Thessaloniki. Port of Istanbul and other Turkish ports may be a substitute to Greek ports, but are currently not used as such because of congested railway infrastructure in Turkey (see reference in supranote 3)

Regional integration of the Serbian railway network

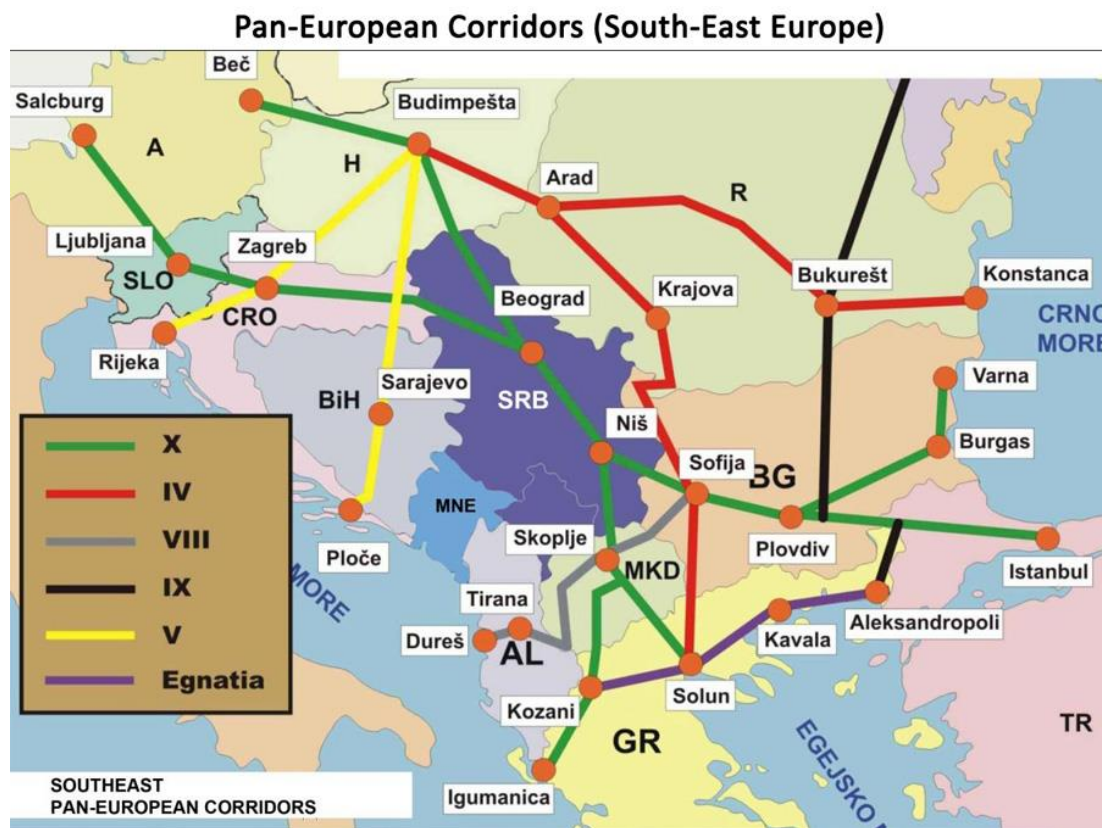
- 2.12 The Serbian freight system is integrated into the regional system via intergovernmental agreements but also via RailNetEurope (RNE), the association of infrastructure managers. RNE prepares the international documentation and operates systems for collection of charges, coordination of paths and information about trains⁵. Serbia also participates in the newly established rail freight corridor (RFC) Alpine - Western Balkan in line with Regulation 913/2010. Through the Transport Community Treaty there are ongoing activities directed towards regional integration.
- 2.13 Pan-European Corridor X stretching from Salzburg in Austria to Thessaloniki in Greece goes through Serbian territory. Corridor X includes the following railway lines from Sid to Presevo (these are also part of Alpine - Western Balkan RFC):
- Belgrade – Šid – State border,
 - Belgrade – Mladenovac – Niš,
 - (Belgrade) – Rakovica – Jajinci – Mala Krsna – Velika Plana,
 - Niš – Preševo – State border.
- 2.14 The following branches connect to the primary route of the Corridor:
- Xb, (Budapest) – Novi Sad – Belgrade (the railway line (Belgrade) – Stara Pazova – Subotica) and

⁴ See WBG (2015), "Understanding the Operations of Freight Forwarders Evidence from Serbia", available at: <http://documents.worldbank.org/curated/en/352591468000616916/pdf/WPS7311.pdf>

⁵ ISR (2020), "Statement on Network for year 2020", p. 17; available at <http://infrazs.rs/lzjavaMreza/lzjava%20o%20mrezi%202020.pdf>

- Xc, Niš – Dimitrovgrad – (Sofia – Istanbul) (the railway line Niš – Dimitrovgrad – State border.

Figure 3: Pan-European Corridors (South-East Europe)



Source: <http://promovere.hr/marketingarticles/world-bank-lends-serbia-35-mil-euro-for-corridor-x> , last accessed on 9 October 2019

- 2.15 The RFC Alpine – Western Balkan RFC stretches from Austria to Turkey (roughly green line from Salzburg to Istanbul in Figure 3), having two branches in Austria, one starting in Salzburg and another in Linz, that join together at Slovenian station of Zidani Most. While Figure 3 above helps to identify the place and importance of corridors going through Serbia, the following table provides further details on the most significant Serbian railway routes:

Table 5: Rail routes along the Pan-European Corridor and other SEE axes

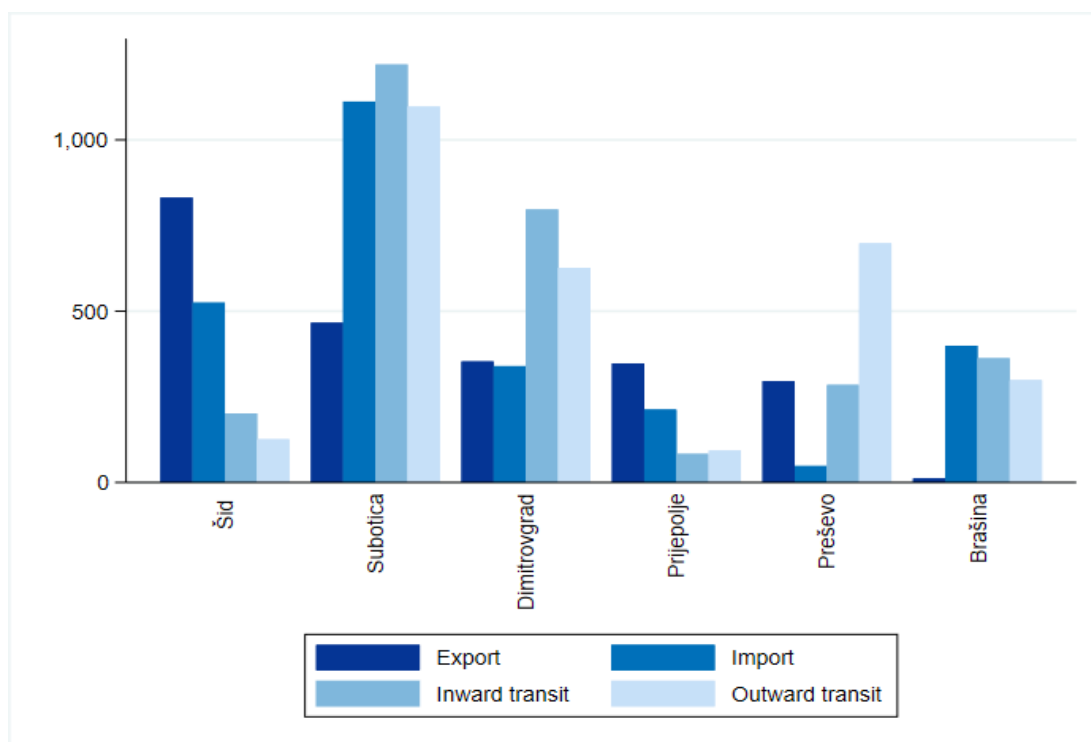
	Route	Length (km)	Pan-European corridor
1.	Corridor X in total	805	
1.1	Belgrade – Novi Sad – Subotica – Hungarian border	183	Xb
1.2	Belgrade – Šid – Croatian border	120	X
1.3	Belgrade – Niš	241	X
1.4	Niš – Dimitrovgrad – Bulgarian border	104	Xc
1.5	Niš – Preševo – Macedonian border	157	X
2.	Belgrade railway junction	/	X
3.	Adriatic-Romania route	401	
3.1	Belgrade Centre – Pančevo – Vršac – Romanian border	102	
3.2	Belgrade Centre – Vrbnica – border of Montenegro	299	
4.	Valjevo – Loznica – state border	82	
4.1	Valjevo – Lipnica (Loznica)*	68	
4.2	Lipnica (Loznica) – Donja Borina – state border	24	
5.	Central Serbia	565	
5.1	Stalać – Kraljevo – Požega	136	
5.2	Lapovo – Kraljevo – Raška – Rudnica – Donje Jarinje – (General Janković – Macedonian border)	277	
5.3	Niš – Doljevac – Priština – Kosovo Polje	152	
6.	Ruma – Šabac – Loznica – Mali Zvornik – state border	109	
7.	Subotica – Palić – Horgoš – Hungarian border	27	

Note: * - not constructed yet

Source: Table 1 in Одлука о Националном програму јавне железничке инфраструктуре за период од 2017. до 2021. Године, in „Службени гласник РС”, бр. 73/53, May 2017, accessible at <http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/skupstina/odluka/2017/53/1/reg> last accessed on 31 August 2019

- 2.16 To further appreciate the international importance of Serbian railways, Figure 4 shows total rail freight flow broken down by border it crossed in 2017. The top three borders by volume (Subotica [Hungary], Šid [Croatia] and Dimitrovgrad [Bulgaria]) have a combined share of almost 70% of the total cross-border volume.

Figure 4: Rail transport flows (thousand tons) at the largest border crossings, 2017



Source: Compass Lexecon based on "Relacije - IZV UVZ TRZ 15,16,17 i 1-9 18.xlsx" received from WBG on 9 July 2019. WBG has received the data from MCTI; the data is based on SK figures.

Selected routes

- 2.17 Following the consultations with MCTI, RD and CPC, we have selected the following routes for a more detailed consideration:
- Subotica – Dimitrovgrad;
 - Subotica – Preševo;
 - Šid – Belgrade
 - Subotica - Prijepolje
- 2.18 The former two are the main international transit routes in Serbia; the third serves as a connection between the ports of Rijeka/Koper and Belgrade, whereas the fourth serves as a connection to the port of Bar in Montenegro. From Figure 4, we can also see that Subotica, Dimitrovgrad and Šid are the three most important border crossings for the rail freight in Serbia.
- 2.19 Table 6 below presents the main characteristics of these routes.

Table 6: Characteristics of main routes, 2018.

Route	Characteristics			Performance indicators (SK)		Alternatives
	Length (km)	Transit time (hours)	Speed (km/h)	Volume carried (ktons)	Traffic (mln netto tonnes-km)	
Subotica – Dimitrovgrad	548	24	23	643	352.4	Corridor IV road
Dimitrovgrad – Subotica				680	372.6	
Subotica – Preševo	603	30/32	19	520	313.6	Corridor IV (road)
Preševo – Subotica				295	177.9	
Šid – Belgrade	120	16	7.5	132.3	15.9	Road
Belgrade – Šid		15	8	97.9	11.7	
Subotica – Prijepolje	503	42	12	26.8	13.5	Road
Prijepolje - Subotica				23.7	11.9	

Source: RFI Responses of Srbija Kargo; data on border crossings from MCTI.

- 2.20 Unfortunately, RFI responses of the market participants do not contain more detailed information about these routes, so we had to proceed with our analysis at the level of the whole railway network.

Section 3

Value chain of the rail freight transport market

- 3.1 We provide below an overview of the structure of the rail freight transport market in Serbia. In this respect, we first identify the relevant entities in the rail freight transport value chain in Serbia and then characterize the relationships among them.

Main actors and their interaction

Activities and actors

- 3.2 A value chain consists of several functions which can constitute separate – yet related – markets. Mapping the value chain into its constituent functions is a critical step since market dynamics, rules, and government interventions may differ across these functions.
- 3.3 Table 7 describes the main activities and actors present at different levels of most rail freight markets while Table 8 provides a high-level overview of the Serbian rail freight transport value chain.

Table 7: Activities and actors in the rail freight and logistics services value chain

Functions		Input supply	Wholesale	Retail
Activities	Unimodal	Rail infrastructure (Ancillary) services	Transport: product, type of shipment, distance, speed of delivery, etc.	Freight forwarding
	Multimodal	Ports, airports, road infrastructures Intermodal (ancillary) services	Logistic services: warehousing, storage, sorting, packaging, processing	
Actors	Unimodal	Infrastructure manager (Ancillary) service providers	Rail undertakings and other carriers	Freight forwarder / end- customers
	Multimodal	Ports, airports, road infrastructure managers Intermodal (ancillary) service providers	Logistic service providers	

Source: Compass Lexecon based on WBG (2019), "Guidance for assessing market dynamics and government interventions that restrict competition: Focus on Cargo Transport and Logistics".

Table 8: Value chain – Rail freight market in Serbia

Role	Description	Active players
Railway infrastructure manager	<ul style="list-style-type: none"> • Management and maintenance of public railway infrastructure • Organization and control of railway traffic • Provision of access for the use of public railway infrastructure to all interested railway undertakings • Protection of public railway infrastructure 	ISR
Basic service providers	<ul style="list-style-type: none"> • Manoeuvring • Storage • Electricity supply • Fuel supply • Further services 	<ul style="list-style-type: none"> • Freight terminals • Šinvoz, Želvoz, Intermehanika (train workshops) • SK and Srbija Voz (facilities for certain workshops) • ISR (manoeuvring in the 5 largest stations)
Locomotive/wagon providers	Leasing or selling locomotive/wagons	Foreign suppliers
Railway undertakings	Provision of freight transport services	<ul style="list-style-type: none"> • Srbija Kargo • Kombinovani Prevoz • Neo Cargo Logistic • Despotija • Eurorail • Pannon Rail
Logistic service providers	Provision of logistics infrastructure and services	<ul style="list-style-type: none"> • Nelt • Mišped • Standard Logistic • Panšped
Freight forwarders	Facilitation of the movement of freight along the logistics chain	<ul style="list-style-type: none"> • Trans Cargo Logistic • Mišped • Transfera • StarAgent Plus • EuroLog • DB Schenker • Cosco Shipping

Source: Compass Lexecon

3.4 In Serbia, the rail freight transport value chain includes the following actors:

- Railway infrastructure manager (input provider according to Table 7). In Serbia, management of railway infrastructure is an activity of general (public) interest. It is carried out by the state-owned ISR as the sole railway network manager in the Republic

of Serbia.⁶ ISR's activities include the management and maintenance of public railway infrastructure, the organization and control of railway traffic, the provision of access for the use of public railway infrastructure to all interested railway undertakings, and the protection of public railway infrastructure. ISR also provides ancillary and auxiliary services to freight operators as detailed in 4.25-4.32.

- Basic service providers (input providers). Basic services in railway transport include manoeuvring, storage, electricity supply, fuel supply, measurement of cargo, maintenance and repairs, engagement of a towing train in case of an accident and so forth. They are provided at freight terminals⁷, 10 of which are intermodal (terminals for combined transport).⁸ Private entities such as Šinvoz, Želvoz or Intermehanika provide ancillary services mostly pertaining to train workshops. SK and Srbija Voz also operate facilities which can be used for certain locomotive and wagon workshops. Manoeuvring services are performed by carriers except in the 5 largest stations where they are performed by ISR.⁹
- Undertakings that lease locomotives and/or wagons (input providers). We could not identify any such undertakings of Serbian origin, but it is possible to lease or buy rolling stock abroad, either from OEMs or in the secondary market.

⁶ According to ISR's Network statement (see *ibid.*, p.10), Railway infrastructure includes permanent way and substructure, tunnels, bridges and other track structures, station tracks, telecommunication, signalling & interlocking, electric traction, power supply and other trackside installations and devices, track equipment, service point buildings, and other facilities on the trackside land used for regulation of railway traffic and maintenance of railway infrastructure, terminals, trackside land and the airspace above the track, 12 m high, i.e. 14m high at over 220kV overhead power lines, measured from top of rail.

⁷ Network Statement (see *supra*note 5) defines the term "freight terminals" on the railway network operated by ISR as all the railway service points used for freight operations where loading and unloading as well as transshipment operations are carried out. Network statement also differentiates between stations, terminals for intermodal freight transport, port terminals. See also <http://srbcargo.rs/en/combined-transport/> for the list of terminals with container processing capacities.

⁸ See "Rulebook on terminals for combined transport on railway and road network for transport to and from terminals for combined transport" ("Official Gazette RS No. 26/2018)

Moreover, Milšped plans on constructing their own intermodal terminal as they are expecting that transport via rail will increase once the rail infrastructure is renewed. They intend to create a paid public intermodal terminal and provide all ancillary services at this terminal. – Interview with Milšped on 16 August 2019.

⁹ Interview with ISR on 2 August 2019; the point about availability of Srbija Voz' services was made during the interview with KP in February 2020.

- Rail undertakings (wholesale providers, input customers). Rail undertakings are enterprises or other legal entities registered for the main activity of provision of freight transport services with a valid license. There were 9 licensed (cargo) rail undertakings with a valid security certificate, with only 5 of them active in the market in 2018: Srbija Kargo (SK), Kombinovani Prevoz (KP), Neo Cargo Logistic (NCL), Despotija, and Eurorail.¹⁰ These are recent entrants, first of which acquired its first routes in June 2016.¹¹ Some of the railway undertakings obtained or are in the process of obtaining licences exclusively to perform freight transport for their own needs. In 2019, Pannon Rail started operating in the market becoming the sixth rail cargo operator. We discuss the rail undertakings in more detail later in this section as well as in in Section 4.
- Logistic service providers (wholesale providers). Freight forwarding and transport service providers rely on logistics infrastructure and services for their activities. Warehouses or temporary deposits are used for storage and as a platform to perform light manufacturing or value-added services on the cargo (such as packaging and labelling) and also serve as distribution centres. Serbian logistic firms such as Nelt and Milšped (for intermodal services) provide a variety of services.¹² These include customs clearance services, warehousing and organisation of (intermodal) transport. Nelt, as intermodal terminal manager, also provides container terminal services which include the processing of full and empty containers, while Milšped also provides rail transportation services through SK and KP. Standard logistic is specialized for petroleum and chemical products logistic in south-east part of Europe. Panšped provides the whole spectrum of logistic services it uses SK as its only railway carrier in Serbia.
- Freight forwarders (retail providers, wholesale customers). Freight forwarders arrange transport, oversee customs clearance on behalf of their clients, and troubleshoot goods transit problems. Their role is to facilitate the movement of freight along the logistics chain and ensure that transport links are reliable, tailored to the product, and timely. This includes booking space, dispatching cargo and delivering it to the end user, completing all relevant documentation, serving as intermediaries in the payment for shipments, and any other duties for services required along the logistics chain. There are more than 150 freight forwarders in Serbia, and they play an important role in rail freight transport markets. Most of the international freight forwarders in Serbia provide their own transportation service, but not on the railway. The majority of freight forwarders use multimodal transport for less than 25% of their shipments and close to a quarter do not

¹⁰ Directorate for Railways (2018), "Report on the regulation of the railway market", available at : <http://www.raildir.gov.rs/izvestaji.php>

¹¹ In the Interview on 2 August 2019, KP claimed that its performed its first railway cargo transport services in April 2017.

¹² RFI responses of Nelt and Milšped, November 2019

use multimodal transport for any of their shipments¹³ Major Serbian freight forwarders include Trans Cargo Logistic (TCL), Milšped, Transfera (active for Chinese customers), StarAgent Plus (Maersk's general agent in Serbia), EuroLog, Panšped, Schenker, Cosco Shipping, Rail Cargo Hungaria, Mars Logistics, Turk Rail, Amber Rail, Railway Integral Transport Belgrade.

- Finally, other market inputs such as carriages, insurance, and licensed drivers, enable the provision of transport and logistics services. The training of drivers (at training centres) is organized by SK,¹⁴ but any operator is eligible to conduct such a training. SK has trained approximately 200 new locomotive drivers in the past years. SK only trains drivers employed by SK, but they are not bound to stay with SK after the training is completed. Based on the outcome of the training, the drivers are licensed by the DR.

Interaction of players along the value chain

- 3.5 As discussed above, rail undertakings get the access to the rail infrastructure from ISR. They may get ancillary service from ISR, but also from other providers. They buy or lease equipment (e.g. locomotive, vehicles, etc.) from OEMs or leasing companies. Apart from SK, railway undertakings in Serbia do not typically own or lease wagons, but operate the trains made up of the wagons owned by customer (typically, a freight forwarder).
- 3.6 Rail undertakings offer rail freight transport services in the wholesale and retail markets. Rail undertakings and logistic providers may contract directly with customers (that would be mostly the case for large industrial customers, e.g. Serbia Zijin Copper Bor, HBIS, FIAT Kragujevac) or indirectly via freight forwarders (which is the case for most of the customers). Table 9 shows the different types of commercial contracts that exist along the chain and those that might potentially fall within the purview of the freight forwarder in each case.

¹³ See *supranote* 4.

¹⁴ The average time to train a loco driver is 2.5 years.

Table 9: Possible commercial contracts along the chain

What services are needed to transport goods?	Rail transport	Logistic services (packaging, warehousing, customs clearance)	Other mode of transport (water, road, air)
The customer hires each service individually	Rail transport	Third-party provider	Other transport operator
The customer hires a rail transport operator and a freight forwarder separately	Rail transport	Freight forwarder	
The customer hires only the freight forwarder and the freight forwarder hires the rail transport operator	(Rail transport) Freight forwarder		
The customer hires only the freight forwarder and the freight forwarder provides all of the services with his own assets	Freight forwarder		

Notes: Many other options and combinations of services and contracting are possible, but these are the ones relevant for competition in the rail transport segment.

Source: Compass Lexecon on WBG (2019), "Guidance for assessing market dynamics and government interventions that restrict competition: Focus on Cargo Transport and Logistics".

