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Belarus

Belarus Railway and Logistics Strategy

Activity 2 - Organizational, Policy and Planning Actions

July 2018

TDD

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EXECUTIVE SUMMARY

In early 2017, the World Bank team and the Belarusian Railways jointly conducted a broad assessment of the historical and current performance of the railway, covered in the Bank's Activity 1 report. **It was found that rail transport has been losing market share to road transport since 2000.** Commercial passenger travel (as measured by passenger kilometers) has generally declined by about 25 percent over the period. Rail passenger transport has declined by about 60 percent. **Both rail passenger journeys and rail trip length have declined, with rail share of the passenger transport market dropping from about 55 percent to about 30 percent over the period.** Activity 1 assessment identified three main areas that would support the long-term sustainability of BCh. These measures can be taken by BCh to better respond to the new realities of the Belarusian transport sector. In order to be able to adjust to the new realities of the Belarus transport system and economy, BCh has to become more business oriented and increase its business planning capacity. The second group of identified actions are measures that could be taken by BCh to improve operating performance. These actions were identified because BCh's operating ratios show it is lagging behind in certain areas of its operating performance, and taking action on this would make the railway more efficient and able to provide better passenger and freight service. The last set of identified actions are related to public policy measures that could be explored by the Belarusian Government in support of the economic, financial, and operational sustainability of BCh. Based on these findings, this second activity focused on laying out the roadmap for the organizational, policy and planning actions of the Belarusian Railways. **This report addressed several important issues in the Belarusian rail sector, including policy changes, changes in the railway law, new organizational structures for BCh, formation of business units (or enterprises under a reorganized BCh holding company), and changes in rail tariff regulations, including deregulation of tariffs for many rail traffic flows.**

This report expands on some of the recommended measures in the broad assessment report produced in Activity 1 and contains a discussion of railway freight and passenger marketing strategies, and approaches to freight logistics services from our international experience. The principal changes are summarized below:

- **New Railway Organization & Strategy**

The Belarusian rail sector should be reorganized and consolidated into a single entity state-owned enterprise. This will likely require changes in the Railway Law and will require accounting changes, revaluation of the assets, and may allow the separation and perhaps privatization of some existing railway units.

The railway strategy development effort should include a full range of strategy analyses, including analyses of freight and passenger markets and forecasts, investment needs and requirements, and organization structures. The strategy analysis should include a financial analysis, and consider estimated asset valuations, and alternative levels of private sector participation.

This report has suggested a vertically integrated holding company type structure with freight and passenger units (may be separate businesses, with the overall BCh structure as a holding company – like DB, the German railway). But, the Government and BCh should develop an integrated railway company structure based on the strategic analysis. Over time, as the sector develops, new organization forms can be implemented to provide greater commercial focus or encourage private sector participation.

New accounting systems will also be needed for BCh as an integrated entity and for each strategic unit or enterprise within BCh. These systems should be used to develop more detailed costs and infrastructure tariffs to be charged to operating business units. The systems should be based on a set of asset allocations and costing assumptions that form part of the rail sector organization strategy.

- **Legal & Regulatory Framework**

A new railway law, defining a state-owned enterprise (SOE) structure, and clearly describing what services constitute the railway natural monopoly (generally, the railway infrastructure network, including tracks, bridges, related structures, electrification facilities, signaling and dispatching facilities). Other services (such as transportation services) occur in a competitive market, especially in Belarus. Property laws governing such issues as financial and operational leasing should be reviewed to encourage financing structures for railway assets. Land laws may need revision to permit development of railway properties under certain conditions. Eventually, new rail safety regulatory structures may need to be established to govern safety performance outside of the rail SOE.

This report recommends a careful review of BCh markets and suggests that many freight tariffs can be deregulated. Preliminary recommendations for markets that can be deregulated include many Class III commodities, and domestic, import and export container traffic. The rail sector strategy study will reveal more. This report also recommends increasing the wagon component in tariffs and regulatory changes to encourage private investment (especially in rail wagons).

- **Develop Business Plans and Commercial Strategies**

Once the rail sector strategy and organization structures are established and agreed, BCh should establish separate business units for freight and passenger. The new business units should develop commercial strategies and develop business plans, including investment plans and pricing strategies. In addition, BCh should develop business plans for the remaining rail sector units (e.g., infrastructure, rolling stock, supply units) and detailed development plans, coupled with the plans and commercial strategies of the business units. A development plan for the accounting systems,

financial organization, and information systems should also be prepared, reflecting the new sector structure and regulatory framework.

