



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 15-Nov-2019 | Report No: PIDC27813



BASIC INFORMATION

A. Basic Project Data

Country Serbia	Project ID P170868	Parent Project ID (if any)	Project Name Serbia Railway Sector Modernization (P170868)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date Jul 05, 2020	Estimated Board Date Sep 18, 2020	Practice Area (Lead) Transport
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Ministry of Construction, Infrastructure, and Transport, Serbia Railways Infrastructure	

Proposed Development Objective(s)

To improve the efficiency, market share, and safety of the rail network.

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	400.00
Total Financing	400.00
of which IBRD/IDA	400.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	400.00
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Environmental and Social Risk Classification
Substantial

Concept Review Decision
Track II-The review did authorize the preparation to continue



Other Decision (as needed)

B. Introduction and Context

Country Context

The Republic of Serbia is located in the central part of the Balkan Peninsula, on an increasingly important route linking Europe and Asia. Serbia's international road, railway, and inland waterway networks are connected to the broader Western and Central European corridors, as well as to intercontinental routes linking Central and South-eastern Europe with the Middle East, Asia and Africa. Serbia's geographic position opens up significant opportunities to deepen regional trade and economic integration. The country borders Bulgaria to the east, Romania to the northeast, Hungary to the north, Croatia and Bosnia and Herzegovina to the west, Montenegro to the southwest and Albania and Macedonia to the south, with a total border length of 2,114 kilometers.

Serbia is an upper middle-income country, and with a gross domestic product (GDP) of US\$ 50.5 billion, is one of the main economies in the Western Balkans. After an average annual growth of 5.9 percent during the decade before the 2008 global financial crisis, average real GDP growth approached zero as the economy experienced three recessions in 2009, 2012 and 2014, as well as several floods and droughts during 2012-2014. Over the last four years, Serbia's economy has resumed growth, and poverty is estimated to have declined slightly from 23.8 percent in 2014 to 22.4 percent in 2017. Positive economic performance in Serbia over recent years is mainly the result of a fiscal stability program, supported by the World Bank and the International Monetary Fund (IMF), and a regulatory and institutional modernization process to meet European Union (EU) accession requirements.

The service sector has been the main driver of growth, as it contributed 2.3 percentage points to total GDP growth in 2018. The main engines of growth in the service sector are trade, transport, and tourism. The information technology (IT) sector is increasingly important, with its exports exceeding EUR 1 billion as of 2018. Agriculture also did well in 2018, recovering from 2017 by growing 15.6 percent. Economic activity in 2019 is projected to grow by only 3.5 percent because external developments are less favorable, and the one-off effects from higher consumption and recovery of agriculture are exhausted. Medium-term projections are based on the assumptions that consumption will keep growing at about 3-4 percent annually and that investment will have annual growth of 5-6 percent in real terms. This would bring the share of investment in GDP to about 23 percent.

Serbia remains exposed to external risks, including spillovers and renewed episodes of global market volatility. High levels of public sector employment, inefficient human resource management, and weaknesses in public financial management contribute to Serbia's fiscal challenges. State-owned enterprises (SOEs) dominate many sectors of the economy, drawing substantial fiscal subsidies and diverting resources from more productive uses.

Serbia has potential to transform itself into a highly dynamic, modern economy on a par with those in Western Europe. Its principal economic development opportunities and challenges lie in four areas: (i) deepening financial sector



development; (ii) enhancing the skills of its labor force; (iii) strengthening competition in product markets; and (iv) making government more effective.¹

Sectoral and Institutional Context

Improved transport connectivity will be crucial to enable Serbia to shift towards a greater export orientation, which is the primary path to its economic and social development. Modernized transport infrastructure, together with further structural reforms in the transport sector, will be among the key elements for making Serbia more competitive, stimulating investment, and completing Serbia's transition to a market economy.²

Serbia's rail system, covering 2,474 km, is a major asset with the potential to play a strategic role in the nation's development. At present, Serbia's main trading partners are the Western Balkans, Germany, and Russia. Serbia's key exports—automobiles and auto components, electrical motors and wire, and agricultural products—as well as its main imports—pharmaceuticals, vehicle parts (for assembly), and crude and refined petroleum—lend themselves to transport by rail as the mode of choice. Railways are more cost-efficient than road transport for products that are in bulk, heavy, and moved over relatively long distances. For such goods, rail transport also is more energy- and emissions- efficient per ton and saves on road maintenance. With a modern rail system, Serbia can capitalize on its favorable location as a hub for main east-west and north-south corridors to capture both regional and longer-distance trade opportunities.