3.7 The type of contract according to which the customer hires only the freight forwarder and the freight forwarder hires the rail transport operator (marked in bold in the table above) is, according to the market participants, the most common one in the Serbian rail freight market.¹⁵ Large players also sometimes deal with rail operators independently of freight forwarders, as mentioned in 3.6.

3.8 End-customers and freight forwarders do not normally sign long-term contracts¹⁶.

3.9 For public entities, contracts are generally awarded through tender proceedings and agreements arising from these proceedings are usually executed for a period of one year (only very exceptionally for a period of two or three years). [confidential].¹⁷

¹⁵ RFI responses of railway undertakings and logistic firms, November 2019

¹⁶ Interview with Milšped on 16 August 2019

¹⁷ Ibid.

- 3.10 For private entities, contracts are often for one-time services according to the customers' business needs, and not via public bids or framework agreements.¹⁸

Market for rail freight transport services

- 3.11 In this section, we study in more detail the key characteristics of the market for Serbian rail freight transport services. We then discuss government participation and non-horizontal integration to the extent they could distort competition in this market.

Supply of rail freight transport services

- 3.12 To provide transport services on the ISR's railway infrastructure, railway undertakings need to have concluded a contract on the use of railway infrastructure with ISR; have a valid license for operation in railway transport and a valid certificate on safety of operation in railway transport, both issued by the Directorate for Railways (DR).
- 3.13 On 14.01.2019, there were 20 licensed railways undertakings in Serbia, including rail passenger operators, of which 11 had a valid safety certificate.¹⁹ According to MCTI, the low pickup of the safety certificates can be explained by the current and planned infrastructure works. They expect new rail operators to enter the market after the works are completed.²⁰ According to RD, no company that applied for a safety certificate was refused it.²¹
- 3.14 Of 11 railway undertakings with valid safety certificate, only 6 (as listed in 3.4) were active in freight transport in 2019. All rail freight carriers can in principle transport all types of goods and operate on all routes in Serbia (to the extent they reserve them).
- 3.15 Rail undertakings also need to have access to rail infrastructure and service facilities where basic services associated with rail transport are provided. These are made available by ISR on a non-discriminatory basis. Another key input for operating in the market is locomotives. Private carriers may lease a part of the fleet they operate. SK has by far largest fleet in Serbia and also owns wagons; it does not lease the wagons out.²²
- 3.16 Table 10 below presents main characteristics of rail undertakings active in Serbia.

¹⁸ Ibid.

¹⁹ See *supranote* 10, p.9-10.

²⁰ Interview with MCTI on 29 January 2020

²¹ Interview with RD on 29 January 2020

²² Interview with SK on 1 August 2019.

Table 10: Rail undertakings, Serbia, 2018

Rail carriers	Ownership	Time of entry	Routes operated	Goods transported	Equipment
Srbija Kargo	state 100%	incumbent	all	[<i>confidential</i>]	own locos, own and leased wagons
Kombinovani Prevoz	private	June 2016	all except to Montenegro	[<i>confidential</i>]	own and leased locos
NCL	private	September 2018	Dimitrovgrad border – Šabac and Brasina, Dimitrovgrad – Subotica	[<i>confidential</i>] ²³	leased locos and wagons
Despotija	private	September 2017	Despotovac – Vojvodina	[<i>confidential</i>]	own locos and wagons
Eurorail	private	2018	Vršac – Novi Sad and Vršac – Surcin	[<i>confidential</i>]	leased locos (intra-group lease)
Pannon Rail	private	June 2019	Subotica – Zrenjanin, Subotica – Pančevo and others	[<i>confidential</i>]	leased locos

Source: Compass Lexecon based on interviews with market participants and RFI responses; interview with Prof. Bojovic in July 2019.

- 3.17 We briefly characterize the main competitors in the railway freight transport in section Section 6. It is worth stressing that big companies that need freight transportation services in Serbia have the option of becoming carriers themselves (integrate upstream; e.g. NIS). Several companies have started operating rail freight services for their own needs in recent years. These are ZGOP ad Novi Sad, JP EPS Beograd-Ogranak TENT, and ATM BG Beograd, Elixir group Šabac, NIS ad Novi Sad (the latter two obtained the necessary license, but do not operate rail freight services on the public railway infrastructure).

Demand for rail freight transport services

Freight end-customers/ forwarders

- 3.18 The largest freight transport customers include Serbia Zijin Copper Bor, HBIS Group Iron & Steel d.o.o. Beograd, FIAT Kragujevac, agricultural companies Delta, Vital, Rubin, TENT Obrenovac, Termoelektrana Morava Svilajnac and Naftna Industrija Pančevo. SK's largest customers include most of these companies.²⁴ Strategic agreements do not imply long-term commitments, as contracts can be reviewed annually.²⁵ [confidential].²⁶
- 3.19 In some cases, freight forwarders act as intermediaries between freight carriers and end-customers – in which case they determine which products and volumes are to be transported by rail. TCL, Euro Look, AM-PA Sped, DB Schenker, Rail Cargo Logistics (Austria) and Transagent are some of the largest freight forwarding companies. SK also act as a freight forwarder for internal transport – but not for international transport (they had this service in 2018, but not anymore due to internal restructuring).²⁷
- 3.20 Unfortunately, transportation customers were largely unresponsive to our RFIs. Cosco Shipping (Dragon Maritime) stated that they see rail freight of container shipments as a significant factor in the development of multimodal transport in the Serbian market and a complement to the further development of maritime transport. Works on the reconstruction of the railway infrastructure slowing down the total transit time in intermodal container transport was named as a restriction.²⁸
- 3.21 Elixir Group has only stated that they use SK for railway transportation despite having obtained a license for transporting goods for its own needs. This might indirectly indicate that the quality of SK's services is sufficiently high for Elixir not to pursue their own transportation, but it could also indicate that SK's domestic tariffs are low.²⁹
- 3.22 Panšped stated that road exerts strong competitive constraint on rail both in terms of price and operationally. They admitted however that this competition is restricted by cargo type, value and delivery. Moreover, they see insufficient number of intermodal terminals as the main hindrance to the development of intermodal transport.³⁰

²⁴ See *supranote* 22. However, note that, according to MCTI, SK does not act as a freight forwarder.

²⁵ RFI responses of railway undertakings and logistic firms, November 2019

²⁶ See *supranote* 11.

²⁷ See *supranote* 22.

²⁸ RFI response of Dragon Maritime See, November 2019.

²⁹ RFI response of Elixir Group, November 2019.

³⁰ RFI response of Panšped, November 2019.

- 3.23 Schenker, on the other hand, stressed complementarity of rail and road, and pointed out the potential to reduce transit time by combining them. They also mentioned that their clients often do not pay enough attention to quality and reliability of transport providers.³¹
- 3.24 TCL stated that the main factors driving a client's choice of freight service provider are 1) price; 2) quality; 3) reliability; 4) availability of sufficient capacity; 5) continuity of the service provision.³²
- 3.25 Table 11 below presents the main characteristics of major freight transport customers / forwarders.

³¹ RFI response of Schenker, November 2019.

³² RFI response of TCL, November 2019.

Table 11: Main rail freight transport customers in 2018

Final Customers	Ownership	Rail carriers	Type of goods	Volume of goods in tonnes, 2018	Shipping route
Naftna Industrija Srbije	state 29.87%	SK	Oil and petroleum products	[confidential]	Internal traffic, import and export
HIP-Petrohemija	state > 70%	SK	Petroleum gas, gasoline	[confidential]	Internal traffic
HIBS GROUP Serbia Iron & Steel	Private	SK	Coke, iron ore, products and semi-finished products of iron and steel	[confidential]	Internal traffic, import and export
FCA Serbia d.o.o.	state 33%	SK	Cars	[confidential]	Import and export
Elixir Group	private	SK	Agricultural products	[confidential]	Internal traffic, import and export
Elektroprivreda Srbije	state	SK*, own means	Coal	[confidential]*	Internal transport
SERBIA ZIJIN BOR COPPER	state 37%	SK	Copper ore and concentrates	[confidential]	Import and internal transport
Freight forwarders					
DB Schenker	German state	SK	Miscellaneous	[confidential]	International traffic
RC Austria	Austrian state	SK	Miscellaneous	[confidential]	International traffic
SI Cargo Logistics	Slovenian state	SK	Quartz sand, miscellaneous	[confidential]	International traffic
Milšped	Private	SK, KP, Adria Rail	Chemicals, sugar, aluminium	[confidential]	International traffic
Eurologsystem DOO Beograd	Private	SK	Cereals, oilseeds, animal feed and clay	[confidential]	Serbia to Italy

Note: * - Data for TENT Obrenovac and TENT Piskanja. Data on volume of goods is confidential. FIAT, Delta, Vital and Rubin do not appear in the table as their orders of SK's services are smaller than those of the clients listed here.

Source: Serbian company registry and RFI responses of railway undertakings and logistic firms, November 2019

Minor market players

3.26 In the following paragraphs we present quantitative information regarding the customers of selected minor market players. The data format is not consistent as market operators submitted data in different formats.

3.27 Table 12 below shows KP's revenues from its main customers in 2017 and 2018.

Table 12: KP - income by customer and year

Customer	Ownership	Year	Income (€)
[confidential]	Foreign	2018	[confidential]
[confidential]	Private	2017	[confidential]
		2018	[confidential]
[confidential]	Foreign	2018	[confidential]
[confidential]	Foreign	2018	[confidential]
[confidential]	Foreign	2018	[confidential]

Notes: Data is confidential.

Source: RFI responses of Kombinovani Prevoz, November 2019

3.28 In Table 13 we list the main customers of Eurorail in 2018.

Table 13: Eurorail – main customers

Customer/ Freight forwarder	Ownership	Type of goods	Volume of goods in tonnes, 2018
[confidential]	[confidential]	[confidential]	[confidential]
[confidential]	[confidential]	[confidential]	[confidential]
[confidential]	[confidential]	[confidential]	[confidential]

Notes: Data is confidential.

Source: RFI responses of Eurorail, November 2019

Procurement process

- 3.29 (Partially) state-owned companies (e.g. TPP Nikola Tesla, TPP Morava, other power plants) organise tenders to select the railway carriers as mandated by Law on Public Procurement.³³ This is also the case for the majority of private freight forwarders. Although tenders are open to both SK and private carriers, SK is usually the only market player that can meet the requirements of large companies (including state-owned).
- 3.30 Table 14 below illustrates the technical and staffing capacity requirements contained in a tender issued by EPS – TENT for the provision of rail freight transport services. Comparing them with the capacity information from the main market players described in Section 4, it is evident that SK is the only company that can fulfil the necessary requirements.

³³

Legal entities, established with the purpose to meet a general interest, which do not have an industrial or trade character, have to perform public procurements, provided they meet one of the following conditions: (i) such entities are financed more than 50% from the state, or (ii) state supervises the work of such entity, or (iii) more than half of the members of the supervisory board or board of directors are appointed by the state. - Article 2 of the Law on Public Procurement (Off. Gazette of Republic of Serbia, no. 124/2012, 14/2015 and 68/2015)

Table 14: Technical and staffing capacity requirements – sample tender

Capacity requirements

At least 5 electric locomotives 25 kV, 50Hz (owned or leased)

At least 3 diesel locomotives (owned or leased)

At least 200 wagons of the EAS or EANOS series (owned or leased)

At least 40 people employed with a driver's licence

Notes: The tender refers to transport of coal by rail.

Source: EPS – TENT, Open procedure for the public procurement of services no. JH/3000/0829/2019 (3106/2019), 11 December 2019 from <http://www.eps.rs/lat/Stranice/nabavke.aspx> (accessed at 10.44 on 18/12/19)

- 3.31 Beyond technical and organizational capacity to transport goods, freight customers consider price, transit time and frequency, security, accessibility, reliability when choosing a rail undertaking.
- 3.32 SK publishes its prices on its webpage, therefore providing a public offering for its services (last modified in 2015).³⁴ In the vast majority of cases, prices are negotiated on a case-by-case basis, meaning customers / freight forwarders do not execute framework agreements or agreements for a certain period of time. There are notable exceptions such as strategic agreements.
- 3.33 According to the Law on Contracts in Railway Traffic („Official Gazzete of RS“, 38/2015), railway operators are obliged to publish their tariffs. Some railway operators, however, do not comply with this obligation, and thus gain competitive.

Drivers of demand

- 3.34 The overall demand for rail freight transport services is driven by macroeconomic situation, business activity and the development of international trade.
- 3.35 Demand for rail transport services depends on the relative attractiveness of rail transport as compared to other means of transportation. The critical factors considered when deciding on the most appropriate means of transportation are unit **value** and **speed** of delivery. For instance, in cases when speed of delivery is of particular importance, railway routes are generally avoided as it takes 36-48 hours to move goods from border to border on rail, and that is in case of no delays. In addition to the prices, the length of transportation and the

³⁴ <http://srbcargo.rs/wp-content/uploads/2019/06/Tarifa-Deo-6-sa-izmenom-8-od-05.06.2019.god...pdf>, last accessed on 4 September 2019.

transit time, the choice of the carrier is also influenced by the **amount** of cargo, the availability of **rolling stock**, the requested **dynamics**.³⁵

- 3.36 Table 15 below illustrates the key factors to be accounted for by freight customers when selecting transport means.

Table 15: Critical factors to select a transport mode

Product	Type of cargo	Distance and geography	Market size	Unit value	Speed
<ul style="list-style-type: none"> Regular: electronics, footwear Refrigerated: agri-products 	Container: <ul style="list-style-type: none"> Regular Reefer 	Multi-modal (road + rail/air/sea)	Many players (integrated services / freight forwarding)	Air	Express logistics / small package delivery Air
Minerals Maize	Bulk				
Cement	Semi bulk				
Oil Chemicals	Liquids (tankers, pipelines)	Uni-modal (road) / local pick-up delivery	Few players (direct hiring, self-transport)	Road	Road
				Rail	Rail
Cars Trucks	Roll-on Roll-off			Maritime	Maritime

Source: WBG (2019), "Guidance for assessing market dynamics and government interventions that restrict competition: Focus on Cargo Transport and Logistics".

- 3.37 As we can see from the table, for containerized products, and especially high unit value products, speed often becomes an important factor. For bulky, large volume and low unit value products price becomes the dominant factor.
- 3.38 The main alternative to railway is road transport. Road Corridor 10 is a major substitute for the Railway Corridor X, and once completed, Highway E763 (Belgrade – South Adriatic) may become a major substitute to the railway route Resnik (Belgrade) – Valjevo – border with

³⁵ Response of SK to extended RFI, Q9, received by KP&CL on 16 September 2019. The highlighting (bold) is introduced by CL.

Montenegro. However, some types of cargo are simply not suitable for transport by road, for example heavy loads or large quantities as mentioned by DB Schenker and Despotija.³⁶ Also, for locations where railroad is not available, road transport may be complementary to railway.

- 3.39 Water transport may complement or substitute railway transport. Pan-European Corridor 7, which includes the Danube river, is a major complement for railway transport. An example of such complementarity is transportation of ore and coke for the Smederevo plant. The ore is transported from Ukraine (via the Black Sea and Danube or via Tisa river and Danube), while coke is transported from Poland and the Czech Republic directly by rail or first by rail to Bratislava and via Danube from Bratislava on. Thus, waterways for ore delivery complement rail for coke delivery; waterway from Bratislava to Smederevo complements the rail route from Poland to Bratislava³⁷.
- 3.40 ISR does not view waterways transport as substitute, but as a complement. However, if Danube's waterline is low or if the river is partially frozen, rail will have more traffic and *vice versa*, if a train route is closed for maintenance, customers will likely use the waterway transport, if available (e.g. Šabac – Golubac route on Sava - Danube).³⁸ This indicates a certain degree of demand-side substitutability between the two transport modes. Also, water transport is only suitable for certain types of cargo (grain, coal, oil, sand, gravel).³⁹

Table 16: Waterway alternatives to railway routes

Railway route	Waterway Alternative			
	Route	Length, km	Speed, km/h	Cost
Belgrade – Novi Sad	Danube	84	Upstream: 5-7 Downstream: 10-12	1.8-3.2 €cent/tkm (gravel and sand)

Note: Cost by rail 2.8-5.5 €cent/tkm

Source: University of Belgrade, Faculty of Transport and Traffic Engineering, joint department for railway traffic, professor PhD Nebojša Bojović

³⁶ RFI responses of DB Schenker and Despotija, November 2019

³⁷ University of Belgrade, Faculty of Transport and Traffic Engineering, joint department for railway traffic, professor PhD Nebojša Bojović.

³⁸ See *supranote* 9

³⁹ See *supranote* 37.

Supply- and demand-side substitutability with road transport

Supply-side substitutability

- 3.41 Supply-side substitutability is limited to those instances when companies engaged in the provision of freight transport services are active on both the rail and road transport service markets. Such companies, generally freight-forwarders or logistics companies, are not bound to one mode of transport and choose between road, rail, inland waterways and air transport based on the specific needs of their customers.
- 3.42 Examples of companies that are active on the rail freight market but also operate through other modes of transport are Despotija, Milšped, Transfera, Schenker and Panšped.⁴⁰

Demand-side substitutability

- 3.43 Judging by market trends and responses from various players involved in the rail freight market, road freight transport has a high degree of demand-side substitutability with rail freight transport.
- 3.44 As Table 2 shows, road freight transport has been growing significantly compared to rail in its overall share of freight transport, both in terms of total tonnes transported and tonnes-km. There is an ongoing shift in the market from rail to road freight transport.
- 3.45 This trend is confirmed by the responses we received from several market players. Despotija notes that road freight transport has grown considerably in market share due to the competitive weakness of rail transport (presumably speed) in the past decade.⁴¹ Lack of maintenance of rolling stock and rail infrastructure, together with a general deterioration of service quality, has led to an increase of the number of road carriers operating on the market.
- 3.46 The same issues were raised by SI Cargo Logistics who consider road haulers to be the biggest competition with rail transport.⁴² They mention that it is becoming increasingly common for goods traditionally transported by rail to be moved on the road. This is due to the large problems with railway traffic, including the large number of closed sections of the rail network and the low commercial and technical speed of rail.

⁴⁰ RFI responses of Despotija, Milšped, Transfera, Schenker and Panšped, November 2019

⁴¹ RFI responses of Despotija, November 2019

⁴² RFI responses of SI Cargo Logistics, November 2019

- 3.47 Milšped comments that, at the moment, the conditions in the rail freight market are such that rail transport cannot be considered an effective substitute to road transport, primarily because of the large difference in the level of service quality.⁴³
- 3.48 Despite these issues, KP expects rail transport services to become of sufficient quality in the future to effectively compete with other modes of transport and take over some customers from road transport, once rail infrastructure capacity is improved.⁴⁴
- 3.49 In general, the advantages of road transport are its flexibility and the ability to respond quickly to smaller shipments, which is why rail transport cannot easily replace it when it comes to shipment to final consumers.^{45,46} The main disadvantages are the higher cost of road transport and the inefficiencies that arise when transporting large quantities of goods over long distances. Road transport's higher unit costs make it less suitable for transporting low-value, high-volume goods such as many agricultural commodities.

Government participation

- 3.50 Government participates at various levels of the value chain. ISR, the sole infrastructure manager and ancillary services provider, and SK, the largest carrier, are state-owned companies. SK's retail tariffs are approved by the Serbian Government. In addition, some major freight transport customers are also state-owned.

Non-horizontal integration

- 3.51 Vertical integration may have a potential to restrict competition if it results in a (partial) foreclosure of upstream or downstream competitors. It is therefore important to describe the vertical relations along the value chain, including the type of relation (integration or commercial agreement) and the importance of the relation in terms of market coverage. Vertically related state-owned firms may also raise concern albeit to a lesser extent as state ownership does not automatically imply maximization of joint profit.
- 3.52 Serbian Railways held a legal monopoly in all railway transportation services before restructuring in 2015. As a result of this restructuring, three legal entities were established, namely Srbija Voz, Srbija Kargo and ISR.⁴⁷

⁴³ RFI responses of Milšped, November 2019

⁴⁴ RFI responses of Kombinovani Prevoz, November 2019

⁴⁵ RFI responses of Despotija, November 2019

⁴⁶ RFI responses of NELT, November 2019

⁴⁷ European Commission (2019), "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions", available at: <https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-serbia-report.pdf>

Section 4

Regulatory environment in rail freight transport in Serbia

- 4.1 The principles underpinning regulation of rail freight transport are (mainly) set forth in the Law on Railways adopted in May 2018⁴⁸, namely:
- Regulation of access/market entry;
 - Regulation on train route allocation;
 - Regulation on access to service facilities access; and
 - Regulation of access fees.
- 4.2 Besides the Law on Railways, the Law on Railway Safety ("Official Gazette of the Republic of Serbia" No. 41/2018) and the Law on Railway Interoperability ("Official Gazette of the Republic of Serbia" No. 41/2018) contain supplementary rules on rail freight transport, as well as several bylaws⁴⁹ which further detail the rules provided in the laws. Corresponding commercial (i.e. contractual) relations are governed by the Law on Contracts in Rail Transport ("Official Gazette of the Republic of Serbia" No. 38/2015).
- 4.3 After discussing the role of the Directorate for Railways as a regulatory body, we describe each of the above-listed regulations. We then discuss the alignment of Serbian overall regulatory environment with European Directives.

⁴⁸ European Commission (2019), "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions", available at: <https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-serbia-report.pdf>.

⁴⁹ Rulebook on Licences for Transport in Railway Traffic ("Official Gazette of the Republic of Serbia" No. 53/2019), [Rulebook on Form of Safety Certificate for Operating of Railway infrastructure](#) ("Official Gazette of the Republic of Serbia" No.68/19) etc.

Regulatory body

- 4.4 In Serbia, the Directorate for Railways has competences of a Regulatory Body, National Safety Authority and a Licensing Body as governed by the Articles 120-125 of the Law on Railways ("Official Gazette of the Republic of Serbia" No. 41/2018).