- **Establish and Implement a Digital Development Plan**

Efforts to restructure BCh's environment should be underpinned by an aggressive use of digital technology. This is necessary in order to be able to compete effectively in the passenger and freight markets. Therefore, another important step in long-term sustainability is the development of a Digital Development Plan and its systemic implementation. Digital technologies are proving to improve customer service, increase operational efficiency and support infrastructure management in a cost-effective manner. BCh would greatly benefit from looking at emerging technologies and implementing them in a methodical way throughout its system.

These types of strategic changes may take many years. The first step is to initiate the rail sector strategic study to define the unitary enterprise structure of the railway, and perform the market analyses necessary to define the business unit/enterprise structure. This type of study typically takes six to eight months. At the same time, work can begin on reforms to the Railway Law, and on review of railway markets and deregulation strategies. This work cannot be completed until the sector strategy is done. The formation of a new Railway Law and other regulatory reforms can also be started early in the process, which should include a review of changes required in the railway law, land, and leasing laws. These activities will take additional time and changes may still be required as the sector evolves and markets change. Nevertheless, to enhance competitiveness and sustain in the transport sector, these steps are essential for the railways.

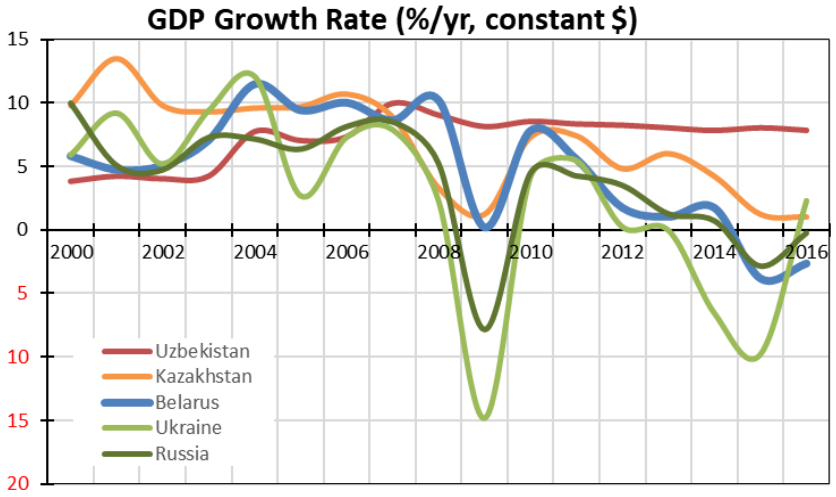
1 Introduction

1.1 Background

The World Bank and the Belarusian Railways (BCh) have been working together to find programs and means to grow railway traffic and rail market share by finding ways to improve the institutional, operational, and financial performance of the railway. The work began with an assessment of the historical and current performance of the railway, covered in the Bank's Activity 1 Report.

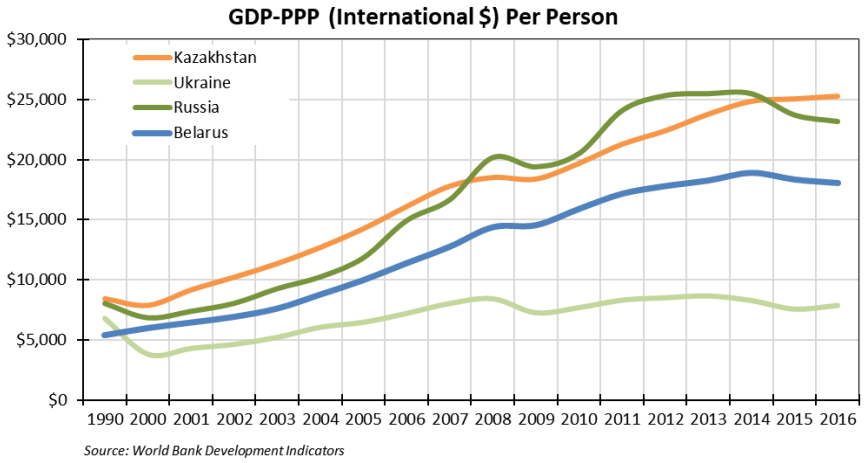
1.2 Summary of Findings on the Belarus Economy

The Assessment Report found generally that the Belarusian economy has grown at an average rate of about 5% per year between 2000 and 2016 but has been subject to global economic pressures and local geopolitical shocks.