The reforms undertaken by the GoS have helped to introduce an EU-compliant legal framework to enable clarity of institutional roles and drive performance improvements. In 2015, the GoS Railway Reform Steering Committee was established, and Serbian Railways was unbundled into three operating companies (passenger, freight, and infrastructure) plus a transitional company. The Steering Committee adopted a Railway Reform Plan (2016-2020), informed by a 2014 World Bank Railway Policy Note and an EU-funded consultancy report. Underlying the Reform Plan's actions is the need to change the business culture in the sector to enable and empower the new railway companies to operate commercially. Restructuring of commercial debt was completed, with debt allocated to the cargo and passenger operating companies and debt restructuring plans either agreed with, or under consideration by the creditors. Since 2016, labor productivity has increased by more than 15 percent. Total subsidies to the sector were reduced by 33 percent between 2015 to 2018, from RSD 16.7 million to RSD 11.25 million. The two main railway operators completed several successful rounds of disposal of surplus assets, generating a total of EUR 6.0 million in savings (Cargo EUR 4.33 million and Voz EUR 1.68 million).

Following the unbundling of Serbia Railways into separate companies, the key stakeholders in the railway sector in Serbia are now the following: The Ministry of Construction, Transport and Infrastructure (MCTI) is responsible for policy direction and funding of railways. The Railways Directorate (RD) is the market regulator and oversees the safety and interoperability of rail transport. Serbian Railways Infrastructure (IZS) is an SOE for infrastructure management, responsible for construction, maintenance, and operation of the railway network, supporting itself mainly through fees. Serbia Voz is an SOE responsible for organization and delivery of rail passenger transport services. Serbia Cargo is an SOE responsible for organization and delivery of rail freight services. Serbian Railways AD is a temporary organization with the remit of generating revenue from various non-core railway assets and settling the court cases involving the

¹ World Bank, Serbia's Growth Challenge, 2019. <http://pubdocs.worldbank.org/en/965791561402546104/Serbia-CEM-NGA-Concept-Note-public-Eng.pdf>

² World Bank Group, Country Partnership Framework for Serbia for the period FY16-20, Report No. 94687-YF.



former vertically integrated railway company. Finally, there are nine active private rail cargo operators certified by the Railways Directorate (one other operator is certified but not currently active).³

Infrastructure modernization is essential to address various cross-cutting performance issues. Decades of low and non-strategic investments, outdated management structures and practices, and neglect of maintenance have led to serious deterioration of the network infrastructure, obsolescence of the rolling stock, and low service quality. As one example, an average of 39 percent of scheduled passenger and 37 percent of scheduled freight trains were cancelled during the period 2016-2018. The current design state of the railway lines enables operation of rolling stock from 12 t/axle to 22.5 t/axle, with the latter maximum load capacity possible on only 1,886 km, which is an obstacle to growth of rail freight traffic. Services are greatly hampered by the current severe regime of continuous speed restrictions across the network. The average speed is low at 38 km/h, and the network has many slow and dangerous spots. As recently as 2017, railways in Serbia had a derailment rate of 9.14 derailments per million train kilometers, compared to 1.5 in Bulgaria and 0.1 in Croatia.