Regulation of access/market entry

- 4.5 A railway undertaking can provide transport services on the ISR's railway infrastructure based on (a) a valid license for carriage in railway transport, issued by Directorate for Railways⁵⁰, (b) a valid certificate on safety for carriage in railway transport⁵¹ issued by Directorate for Railways, and (c) allocated capacity (for which an operator concludes a contract with the ISR).
- 4.6 In practice, the process of obtaining the licenses and security certification to carry rail freight is not very long but may become time consuming as the number of loco drivers, locomotives and wagons to be registered increase (because of the increased paperwork associated with more registrations). Market participants state that these requirements are justified and are standard cost of operation.⁵²

Rules on train route allocation

- 4.7 Procedures and deadlines in capacity allocation are harmonized with Directive 2012/34/EU and its appendices.⁵³ Existing laws and regulations oblige the ISR to allocate (on the annual basis) the infrastructure capacity to railway undertakings in a transparent and non-discriminatory manner.
- 4.8 ISR applies the following criteria in the route allocation process: (a) volume of service, i.e. the annual volume of the operator on all routes; (b) utilization of railway infrastructure; (c) volume of additional services provided by the infrastructure manager in connection with the transport provided on the route; (d) business reputation, i.e. having a history of regular

⁵⁰ According to Network Statement, the main conditions for obtaining a valid license are good reputation, financial capability, expertise and insurance coverage for civil liability.

⁵¹ Ibid. "*Railway safety legislation is in place but further improvements in training capacity, examination methods and licensing procedures are pending. Some technical specifications for interoperability have been published, but publication of the others is needed to allow full implementation of existing legislation.*" The certificate on safety for carriage is issued, inter alia, if the railway rolling stock is technically in accordance with the regulations and standards regulating the safety of rail transport in the Republic of Serbia; if the staff managing and using railway rolling stock is trained and is medically fit; and if the company has organized offices supervising the railway transport.

⁵² Interview with SK on 1 August and Kombinovani Prevoz on 2 August 2019

⁵³ European Commission (2012), "Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area", available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:343:0032:0077:en:PDF>

payments and safety practices; (e) public service obligation; and (f) quality of performed transport service in the previous period.⁵⁴

4.9 If the number of requests for allocation of the same infrastructure capacity exceeds the permitted capacity of a railway line, the ISR drafts priority rules upon which the train path will be allocated. The priority rules apply in the following order:⁵⁵

- BG:VOZ (Belgrade Train)⁵⁶;
- Trains for transport of passengers in international traffic;
- Trains for transport of passengers in domestic (inbound) traffic;
- International freight trains; and
- Other freight trains.

4.10 Within each priority category, there are the following additional rules:⁵⁷

- requests for regular trains have a priority over requests for train routes for special trains and trains transporting exceptional consignments;
- requests in accordance with framework agreements have a priority over the new requests;
- requests for the use over a longer period of service have a priority over requests for the use over a shorter period;
- requests for longer routes have a priority over the requests for a shorter route.

4.11 The criteria mentioned in 4.8 - 4.10 were introduced four years ago, based on similar criteria present in the Network Statement of Croatia.⁵⁸ Nevertheless, these criteria have never been applied before as ISR has never experience congestion on its network. It is therefore not completely clear how these criteria would be applied in practice.

4.12 The applicant for train path allocation may submit a formal request (complaint) to the Directorate for Railways against the decision by the infrastructure manager to reject its

⁵⁴ see *supranote* 5, p. 48 of the document available at the link.

⁵⁵ see *supranote* 5, p. 52-53 of the document available at the link.

⁵⁶ BG:VOZ is an urban rail system that serves the city of Belgrade. It is a part of the transport system managed by the public transit corporation GSP Belgrade.

⁵⁷ see *supranote* 5, p. 53 of the document available at the link.

⁵⁸ Interview with ISR, January 2020

application for the path allocation or against the established conditions of supply of infrastructure capacity, or when not satisfied with the train path allocation procedure and its outcome.

- 4.13 Table 17 below contains a description of all requests (complaints) submitted to RD since 2016. It makes crystal clear that there have not been any serious problem with the access to the rail network so far.

Table 17: List of requests (complaints) to the Railway Directorate, 2016 to present

Rail operator	Date	Request (Complaint)	Solution
SK	18/03/2016	ISR published an incomplete Network Statement for 2016 and failed to publish one for 2017	ISR amended the 2016 NS and published the 2017 NS
Ex officio	23/03/2017	ISR published an incomplete Network Statement for 2017 and failed to publish one for 2018	ISR amended the 2017 NS and published the 2018 NS
SK	09/05/2017	KP received favourable conditions from ISR for a special shipment	No unfair treatment, complaint dismissed
SK	14/09/2017	Despotija received favourable treatment from ISR	No unfair treatment, complaint dismissed
Despotija	08/12/2017	Despotija was assigned a different route from what it requested	No unfair treatment, complaint dismissed
KP	03/09/2018	ISR rejected its route allocation request because of unclear legal provisions	ISR was instructed to clarify legal requirements, complaint withdrawn by KP
KP	04/06/2019	ISR illegally changed access charges	ISR reversed the change
SK	18/10/2019	SK objected to the calculation of certain access charges	ISR was not responsible, complaint dismissed
KP	10/12/2019	KP objected to the calculation of certain access charges	Miscommunication between ISR and KP was resolved

Source: Railway Directorate

- 4.14 In practice, the route allocation is performed by hand and is susceptible to human error. At the same time, the access approval is normally issued within 24 – 48h (statutory deadline is 5 days). So far, the need to resolve multiple bids has never arisen.⁵⁹
- 4.15 Table 18 shows routes allocated to each rail carrier in 2018.

⁵⁹

Source: Interviews with ISR on 2 August 2019; with SK on 1 August 2019.

Table 18: Route allocation (thousand km), 2018.

Railway carrier	Allocated route	Used route	% used in relation to assigned routes
Srbija Kargo	100,831	67,576	67.0
Kombinovani Prevoz	7,694	3,209	41.7
Despotia	1,953	1,065	54.5
Eurorail	375	33	8.8
NCL	327	195	59.6
TOTAL	111,180	72,042	64.8

Source: ИЗВЕШТАЈ О РЕГУЛИСАЊУ ТРЖИШТА ЖЕЛЕЗНИЧКИХ УСЛУГА ЗА 2018. ГОДИНУ, Railway Directorate of the Republic of Serbia, June 2019, available at <http://www.raildir.gov.rs/izvestaji.php>

- 4.16 As can be seen from the table, in 2018, about 35% of the allocated capacity was not actually used. This varies by the carrier, with SK utilising most of its allocated capacity (67%), with KP utilising only about 42% and Eurorail less than 10% (presumably, due to the suspension of their security certificate after an audit by RD) of their allocated capacity.
- 4.17 According to the Network Statement,⁶⁰ when a rail undertaking is not using the allocated train path to the extent requested and documented in the timetable, ISR may charge a reservation fee or cancel the allocated train path. ISR calculates monthly utilisation rates and declares its right to cancel the allocation in case the utilisation rate is below 25% (below 50% on congested infrastructure).
- 4.18 When the utilisation rate on the allocated to freight train route is below 40%, ISR is entitled to charge a fee on the allocated but not used capacity. The fee is calculated as 20% of the access fee multiplied by the difference between 40% of allocated capacity and actually utilised capacity⁶¹. However, the fee for the under-utilised capacity has never been charged by ISR.⁶² MCTI explains that this is because underutilisation fee is a preventive measure when there is significant congestion potential.
- 4.19 Market participants point out that an allocation does not guaranty timely access to the network, as passenger transport always gets priority. SK indicates that clients usually own the wagons. SK may lease its wagons to customers if it does not currently need them.

⁶⁰ See *supra*note 5, p. 53 of the document available at the link.

⁶¹ See *supra*note 5, p. 54 of the document available at the link.

⁶² Interviews with ISR and KP on 2 August 2019.

Access and charges

*Rules on services and facilities access*⁶³

4.20 The services that can be provided to railway undertakings are categorised in Table X:

Table 19: Infrastructure charging categories

Charging category	Description
I	Minimum package of services
IIa	Track access to service facilities
IIb	Basic services in service facilities
III	Additional services
IV	Ancillary services

Source: Network Statement 2020

4.21 The minimum package of services includes:

- handling of requests for capacity allocation;
- right to use the allocated capacity;
- use of infrastructure on the main running track (turnouts, tracks, railway nodes and lines),
- train control including signalling, regulation of train movements, acceptance and dispatching of trains and communication regarding the train operations and provision of information on train movements;
- use of electrical supply equipment;
- provision of all other information to operate the service on the allocated capacity.

4.22 Services facilities for provision of basic services include freight terminals, marshalling yards, storage sidings, maintenance facilities, water supply and scaling facilities, inland port facilities, relief facilities, and facilities for storing and refuelling. ISR provides railway access to these facilities and many of the services at these facilities.

4.23 The services at freight terminals are provided by freight terminal operators (ŽIT Beograd and Nelt Co. being the most prominent ones). The services at inland port facilities are provided by port operators. Shunting services at marshalling yards are provided by ISR, but subject to a special contract; fuel prices are quoted separately.

⁶³ This is based on *supra*note 5, p. 51-57 of the document available at the link.

4.24 Additional services (a separate contract must be concluded with ISR) include

- Supply of electricity for train traction;
- Modified contracts for control of transport of dangerous goods and for assistance in transport of special trains.

4.25 Ancillary services include the following:

- access to telecommunications network
- provision of additional information (training, timetable materials)
- technical inspection of rolling stock

ISR may refuse providing any of ancillary services, but if it does so, then it does it for all railway undertakings.

Determination of access fees

4.26 A new Regulation specifying the access pricing methodology is pending. ISR expects the new methodology to increase the part of infrastructure costs that are covered by access fees; however, the new methodology is likely to be more complicated.⁶⁴ At present, only 22-28% of ISR's expenses are covered by their revenues,⁶⁵ so the difference has to be financed by the Government.

4.27 Currently, the access fee is determined according to the principle that railway undertakings should only bear the justified cost of the infrastructure and the costs arising from the efficient provision of services requested by the users⁶⁶. The methodology is based on the economic principle of valuation known as marginal cost plus, i.e. marginal costs increased by a mark-

⁶⁴ See *supra*note 9.

⁶⁵ Interview with ISR on 23 July 2019.

⁶⁶ Regulation on Methodology for Valuation of Elements for Track Access Charge Setting (Uredba o metodologiji vrednovanja elemenata za određivanje naknada za korišćenje železničke infrastrukture) „Official Gazette RS”, No. 122/14.

Regulation on the method and modalities of calculating the costs incurred as a direct result of operating the train (Uredba o načinu i modalitetima izračunavanja troškova koji su nastali kao direktan rezultat saobraćanja voza) „Official Gazette RS”, No. 48/19.

European Commission (2015), “Commission implementing regulation (EU) 2015/909 of 12 June 2015 on the modalities for the calculation of the cost that is directly incurred as a result of operating the train service”, available at : <https://publications.europa.eu/en/publication-detail/-/publication/89c95159-1186-11e5-8817-01aa75ed71a1/language-en>

up. Marginal costs are estimated on the base of track amortisation, cost of train movement control and signalling, consumption of energy and overheads.

- 4.28 Charges for categories I and II are defined based on the costs of railway traffic management (or regulation) and infrastructure maintenance. The level of unit charges is determined according to the line category (main, regional, local), train category (passenger, freight) and traction type (diesel, electrical). Additionally, the level of unit charges for category II also depends on the railway node (service facility).
- 4.29 The charging units for category I services are train-km (part of the charge attributed to the use of infrastructure) and tonne-km (part of the charge attributed to the tear and wear of tracks); for category IIa, these are train (part of the charge attributed to the use of the node capacity) and tonne-km (part of the charge attributed to the tear and wear of tracks in the node); for category IIb, the charging unit is serviced train.
- 4.30 In Table 20 below, we compare basic charges in Serbia with related charges in Hungary, a comparator EU country. The charges for Hungary are converted to RSD and adjusted for income with GDP per capita data. The charges are not perfectly comparable as the two countries use different charging categories. Nevertheless, charges relative to GDP in Serbia are somewhat higher than in Hungary.

Table 20: Infrastructure charges – Serbia vs Hungary

Unit of measurement	Charges description - Serbia	Charges - Serbia	Charges description - Hungary	Charges (adjusted for income) - Hungary	Charges (nominal) - Hungary
RSD per one train km	Electrical locomotive – mainline	93.50 (€0.79)	Standard freight trains – line section category I	73.36 (€0.62)	161.64 (€1.37)
	Diesel locomotive – mainline	79.04 (€0.67)			
RSD per one gross-tonne km	Electrical/diesel – mainline	0.0858 (€0.00073)	Standard freight trains	0.0454 (€0.00038)	0.1001 (€0.00085)

Notes: The values for Hungary refer to the MÁV part of the network

Source: Compass Lexecon from various sources – Serbian charges from the Serbian Network Statement, Hungarian charges from the Hungarian Network Statement, 2018 GDP per capita (current US\$) and 2018 exchange rate (LCU per US\$, period average) from the World Bank

- 4.31 Charges for categories III and IV are determined based on the costs of the actual service provided. These charges are uniform across the Serbian railway network. The exact values of the charges for all categories and formulae for their computation are provided in the Network Statement (supranote 5, p. 70-81).

- 4.32 ISR does not provide quantity discounts. It charges ad-hoc path allocation at extra 12,230 RSD per path (about €104 at 2nd October 2019 exchange rate) and extraordinary requests that involve the timetable change at 17,137 RSD per path (about €147 at the same rate).

Incentive regulation

- 4.33 The regulation also aims to provide incentives for efficient operation of the network, investment and quality of service. For instance, 2020 Network Statement indicates that the compensation for all primary train delays (i.e. train delays that are not caused by already existing earlier delay and not subjected to exemption) is calculated on the basis of the number of minutes of train delay and “charged between ISR and the rail undertaking, if agreed under the contract for the use of railway infrastructure”.⁶⁷
- 4.34 In practice, ISR pays to cargo carriers the damage which arises from delays in transport caused by the deficiencies in rail infrastructure. ISR indemnifies the actual damage incurred and which can be evidenced, such as costs of train not being able to move, etc. However, ISR notes that it does not penalize the cargo carriers for delays caused by them – if it did so, SK would be most affected.⁶⁸ In turn, SK notes that it never received a compensation for a delay caused by ISR.⁶⁹

Alignment with EU acquis

- 4.35 The European Commission notes that Serbia adopted new Law on Railway, Law on Safety in Railway Traffic and Law on Interoperability of the Railway System, achieving a high level of alignment with EU legislation on establishing a single European railway area.⁷⁰ It also stresses that further improvements regarding training capacity, examination methods and licensing procedures are still pending.
- 4.36 Over the past years, the EU has focused its efforts in the railway sector towards liberalisation and competition. Its main goals have been 1) opening national markets and liberalising rail

⁶⁷ See *supra*note 5, p. 72 of the document available at the link.

⁶⁸ Interview with ISR on 2 August 2019.

⁶⁹ Response of SK to extended RFI, Q23, received by KP&CL on 16 September 2019.

⁷⁰ European Commission, “Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area”, 2012, available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:343:0032:0077:en:PDF>

services, 2) creating a common transport market through technical interoperability and harmonisation and 3) separating infrastructure management and service operations⁷¹.

4.37 Below, we briefly outline EU reforms in the railway sector, leaving more detailed discussion of EU regulation to Appendix B.

Opening and liberalisation

- Extension of access rights for rail freight operators and improvement of transparency of rail market access conditions
- Gradual opening of the rail freight market
- Establishment of national regulatory bodies and strengthening of their independence

Interoperability and harmonisation

- Common criteria for the granting of licences
- Improvement of technical interoperability arrangements
- Establishment of the European Railway Agency to deal with the technical aspects of safety and interoperability
- Common procedures for accident investigation
- Establishment of Safety Authorities in each EU Member State

Separation

- Clarification of the rules for funding and management of infrastructure
- Vertical separation of infrastructure management and service operations
- Reduction of costs and administrative burdens for railway companies in order to improve the competitiveness of the sector

4.38 Serbia is generally well prepared in the transport area when it comes to alignment with EU acquis⁷². The European Commission makes a series of policy recommendations in its Serbia report accompanying the 2019 Communication on EU Enlargement Policy, some of which are applicable to the rail freight market.

⁷¹ UNECE, "Railway reform in the ECE region – Final report", 2017

⁷² European Commission, "2019 Communication on EU Enlargement Policy – Serbia 2019 Report", 2019, available at:

<https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-serbia-report.pdf>

- 4.39 The European Commission encourages Serbia to focus on implementing rail reform including market opening, the network statement, infrastructure management and market monitoring, as well as strengthen the capacities of the regulatory body for railways.
- 4.40 The European Commission also notes that Serbia should revise its transport strategy in line with EU guidelines for the development of trans-European networks, as the country is only moderately prepared for this negotiation chapter.
- 4.41 In general, we did not identify any significant departures between Serbian and EU legislation, since the latest amendments to the Serbian regulation of the Railway sector came as a result of the harmonization with the EU rules (as stipulated per the Stabilization and Association Agreement signed between Serbia and EU Member States). In particular, the new rules adopted in 2018 are a somewhat verbatim adoption of the relevant EU Directives or contain very similar wording as the EU rules which in turn provide for the same solutions as the EU counterparts.

Section 5

Market performance

- 5.1 The interaction between market characteristics and government interventions influences the behaviour of market participants and ultimately market outcomes. Prices, quality of services, investment, and productivity, among many other variables, are the outcome not only of how companies decide individually and independently, but predominantly of how they interact strategically in the market given the underlying market features and the rules set by the government (or lack thereof).
- 5.2 Due to the lack of comprehensive data⁷³, in the following, we only look at financial indicators and overall quality of the freight transport service to conclude that the quality is relatively low. We then look at two potential reasons for such poor performance: (i) excessive government regulation, and (ii) poor infrastructure quality. Our take from this section of the report is that poor market performance is likely to be caused by poor infrastructure quality.

Financial performance indicators

- 5.3 Since SK is performing the bulk of rail freight service (its market share in 2018 exceeded 94% and was about 85% in 2019), its performance indicators largely characterise industry as a whole. From Table 21, we can see that, in 2018, SK received somewhat lower revenue compared with the two previous years; its net profit dropped very significantly, but investment grew a lot, exceeding the whole revenue it got from domestic transportation in 2018.

⁷³ Despite (in some cases numerous) requests from us, no members of the value chain provided us with any indicators of service quality. Apparently, quality of rail freight transport is not being quantified in Serbia.

Table 21: Revenue, Investment and Profit of SK in €mln

	2016	2017	2018
Revenue from freight transport	76.70	81.00	73.03
- Domestic transportation	21.39	16.12	14.72
- International transportation	55.31	64.88	58.31
Export	14.20	18.40	16.63
Import	14.44	20.15	16.37
Transit	26.67	26.33	25.32
Investment	1.68	2.58	23.11
Total revenue from all sources	91.3	99.3	88.5
Net Profit	3.26	3.91	0.05

Source: Srbija Kargo

- 5.4 Overall, the financials of SK look solid despite apparent reduction in demand in 2018, which was not expected by SK's management in 2016. Table 22 shows that SK expected stable, if not very strong, growth in demand for the next 4 years at that time. At the same time, SK planned significant cost cuts both in terms of payroll and access fees.

Table 22: SK – Basic success indicators for the medium-term

Description	Indicator	Year				
		2016	2017	2018	2019	2020
Volumes	Tons transported (in thousand tonnes)	11,758	11,975	12,191	12,385	12,596
	Mln tonnes-km	3,064	3,107	3,160	3,207	3,258
Productivity	Average number of employees during the year	3,892	3,245	2,769	2,530	2,385
	thousand tonnes-km per employee	787	957	1,141	1,267	1,366
	Revenues from transportation of goods in mln RSD (mln €)	9,059 (€76.70)	9,611 (€81.26)	9,783 (€82.72)	9,941 (€84.05)	10,110 (€85.48)
	- Internal traffic	2,439 (€20.62)	2,591 (€21.91)	2,637 (€22.30)	2,680 (€22.66)	2,725 (€23.04)
	- International traffic	6,620 (€55.97)	7,020 (€59.36)	7,145 (€60.41)	7,261 (€61.39)	7,385 (€62.44)
	Gross wages and contributions borne by the employer (in mln RSD)	2,941 (€24.87)	2,708 (€22.90)	2,341 (€19.79)	2,157 (€18.24)	2,059 (€17.41)
Financial parametres	Fee for RS infrastructure network access, mln RSD (mln €)	1,297 (€10.97)	1,507 (€12.74)	1,444 (€12.21)	1,466 (€12.40)	1,490 (€12.60)

Notes: 2016 actuals, 2017 and later - projections

Source: Srbija Kargo, "Long-term and mid-term plan – business strategies and developments"

- 5.5 Below, we illustrate the cost structure of KP in 2017. Infrastructure charges are the largest cost for KP, followed by executive staff and energy costs.

Table 23: KP – cost structure, 2017

	Cost	Value	% of total
1	Infrastructure charges	[confidential]	[confidential]
2	Executive staff	[confidential]	[confidential]
3	Energy	[confidential]	[confidential]
4	Maintenance	[confidential]	[confidential]
5	Depreciation of assets	[confidential]	[confidential]
6	Administrative and other staff	[confidential]	[confidential]
7	Fixed cost of leasing offices and other facilities	[confidential]	[confidential]
8	Insurance, etc.	[confidential]	[confidential]
	<i>Total</i>	[confidential]	100

Notes: Confidential

Source: RFI responses of KP, November 2019

Quality of services

- 5.6 A consistently measured across countries performance (quality) indicator we could find is World Bank's LPI (logistics performance indicator), which ranks countries on six dimensions:

- The efficiency of customs and border management clearance ("Customs")
- The quality of trade and transport infrastructure (Infrastructure")
- The ease of arranging competitively priced shipments ("Shipments")
- The competence and quality of logistics services—trucking, forwarding, and customs brokerage ("Logistics")
- The ability to track and trace consignments ("Tracking")
- The frequency with which shipments reach consignees within scheduled or expected delivery times ("Timeliness").

- 5.7 The data used in the ranking comes from a survey of logistics professionals who are asked questions about the foreign countries in which they operate. Admittedly, this is much broader than performance of the rail freight transport alone. In the absence of a narrow, indicator, however, LPI is a useful tool that gives an idea of how Serbian freight transport is positioned internationally and how its performance evolved in the recent decade.