After several years of slow economic growth, the Belarusian economy entered a recession in 2015, the first time since 1995. The economy remained in recession in 2016 but grew at 2.4% again in 2017. GDP growth is expected to average 1.8% per year over the next few years, driven by improvements in the external environment and the effects of domestic competitiveness-enhancement policies.

Purchasing Power Parity (PPP) adjusted GDP per capita increased from about Int$6,000 in 2000 to nearly Int$19,000 in 2014 (a factor of more than three) but declined to about Int$18,000 in 2016. Overall, GDP(PPP)/capita increased at a rate of about 7.1% per year since 2000 (see chart on the next page). While this increase is not as dramatic as those in Russia and Kazakhstan, it represents a significant increase in wealth for average citizens. Increasing economic activity and wealth has had an impact on transport within Belarus.



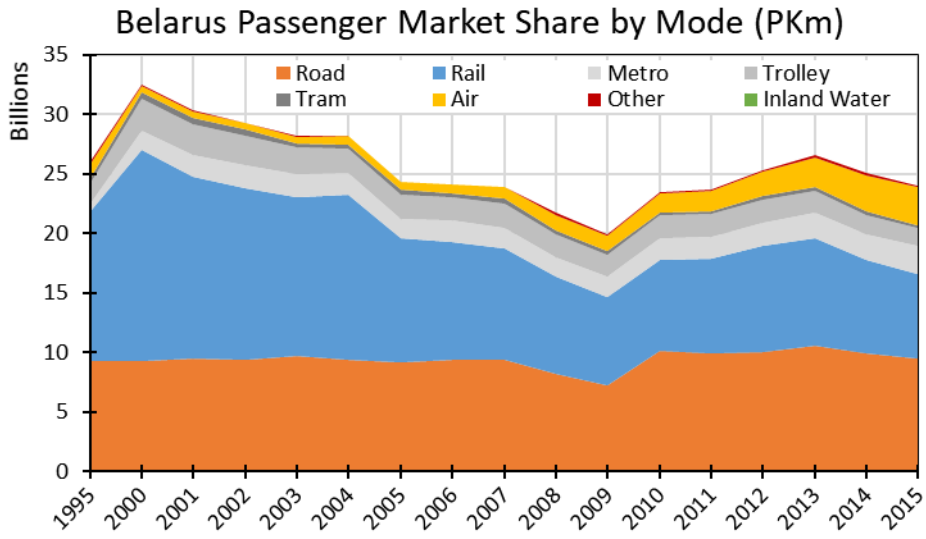
However, risks to this outlook are tilted to the downside. The widening current account deficit and high foreign debt service obligations continue to pose significant risks due to weak recovery in key trading partners (Russia in particular), the slow pace of export diversification, and low commodity prices. As the capacity to borrow domestically is limited and foreign reserves are likely to remain low, external financing needs remain high over the medium-term. Domestically, financial and fiscal strains—including possibility of bank recapitalizations as well as uncertainties arising from State-Owned-Enterprise (SEO) performance—are requiring the Government to further tighten fiscal policy to build fiscal and reserve buffers. Slow economic growth in Russia threatens to continue to trouble the Belarus economy.

On the upside, a faster pace of structural transformation in Belarus—in combination with the global and some regional economic recovery—would strengthen financial sector, improve enterprise performance, and increase household incomes in the medium-term.

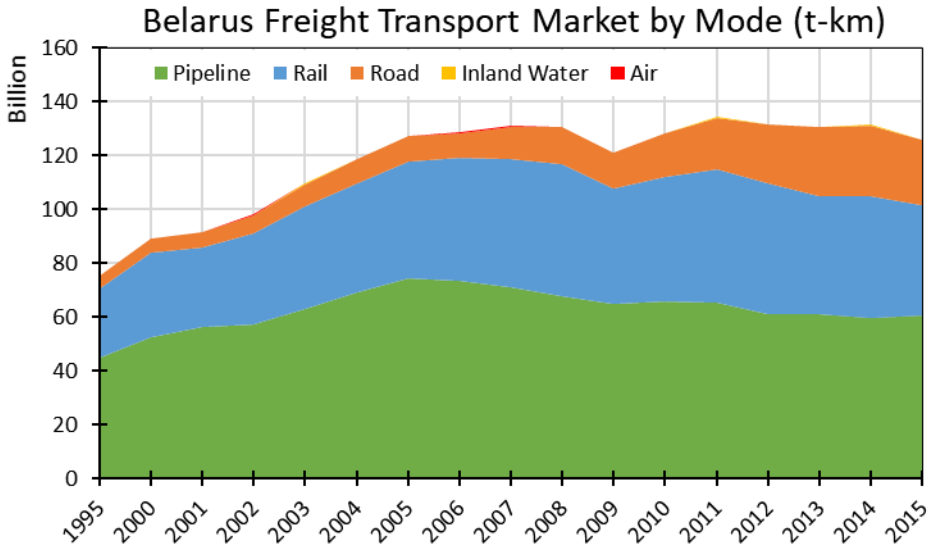
1.3 Summary of Findings on Belarus Transport