Favorable results are starting to emerge for freight rail transport, but much more needs to be done. Recent reforms have resulted in attracting back some of the freight traffic lost between 2004 and 2014 (Table 1). However, much of the freight that could move by railways still goes by road.⁴ The railway freight market share in Serbia is below five percent, which is very low compared to most European countries (Figure 1).⁵ Serbia's rail freight intermodal market is undeveloped but has the potential to add an important traffic base to the railway system. In general, other European railways have been able to achieve substantial growth of intermodal traffic, even while their overall freight market share remained constant. Total rail freight (million ton-kilometers) in the EU grew by only 1 percent from 2005 to 2015, but intermodal rail freight grew by 28 percent during the same period.⁶ Improving rail infrastructure and modernizing rail cargo operations would introduce a service that is being sought by producers in the region.⁷

The picture for passenger rail services is mixed and poses considerable challenges. Serbia Voz has improved its financial accounting practices and has entered into a Public Service Obligation (PSO) contract whereby the subsidy that it receives is conditioned on certain performance indicators. This helps to ensure that only valuable passenger rail services are maintained. Still, passengers per km declined by over 60 percent between 2005 and 2017, and the volume of passenger services was lower in 2018.

Technology will be an important element going forward, as new infrastructure will need to be compatible with emerging intelligent railway systems. Railway automation is the architecture that links railway components together for a standardized and efficient flow of traffic. The railway sector in Serbia is well positioned to start a formal initiative for technology deployment in support of significant transportation, safety, and environmental benefits. Such an

³ Most rail cargo operators provide specialized services (e.g., chemical or mining) focused on particular traffic segments. Many of these operators were established by previous rail customers that sought to obtain higher quality service or lower transport rates.

⁴ For example, Serbia currently exports about 2.7 million tons of corn and 0.5 million tons of wheat to Romania. However, railway operational statistics from MCTI do not show significant rail freight movements of these two commodities, and it is unlikely that they are moving on inland waterways (Danube and Sava rivers).

⁵ International Union of Railways (UIC) Report on Combined Transport in Europe 2016

⁶ Ibid.

⁷ Study of intermodal transport users' needs in the Danube Region, June 2018



initiative can be supported by key local drivers such as the country's strong IT sector and the presence of a clear technology framework driven by EU standards.

Railway safety is a serious challenge in Serbia. As mentioned above, Serbia's derailment rate is far above peer countries. In 2017, the level crossing accident rate in Serbia was 5 per million train-km, compared with only 1.14 in Bulgaria, 0.5 in Croatia, and 0.09 in Germany (Figure 2). If this problem is not addressed now, it is likely that more accidents and fatalities will happen once trains speeds increase. Implementation of Safety Management Systems (SMS) coupled with cost-effective technologies have the potential to bring the safety in Serbian rail sector to a level comparable to regional standards.

To consolidate its railway reform work and develop a sustainable base for the future, the GoS has requested the World Bank's support for continuation of institutional, physical, and operational modernization of the sector in an integrated fashion. The key elements of the GoS's approach are (i) strengthening sector **regulation** while giving companies clear and manageable contractual arrangements; (ii) improving **infrastructure**; (iii) giving railway sector companies incentives to maximize their own **corporate** efficiencies and achieve their commercial objectives; (iv) enhancing **reliability and safety** of railway services through utilization of modern technology, up to date safety systems, energy efficiency measures, and resilience considerations; and (v) increasing rail **modal share** by addressing last mile connectivity, urban integration, multimodal logistic centers, and concepts of integrated territorial development. Figure 3 schematically illustrates the route being followed by the Serbian rail sector on its journey to its ultimate goal, a safe, sustainable, commercially efficient, and effective railway system.

Relationship to CPF

The MPA is closely aligned with the World Bank Group (WBG)'s twin goals of reducing poverty and promoting shared prosperity and with the Country Partnership Frameworks (CPF) for the period ending 2021, as well as the priorities outlined in the Systematic Country Diagnostics (SCD). The program will contribute towards enhancing quality of infrastructure for improved in-country and regional integration and accelerated economic growth, boosting employment and improving the business environment in the region. Connectivity is a critical driver of competitiveness and a key piece in support of export-oriented development. The program will enable improved access to new economic opportunities. Improved infrastructure quality and integrated territorial development should contribute toward modal shift to railways, provision of more affordable transport service, and reduction of greenhouse gas (GHG) emission. Most importantly, railways are key for full integration with the EU and this program will support this priority.