- 5.8 From the summary table below, we can observe that the general trend in Serbia was improvement in freight transport performance. However, from 2014 to 2016, there was a

drop in LPI score that was not completely made up for by slight improvement towards 2018. Infrastructure index followed a similar pattern.

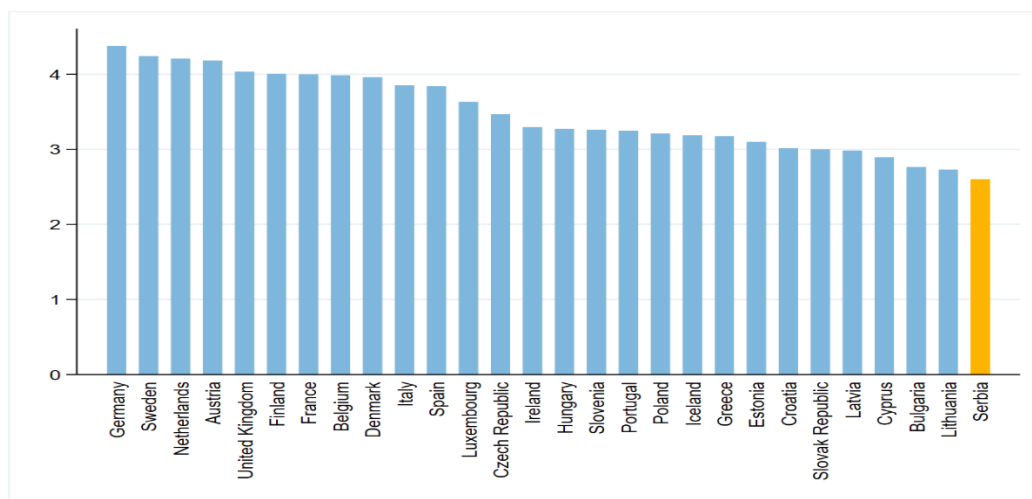
Table 24: LPI score and its components in Serbia, 2007-18

Year	Rank	Score	Customs	Infrastructure	Shipments	Logistics	Tracking	Timeliness
2007	115	2.28	2.33	2.18	2.25	2.29	2.07	2.54
2010	83	2.69	2.19	2.3	3.41	2.55	2.67	2.8
2012	75	2.8	2.39	2.62	2.76	2.8	3.07	3.14
2014	63	2.96	2.37	2.73	3.12	3.02	2.94	3.55
2016	76	2.76	2.5	2.49	2.63	2.79	2.92	3.23
2018	65	2.84	2.6	2.6	2.97	2.7	2.79	3.33

Source: <https://lpi.worldbank.org/international>

5.9 At the same time, we observe that the quality of freight transport in general and transport infrastructure in particular were low by European and international standards (65th place worldwide). To illustrate this point, we show, in Figure 5, how Serbian freight transport infrastructure scored in 2018 relative to other European countries.

Figure 5: Transport infrastructure score by country, 2018



Source: <https://lpi.worldbank.org/international>

5.10 The domestic LPI data described in Table 25 and Table 26 was obtained by the World Bank by surveying logistics professionals to assess the logistics environment in Serbia. Table 25 clearly shows that virtually every respondent judged the quality of rail infrastructure in Serbia to be low or very low. This result is even more striking when compared to the 0% of respondents who identified major infrastructure quality issues with regards to airports and roads.

Table 25: Domestic LPI – Quality of infrastructure

Type of infrastructure	Percentage of respondents answering low/very low
Ports	67%
Airports	0%
Roads	0%
Rail	100%
Warehousing/transloading facilities	0%
Telecommunications and IT	0%

Notes: The relevant question in the survey is "Evaluate the quality of trade and transport related infrastructure (e.g. ports, roads, airports, information technology) in your country of work".

Source: World Bank, "Domestic LPI, Environment and Institutions: Serbia 2018" from https://lpi.worldbank.org/domestic/environment_institutions/2018/C/SRB#chartarea (accessed at 11.43 on 19/12/19)

- 5.11 Table 26 provides further evidence of the low quality of services that characterises the Serbian rail sector. While 75% of respondents consider road transport services to be of high or very high quality, none of the respondents say the same about rail transport services.

Table 26: Domestic LPI – Competence and quality of services

Type of service	Percentage of respondents answering high/very high
Road	75%
Rail	0%
Air transport	33%
Maritime transport	33%

Notes: The relevant question in the survey is "Evaluate the competence and quality of service delivered by the following in your country of work".

Source: World Bank, "Domestic LPI, Environment and Institutions: Serbia 2018" from https://lpi.worldbank.org/domestic/environment_institutions/2018/C/SRB#chartarea (accessed at 11.43 on 19/12/19)

- 5.12 For example, the reliability of rail freight traffic in Serbia is only assessed as freight train delays at a regional level or for the entire network. Table 27 below contains such information in thousand minutes for the entire railway network over the whole year.

Table 27: Delay of freight trains

	2016	2017	2018
Delay (thousand mins)	2,086	2,558	2,771

Source: Compass Lexecon based on the interview with SK on 1 August 2019.

- 5.13 Average speed data can also be a good indicator of the quality of rail services and also of the quality of rail infrastructure. Official speed data shows that the average commercial speed on the entire network was 19.9 km/h in 2018 and 23.3 km/h in 2019 (until 20/11/19).⁷⁴ This was broadly confirmed by Despotija in its RFI responses.⁷⁵ Nevertheless, Despotija also noted that the current infrastructure works caused average speed to drop to around 10 km/h in some sections of the network.
- 5.14 In comparison, a 2016 study by the European Court of Auditors notes that the average speed in central and eastern EU Member States was between 20 and 30 km/h according to the latest data available at the time of their study.⁷⁶ More specifically, they found that in Poland the average commercial speed of freight trains was 22.7 km/h in 2014.

Regulation of rail freight transport market

- 5.15 In our cross-country comparison of the rail freight transport markets across Europe, we use Product Market Regulation indicator (“PMR”) as one of the key metrics. It aims at measuring “the regulatory barriers to [...] entry and competition at the level of individual sectors”⁷⁷ and is published by OECD for a set of countries.
- 5.16 The rail transport sectoral PMR is computed as an average of scores ranging from 0 to 6. A high score implies a stronger degree of regulatory pressure. The scores are based on answers to a standard questionnaire designed to reveal the extent of entry regulation, public ownership and vertical separation.
- 5.17 Figure 6 below shows the OECD’s rail transport sector PMR indicators for a selected set of countries. Unavailable to the public in the OECD’s PMR database, Serbia’s rating was computed by Compass Lexecon using the same scoring methodology as the OECD. As a result, Serbia achieves a sectoral PMR of 3.86.

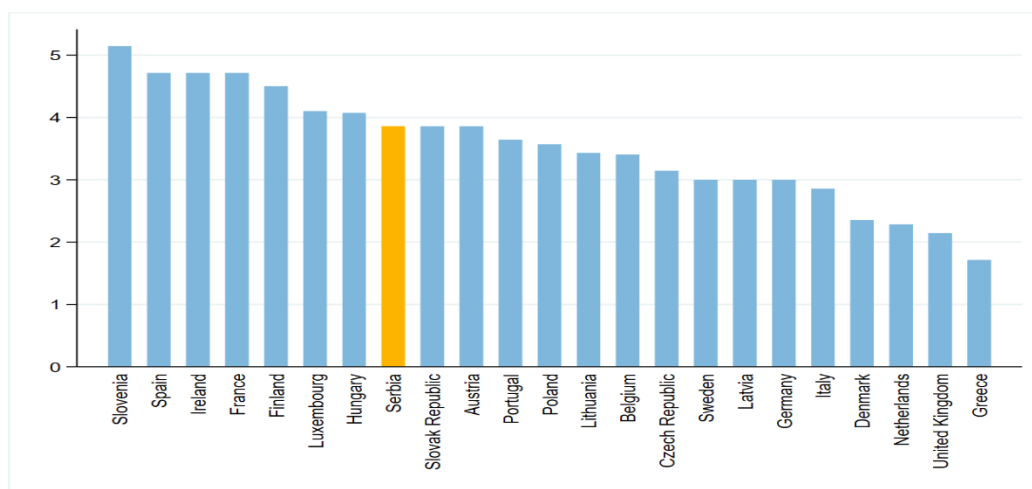
⁷⁴ University of Belgrade, Faculty of Transport and Traffic Engineering, joint department for railway traffic, professor PhD Nebojša Bojović.

⁷⁵ RFI responses of Despotija, November 2019

⁷⁶ European Court of Auditors, “Rail freight transport in the EU: still not on the right track”, 2016

⁷⁷ <https://www.oecd.org/economy/reform/indicators-of-product-market-regulation/>, last accessed on 11 October 2019.

Figure 6: Rail transport PMR score by country, 2018



Notes: OECD countries, based on availability of data.

Source: <https://stats.oecd.org/pmr>

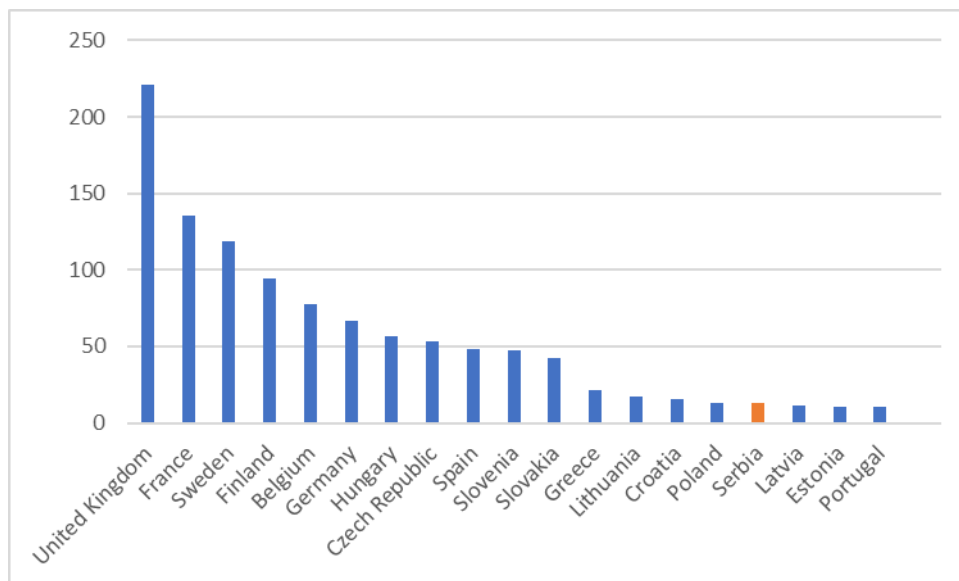
- 5.18 We observe that Serbian railway transport does not appear strongly overregulated, achieving the same score as Austria and Slovak republic, and performing better than France and Spain, according to this indicator. This is one of the pieces of indirect evidence pointing at that problems in rail freight sector in Serbia are not coming from regulation.

Investment in rail infrastructure

- 5.19 One possible reason for the lack of competitiveness of rail may come from poor infrastructure quality, which, in turn, is caused by significant under-investment in the sector. Figure 7 and Figure 8 below show respectively the levels of investment per capita and maintenance spending as a proportion of GDP in the rail sector for a number of European countries. In 2016-17, Serbia's spending on rail investment and maintenance was low compared to most EU Member States.
- 5.20 In 2017, Serbia's maintenance cost of railway infrastructure was about €40.3 mln, growing to more than €50.2 mln in 2018 before dropping to about €36.5 in 2019. The total maintenance spending as a proportion of GDP was about 0.001 in 2017, 0.00117 in 2018, and 0.000796 in 2019, thus exceeding the figure for 2016 in each of these years.⁷⁸

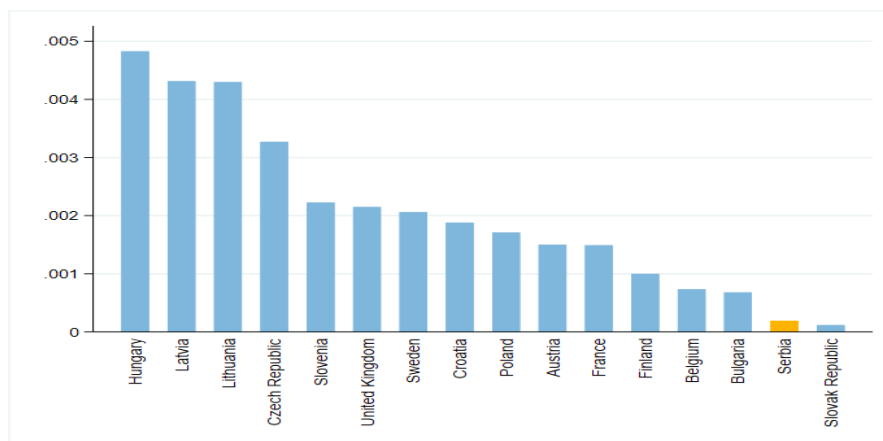
⁷⁸ The absolute figures are provided by MCTI; the relative ones are obtained using the GDP data from The Statistical Pocketbook of the Republic of Serbia 2020.

Figure 7: Total rail investment in Euros per capita in 2017



Source: [CL calculations based on OECD data on investment and population. Population data for Serbia is from WB.](#)

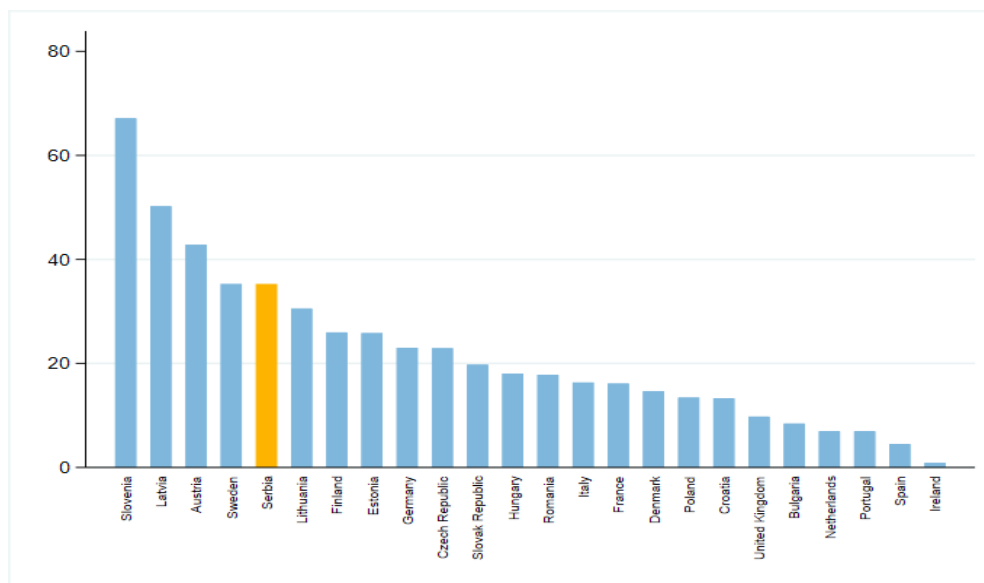
Figure 8: Total maintenance spending as a proportion of GDP in 2016



Source: <https://stats.oecd.org/>

5.21 This is despite the fact that, overall, rail transportation is relatively important for Serbia, as **Figure 9** shows:

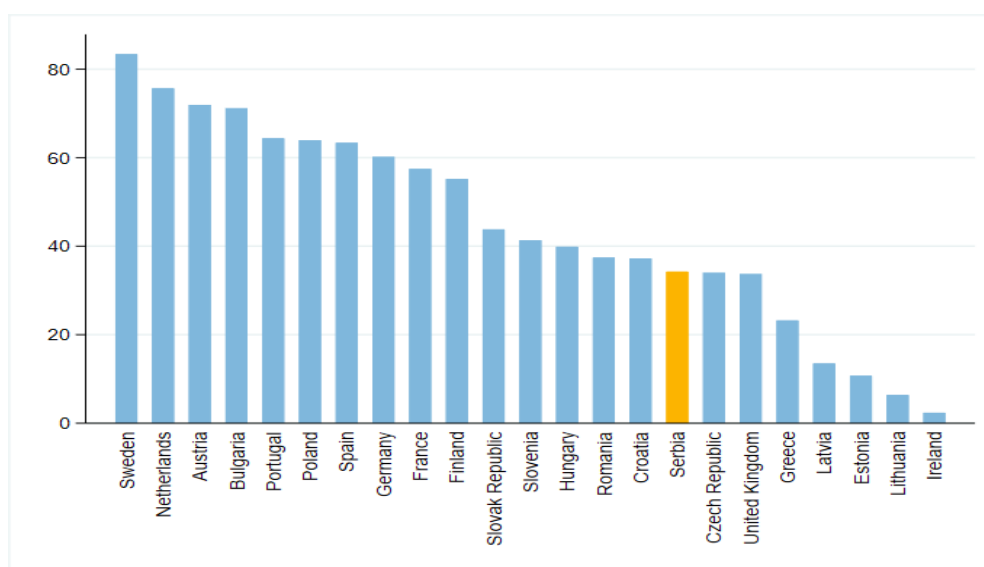
Figure 9: Share of rail freight transport in total inland freight transport, 2016



Source: <https://stats.oecd.org>

- 5.22 Serbian rail infrastructure is lagging behind in terms of rail line electrification rates. Only around a third of the Serbian rail network consists of electrified rail lines, which puts it in the lower half of the EU ranking.

Figure 10: Share of electrified rail lines in total rail network, 2016

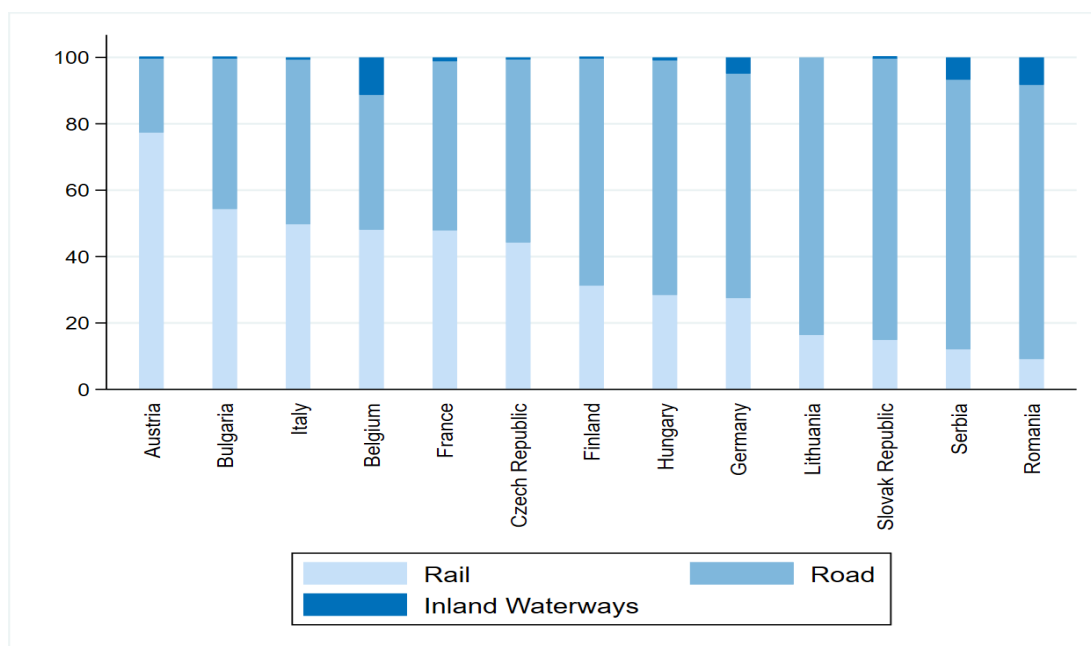


Notes: EU and selected countries, based on availability of data

Source: <https://stats.oecd.org>

- 5.23 As we can see from Figure 11, Serbia dedicates significantly fewer resources to investment in rail infrastructure compared to investment in other modes of inland transport.

Figure 11: Inland transport infrastructure investment, 2016



Notes: EU and selected countries, based on availability of data

Source: <https://stats.oecd.org>

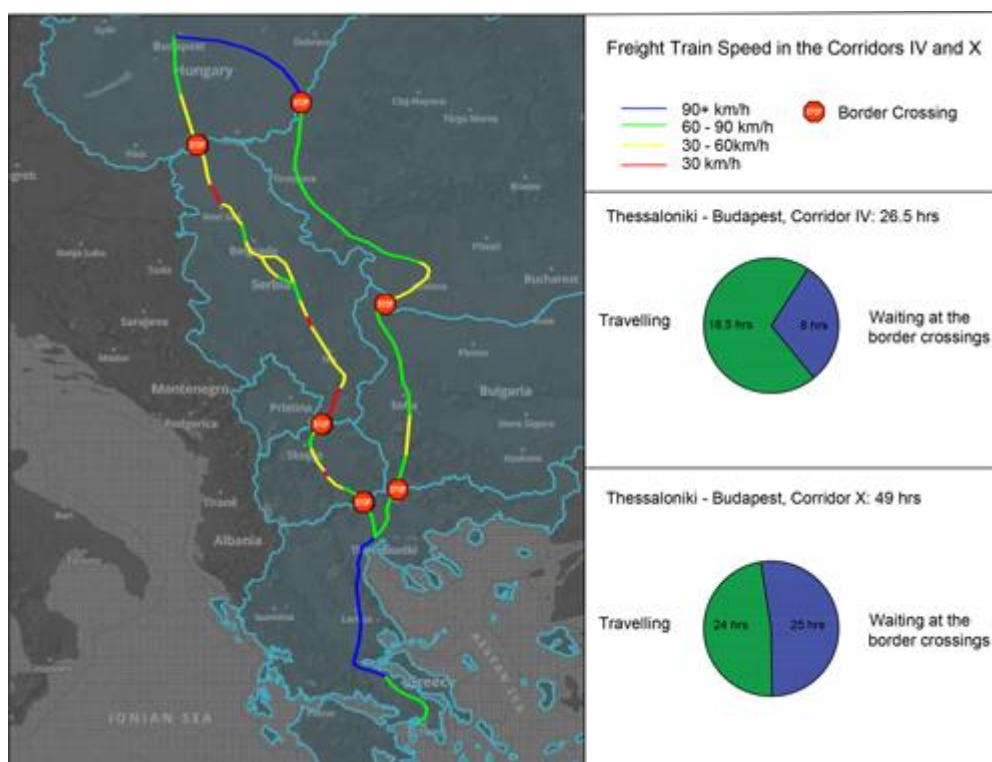
Quality of infrastructure

- 5.24 Both railway network and organization of service by ISR are outdated. The low quality of infrastructure acts in practice as a barrier to entry, as discussed more in detail in the next section.
- 5.25 According to Bauranov (2016)⁷⁹, Corridor X, which Serbia is a substantial part of (see Figure 3 and Table 5), is not a viable option for transit from Northern part of Europe to Greek ports of Thessaloniki and Piraeus. This is because of very low speed of transportation on this route compared to that on the routes of Corridor IV. Average commercial speed in 2012 was 22 km/h, and average running speed 35 km/h, with roughly half of the 49 hours spent waiting at the border crossings. For some details, see Figure 12 below.