Increased economic performance since 2000 has resulted in an increase in the number of passenger cars and motor vehicles in Belarus. Investment in roads, highways, and road transport infrastructure has helped to increase road transport market shares for both passenger and freight traffic.

The Assessment Report found that rail transport has been losing market share to road transport since 2000. Commercial passenger travel (as measured by passenger kilometers) has generally declined – by about 25% – over the period. Rail passenger transport has declined by about 60%. Both rail passenger journeys and rail trip length have declined, with rail share of the passenger transport market dropping from about 55% to about 30% over the period (see chart below).

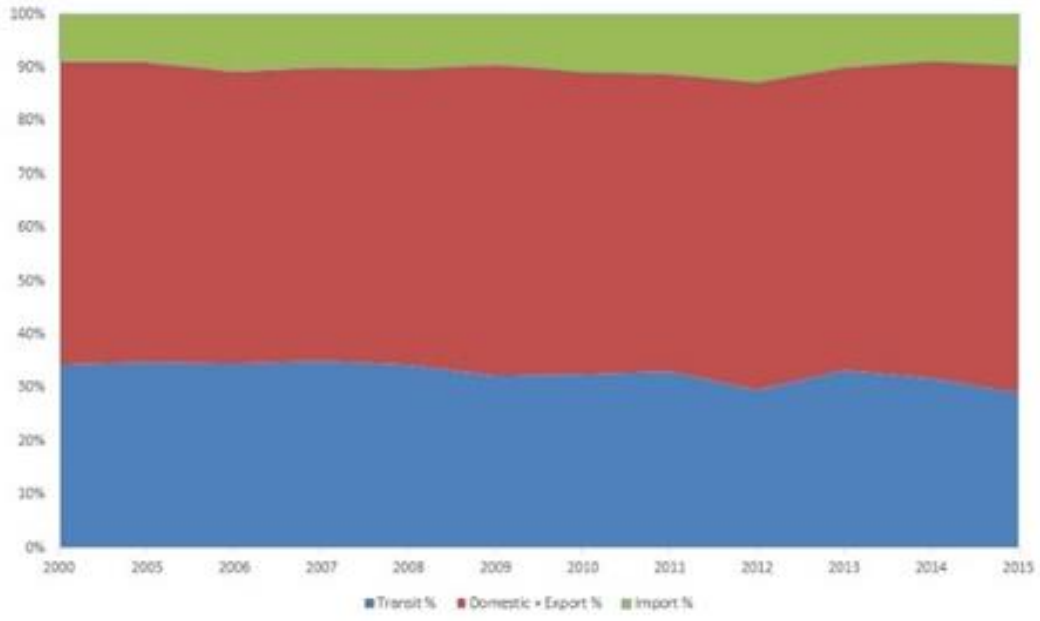


In contrast, the Belarusian freight markets increased steadily over the period, until 2015. Overall freight transport, as measured by tonne-kilometers, has increased by more than 40% since 2000 – a growth rate of about 2.3% per year. But, the mix of modes has changed, road transport has increased by about 11% per year while rail transport increased by 1.8% per year. As a result, rail share of the freight transport market has declined from about 35% in 2000 to about 32% in 2015 (see the chart below).



Generally, these results are indicative of increased motorization in Belarus, arising from improving economic conditions, increases in personal ownership of automobiles, and large investments in the road transport network. At the same time, increased trade between China and Europe have added to the Belarus Railways transit traffic base in recent years, but reductions in trade with Ukraine and Russia arising from geopolitical turmoil, have reduced both import, export and transit traffic on the

railway. As a result, in rail transport, transit share has declined over the past few years, even as China/Europe trade has increased.