Infrastructure is one of the six priority areas identified in the CPF for fiscal years (FY) 2016 - 2020. Better regional connectivity through infrastructure development is essential to boost investment and growth in Serbia. The WBG has been heavily engaged in infrastructure development, through the reform of the railway sector, investment support to highway and national road construction, and improvements in road and rail sector management systems. The CPF notes that improved efficiency in spending and operation of SOEs, better quality maintenance of infrastructure, and improved prioritization of public investments need to be pursued. Furthermore, the CPF notes that engagement in infrastructure development will be continued in close coordination and cooperation with other international bodies (i.e., IFIs and the EU).

This MPA is closely linked to three CPF objectives. The Multiphase Programmatic Approach (MPA) instrument selected for this operation will support the improvement of the rail infrastructure and continued corporatization and financial consolidations of the three railway companies. Improvement of the important railway links and improved safety on the



network is directly aligned to the CPF objective 2d “enhancement of infrastructure networks.” Railways is perhaps the transport sector that has lagged behind the most and is now prime for investment, as reforms have improved financial and operational indicators. Improved performance will also likely support a more sustainable public expenditure management (CPF Objective 1a) and improve operation of railway SOEs (CPF Objective 1d). Building on past reforms and rebuilding the most important railway lines in Serbia will allow Serbia Voz and Serbia Cargo, along with other potential operators, to start regaining some of the traffic lost to road service providers. This will in turn increase revenues and reduce the need for public budget support.

C. Proposed Development Objective(s)

To improve the efficiency, market share, and safety of the rail network.

Key Results (From PCN)

The MPA key results identified at the concept review stage are the following;

The MPA’s key results Key output indicators:

- Kilometers of track rehabilitated
- Number of beneficiaries at the passenger level, disaggregated by gender
- Proper legislative framework and data system for the Railways Directorate (sector regulator).
- Human Resources strategy to enhance strategic staffing and Gender balance in the companies.
- Safety management system action plan.

Outcomes:

- Increased **modal share** of rail transport in Serbia, as measured by percent of ton-km and pass-km in the rail mode
- Improved **safety** on Serbia's railway network, as measured by derailment rates, accident rates, fatality rates
- Increased **intermodality**, as measured by freight containers and passengers connecting to or from rail with a different mode of transport

Intermediate Outcomes:

- Increased **technical efficiency** of the railway infrastructure in Serbia, as measured by average network speed.
- Improved **financial sustainability** of Serbia Voz and Serbia Cargo, as measured by improved operating ratios; reduced subsidies/traffic unit.
- Improved **capital investment efficiency** of IZS, as measured by numbers of km rehabilitated and built per year.
- Improved **maintenance** of the rail infrastructure, as measured by share of track network operating at design speeds (design speed km/total network km).
- Improved **gender balance** in male-dominated roles of Serbia Voz, as measured by percent increase in number of women employed in roles such as management, engineers, mechanics and drivers.

D. Concept Description



The proposed operation will be a simultaneous Multiphase Programmatic Approach (MPA) with three Phases implemented over ten years to support GoS in deepening railway reforms and modernizing the railway sector. The MPA will have the following development objectives:

- Proposed Phase Development Objective (Phase 1). To improve quality and sustainability of existing network assets; governance and institutional improvements
- Proposed Phase Development Objective (Phase 2). To integrate intercity and urban rail services with other modes (freight and passenger); operational safety
- Proposed Phase Development Objective (Phase 3). To consolidate gains from previous two phases to promote multimodality in freight and passenger rail services, synchrony of railways with urban development, and universal accessibility (i.e., gender, disability access, and minorities).

Phase 1 of the Program is a US\$125 million IBRD loan, focusing on the rehabilitation and renewal of the existing railway infrastructure and technical assistance to key institutions in the sector. The latter will support improved sector governance, institutional strengthening, and key modernization elements of the sector.