Figure 12 Freight train speed at the Corridors IV and X

⁷⁹

A. Bauranov (2016), The Port of Piraeus – Opportunity for Railways in South East Europe? Available online at <https://www.globalrailwayreview.com/article/29672/port-piraeus-railways-south-east-europe/#comments> , last accessed on 20 December 2019.



Source: see supranote 79

- 5.26 ISR states that there was not enough investment into the rail infrastructure. Given that the infrastructure has to be renewed every 25 years on average, at least 185 km of rail should be refurbished every year in the years to come. The key issue for ISR is to renew the railway and simultaneously ensure smooth functioning of the railway transportation. That is why the routes being repaired are closed only intermittently rather than shut down totally. This, however, leads to the delays in the maintenance work – this problem is particularly acute on Preševo and Dimitrovgrad route where there is only one track and two trains cannot go into opposite directions simultaneously.⁸⁰
- 5.27 The current infrastructure works, while welcome by market players because of the future opportunities connected to an upgraded rail network, are proving to be a challenge for most companies⁸¹. Several rail operators noted that the closing of some routes will make it difficult for them to operate even at current levels, with market expansion becoming unrealistic in the nearest future. According to KP, the disruption caused by the infrastructure works could,

⁸⁰ Interview with ISR on 2 August 2019.

⁸¹ RFI responses of railway undertakings and logistic firms, November 2019

under extreme conditions, lead them to bankruptcy as route closing results in less efficient transportation and higher costs.

- 5.28 The express rail project (Belgrade-Budapest route) involves extensive work on the Novi Sad-Subotica route, one of the key routes in Serbia. The works will begin in 2020 and will last 33 months,⁸² and the route will essentially be closed through the most of this period. SK expects that this will increase the cost and length of transportation. Traffic will be diverted to routes via Bogojevo and Banatsko Milosevo.⁸³ ISR started working on alternative routes through Serbia to the east (Zrenjanin) and west (Bogojevo) and plans on finalizing these works by the first half of 2020. Table 28 identifies the main recent/ongoing infrastructure investment projects.
- 5.29 SK notes that ISR has skipped 2.5 maintenance cycles, so without modernisation the throughput capacity of the railway network cannot be increased. Modern software would help improving efficiency and optimizing business operations, which would reduce ISR's costs, but by itself it would not be sufficient for increasing network capacity.⁸⁴
- 5.30 Another potential issue related to infrastructure quality is the lack of qualifications of some of ISR's personnel. KP mentions that ISR finds it difficult to hire qualified personnel and consequently hires mostly young and inexperienced recent graduates.⁸⁵
- 5.31 Despite the obvious difficulties in attracting sufficient funding, Serbian government and MCTI have been very active in encouraging investment in railway infrastructure, as the following tables show. Table 28 contains a selection of investment projects along Corridor X implemented in 2017; Table 29 contains a high-level description of investment projects that were taking place in 2017.

⁸² The very recent development is that the funds for the construction of this route were allocated to health and social protection purposes due to Covid19 (see Р е ш е њ е о у п о т р е б и с р е д с т а в а т е к у њ е б у џ е т с к е р е з е р в е, the Official Gazette dated 31.03.2020). The completion of the project may therefore take longer than planned.

⁸³ Responses to the RFI for Srbija Kargo of August 27, Question 42.

⁸⁴ See *supranote* 24, Q44.

⁸⁵ See *supranote* 11.

Table 28: Selected investment projects (Corridor X), 2017

Project	Description	Value of investment
Railway reconstruction II	Batajnica - Golubinci and Gilje – Cuprija – Paracin	€80 mln
Railway rehabilitation	Rasputnica G-Rakovica-Resnik, Jajinci-Mala Krsna, (reconstruction of 66 km), reconstruction of railway station Mala Krsna, procurement of machinery for the maintenance of construction and electrical infrastructure, renewal of electrical railways infrastructure – 646 km of tracks, capacity reconstruction and modernisation program for the needs of the BG Voz	€91.5 mln
Procurement of new materials	Superstructure rehabilitation of the railways along Corridor X and rolling stock	€100 mln
Modernization and reconstruction	244.9 km railway lines and procurement of 27 diesel motor train units	\$941 (€797.03) mln
Railway section Belgrade Center - Stara Pazova (34,5 km)	Reconstruction and modernization of railway: Works on double track section for high-speed (up to 200 km/h)	\$350.1 (€296.53) mln
Railway section Stara Pazova - Novi Sad (40,4 km)		\$585.5 (€495.92) mln
Railway section Novi Sad - Subotica (108,2 km)		€1,0211.1 mln
Railway line Jajinci – Mala Krsna and station Mala Krsna (60,4 km)	Reconstruction and modernization of railway: Works on single track section for up to 120 km/h speed	€39.2 mln
Railway line Niš – Dimitrovgrad (108 km)	Reconstruction and modernization of railway: Works on single track section for up to 120 km/h speed*	€268.28 mln
Railway section Niš -Brestovac (23 km)		€59.9 mln

Note: Planned to start in the second half of 2020

Source: MCTI

Table 29: Projects started, completed or in progress in 2017

Project	Duration	Distance (km)	Investment (€mln)
Reconstruction and modernisation two-track sections of the Gilje-Cuprija-Paracin railway line Belgrade-Nis	10.02.2011 – 31.01.2017 (with a break 9.09.2011 – 23.04.2014)	10.5	45.92
Reconstruction and modernisation of the Rasputnica G-Rakovica-Resnik section	30.03.2017 – 30.08.2019	7.5	24.57
Reconstruction and construction of the second track on the section Pancevo bridge - Pancevo Main	12.03.2014 – 25.07.2017	14.9	78.97
Reconstruction of 6 sections on Corridor X (3 southern sections)	18.04.2016 – 23.04.2017	46.5	32.6
Reconstruction of the regional line Orlovat - Zrenjanin	December 2017 - 25.10.2018	26	4.75
Resnik - Valjevo reconstruction	06.07.2016 - 14.11.2017	77.6	63.35
Renewal of the regional line Roman Šančevi - Orlovat – Pancevo	October 2017 - 31.01.2019	112	52.31
Construction of viaducts and tunnels "Cortanovci" on the section Stara Pazova-Novi Sad	19.09.2017 – end of 2021 (planned)	4.2	296.42
Construction of Žeželj Bridge	20.04.2012 - 23.05.2018	0	60.6

Source: MCTI

Intermodal transport

- 5.32 Intermodal transport is still in its infancy in Serbia.⁸⁶ The development of intermodal transport is expected to bring about changes in the market and an increase in the transport of goods by rail. With adequate infrastructure and the normalisation of traffic the share of intermodal transport has the potential to grow exponentially and to attract companies that are more or less specialised in intermodal transport to enter the Serbian market.
- 5.33 The role of the terminal is crucial, primarily in terms of location, capacity and speed. There is an insufficient number of intermodal terminals in Serbia, with a lack of terminals in the north and south. Moreover, the quality and capacity of the existing terminals in Belgrade is insufficient

⁸⁶

See *supranote* 81

Section 6

Competition in rail freight transport market in Serbia

Current state of competition

Overview

Market players

- 6.1 After the liberalization of the Serbian market for rail freight transport in 2016, KP entered the industry in 2016 and became the first private carrier. The Serbian rail freight transport market is still highly concentrated – in 2018, SK had a market share exceeding 90%⁸⁷, while in 2019 its share was approximately 85%⁸⁸.
- 6.2 At the outset, we briefly characterize the main competitors in the railway freight transport:
- SK serves all routes. It currently owns 7,000 carriages (approximately 2,500 are fully operable and 2500 are outdated and will be removed from use) and has further 300 leased carriages at its disposal. SK transports all types of goods.⁸⁹ In 2017, SK had 77 electric locomotives of all series of which 70 were in service, as well as 74 diesel-electric locomotives of which only 45 were in service. The average age of locomotives was about 40 years.⁹⁰
 - KP is capable of serving all routes, except for the routes which lead to Montenegro. This is due to the poor condition of such routes and their high inclination so that more than a single locomotive or a higher-power locomotive is needed for operation there. The

⁸⁷ Дирекција за железнице (2019), "Извештај о регулисању тржишта железничких услуга", available at <http://www.raildir.gov.rs/izvestaji.php>

⁸⁸ Source: MCTI.

⁸⁹ Interview with SK on 1 August 2019.

⁹⁰ Ministry of Construction, Transport and Infrastructure (2017), "Projects", available at <https://www.mgsi.gov.rs/sites/default/files/The%20book%20of%20projects%20MGSI%202017.pdf>, last accessed on 11 October 2019.

company started its operations in June 2016 and by now has 15 own locomotives (14 diesel, 1 electrical) and 1 leased electrical locomotive. They do not own or lease any wagons, but only provide the service of “towing” the freight.

- Despotija started its freight transport activities in September 2017. It currently has 3 locomotives and 62 wagons, and it is planning to expand its capacity by March 2020. It transports stone aggregate from Despotovac to stations in Vojvodina, with Kovilovača as their only direct customer.⁹¹
- NCL started operations in September 2018 and it is currently using leased rolling stock with the intention of expanding it in the future.⁹²
- Eurorail began providing services in 2018. It is a part of the Grampet Group, the largest private railway business group in Southeast Europe.⁹³
- Pannon Rail has started to operate in June 2019. The company has 2 leased locomotives.⁹⁴

6.3 There are also market players who either have not yet started operating on the market or only operate for their own needs:

- Companies such as AB Prevoz and Transagent have not yet started operating but plan to enter the market in the future.⁹⁵ AB Prevoz is in the process of obtaining the remaining licences, having already received some of the necessary certificates. Transagent, a subsidiary of a larger Croatian freight forwarder and railway undertaking, has obtained the relevant licences but has not yet provided rail freight transport services.
- Companies such as Elixir Group, EPS – TENT, ATM and NIS are active in sectors unrelated to commercial transport services and are only interested in registering as authorised rail freight undertakings to operate for their own business needs.⁹⁶ Elixir Group, EPS – TENT and ATM have already obtained the necessary licences, but Elixir Group is still relying on SK for its rail freight transport needs as they currently do not find

⁹¹ RFI responses of Despotija, November 2019.

⁹² RFI responses of NCL, November 2019.

⁹³ RFI responses of Eurorail, November 2019.

⁹⁴ RFI responses of Pannon Rail, November 2019.

⁹⁵ RFI responses of AB Prevoz and Transagent, November 2019

⁹⁶ RFI responses of Elixir Group, EPS – TENT, ATM and NIS, November 2019

operating their own rail services justifiable from an economic point of view.
[confidential].⁹⁷

- 6.4 Table 30 and Table 31 list all the companies that received a licence as rail freight operators, either to operate for their own needs or as commercial operators.

Table 30: Licensed operators – Transport for own needs

Company	Year of issue
ZGOP	2015
Elixir Group	2015
NIS	2018
EPS – TENT	2018
ATM	2019

Source: See supranote 10

Table 31: Licensed operators – Commercial freight transport operators

Company	Year of issue
Standard Logistic	2014
Srbija Kargo	2015
SI – Cargo Logistics	2015
AB Prevoz	2016
Rail Transport Logistc	2016
Kombinovani Prevoz	2017
Trans Cargo Logistic	2017
Eurorail	2017
Despotija	2017
Pannon Rail	2017
Neo Cargo Logistic	2018
OBL Logistic	2018
Lokotrans	2018
Transagent	2019

Source: See supranote 10

- 6.5 Table 32 below presents market shares for the main rail undertakings.

⁹⁷ This information is confidential.

Table 32: Traffic volume (in mln tonne-km) and market shares (by volume), 2017-2018

Rail carrier	2017		2018	
	Volume	Share, %	Volume	Share, %
Srbija Kargo	3,288	99.9	3,055	91.6*-94.1
Kombinovani Prevoz	3	0.1	194	2.67-5.8*
Despotija	0	0	50	1.5*-2.11
NCL	N/A	N/A	34**	1.06
Eurorail Logistic	0	0	1**	0.04

Note: * - market share computed from the information reported in RFI responses

** - volumes implied by market share as per supranote 87.

Source: Volume – RFI responses of railway undertakings and logistic firms; Share 2018 – see supranote 87.

State of competition

- 6.6 Despotija and Eurorail are not perceived as competitors by SK because their low capacity and/or because they only transport their own goods (vertically integrated into transport).⁹⁸ At the same time, KP does not perceive SK as its competitor because of its undisputable dominant position in the market.⁹⁹ In line with that view, one of undertakings perceives SK as the only freight carrier in Serbia, because others do not have wagons at their disposal and can at best be viewed, as train operators.¹⁰⁰¹⁰¹
- 6.7 However, it is worth stressing that, in recent years, within a relatively short period of time, several players have entered the rail freight transport market and the European Commission noted in that regard that “Serbia continues to make good progress on rail market opening with five private freight companies operating on the market in early 2019.”¹⁰²
- 6.8 Furthermore, ISR believes that there is potential for entry of new market players such as Grampet Group or RailCargo Austria into the Serbian market.¹⁰³

⁹⁸ See *supranote* 89, Q33

⁹⁹ Interview with KP on 2 August 2019.

¹⁰⁰ Interview with one of undertakings

¹⁰¹ [confidential]

¹⁰² European Commission (2019), “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions”, <https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-serbia-report.pdf>

¹⁰³ See *supranote* 9.

- 6.9 SK's retail tariffs for internal transportation are approved by the Serbian Government. They were introduced around 2007-2008 and not changed since then.¹⁰⁴ SK has requested a tariff increase two or three years ago, but the request has not been accepted yet.
- 6.10 Market participants believe that pricing below SK tariffs would not be profitable. This is because SK only covers direct costs associated with provision of such services: fuel, infrastructure access and payroll.¹⁰⁵
- 6.11 As a result, SK *de facto* does not suffer any competitive pressure from private carriers in the Serbian market for domestic transport. However, there exists certain competitive pressure from private carriers on international freight routes.¹⁰⁶ Here, the tariffs are not regulated and only maximum (so called TEA) tariffs are published by SK. The effective price is determined in bilateral negotiations.¹⁰⁷
- 6.12 SK states that, in 2018, it lost 20% of its profit due to private operators taking over some of its customers. SK explains this by the fact that its prices are publicly known so they are easy to undercut.
- 6.13 SK provides discounts for both international and domestic transportation.¹⁰⁸ This may appear contradictory to the argument about undercutting but is not necessarily inconsistent. If discounts are provided for large volumes only, for which SK does not have effective competitors, the undercutting on smaller customers may indeed be facilitated by publicly known tariffs. At the same time, volume discounts are consistent with the at-cost pricing because of the network effects that provide for average costs sinking with operation volume.

Entry conditions

- 6.14 According to several market players, the licensing process is for the most part smooth and all undertakings are treated fairly.¹⁰⁹ Nevertheless, Eurorail mentions that clarifying what constitutes fulfilment of the specific requirements for the obtainment of the licenses could be useful to avoid misunderstandings and selective interpretation of the relevant provisions.¹¹⁰
- 6.15 KP noted that the market is deregulated to the extent that any company that obtains towing equipment can engage in transportation activities by complying with the prescribed minimum

¹⁰⁴ Interviews with RD and MCTI, January 2020.

¹⁰⁵ See *supranote* 89, Q31.

¹⁰⁶ See *supranote* 89.

¹⁰⁷ See *supranote* 89, Q30.

¹⁰⁸ See *supranote* 89, Q.14.

¹⁰⁹ See *supranote* 81.

¹¹⁰ RFI responses of Eurorail, November 2019

legal requirements with little effort.¹¹¹ Despite the lax regulatory framework, official checks on railway operators have resulted in the temporary suspension of the safety certificate for one carrier (Eurorail).

- 6.16 Table 33 below describes the minimum requirements a rail freight transport provider needs to fulfil in order to be allowed to operate in the market. Eurorail mentioned that €3M is an unrealistically high amount for the minimum cover for civil transport liability.¹¹²

Table 33: Minimum operability requirements

Resource required	Number of executors, quantity of equipment, etc.	Estimation of minimum cost
Experts for the organization, supervision and control of traffic activity; executive service employees	Controller, Security, Dispatcher, Engineer, Driver, Car Inspector	600k RSD (€5,107) a month for payroll
Locomotives	1 diesel locomotive	€500k or €600 daily for rent
Maintenance	Licensed workshop or mechanical engineer services	150k RSD (€1,277) per locomotive monthly
Insurance	Minimal cover €3M	1.7M RSD (€14,469) a year
Working capital		3M RSD (€25,533)

Note: currency conversion by Compass Lexecon at the 10.12.2019 exchange rate

Source: RFI response of Kombinovani Prevoz received on 26 November 2019.

- 6.17 Overall, the minimal requirements do not strike as prohibitive. The total sum of €50k for fixed cost including a month of payroll and locomotive servicing appears like a small business value and cannot be considered a serious entry barrier for a larger company. From this, we conclude that the lack of active competition must be coming from lack of demand or other, hidden (non-monetary) barriers to entry.

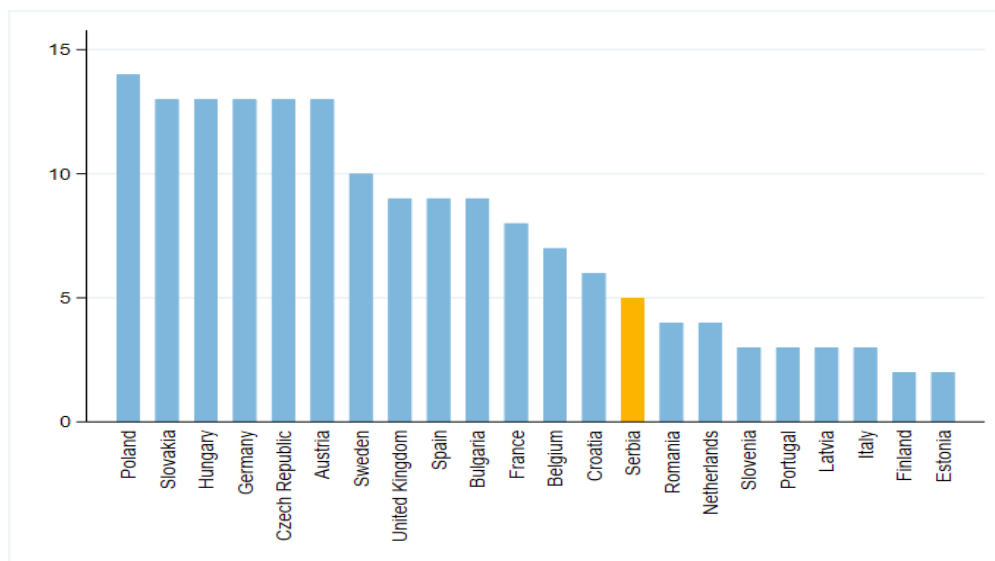
Cross-country comparison

- 6.18 There are few undertakings active in the rail freight market in Serbia compared to most EU countries (see Figure 13). There is, however, potential for more players to enter the market in the near future, as several prospective railway operators have obtained licenses since the market liberalisation.

¹¹¹ RFI responses of KP, November 2019

¹¹² See *supranote* 110.

Figure 13: Active railway undertakings in the freight market by country



Source: Compass Lexecon based on RMMS 2018 data.¹¹³

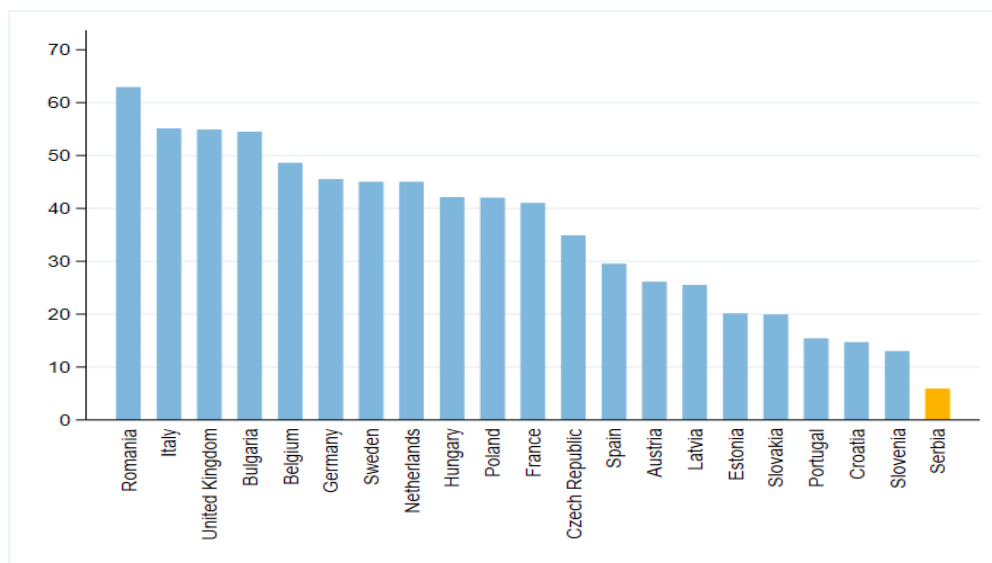
Notes: EU data is from 2016, Serbian data is from 2019.