1.4 Organizational Structure of the Belarusian Rail Sector

The railway system in Belarus is operated by the Belarusian Railway, which is organized as a state association consisting of 29 legal entities. These include 7 regional railway organizations and a wide variety of separate functions such as information management, training centers, maintenance facilities, and materials production entities. The BCh Association includes a logistics services provider, BelInterTrans, which operates several railway freight terminals within Belarus. Each legal entity is separately owned by the state and has its own decision-making processes. Investment decisions are coordinated and approved by the main BCh association. While each railway branch is an independent legal entity, their functions are not independent from BCh's control on a day-to-day basis. Some of these entities are responsible for activities that might be sub-contracted to outside parties in other railway organization structures. The current structure does not permit BCh or the Government to tap the potential for private investment in some of these functions, placing all railway related investment burdens on the Government and BCh. Private investment in railway wagons, maintenance depots, maintenance equipment, stations, and other rail related facilities has flowed into the sector where structural changes have been made to allow for such investment.

The railway entities are under the supervision of the Ministry of Transport and Communications (MoTC) and regulated by the Ministry of Antimonopoly Regulation and Trade (MART). MoTC supervision is related to the operational and policy aspects of the railway system. Railways are considered a natural monopoly and economic factors such as tariff setting, and some service aspects are regulated by MART.

The Belarusian "Law on Rail Transport" designates that BCh is the only rail operator in Belarus responsible for train services and railway infrastructure management. It designates the Public Association Belarusian Railway as a commercial organization under MoTC supervision. BCh is a state property and BCh manages both the infrastructure and railway land and property. Railway revenues are managed through a central accounting system and allocated to each unit of the organization based on their contribution. BCh obtains rights to use land from the Government when required for investment and railway services. But, the land ownership framework may limit the railways ability to use its real estate assets to generate additional revenue.

1.5 Summary of Activity 1 Findings and Recommendations

The findings of the Activity 1 report identified several areas of focus on future work. These included

1. Gradual railway freight tariff deregulation
2. Strategic changes in rail passenger rail transport to reduce the need to have rail passenger services cross-subsidized by railway freight services
3. Develop a more focused marketing strategy for rail freight services
4. Explore replacement of the locomotive fleet with more modern, fuel efficient types;
5. Improve freight terminal capacity and efficiency;
6. Increase collaboration between BCh and freight forwarders

1.6 Objective and Contents of Activity 2 Report

The objective of the analyses contained in this Activity 2 Report is to identify feasible and detailed policy actions that can be implemented by the Belarusian Railways and Government of Belarus to improve railway commercial performance, increase rail market share, and further support economic development within Belarus.

In particular, this report addresses organizational and policy changes to BCh's structure, formation of business units to focus on improving the performance of major business segments, railway marketing strategies for rail freight services, and explores ways to deregulated rail freight tariffs.

2 Railway Administration

2.1 Current Administrative Structures

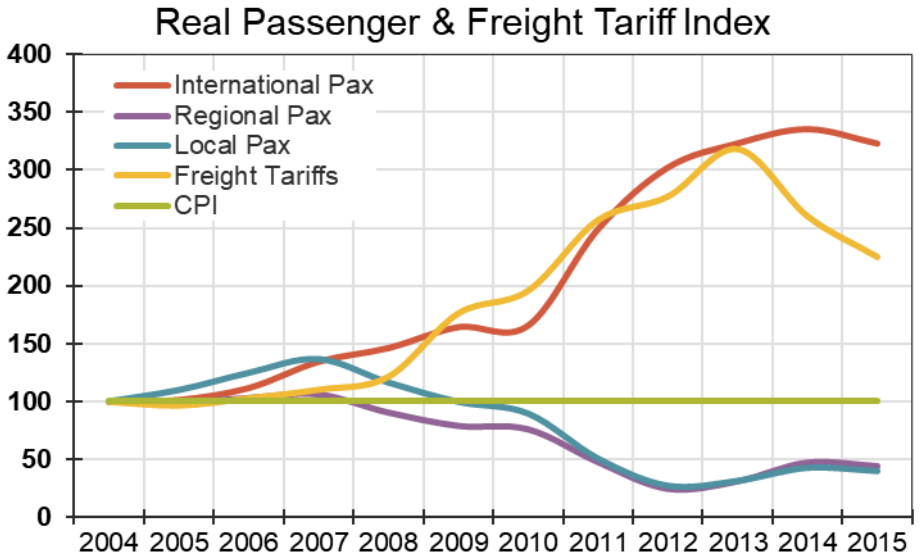
The Law on Railway Transport designates The Public Association Belarusian Railway (herein, BCh) as the only rail operator in Belarus. It is responsible for both train operations and railway infrastructure management. BCh is under the supervision of the Ministry of Transport and Communications (MoTC), who oversees railway policy and operations. BCh prices or tariffs and some aspects of railway services are regulated by the Ministry of Antimonopoly Regulation and Trade (MART) because the railway is considered a natural monopoly. Public policy in Belarus has been directed towards the regulation of railway prices and services. Since the railway has been able to generate sufficient revenue to sustain its activities, public financial support for railway investment has not been a priority.