Phase 2 would prioritize investments in the integration of intercity and urban rail services (freight and passenger) with other modes and continue to improve operational safety. This is expected to be the largest phase by investment amount. In Phase 2, the MPA would utilize the knowledge originated in Phase 1 on ownership structure, further corporatization, and commercialization of the sector. In addition, it would scale up and finish implementation of the SMS to improve safety performance and establish a safety culture. These efforts would be coupled with scaled-up infrastructure investments coherent with the main objective of the phase. Phase 2 may also begin the utilization of intelligent transportation systems (ITS) and pilot integration of rail and bus services. These measures would not only benefit wider local communities but also provide climate co-benefits.

Phase 3 would consolidate the performance of the sector by promoting multimodality (in freight and passenger services), synchrony of railways with urban development, and universal accessibility. Interventions would promote the re-insertion of Serbia Voz in the urban transport landscape and regional intercity markets through improved ticketing, multimodality, and transit-oriented development (TOD) strategies. For Serbia Cargo, Phase 3 would support interventions to optimize the railway system for moving more intermodal freight. At this stage, the MPA also would support activities for both SOEs to move towards universal access to ensure services enhance accessibility of opportunities for all segments of the population. Phase 3 would utilize two main knowledge products generated during Phase 1, the investment plan on intelligent railway systems (subcomponent 3.1) and knowledge on integrated territorial development (subcomponent 3.3). Private investments opportunities will be considered in close coordination with IFC. Intermodal terminals, transit oriented development (TOD), and cargo oriented developments (COD) normally have clear opportunities for the private sector to participate.



The sequencing of activities across the three phases is shown in Table 4.

Sequencing of Activities Across Phases of Proposed MPA

Components	Phase 1	Phase 2	Phase 3
Component 1: Infrastructure Investments and Asset Management	<ul style="list-style-type: none"> Rehabilitation of selected local and regional routes Upgrading of railway crossings Monitoring station Rollout of asset management system – phase 1 (integration of asset register and accounting system) Preparatory studies for phase 2 investments 	<ul style="list-style-type: none"> Renewal of a main intercity route (Pancevo – Vrsac or a segment in a regional corridors); will include catenary, track, and signaling Pilot integration of bus and urban rail services Rollout of asset management system for other components beyond rail tracks – phase 2 Preparatory studies for phase 3 investments 	<ul style="list-style-type: none"> Intermodal terminals (freight and passenger) Other infrastructure to promote transit- and cargo-oriented development around Belgrade, Nis, and Novi Sad
Component 2: Institutional Strengthening and Project Management	<ul style="list-style-type: none"> TA to strengthen RD as regulator TA for railway company ownership structure TA to strengthen existing legal, regulatory and enforcement framework of contracts and obligations between MCTI and companies TA for developing human capital for market-oriented service delivery Project management and capacity building 	<ul style="list-style-type: none"> TA for Implementation of SC and SV ownership recommendations (if decision is to privatize, focus will be on privatization approaches in EU context; if to maintain as SOE, focus will be on change management and SOE best practices) Human capital: further implementation of HR and skills development in accordance with SMS, asset management, and commercialization efforts Adoption by the three companies of commercial, customer-responsive practices Project management and capacity building 	<ul style="list-style-type: none"> Capacity building for the companies to better manage intermodal and urban services TA to determine private investment opportunities in both freight and passenger terminals and facilities and for companies to handle private sector partnerships Project management and capacity building
Component 3: Railway Modernization Enablers	<ul style="list-style-type: none"> Intelligent railway systems – planning and design phase Safety Management Systems (SMS) – planning and design phase TA to assess options for freight and passenger integration with urban transport, transit-oriented development options, land use planning, etc. Business process support systems for Serbia Cargo 	<ul style="list-style-type: none"> Implementation of foundation systems for intelligent railway communication network; Phase 3 design SMS – implementation of risk-based hazard management program 	<ul style="list-style-type: none"> Implementation of ITS applications -- traffic planners, scheduling, wagon reservation etc. SMS – phase 3 implementation Implementation of integrated ticketing and other systems for Belgrade-Zagreb intercity link

Legal Operational Policies

Triggered?

Projects on International Waterways OP 7.50

No

Projects in Disputed Areas OP 7.60

No

Summary of Screening of Environmental and Social Risks and Impacts



Note To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document.

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