- 6.19 As we can see from Figure 14, Serbia is clearly lagging behind EU countries in terms of the market share of non-incumbent railway undertakings. In 2018, companies other than SK serviced only 5.9% of the market.¹¹⁴ This is partly because the Serbian market was opened to competition much later than in EU countries, so one cannot expect the same level of development at this stage.

¹¹³ European Commission, “Data and figures – 6th Report on monitoring development of the rail market”, February 2019

¹¹⁴ See *supranote* 10

Figure 14: Competitors in freight – market share, %



Source: Compass Lexecon based on RMMS 2018 data.

Notes: EU data is from 2016, Serbian data is from 2018.

Switching costs

- 6.20 In the regarded period, overt switching costs are not large in this industry. The contracts are usually annual, so there is no contractual hindrance to switch railway carrier annually. There are certain contracts to which SK refers as strategic, but their duration does not exceed one year either.¹¹⁵
- 6.21 Tenders are a typical procedure for granting transportation contracts. For state-owned companies, tenders are mandated by law. However, SK is often the only bidder in such tenders, because other carriers simply do not have the sufficient capacity to perform the scope of service desired. Presumably, by participating in a tender, private carriers hope to win some extra limited orders fitting their capacity rather than the large order procured at such tenders.¹¹⁶
- 6.22 SK claims that it has a big number of locomotives, cars and staff that can meet any rail cargo transportation needs in Serbia, however large. At the same time, SK conjectures that if

¹¹⁵ See *supranote* 89, Q. 26.

¹¹⁶ See *supranote* 26.

private carriers wish to meet the needs of a larger clientele, they have the possibility to rent locomotives and wagons.¹¹⁷ Access to the railway infrastructure is not a problem.

- 6.23 Nevertheless, in practice, renting locomotives and wagons may prove quite costly or even impossible without sufficient access to credit markets or in case of imperfect functioning of these markets. As KP noted, locomotive ownership is unrealistic for start-up companies, as commercial banks do not provide any financial support for the purchase of locomotives.¹¹⁸ The only market players that could potentially compete with SK at a larger scale are the Serbian subsidiaries of large European railway undertakings, such as Eurorail.¹¹⁹
- 6.24 Reputation may also play a role in decision to retain the rail operator, because there is significant uncertainty about reliability and quality of service – and SK obviously is an established brand in the market. These kinds of tacit switching costs make significant expansion unlikely.
- 6.25 For domestic transportation, in particular, since it is priced at costs, a successful entrant would have to be distinctly more efficient than SK. We do not see where such efficiency gains may stem from.
- 6.26 SK provides only one concrete example of the switching. [*confidential*]¹²⁰

Intermodal competition

- 6.27 SK claims that significant competitive pressure comes to it from road transport. For domestic transportation, this is not reflected in prices, as they are fixed, but in the traffic switching from rail to road in the recent years.¹²¹ We note, however, that there was a dip in 2017 in domestic transportation rather than a drop, which followed by almost complete recovery of traffic in 2018 (see Table 1). This may probably be explained by adjustment of road transportation prices or, alternatively, by a general upward shift of demand for transportation of freight.
- 6.28 Several market players confirmed that rail transport is not currently fully competitive vis-à-vis road transport because of the significant gap in infrastructure quality between the two modes of transport¹²². When the rail infrastructure upgrades are completed and intermodal transport becomes more developed, rail transport will be able to compete more effectively in the broader freight transport market.

¹¹⁷ See *supranote* 69, Q27.

¹¹⁸ See *supranote* 44.

¹¹⁹ See *supranote* 22.

¹²⁰ See *supranote* 69, Q28.

¹²¹ See *supranote* 24.

¹²² See *supranote* 11.

- 6.29 Regarding water transport, SK notes that it is competing with waterways for HBIS's cargo. A small route between Smederevo port and HBIS is however complementary to waterways.¹²³ Water transport is limited in competition with rail to certain types of transported goods. Moreover, there are route-specific and seasonal restrictions that make water transport appealing only in specific situations.

Intensification of competition in the next five years

- 6.30 Competition in the Serbian market for rail freight transport services has the potential to intensify over the next five years because of the following reasons:
- In 2019, SK anticipated significant competitive constraint from Eurorail in case it re-entered the market. Eurorail is a part of the Grampet Group, which has a large number of locomotives and wagons that it can make available to its daughter company.¹²⁴ In 2020, Eurorail is active in the market again.¹²⁵
 - SK expects that KP, which they currently see as their biggest competitor, could take 10-15% of the market share in the medium run.
 - Entry into the market from new carriers is expected after the railway infrastructure is restructured and renewed.
 - ISR explains that the future of railway cargo market is in building capacities for container transport (Batajnica is one of the desired locations). ISR also notes that certain companies (such as NELT) already have their intermodal terminals in Ruma, Sremska Mitrovica, Niš and other locations. This will bridge the gap between road and rail transport and return a large part of cargo transport to rail. This new demand will then be subject to increased competitive constraint from other transport modes.

- 6.31 Despite the prospects of future entry and expansion of competitors, SK does not expect its market share to fall below 80%.

Infrastructure investment as a competition booster

Poor infrastructure quality at the current stage

- 6.32 As recurrently discussed in the previous sections, poor rail infrastructure quality in Serbia resulting from years of underinvestment is at the root of limited competition in the market. The investment situation is now gradually changing with several infrastructure upgrades

¹²³ See *supranote* 24.

¹²⁴ See *supranote* 69, Q34.

¹²⁵ Source: MCTI.

taking place and planned in the near future, funded from both national sources and from the investors in EU, Russia and China.

- 6.33 Infrastructure-related issues have been quoted by most rail operators as the main obstacle to further market entry and/or expansion¹²⁶. Poor infrastructure limits the options available to new market entrants because of the technical and capacity constraints it creates and because the demand for transport of cargo at low speed is limited.
- 6.34 Lack of adequate infrastructure often has a negative impact on the competitive structure of the market. It can affect both inter- and intra-modal competition by making rail transport less competitive compared to the other modes of transport and small new entrants less competitive compared to the incumbent(s). In the following, we briefly discuss economic literature on the effects of infrastructure investment on competition.

Higher infrastructure quality may boost both inter- and intra-modal competition

- 6.35 Below, we discuss the role of infrastructure quality in market development through the analysis of theoretical and empirical literature on the topic.

Inter-modal competition

- 6.36 The markets for different transport modes are interconnected and there is generally a degree of demand substitutability among modes, as discussed in the previous section. This results in road, rail and occasionally inland waterway operators competing for the same customers.
- 6.37 Woodburn (2016) presents a case study on the impact of a new chord opened to segregate passenger and freight traffic¹²⁷. He analyses the impact of the new infrastructure project on three indicators (train routing, scheduled journey times and train punctuality) over a 10-week period. His results show that the new chord had a clear positive impact on all three measures, therefore making rail transport a stronger competitor vis-à-vis road transport in the freight sector.
- 6.38 Woodburn (2013) investigates an infrastructure upgrade project and its effect on inter-modal competition¹²⁸. More specifically, he looks at the impact of a loading gauge increase on the share of container throughput captured by rail transport. The results of the paper show a positive impact of the infrastructure project on the inter-modal competitiveness of rail freight transport.

¹²⁶ RFI responses of railway undertakings and logistic firms, November 2019

¹²⁷ A. Woodburn, "The impacts on freight train operational performance of new rail infrastructure to segregate passenger and freight traffic", *Journal of Transport Geography*, 2016

¹²⁸ A. Woodburn, "Effects of rail network enhancement on port hinterland container activity: a United Kingdom case study", *Journal of Transport Geography*, 2013

- 6.39 The 2015 European Parliament study¹²⁹ shows that high-quality rail infrastructure is essential for effective inter-modal competition. Addressing infrastructure quality issues related to bottlenecks, capacity and reliability is necessary if rail transport is to effectively compete with road transport.
- 6.40 Clearly, we are not interested in the competitiveness of rail vs road per se, but to the extent it may harm or benefit consumers. The bias in the infrastructure quality towards road, however, may lead to a situation in which everything that may be reasonably transported by road is transported by road. The rail is left with oil, minerals, agricultural products, cars etc. – goods that are either very hard to transport by road or deliveries for which the customers do not really mind long waiting times. Indeed, in domestic rail freight transportation in 2018, bulk cargo, ore and minerals, oil and its derivatives, metals and chemicals constituted more than 90% of all non-empty cargo volume, with containers only accounting for 7.3%.¹³⁰ Since these are mostly goods that generate highest economies of scale, this does not leave much space for competition on the rail network.
- 6.41 By itself, that is still not sufficient to ensure that consumers are harmed by low quality of rail infrastructure. However, it is likely that even for the goods, transportation of which generates modest scale economies, these economies are larger for rail than for road. Using road in such instances, especially when sufficiently high volume is available and sufficiently long distance is required to be covered, is very likely to lead to suboptimal use of resources relative to using rail. Further, rail may be socially preferred because it (or at least its electrified part) is more environmentally friendly than road (though this depends on the electricity production mix that we did not check for Serbia). Ultimately, the studies discussed above evidence (consumer) welfare superiority of rail infrastructure being at par with road infrastructure by simple revealed preference argument: consumers choose rail over road because this increases their well-being.
- 6.42 Naturally, the consumer benefits from improved infrastructure that are likely to come both from higher quality of service and from increased competition in the freight transport market, have to be weighed against the cost of investment. We would therefore recommend conducting a quantitative cost-benefit analysis before heavily investing into any infrastructure.

Intra-modal competition

- 6.43 In the market segments with minimal competitive pressure from road transport, i.e. transport of high-volume, low-value goods, underinvestment effectively results in the rail freight market approaching a natural monopoly structure, with service provision being economically viable only on a very large scale. This contrasts with the often highly competitive structure of rail

¹²⁹ European Parliament, “Freight on road: why EU shippers prefer truck to train”, 2015

¹³⁰ CL calculations based on SK figures provided in January 2020.

freight markets in the EU, which evidences potential for competition when the rail network is of sufficiently high quality to support market expansion.

- 6.44 The OECD (2016) in its Digital Economy Toolkit for the Latin America and the Caribbean region describes how liberalised competitive markets can only develop when good infrastructure conditions exist in a country.¹³¹ The basic intuition is the same as in the previous paragraph.
- 6.45 The 2009 PWC study provides concrete evidence of the possible negative impact of poor infrastructure quality on competition in the rail market.¹³² In that study, stakeholders from all EU countries (with the exception of Cyprus and Malta as they do not have a railway system) submitted their opinions and ratings on a variety of issues, e.g. obstacles that hinder full liberalisation of rail markets, EU legislation to be improved, effectiveness of proposed measures, etc.
- 6.46 One of the highest ranked issues in the survey was low quality of infrastructure, classified as a major issue. Infrastructure quality is not thought to be a significant obstacle in terms of market opening. Nonetheless, it is a major impediment for the development of the rail market negatively affecting train speed. Clearly connected to the above, another major issue mentioned by the stakeholders involved was the lack of investment in railway infrastructure.
- 6.47 To sum up, higher infrastructure quality spawns competition by increasing demand especially in the market segments where scale economies are not extremely pronounced and which feature substitutability with road transportation.

Infrastructure investment was a necessary step in the reform process in EU countries

- 6.48 All EU countries went through a process of liberalisation of their markets for rail freight and passenger services, following the principles laid out in the railway packages (see ¶ 4.36-4.37 for a brief summary and Appendix B for more detailed treatment.) A lot of the problems faced by European and national regulators are also present in Serbia. We therefore devise solutions applicable to the Serbian rail market based on the experience of EU countries.
- 6.49 Hungary is an interesting comparator country because of the similarities with Serbia in terms of their rail markets, but also broader country characteristics.¹³³ The two countries have similar geographic and demographic features, e.g. they are landlocked, have similar area, population density, population per track km, and are neighbours.

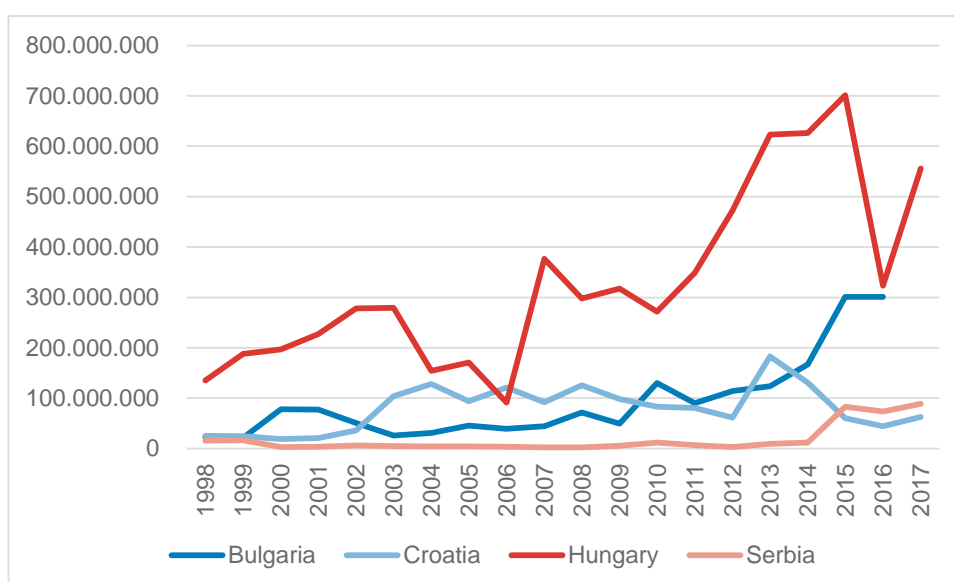
¹³¹ OEDC, "Competition and infrastructure bottlenecks", from "Broadband policies for Latin America and the Caribbean: a digital economy toolkit", 2016

¹³² PWC for the European Commission, "Amendments to the rail access legislation in the framework of the recast of the 1st Railway Package", 2009

¹³³ Steer Davies Gleave for the European Commission, "Exploratory study on the application and possible revision of Regulation 261/2004", 2012

- 6.50 Competition in the rail freight transport market in Hungary is significantly stronger than in Serbia. In 2016, there were 13 active railway undertakings in the Hungarian freight market, second only to Poland in the EU¹³⁴. More importantly, the market share of rail transport operators other than the former monopolist was 42%, up from 26% in 2011.
- 6.51 The improvement in the competitive structure of the Hungarian market is most likely the result the full implementation of EU legislation relevant to the rail freight sector and the consistently high levels of investment into the rail infrastructure. While, as we discussed in section 4, the Serbian rail legislation is largely aligned with the EU one, there is a striking difference between Hungary and Serbia in terms of rail infrastructure investment. Hungary has had consistently higher levels of funds dedicated to investment compared to Serbia for the whole period covered by available data, as Figure 15 shows. In particular, investment levels in Hungary have not dropped below €250M per year since 2007, while in Serbia they have only been slightly higher than €15M Euros since 2015.

Figure 15: Rail infrastructure investment, Euro



Source: OECD

- 6.52 For comparison, we also show the data for Bulgaria and Croatia, two EU countries neighbouring Serbia that had limited success in modernising their railway infrastructure

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European Commission, "Sixth report on monitoring development of the rail market", 2019

Government interventions that may act as obstacles to competition

Assessment of government interventions

Identify key government interventions to address market failures

6.53 The key government interventions and their justifications are the following:

- The infrastructure manager is state-owned and access to infrastructure is regulated – completely justified by network externalities, returns to scale and free-riding problems.
 - Access fee policy (should cover variable cost) and infrastructure investment (should optimize long-run social welfare)
- The dominant rail freight undertaking is state-owned – may be justified by historical and other non-economic (social, political) factors

Assess whether government interventions are restricting competition

6.54 We use the MCPAT framework to assess whether government interventions may be restricting competition. The MCPAT builds on the identification of those rules and regulations that may have anticompetitive effects based on the following typology:

- Rules that reinforce dominance or limit entry;
- Rules that are conducive to collusive outcomes or increase costs to compete in the market;
- Rules that discriminate and protect vested interests.

6.55 In a nutshell, the market participants have not expressed concerns with respect to the regulation of access to infrastructure and ancillary services. Instead they identified as hurdles: (a) the poor conditions of the railway infrastructure assets – that may restrain entry and expansion; (b) SK's low prices (approved by the Government) in the internal Serbian rail freight market; (d) inability of private carriers to comply with large freight forwarders' requirements.

Table 34: MCPAT typology of rules that may have anticompetitive effects

General typology based on effects	Specific typology	Serbian rail cargo transport market
Rules that reinforce dominance or limit entry	Monopoly rights and absolute ban for entry	Infrastructure manager only
	Relative ban for entry and expansion of activities	<ul style="list-style-type: none"> Poor quality of infrastructure Path allocation issues
	Incumbent participation in entry decision	<i>No concerns</i>
	Requirements for registry (licences and permits)	<ul style="list-style-type: none"> Complaint about licence requirements Training of locomotive drivers
	Rules that raise switching costs for customers/lock-in customers	<i>No concerns</i>
Rules that are conducive to collusive outcomes or increase costs to compete in the market	Rules that reduce the ability of firms to choose their strategic variables	Regulated domestic tariffs
	Restrictions on type of products and services and location	Inadequacy of intermodal terminals
	Price control	Regulated domestic tariffs
Rules that discriminate and protect vested interests	Discriminatory application of rules or standards	<i>No concerns</i>
	Discretionary application of rules	Complaint about licensing procedure
	Lack of competitive neutrality vis-à-vis government entities	Potential path allocation bias
	State aid/incentive distorting level playing field	<i>No concerns</i>

Source: Compass Lexecon from WBG's Market and Competition Policy Assessment Toolkit

6.56 Table 34 above summarises our findings regarding the applicability of the MCPAT framework to the Serbian rail cargo transport market.

Rules that reinforce dominance or limit entry

Monopoly rights and absolute ban for entry

6.57 The infrastructure provider is a legal monopoly. This type of market structure is justified by the nature of the network (scale and scope) economies.

Relative ban for entry and expansion of activities

6.58 Comparing the rules on train allocation used across Europe with the ones currently used by ISR (see also 7.19), we have identified only one criterion that is potentially of concern. As mentioned in 4.11, in case of congestion, ISR would use annual volume and turnover of

railway undertakings as a priority criterion. This could potentially give an unwarranted advantage to SK in the path allocation process as by far largest player on this market.

Incumbent participation in entry decision

- 6.59 The incumbent does not in any way participate or affect entry decision of potential competitors other than by its actual competitive conduct in the market.

Requirements for registry (licences and permits)

- 6.60 According to several market players, the licensing process is for the most part smooth and all undertakings are treated fairly¹³⁵. Nevertheless, Eurorail noted that €3M is an unrealistically high amount for the minimum cover for civil transport liability.¹³⁶

Rules that raise switching costs for customers/lock-in customers

- 6.61 SK is the only player that can meet the technical requirements of large freight customers, due to the sheer size of the customers. However, this factor, while making switching difficult, is not determined by any government rules but by the lack of sufficient capacity of smaller railway undertakings.¹³⁷

Rules that are conducive to collusive outcomes or increase costs to compete in the market

Rules that reduce the ability of firms to choose their strategic variables and Price Control

- 6.62 SK must obtain government approval for its pricing policies for internal transport. This makes competition for national traffic almost impossible in practice. The international traffic market is more competitive as tariffs are not regulated and prices are determined through negotiations with customers.

Restrictions on type of products and services and location

- 6.63 The set of locations where to and from cargo can be transported is naturally limited by railway network. Expansion of the network may loosen such restrictions.
- 6.64 Intermodal competition is hindered by the lack of capacity for container transport. There are no intermodal terminals in the North or the South of Serbia and the existing terminals in Belgrade lack the capacity and quality of facilities to effectively carry out intermodal transport activities.¹³⁸

¹³⁵ RFI responses of railway undertakings and logistic firms, November 2019

¹³⁶ RFI responses of Eurorail, November 2019

¹³⁷ See *supranote* 11

¹³⁸ See *supranote* 11.

Rules that discriminate and protect vested interests

Discriminatory application of rules or standards

- 6.65 We have not noticed any indications of unfair implementation of the route allocation. In any case, RD might have knowledge about such practices.

Discretionary application of rules

- 6.66 The previous practice of issuing a Safety Certificate was to first issue a Safety Certificate Part A based on a review of the documentation submitted in order to evaluate the compliance with the requirements for issuing the certificates prescribed by the Rulebook on Common Security Methods for Assessing Compliance with the Requirements for Obtaining a Certificate on safety and the elements of system for safety management ("Official Gazette of the RS", No. 71/15), without talking to the responsible persons about the actual implementation of safety procedures.
- 6.67 The current practice is that, following the issuance of the safety certificate, RD shall, at least once a year, supervise the safety management systems of the railway undertakings, verifying that the railway undertakings apply their safety management system and, where appropriate, order the implementation of appropriate measures. In doing so, RD applies the Common Safety Method to monitor safety performance after the issue of a transport safety certificate. In this regard, interviews the responsible persons are held with the aim to assure RD that these persons are familiar with the prescribed procedures and are implementing them.
- 6.68 Inspection is not within the competence of RD. 6 employees participate in the process of issuing the safety certificate and the subsequent supervision, but these same employees also have other tasks to take care of. Due to insufficient capacity, RD checks 4-5 safety criteria each year, so that all 19 criteria are checked within the validity period (5 years).¹³⁹
- 6.69 In other words, RD carries out both ex-ante and ex-post controls of the fulfilment of safety standards, but it lacks the resources necessary to conduct proper controls.^{140,141} In general, a lack of both human and financial resources on the MCTI and RD side is the main problem.¹⁴²
- 6.70 The uncertainty around safety compliance may, in principle, discourage entry, but it is more than compensated by a too lax monitoring stemming from the understaffed authorities. The net effect is likely to be pro-competitive.

¹³⁹ This and previous 2 paragraphs are based on Additional written responses of RD, January 2020.

¹⁴⁰ See *supranote* 104.

¹⁴¹ See *supranote* 139.

¹⁴² See *supranote* 104.