BCh is designated as a commercial organization under MoTC supervision. The state association is an integrated transport system consisting of 29 different legal entities. These legal entities perform a wide variety of functions ranging from information management, infrastructure maintenance services, operation of workshops and depots for rolling stock of various types, operation of training centers, as well as operation of rail transport services. BCh has 7 regional subsidiaries disbursed throughout the country. BCh operates a logistics service provider, BelInterTrans, as a part of the state association. As a whole, BCh employs about 85,000 staff; it considers about 82,000 of them core staff. About 73,000 staff are employed by the regional operating divisions and about 800 are in headquarters management.

Each legal entity is owned independently by the state and has its own decision-making process. Revenue from transport services are managed through a centralized accounting system and allocated to each component of the association, and further, within the legal entities, based on their contribution. Generally, investments made by each entity must be approved by the central BCh administration.

The current railway structure evolved as Belarus emerged as a sovereign state in 1990. The new government had to assemble a railway and transport administration as the Soviet Railway Ministry faded from existence. In many ways, BCh remains a legacy of the Soviet Railway structure and functions as a centrally planned state agency. Economic conditions are changing rapidly in Belarus, with a growing market economy and increasing transport competition. As discussed previously, BCh has been losing market share and has not been particularly responsive to changing market conditions.

The Activity 1 analysis showed that an important issue that must be addressed in the rail sector is the practice of railway freight traffic cross-subsidizing loss-making passenger services. The practice of cross-subsidizing some services has been acceptable in the past because freight traffic did not face much competition and rail tariffs could be high. As the government invested in roads and the economy became increasingly motorized, rail passenger demand has declined, moving to road transport, even with much lower rail passenger fares. At the same time, freight markets became more competitive as freight transport increasingly shifted to roads.



So far, BCh has been able to maintain financial returns by becoming more efficient and because rail transit traffic revenue has increased. But, even rail transit traffic is becoming more competitive with multiple route and mode combinations. Long-distance transit movements are complicated, involving many different parties and require flexibility and responsiveness. Shorter distance freight traffic must be competitive with road transport in both service quality and price.

Belarus is not a large country where rail freight has a natural advantage because of vast distances and limited road transport options. Further, BCh freight transport does not have the large bulk movements that continue to support other national railways. To help the economy of Belarus grow, BCh needs to modernize, become more commercially oriented, more competitive, and, most importantly, better able to adapt to the changing economy and the evolving transport demands of the country.

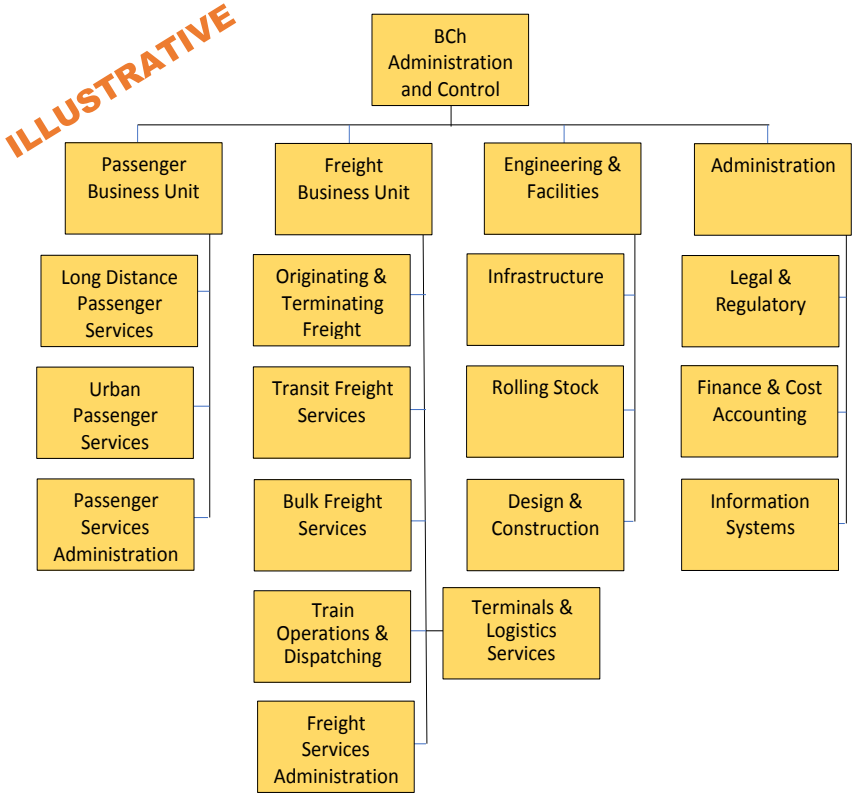
2.2 Bringing More Commercial Focus to Railway Activities

The organization of the rail sector in Belarus must be changed to allow the introduction of more commercially oriented railway business structures. Changing how the rail sector is organized in Belarus can not only make rail services more market responsive, it can also help attract private

investment into the sector, relieving the government and the railway itself of some investment needs. While there are many ways to strengthen rail sector commercial performance, some initial changes are needed quickly to begin the process.

CIS and Eastern European railways have taken many different approaches to commercializing railway activities but nearly all of them start with consolidation of railway assets into an integrated enterprise. This step is needed to support continuing operation of rail services while the government develops a new sector organization strategy and develops path forward. It also consolidates control of the assets until the new strategy is agreed and can be implemented, which usually requires new legislation. It also permits the consolidation of financial reports, re-valuation of assets, and supports the development of sensible and manageable business units to provide rail services.

There are many ways to organize the rail sector in Belarus. But, first BCh railway enterprises and assets should be consolidated. As a part of consolidating important railway assets, and excluding non-core or non-essential assets, most railways organize themselves first in important business units: passenger and freight, and then form a separate unit for infrastructure, engineering facilities, and yet another for administrative management functions such as legal and regulatory representation, finance and accounting, and information systems. There are many considerations to take into account and sector organization should reflect the legal structures in the country and the way railway units are currently organized. The World Bank has helped many railways develop new railway structures and has deep experience in helping countries and railways find their own unique path to the development of a more competitive, commercially oriented rail sector. The diagram below is



illustrative of the type of organization structure that might be developed for Belarus. Other variations include a wagon operator unit (which could eventually be separated for BCh, as was done in Russia), another unit might include a separation between rolling stock maintenance and capital repair entities.

2.3 Transition Approaches

Transition to an integrated structure for the rail sector in Belarus is the first step in the development of more commercial strategies and management practices which can revitalize the Belarusian Railway. To make this transition, the government and railway must work together to develop a new definition of the rail sector and of the form of the integrated enterprise. The structure should permit private sector investment and streamline the sector to include only the most essential transport functions and assets. In developing this structure, existing railway units performing services which are already commercially available in Belarus should be separated from the new railway structure (e.g., ballast pits and production, general manufacturing facilities, perhaps even wagon depots, as has been done in Russia and other CIS countries). Other functions should be organized into business units and functions needed to provide rail transport services. Rail sector assets should be enumerated, and a new valuation developed.

A new railway law, defining a state-owned enterprise structure, and clearly describing what services constitute the railway natural monopoly (generally, the railway infrastructure network, including tracks, bridges, related structures, electrification facilities, signaling and dispatching facilities). Other services (such as transportation services) occur in a competitive market, especially in Belarus. Property laws governing such issues as financial and operational leasing should be reviewed to encourage financing structures for railway assets. Land laws may need revision to permit development of railway properties under certain conditions.

Over time, as the sector develops, new organization forms can be implemented to provide greater commercial focus or encourage private sector participation.

Additional changes will be needed to assemble various currently "independent" units, including consolidation of accounts, assets, staff, and dividing operating responsibilities. For example, should there be a separate rolling stock unit or should freight related rolling stock be included in the freight unit and passenger rolling stock in the passenger unit? Where should depots and workshops be assigned. To answer these questions, a concept for the future rail sector organization strategy should be developed.