Lack of competitive neutrality vis-à-vis government entities

- 6.71 SK receives no priority treatment with respect to the right of passage.¹⁴³ Both IRS and KP believe that this may be a matter of perception bias, as the sheer size of SK makes it more likely that other railway carriers see SK trains allowed to pass in front of them.¹⁴⁴

State aid/incentive distorting level playing field

- 6.72 SK's owns carriages, while most of the private railway undertakings do not. This may confer a competitive advantage to SK. In fact, as mentioned, Milšped goes as far as refusing to consider operators other than SK to be freight carriers for exactly this reason.
- 6.73 According to KP, SK receives financial support from the state through state guarantees for loans for the acquisition and repair of towing and towed assets, etc.¹⁴⁵ For example, under the auspices of the Serbian government, an (amended) loan agreement has been signed in November 2016 for modernisation of 31 electrical locomotives (value of investment €32 mln) and procurement of 8 new multisystem locomotives (value of investment another €32 mln).¹⁴⁶
- 6.74 MCTI noted that SK has not received any state aid from the Serbian government, apart from a state guarantee concerning an EBRD loan for the repair of its rail fleet inherited from Serbian Railways.¹⁴⁷ On the basis of public call in line with Regulation on stimulating measures for improvement of combined transport for 2019, SK also received RSD 10.15 million (€84,552) in funding. However, private companies also received funding of about RSD 100 million (€845,520) for the same purpose.
- 6.75 SK also receives government funding in line with the reform plan from 2016 as a compensation for not being able to reduce its employment costs. The company cannot easily lay off its employees or change company salaries because of the legal provisions connected to public employment. This results in extra costs that private companies do not have to incur.
- 6.76 Table 35 contains the data on the cost of salaries and the related subsidies from the latest available years.

¹⁴³ See supranote 58.

¹⁴⁴ See *supranote* 68.

¹⁴⁵ See *supranote* 9.

¹⁴⁶ See *supranote* 90.

¹⁴⁷ See *supranote* 104.

Table 35: Salaries and related subsidies for SK

	2016	2017	2018
Salaries (in thousands)	RSD 4,100,980 (€34,675)	RSD 3,624,978 (€30,650)	RSD 3,891,361 (€32,902)
Subsidies (in thousands)	RSD 824,490 (€6,971)	RSD 511,007 (€4,321)	RSD 730,161 (€6,174)

Source: SK – Income Statement

Assess whether a regulation / intervention can be removed or replaced by a less restrictive one and whether new regulations are needed

- 6.77 Based on the analysed data and information, we can conclude that regulation is not restrictive.

Anticompetitive conduct

Anticompetitive behaviour detected and sanctioned

- 6.78 CPC, through the proceedings against the Serbian Railways, suspended after fulfilling all the prescribed orders, contributed to liberalisation of the market and opening it to competition. The procedure was suspended on 22 September 2017, while the analysis of the sector was launched in March 2019 and is currently in its final stages. In such a short period of time after liberalisation, no proceedings have been initiated in the sector, but CPC is closely monitoring the state of competition and will react in the event of the existence of actions that may distort, restrict or prevent competition in the market.

Potential anticompetitive behaviour

Availability of necessary inputs (anti-competitive foreclosure)

Locomotives

- 6.79 As mentioned above in 6.23, leasing locomotives only pays off if they are sufficiently utilized. At the current level of infrastructure quality, there are very limited possibilities for profitable operation of select routes, which prevents private operators from growing. Investing in purchasing of locomotives, even if it were feasible (which currently only is for companies with adequate financial strength or potential), would not make economic sense for the same reason.
- 6.80 At the same time, there is no anti-competitive foreclosure with respect to locomotives, as the problem stems from the demand (constrained by infrastructure quality and resulting low speed of transportation).

Wagons

- 6.81 ISR and SK agree that wagons are one of the key inputs in the provision of rail freight transport services. The private carriers do not typically own any wagons. SK leases wagons

that otherwise remain unengaged in its operations. However, SK claims that it is customers, and not carriers, who are interested in leasing such wagons.¹⁴⁸

6.82 Owning its own wagons allows Srbija Kargo to retain its competitive advantage on the rail freight transport market. As we have explained in previous sections, SK is often the only company with the right resources to compete in large tenders.

6.83 Just as is the case with locomotives, however, there is no anti-competitive foreclosure with respect to rolling stock in general – the expansion of small players or large-scale entry is hindered by the lack of demand driven by low infrastructure quality.

Drivers

6.84 The education system in Serbia includes the option of attending a secondary school focused on the railway market, which involves 4 years of training as a driver.¹⁴⁹ Graduates of such a school are exempt from the General Expertise Examination, a necessary requirement to obtain a train driver's licence.

6.85 In order to obtain a complementary certificate, it is necessary to pass a theoretical and practical examination of specific expertise in vehicle and infrastructure knowledge. The preparation for this exam, after completion of internships and training, is organised by the employer of prospective drivers.

6.86 All operators are eligible to organise their own trainings, but the high costs make it unprofitable for most railway undertakings.¹⁵⁰ The training process lasts for at least two years, during which the training entity must pay the trainees and the experienced drivers in charge of training. KP is planning to start training its own drivers, hiring people directly from the railway school. They noted that while it is more expensive than hiring drivers from SK, it will be beneficial for the company in the long term.

6.87 Rail operators who do not train their own drivers can hire them through two main channels:¹⁵¹

- They can poach the drivers trained by SK, for example by offering them larger salaries;
- They can hire drivers that are eligible for pension, if they obtain a health certificate.

¹⁴⁸ See *supranote* 35, Q36

¹⁴⁹ This and the following paragraph are based on Additional written responses of MCTI, January 2020

¹⁵⁰ This and the following paragraphs are based on the Interview with KP in January 2020.

¹⁵¹ See *supranote* 22.

- 6.88 Overall, no market participant has expressed any concern about availability of drivers in their RFI responses.¹⁵² KP noted that there currently are enough locomotive drivers to cover the Serbian market.
- 6.89 In terms of external factors which could have an impact on the market, we note the following three points:
- Serbian law does not impose a mandatory retirement age on locomotive drivers. Nevertheless, they can retire earlier (at the age of 55) as they have a particularly favourable pension scheme which gives them 3-4 months extra for every year of work.
 - There are no provisions in Serbian law which stipulate that locomotive drivers must work for the company that organised and paid for their training. Private contracts between the employer and prospective drivers can however include such provisions.
 - Competitive pressure from employers outside of Serbia is a significant issue in the job market for drivers. Once trainings in Serbia are completed, many of the newly certified drivers find jobs in the EU or other countries where the pay is higher than in Serbia. For example, this is particularly noticeable in the case of trainings organised in Vojvodina, after which the majority of participants find employment in Hungary. Moreover, the railway school has a dedicated department to prepare their students to work in Germany. MCTI is currently trying to find a legal solution to the issue in order to retain certified drivers in Serbia.¹⁵³ However, the problem is of broader relevance for the whole Serbian Government.
- 6.90 We can conclude from the above that there is no anticompetitive foreclosure with respect to train drivers.

¹⁵² Except for highly speculative concerns of Eurorail about the potential problem in the future that it expressed in the interview on 13 February 2020.

¹⁵³ See *supranote* 20.

Section 7

Recommendations

Guiding principles

- 7.1 Our recommendations recognize that an effective competition policy framework should be based on three complementary pillars: fostering pro-competition regulations and government interventions, guaranteeing competitive neutrality in markets, and the effective economy-wide enforcement of competition law.
- 7.2 Accordingly, we apply the following principles:¹⁵⁴
- The most appropriate solution is the alternative that among those that address the underlying policy objective minimizes competitive restraints;
 - Market-oriented and incentive-based approaches are generally preferable to direct controls;
 - Standards/regulation targeting performance or outcome are generally preferable to those targeting design or inputs;
 - Where market failures arise from inadequate or asymmetric information, remedies which increase information available to market players present the most effective means of correcting the failure;
 - It is more efficient to tackle market failures in the activity in which they occur rather than introducing additional restraints in another sub-sector of the market.
- 7.3 As a result of such analysis we come up with 6 sets of recommendations that we discuss in detail in the following subsections. They are summarised in Table 36 below.

Table 36: Summary of recommendations

Recommendation	Implementing party	Time frame
Formalize implicit subsidies to state-	Serbian	Long term (>2 years)

¹⁵⁴ WBG's Market and Competition Policy Assessment Toolkit.

Recommendation	Implementing party	Time frame
owned companies and monitor implementation	government	
Monitor rail freight market and collect information on a set of indicators accepted in the EU	CPC and RD	Short term (<1 year)
Modernise path allocation procedures to boost efficiency	ISR	Medium term (1-3 years)
Introduce smart operational procedures to reduce travel times	ISR	Medium term (1-3 years)
Continue significant investment in rail infrastructure to improve network quality	MCTI	Long term (>3 years)
Abandon regulation of SK's tariffs	MCTI	Long term (>3 years)

Source: Compass Lexecon

Making implicit subsidies explicit

- 7.4 As mentioned in previous sections, a significant portion of SK's domestic activities is unprofitable and kept operative only through cross-subsidisation from more profitable services.¹⁵⁵ In theory, SK could refuse to operate unprofitable services as there is no formal legal obligation to perform those activities.¹⁵⁶ Nevertheless, both MCTI and SK admitted that it would be unimaginable for SK to reject transport requests as the unprofitable services are generally connected to large state investment projects and SK is obliged to work in the interest of the state.
- 7.5 SK stated that it would like to have a legal basis to deal with such transport obligations, as the current situation produces significant uncertainty for both SK and other market participants.¹⁵⁷ MCTI mentioned that it is currently working on a balanced solution for this issue, but that no legal changes have been proposed or adopted yet.¹⁵⁸
- 7.6 This is a part of a more general problem, implicit subsidization. This problem arises whenever a market participant pays a price for service or good that does not reflect either market reality (whenever markets are present) or the cost incurred in provision of such a

¹⁵⁵ See *supranote* 22.

¹⁵⁶ Interview responses of SK and MCTI, January 2020.

¹⁵⁷ See *supranote* 22.

¹⁵⁸ Interview responses of MCTI, January 2020.

service or good. This generally leads to misallocation of resources in the economy and loss of welfare.

- 7.7 The resulting inefficiencies are hard to trace or analyse because of the lack of transparency regarding associated implicit subsidies. The first step to improving the allocation of resources would be therefore to make such subsidies explicit, i.e. formally accounted for. For example, in case of railway freight transport, this would mean charging at least long-run incremental cost covering price for transportation service, while providing subsidies to state-owned companies that need to pay for such services.

Market monitoring

- 7.8 The first step to fostering competition in a market where a dominant undertaking is present is to monitor such a market. This is necessary to identify potential issues both in terms of institutional gaps and market/government failures. In this subsection, we present indicators of market performance which we believe are relevant to the Serbian rail freight transport market.

Quantitative assessment

- 7.9 The parameters detailed in the European Commission's Rail Market Monitoring Questionnaire constitute a complete set of monitoring indicators that can easily be adopted by the relevant Serbian authorities.¹⁵⁹
- 7.10 The CPC and/or the DR could gather these indicators on a yearly basis from undertakings active on the market, but only in cases set forth by law. This will allow them to monitor the market more effectively and to identify potential issues that might arise in the future.
- 7.11 As mentioned in the EU Regulation 2015/1100, the relevant authorities can collect the necessary data through a variety of sources:
- Mandatory surveys
 - Administrative data, including data collected by statistical offices and other authorities
 - Statistical estimations
 - Data supplied by relevant industry organisations or other stakeholders
 - Ad hoc studies

¹⁵⁹ European Commission, "Commission implementing regulation 2015/1100 on the reporting obligations of the Member States in the framework of rail market monitoring", 7 July 2015

- 7.12 The type of data to be collected is described in detail in the Annex of Regulation 2015/1100. We summarise the different groups of indicators in Table 37.

Table 37: Rail Market Monitoring Questionnaire

Indicator category	Description
Infrastructure charging	Average track access charges per train-km for different categories of train
	Infrastructure managers' revenue from infrastructure, station and terminal charges*
	Main characteristics of the contractual agreements concluded between the State and the infrastructure managers*
Capacity allocation	Congested sections of the infrastructure
	Priority services*
	Successful and rejected path allocations for various services
Expenditure on infrastructure	Overview of expenditure on railway infrastructure*
	Source of funding for expenditure on different components of infrastructure*
Revenue and traffic volumes	Revenue and volumes of freight services, per route*
Quality of rail services	Punctuality and cancellations of freight services, per route*
	Average timetable speed of freight services, per route*
Public Service Obligations (PSO)	Volume of services and compensation paid for services provided under PSOs in different market segments*
	Access to rolling stock in the context of PSO services*
Degree of market opening	Market shares of freight services (for companies that have a market share of 1% or more)
Licensing	Number of licences issued to railway undertakings
	Fees and time needed for obtaining a licence
Employment and social conditions	Employees in the rail sector by gender and age group*
	Employees by type of contract*
Service facilities	Ownership and management of main service facilities
	Number of complaints relating to service facilities*
	Description of complaints*

Note: * - the indicators information on which is not, in our understanding, currently collected by CPC or RD
Source: Rail Market Monitoring Questionnaire from "Commission implementing regulation 2015/1100 on the reporting obligations of the Member States in the framework of rail market monitoring", European Commission, adjusted by Compass Lexecon

Qualitative assessment

- 7.13 In addition to collecting market data, the CPC could also produce a qualitative assessment of the market in order to better interpret the quantitative information. A contact point for market participants could be set up to receive complaints and suggestions from the different stakeholders. This will allow it to track issues which might not be immediately detectable through data collection and analysis.

Improving path allocation

Path allocation software

- 7.14 Infrastructure managers across the EU use specialised IT tools (e.g. Book In in Belgium, Liike in Finland, TPN in Germany, etc.) for domestic path allocation requests, all employed alongside RNE's PCS for international path allocation which is however not used for domestic traffic.^{160,161}
- 7.15 ISR mentioned that path allocation in Serbia is still made manually without any specialized software.¹⁶² KP identified the lack of daily path allocation system as a barrier to entry, as a flexible allocation system would allow to create demand for transportation services that cannot be addressed by means of the current system.¹⁶³ This concerns the uncertain and demand that cannot be predicted very well in advance of the time when it actually arises.
- 7.16 ISR has developed a train tracking system called ŽIS that allows them to track trains in real time.¹⁶⁴ Nevertheless, the system is not ready to be released to the public yet, as it has bugs. Moreover, the information is entered manually by ISR employees which leads to inaccuracies. ISR is now obtaining a loan for the procurement of tracking software, but it is unclear how advanced it is in this endeavour.¹⁶⁵
- 7.17 Using a dedicated stable software that allows for flexible online allocation of the routes would boost the demand and therefore open up possibilities for competition in the sector. We recommend accelerating the process of procurement for such software.

¹⁶⁰ Network Statements of infrastructure managers from Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece and Hungary.

¹⁶¹ See *supranote* 58.

¹⁶² See *supranote* 9.

¹⁶³ Interview with KP in January 2020..

¹⁶⁴ See *supranote* 58.

¹⁶⁵ See *supranote* 58.

Path allocation priority rules

- 7.18 We have analysed the priority criteria described in the network statements published by infrastructure managers from EU member states.¹⁶⁶ The criteria vary greatly among countries and do not seem to follow a common pattern (e.g., Germany has a bidding system as a last resort in case of unresolved conflict, Finland considers environmental aspects among its priority criteria, etc.). All the criteria used across the EU are based on objective parameters that can be easily quantified and verified by stakeholders if needed.
- 7.19 The priority criteria used by ISR for path allocation are broadly in line with the variety of criteria used in different EU Member States. As mentioned in the previous section, we were able to identify only one priority criterion that has a potential of raising competition concerns. In particular, this is giving priority on the bases of annual volume.
- 7.20 While we are aware that such criterion may get an efficiency justification based on scale economies (provide the service to the operator who has a potential to use it in a manner that benefits consumer most), we nevertheless advise ISR to temporarily (for 2-4 years) discontinue its use. This is because this criterion has a potential to create a bias towards SK in the path allocation process, as mentioned in 6.58, and it is important to prevent such a bias in the period when competition in the sector is nascent and needs a boost.
- 7.21 Generally, path allocation criteria in EU Member States reflect characteristics of a specific path request and not of the requesting company itself. In this sense, the annual volume criterion is also not consistent with the criteria used in comparable EU markets.¹⁶⁷
- 7.22 It would also be advisable to publish the train allocation and have an electronic, real-time priority list in order to avoid uncertainty and to improve the perception of fairness for all market players. This could be achieved with the IT tools discussed in the previous subsection.

Smart operational procedures

- 7.23 According to Bauranov (2016)¹⁶⁸, investment in infrastructure alone is not sufficient to compete, at least for Corridor X, with 14 hour travel time on Corridor IV. The biggest time savings may come from smart operational procedures:
- a. Implementation of a one-stop shop. In 2016, all the border procedures are repeated twice. By implementing a Framework for Border Crossing Procedures proposed by the

¹⁶⁶ For a full list of countries analysed, see *supra*note 160.

¹⁶⁷ See, e.g., VPE – Rail Capacity Allocation Office, “Network Statement 2019/2020 (Modification 5)”, 2019, from <https://www2.vpe.hu/eng/network-statement/network-statement-2019-2020> accessed on 17/12/2019 at 15.47

¹⁶⁸ See *supra*note 79.

World Bank, or similar agreement, the waiting time could be cut in half. According to MCTI, this is currently being implemented in coordination with TCT.

- b. Flexible time planning. As the experience with COSCO trains showed, GPS tracking of locomotives and appropriate timetable planning software could shorten the journey significantly by making instantaneous changes and prioritising incoming freight traffic. The installation of GPS devices, purchase of software and training of staff costs around €2.5M. We are aware that this would have even greater impact if the network were congested, but even in the current circumstances this procedure may open part of the demand to smaller companies as explained in ¶7.16.
- c. Improvement in availability of drivers and locomotives. On average, waiting for a train driver or for a locomotive reached 2 hours per border in 2016. Better management could cut this time substantially.
- d. Performing customs formalities at origin and destination stations.

7.24 ISR noted that while it agrees that GPS tracking would improve traffic planning, it does not have the power to oblige rail operators to install GPS on their locomotives.¹⁶⁹ If even a single company refused to install GPS, the system would fail. We therefore recommend MCTI to take initiative on this and launch a study of feasibility of equipping all the trains with GPS tracking system. This is in a view of incorporating in the network statement the obligation for all railway undertakings to install GPS equipment on their trains.

7.25 It goes without saying that the aforementioned measures would not only increase the quality of service on the routes going via Corridor X, but throughout Serbia, therefore boosting demand and opening the doors for fiercer competition.

Sufficient infrastructure investment

7.26 As we explained in the previous section, higher infrastructure quality is conducive of competition because it generates higher demand for cargo transport services and because this additional demand is for the services that exhibit weaker scale economies. The weaker scale economies create an environment that is more favourable for competition. Higher quality infrastructure also allows to more efficiently manage the provision of services, e.g. achieve higher utilization of rolling stock, which reduces entry barriers (as it becomes economically sensible to lease this rolling stock).

7.27 We therefore recommend keeping up the good work and continue investing at a large scale in modernisation of railway infrastructure.

¹⁶⁹ See *supra*note 58.

Price liberalisation

Infrastructure charges

- 7.28 As we have mentioned in 4.26, infrastructure charges only cover 22-28% of ISR's expenses. Infrastructure charges could be gradually brought closer to the ISR's expenses, at least to cover its direct cost. This could bring about a stabilisation of the levels of investment in rail infrastructure over time.
- 7.29 As the WBG Toolkit for Improving Rail Sector Performance explains, "most railway infrastructure costs are fixed in relation to an individual traffic movement during the currency of rail freight contracts, so any infrastructure cost allocation to individual customers is largely technically arbitrary".¹⁷⁰
- 7.30 More importantly, "The rate set should *be the highest that the market will bear*, except under special circumstances, such as the need to nurture a new service. This rate should at least cover a price-floor of the long-run variable costs of carrying specific traffic for the duration anticipated".¹⁷¹

Domestic tariffs

- 7.31 As we described in Section 6, SK's tariffs for domestic transportation are regulated (approved) by the government. Competitors have complained about the system, as the low tariffs impede effective competition on the market.
- 7.32 Price regulation could be gradually removed, and SK allowed to offer market prices for routes on which competition is viable, if any, in the first stage of liberalisation process. This would require route-by route analysis using quantitative data that we failed to obtain from market participants. In any event, for the computation of tariffs we would propose using LRAIC methodology based on the long-run average incremental cost. This would allow SK to avoid making losses while compensating for investment cost that could be attributed to the service in question.
- 7.33 In the second stage, tariffs could be left to the competitive market to be set. Price liberalisation would increase competition on domestic routes as more companies would find domestic services profitable, especially if infrastructure quality is improved.
- 7.34 Ability to negotiate tariffs at a customer level and elimination of unprofitable services would allow SK to improve its financial capacity to invest and improve its service. If SK were able to maintain sound finances, it could be able to attract more traffic and generate public benefits

¹⁷⁰ WBG, "Railway Reform: Toolkit for Improving Rail Sector Performance", second edition, September 2017

¹⁷¹ Ibid, emphasis added.

with it. With improved infrastructure, both intermodal and intramodal competition becomes viable and SK is prevented from getting monopoly rents.

Potential future reform

- 7.35 Following unbundling in the rail sector, a fresh look at the role of SK in Serbia's economy and transport policy is in order. In general, if transport policy objectives can be met through regulation or policy, the government does not need to retain ownership of SK. The private sector may be able to provide services more efficiently. The decision to privatize SK should be preceded by an analysis of different approaches and consequences of this step.

Implementation roadmap

- 7.36 In this subsection, we discuss the likely impact and feasibility of the suggested recommendations. Table 38 below summarises our findings.

Table 38: Recommendations by impact and feasibility

	High impact	Low impact
High feasibility	<ul style="list-style-type: none"> Improving path allocation Smart operational procedures Ongoing infrastructure works 	<ul style="list-style-type: none"> Making implicit subsidies explicit
Low feasibility	<ul style="list-style-type: none"> Domestic tariff freedom Sufficient infrastructure investment 	<ul style="list-style-type: none"> Market monitoring

Source: Compass Lexecon

Impact

High impact

- 7.37 The ongoing infrastructure works and the subsequent increase in the quality of the rail network are likely to improve competition structure in the market. As all market players indicated low infrastructure quality as a major hindrance, we may expect more favourable conditions for the expansion of recent entrants. It is however unlikely that the current level of investment is sufficient to generate additional demand capable of disrupting SK's dominance in the market.
- 7.38 Improving ISR's operational procedures, also in terms of path allocation, may be expected to have effects similar to an improvement in infrastructure quality, as travel times would be reduced, and rail undertakings would be able to start serving the demand for transportation of goods with uncertain delivery timing.

- 7.39 De-regulating domestic tariffs of SK would open the domestic market to competition, increasing the opportunities for entry and expansion of smaller market players. Higher domestic tariffs could also improve SK's financial situation, allowing it to invest and increase its service quality.

Low impact

- 7.40 Monitoring the rail freight market is likely to only have a moderate impact in the short term, as it is unlikely that significant competition issues will arise in the near future.
- 7.41 Making implicit subsidies for SK's state-owned customers explicit would contribute to improving financial condition of SK, but it is unlikely be a "game changer" in the market.

Feasibility

High feasibility

- 7.42 The rail network is already undergoing a major upgrade and there are clear prospects for the improvement of ISR's procedures, as they are in the process of obtaining a loan for the adoption of dedicated software. Therefore, these recommendations can realistically be implemented in the expected time frame.

Low feasibility

- 7.43 De-regulating prices for the domestic services is potentially more challenging to implement. This requires changes at a legislative level.
- 7.44 Market monitoring processes are hard to improve as the institutional actors in charge of monitoring tasks are structurally underfunded and lack the resources to expand their activities.

Section 8 **Appendix A: a methodology for empirical assessment of demand**

Feasibility

- 8.1 The data necessary for this project were not possible to obtain from the market participants for the two main reasons: (i) at the moment, the data are not collected by market participants in principle (characteristics of alternative routes, including road, waterway and foreign railway; e.g. reliability); (ii) the market participants refused to provide the data (effective prices [after discount] of SK for international traffic, the volume at the route level broken down by the type of cargo, average speed on the route, etc.)

Scope

- 8.2 As the state of intramodal competition in the Serbian rail freight market does not allow for free choice of cargo operator (larger customers are bound to SK because only SK can provide desired volumes of transportation), we suggest that the study focuses on intermodal aspects of demand.
- 8.3 The study should focus on a subset of rail cargo routes (for example, 8 routes that were identified in this report) and their rail/road/waterway alternatives. For each route chosen and type of cargo, variation in volume of freight service across time and customers should be explored.

Data requirements

- 8.4 We assume that whenever observed, the optimal route has been chosen within Serbian railway network. The first step of the analysis is to identify alternative routes:
- a. Rail routes outside Serbia (e.g. Corridor IV as an alternative to Subotica-Preševo and back) if available.
 - b. Road routes inside or outside Serbia (e.g. Corridor 10 as an alternative to Subotica-Preševo and back) if available.
 - c. Waterway routes (e.g. Belgrade - Novi Sad connection via Danube as an alternative to the same connection via rail) if available.

- 8.5 The second step is to collect the following route-level indicators ($\mathbf{X} = (\mathbf{p} \ \mathbf{l} \ \mathbf{v} \ \mathbf{r} \ \mathbf{m})$) for each alternative, including the route in question maintained by ISR:
- Effective price per unit of cargo (\mathbf{p}).
 - Length of the route (\mathbf{l}).
 - Average speed of delivery (\mathbf{v}).
 - Reliability of delivery. This may be proxied by average delay. If delay data is not available, average deviation of speed from maximum speed can be used as a proxy for delay (\mathbf{r}).
 - Other relevant quantifiable factors, e.g. administrative costs related to border-crossing (\mathbf{m}).
- 8.6 Additionally, customer-level indicators like size and profitability may be useful to collect as controls, but in principle customer-level fixed effects may serve this purpose.
- 8.7 The third step is to collect volume of goods transported per period by each customer on each of the alternative routes. From these data, the volume shares of each alternative route for every customer may be computed and used in the estimation.

Underlying random utility model and simulation

- 8.8 We assume that utility from alternative route j in choice situation t by customer n is

$$U_{njt} = \beta_n x_{njt} + \varepsilon_{njt}$$

With ε_{njt} being iid extreme value over time, customers and alternative routes.

- 8.9 Consider a sequence of alternatives (routes), one for each time period, $\mathbf{i} = \{i_1, \dots, i_T\}$. Conditional on β , the probability that the customer makes this sequence of choices is the product of logit formulas:

$$L_{ni}(\beta) = \prod_{t=1}^T \frac{e^{\beta_n' x_{ni_t t}}}{\sum_j e^{\beta_n' x_{njt}}}$$

since the ε_{njt} s are independent over time. The unconditional probability is the integral of this product over all values of β ,

$$P_{ni} = \int L_{ni} f(\beta) d\beta$$

- 8.10 The probability is simulated in the following way. A draw of β is taken from its distribution (we suggest to take normal distribution with mean and variance estimated). The logit formula is calculated for every period, and the product of these logits is taken. This process is repeated for many draws to arrive at average results.

- 8.11 Of particular interest for us would be substitution patterns, e.g. the percentage change in the probability for route i to be chosen given a change in some attribute (for example, v) of route j is

$$E_{nix_{nj}^v} = - \int \beta^{vj} L_{nj}(\beta) \frac{L_{ni}(\beta)}{P_{ni}} f(\beta) d\beta.$$

- 8.12 Moreover, the estimated coefficient β^{vj} is of particular interest to us, as it characterizes how valuable the quality of infrastructure embodied in the speed of delivery on the route j is.

Potential use of the results for identifying bottlenecks in the railway infrastructure

- 8.13 The estimation results for each cargo type will plot a rather detailed picture of substitution pictures between alternative modes of transport. This will allow to make predictions about the demand for transport service for each type of cargo, depending on the changes in variables considered (route characteristics).
- 8.14 For making predictions on how valuable a change in a particular attribute of a route would be in terms of consumer choice, the volume data for goods transportation should be substituted by the value data (revenue of rail freights undertakings or the amount of money paid by the customer for transport service). This will allow to pool observations for different types of goods into a single estimation. The estimated coefficient β^{vj} would then characterize the average across the types of cargo value of the improvement in the speed of delivery.
- 8.15 Marginal effects of changes in route attributes on the choice of customers can also be computed using the estimated coefficients. Those can then be compared across routes chosen for analysis and, appropriately scaled (e.g. by revenue generated by the routes), may indicate which route could be a priority to invest in.

Section 9 **Appendix B: EU legislative framework**

- 9.1 As mentioned in the subsection on Alignment with EU acquis, the European Union has promoted a series of reforms over the years aimed at liberalising national rail markets and producing harmonised standards and guidelines on issues ranging from safety to train driver certification. In the following paragraphs, we summarise this legislative framework.

Market opening and liberalisation

Management independence

- 9.2 As regards management, administration and internal control over administrative, economic and accounting matters, railway undertakings directly or indirectly owned or controlled by State should have independent status in accordance with which they will hold, in particular, assets, budgets and accounts which are separate from those of the State.¹⁷²
- 9.3 The infrastructure manager should be responsible for its own management, administration and internal control. Member States should enable railway undertakings to adjust their activities to the market and to manage those activities in the interest of providing efficient and appropriate services at the lowest possible cost for the quality of service required. Railway undertakings should be managed according to the principles which apply to commercial companies, irrespective of their ownership.

Separation of accounts

- 9.4 Separate profit and loss accounts and balance sheets should be kept and published, on the one hand for business relating to the provision of transport services by railway undertakings and, on the other, for business relating to the management of railway infrastructure.¹⁷³ Public funds paid to one of these two areas of activity shall not be transferred to the other. The same principle should apply to the separation of passenger and freight transport services.

¹⁷² 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.40-41

¹⁷³ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.41-42

Financing

- 9.5 State may provide the infrastructure manager with financing, in particular in order to cover new investments, taking State Aid provisions into account.¹⁷⁴ Under normal business conditions, the profit and loss account of an infrastructure manager should at least balance income from infrastructure charges, surpluses from other commercial activities, non-refundable incomes from private sources and State funding, on the one hand, and infrastructure expenditure, on the other hand.
- 9.6 Appropriate mechanisms should be set up to reduce the indebtedness of publicly owned or controlled railway undertakings to a level which does not impede sound financial management.

Access to infrastructure and services

- 9.7 Railway undertakings should be granted, under equitable, non-discriminatory and transparent conditions, the right to access to the railway infrastructure in all Member States for the purpose of operating all types of rail freight services.¹⁷⁵ That right shall include access to infrastructure connecting maritime and inland ports and other service facilities, and to infrastructure serving or potentially serving more than one final customer.
- 9.8 Infrastructure managers should supply to all railway undertakings, in a non-discriminatory manner, the minimum access package laid down in point 1 of Annex II of Directive 2012/34/EU.¹⁷⁶

Cross-border agreements

- 9.9 The provisions contained in cross-border agreements should not discriminate between railway undertakings or restrict their freedom to operate cross-border services.¹⁷⁷

Access to training facilities

- 9.10 Railway undertakings and infrastructure managers and their staff performing safety-critical tasks should have fair and non-discriminatory access to training facilities for train drivers and

¹⁷⁴ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 p.42

¹⁷⁵ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.43-45

¹⁷⁶ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 p.64; Law on Railways, Article 14.

¹⁷⁷ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 p.45

staff accompanying trains, whenever such training is necessary for operating services on their network.¹⁷⁸

Institutional setting

Regulatory body

- 9.11 The State should establish a single national regulatory body for the railway sector.¹⁷⁹ This body should be a stand-alone authority which is legally distinct and independent from any other public or private entity. It should also be independent from any infrastructure manager, charging body, allocation body or applicant. The regulatory body may also be joined in organisational terms with the national competition authority.
- 9.12 The staff of the regulatory body should act independently from any market interest related to the railway sector and should therefore not have any interest or business relationship with any of the regulated undertakings or entities.
- 9.13 In terms of functions, the regulatory body should examine the requests (complaints) of applicants that think they have been treated unfairly, discriminated against or in any way aggrieved, especially within the context of decisions adopted by the infrastructure manager or the railway undertaking or the operator of a service facility. The body should also have the power to monitor the competitive situation in the rail services markets on its own initiative in order to prevent discrimination against applicants. It should in particular check whether the network statement contains discriminatory clauses or creates discretionary powers for the infrastructure manager that may be used to discriminate against applicants.

Safety authority and investigating body

- 9.14 Safety authority should be independent in its organisation, legal structure and decision making from any railway undertaking, infrastructure manager, applicant and procurement entity.¹⁸⁰ It may be a department within the national ministry responsible for transport matters.
- 9.15 The tasks of the safety authority should include, among others, issuing, renewing, amending and revoking vehicle authorisations, single safety certificates (together with the ERA), safety authorisations, monitoring the safety regulatory framework and supervising railway undertakings and infrastructure managers.

¹⁷⁸ 'Directive 2016/798 of the European Parliament and of the Council on railway safety', 2016, Official Journal L138 p.122; Law on Safety in Railway Traffic, Article 61.

¹⁷⁹ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.57-59

¹⁸⁰ 'Directive 2016/798 of the European Parliament and of the Council on railway safety', 2016, Official Journal L138 pp.125-128

9.16 Investigating body should carry out an investigation after serious accidents on the railway system, with the objective to improve railway safety and prevent further accidents.¹⁸¹ Directive 2016/798 sets out an investigation procedure to be followed during the investigation process.

9.17 The investigating body should be independent in its organisation, legal structure and decision making from any infrastructure manager, railway undertaking, and from any party whose interests could conflict with the tasks entrusted to the body. It should also be functionally independent from the safety authority and from any regulator of railways.

Licensing authority

9.18 Each Member State should designate a licensing authority that should be responsible for issuing licences and for carrying out the obligations imposed by the Directive 2012/34/EU.¹⁸² The licensing authority should not provide rail transport services itself and should be independent of firms or entities that do so.

Conformity assessment body and notifying authority

9.19 A conformity assessment body is a body that has been notified or designated to be responsible for conformity assessment activities, including calibration, testing, certification and inspection.¹⁸³

9.20 Notifying authorities should be appointed and responsible for setting up and carrying out the necessary procedures for the assessment, notification and monitoring of conformity assessment bodies.¹⁸⁴

Standards and procedural guidelines

Monitoring

9.21 The Commission shall monitor the use of the networks and the evolution of framework conditions in the rail sector, in particular infrastructure charging, capacity allocation, investments made in railway infrastructure, developments as regards prices and the quality of rail transport services, rail transport services covered by public service contracts, licensing

¹⁸¹ 'Directive 2016/798 of the European Parliament and of the Council on railway safety', 2016, Official Journal L138 pp.128-132

¹⁸² 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 p.46

¹⁸³ 'Directive 2016/797 of the European Parliament and of the Council on the interoperability of the rail system within the European Union', 2016, Official Journal L138, p.74

¹⁸⁴ 'Directive 2016/797 of the European Parliament and of the Council on the interoperability of the rail system within the European Union', 2016, Official Journal L138

and the degree of market opening and harmonisation between Member States, development of employment and the related social conditions in the rail sector.¹⁸⁵

Network statement

- 9.22 The infrastructure manager should, after consultation with the interested parties, develop and publish a network statement which should be obtainable against payment of a fee which should not exceed the cost of publication of that statement.¹⁸⁶
- 9.23 The network statement should set out the nature of the infrastructure that is available to railway undertakings, and contain information setting out the conditions for access to the relevant railway infrastructure. The network statement should also contain information setting out the conditions for access to service facilities connected to the network of the infrastructure manager and for supply of services in these facilities or indicate a website where such information is made available free of charge in electronic format.

Infrastructure charges

- 9.24 A charging framework respecting the management independence of the infrastructure manager should be established;¹⁸⁷ specific charging rules may be delegated to the infrastructure manager. The network statement should contain the charging framework and charging rules or indicate a website where those are published.
- 9.25 Infrastructure managers should, with due regard to safety and to maintaining and improving the quality of the infrastructure service, be given incentives to reduce the costs of providing infrastructure and the level of access charges.
- 9.26 Charges for the use of railway infrastructure and of service facilities should be paid to the infrastructure manager and to the operator of service facility respectively and used to fund their business.
- 9.27 The charges for the minimum access package and for access to infrastructure connecting service facilities should be set at the cost that is directly incurred as a result of operating the train service. They may include charges which reflect the scarcity of capacity of an identifiable section of the infrastructure during periods of congestion and the cost of environmental effects caused by the operation of the train.

¹⁸⁵ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.45-46

¹⁸⁶ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 p.48

¹⁸⁷ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.49-52

- 9.28 In order to obtain full recovery of the costs incurred by the infrastructure manager a Member State may, if the market can bear this, levy mark-ups on the basis of efficient, transparent and non-discriminatory principles, while guaranteeing optimal competitiveness of rail market segments. The charging system should respect the productivity increases achieved by railway undertakings.
- 9.29 The level of charges should not, however, exclude the use of infrastructure by market segments which can pay at least the cost that is directly incurred as a result of operating the railway service, plus a rate of return which the market can bear.
- 9.30 A time-limited compensation scheme for the use of railway infrastructure may be introduced for the demonstrably unpaid environmental, accident and infrastructure costs of competing transport modes in so far as these costs exceed the equivalent costs of rail.
- 9.31 Infrastructure charging schemes should encourage railway undertakings and the infrastructure manager to minimise disruption and improve the performance of the railway network through a performance scheme. This scheme may include penalties for actions which disrupt the operation of the network, compensation for undertakings which suffer from disruption and bonuses that reward better-than-planned performance.
- 9.32 Infrastructure managers may levy an appropriate charge for capacity that is allocated but not used. That non-usage charge should provide incentives for efficient use capacity. The levy of such a charge on applicants that were allocated a train path should be mandatory in the event of their regular failure to use allocated paths or part of them.

Capacity allocation

- 9.33 Infrastructure capacity should be allocated by an infrastructure manager.¹⁸⁸ Once allocated to an applicant, it shall not be transferred by the recipient to another undertaking or service.
- 9.34 A framework for the allocation of infrastructure capacity subject to the condition of management independence of the infrastructure manager may be established. Specific capacity-allocation rules should be laid down. The infrastructure manager should perform the capacity-allocation processes.
- 9.35 Where, after coordination of the requested train paths and consultation with applicants, it is not possible to satisfy requests for infrastructure capacity adequately, the infrastructure manager should immediately declare that section of infrastructure on which this has occurred to be congested. This should also be done for infrastructure which can be expected to suffer from insufficient capacity in the near future.

¹⁸⁸ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.52-57

- 9.36 Where infrastructure has been declared to be congested, the infrastructure manager should carry out a capacity analysis, unless a capacity-enhancement plan is already being implemented. Where charges have not been levied or have not achieved a satisfactory result and the infrastructure has been declared to be congested, the infrastructure manager may, in addition, employ priority criteria to allocate infrastructure capacity. The priority criteria should consider the importance of a service to society relative to any other service which will consequently be excluded.

Safety

- 9.37 The minimum safety levels should be set that must be reached by different parts of the rail system and by the system as a whole, expressed in risk acceptance criteria.¹⁸⁹ These should be regularly revised to consider the market development in terms of railway safety.
- 9.38 In order to monitor the safety status of the railway market, Member States should annually collect information on a set of common safety indicators listed in Annex I of Directive 2016/798.¹⁹⁰ The indicators contain information related to accidents, dangerous goods, suicides, precursors of accidents, technical safety of infrastructure and its implementation and the economic impact of accidents. Infrastructure managers and railway undertakings should establish their safety management systems to ensure that the railway system can achieve the minimum safety levels.
- 9.39 Access to the railway infrastructure should be granted only to railway undertakings which hold the single safety certificate issued by the Agency. The certificate provides evidence that the railway undertaking concerned has established its safety management system and that it is able to operate safely in the intended area of operation. In order to be allowed to manage and operate a rail infrastructure, the infrastructure manager should obtain a safety authorisation from the national safety.

Licensing or railway undertakings

- 9.40 The conditions for obtaining a licence are listed in Section 2 of Chapter III of Directive 2012/34/EU and include requirements relating to good repute, financial fitness, professional competence and civil liability cover, among others.¹⁹¹

¹⁸⁹ 'Directive 2016/798 of the European Parliament and of the Council on railway safety', 2016, Official Journal L138

¹⁹⁰ 'Directive 2016/798 of the European Parliament and of the Council on railway safety', 2016, Official Journal L138, pp.136-142

¹⁹¹ 'Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area', 2012, Official Journal L343 pp.46-48

Certification of train drivers

- 9.41 The certification process of train drivers should be carried out by the safety authority, which should ensure that all drivers have the necessary fitness and qualifications to drive trains.

EU State Aid provisions

- 9.42 In order to prevent State funding to favour specific undertakings, consequently distorting competition and disrupting the functioning of the internal market, the EU has adopted a large body of State Aid provisions.¹⁹²
- 9.43 The basic provisions in the treaties stipulate that State Aid is present if an assistance measure fulfils the following conditions:
- the assistance is granted by the State or through State resources
 - the assistance gives the recipient an advantage on a selective basis
 - competition has been or may be distorted
 - the assistance affects trade between Member States
- 9.44 The EU has expanded the treaty provisions with an extensive series of interpretative pieces of legislation. A variety of sector-specific guidelines have been published in order to provide tools to apply State Aid law to different market conditions. The rail transport provisions are briefly described in the next subsection.
- 9.45 EU law also regulates State Aid in the form of public services compensation granted to certain undertakings tasked with operating Services of General Economic Interest (SGEI). SGEIs are economic activities that Member States identify as being of significant importance to citizens but that would not be adequately supplied if there were no public intervention.
- 9.46 SGEI compensation does not constitute State Aid if the following conditions are met.¹⁹³
- the undertaking receiving compensation must have clearly defined public service obligations
 - the compensation calculation methods must be objective, transparent and established in advance
 - the compensation cannot exceed what is needed to cover all or part of the costs incurred in the discharge of the public service obligations, including a reasonable profit

¹⁹² European Commission, 'EU Competition law - Rules applicable to State Aid', 2014

¹⁹³ Judgement of 24 July 2003, *Altmark*, C-280/00, EU:C:2003:415

- if the undertaking tasked with the public service obligations is not chosen through a public procurement procedure, the level of compensation needed must be determined on the basis of an analysis of the costs of a typical well-run company

Community guidelines on State aid for railway undertakings

- 9.47 The guidelines concern the application of Articles 93 (formerly 73) and 107 (formerly 87) TFEU and their implementation with regard to public funding for railway undertaking. Several of these provisions can be applicable to the Serbian rail freight market.

Public financing of railway undertakings by means of railway infrastructure funding

- 9.48 Public financing of infrastructure development can constitute aid. However, if infrastructure use is open to all potential users in a fair and non-discriminatory manner, and access to that infrastructure is charged for at a rate in accordance with EU law, the Commission normally does not consider that State aid.

Debt cancellation

- 9.49 Debt cancellation mostly concerns the old incumbent rail operators which struggled to adjust to the new open competition model and it is not allowed under most circumstances. Only debts incurred before the railway market liberalisation (or before EU accession) can be covered by State aid and only under a specific set of conditions.

Aid for restructuring railway undertakings – restructuring a ‘freight’ division

- 9.50 The 2004 guidelines on State aid for restructuring apply except for some derogations when the undertaking respects certain conditions (return to long-term viability, prevention of any excessive distortion of competition, aid limited to a minimum, ‘one time, last time’ principle).

Aid for coordination of transport

- 9.51 Aid for rail infrastructure, for reducing external costs or for interoperability that is necessary and proportionate is compatible under Article 93 TFEU, subject to a set of conditions.

State guarantees for railway undertakings

- 9.52 Unlimited guarantees are incompatible with the Treaty. The ones that still exist because of historical legacies should be removed.

Application of competition rules to rail transport

- 9.53 EU law provides for certain exceptions related to its competition rules, specifically for the rail, road and inland waterway transport markets.¹⁹⁴

Exception for technical agreements

- 9.54 The provisions in Article 101(1) TFEU do not apply to agreements, decisions or concerted practices with the object and effect of applying technical improvements or achieving technical cooperation through, for example, the standardisation of equipment and transport supplies, the coordination of transport timetables for connecting routes, etc.

¹⁹⁴ "Council regulation applying rules of competition to transport by rail, road and inland waterway", 2009, Official Journal L61 pp.1-5