New accounting systems will be needed for BCh as an integrated entity and for each strategic unit within BCh. These systems will be used to develop more detailed costs and infrastructure tariffs to be charged to operating business units. The systems will be based on a set of asset allocations and costing assumptions that form part of the rail sector development strategy. For example, they should address such questions as whether facilities (e.g., stations) used only by the Passenger Business Unit

should be transferred to that unit, which would then be responsible for renewal, investment, maintenance, and operation of those facilities.

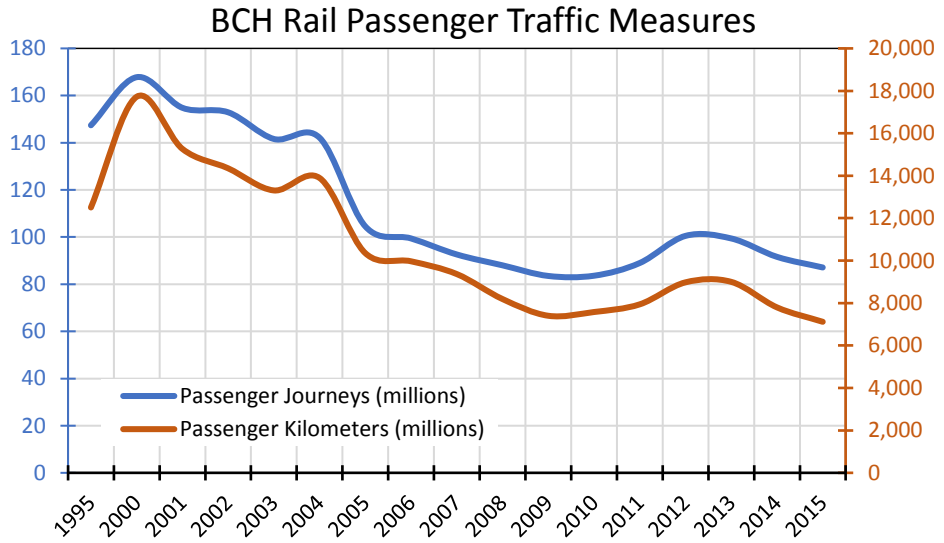
Eventually, new rail safety regulatory structures may need to be established to govern safety performance outside of the state-owned railway enterprise.

These changes may take some time and need not be rushed. But it is important to begin to establish more market focused business units, develop investment strategies, and to develop the accounting systems that will reduce and eventually eliminate the necessity for BCh freight services to cross-subsidize rail passenger services. This new organization strategy will help attract private sector capital and financing to the rail sector.

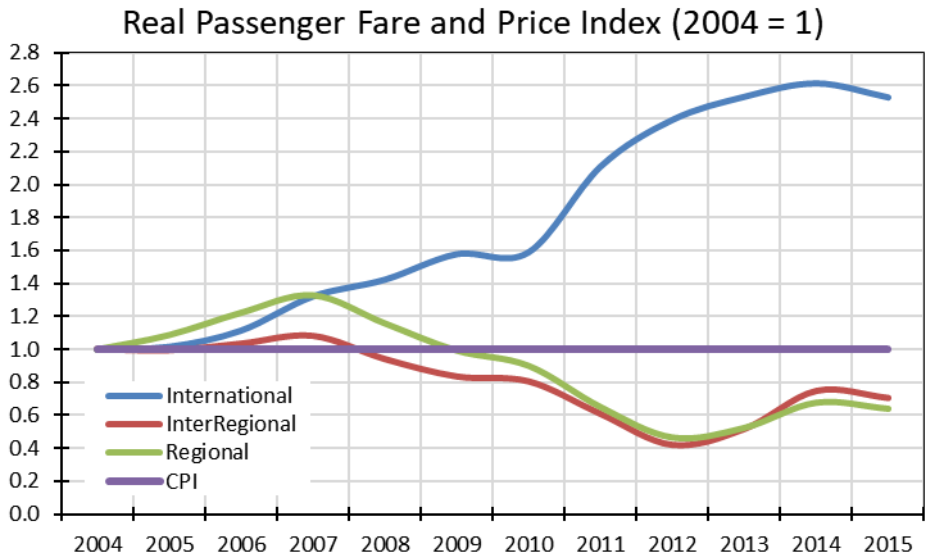
3 Railway Passenger Transport

3.1 Status of Rail Passenger Services

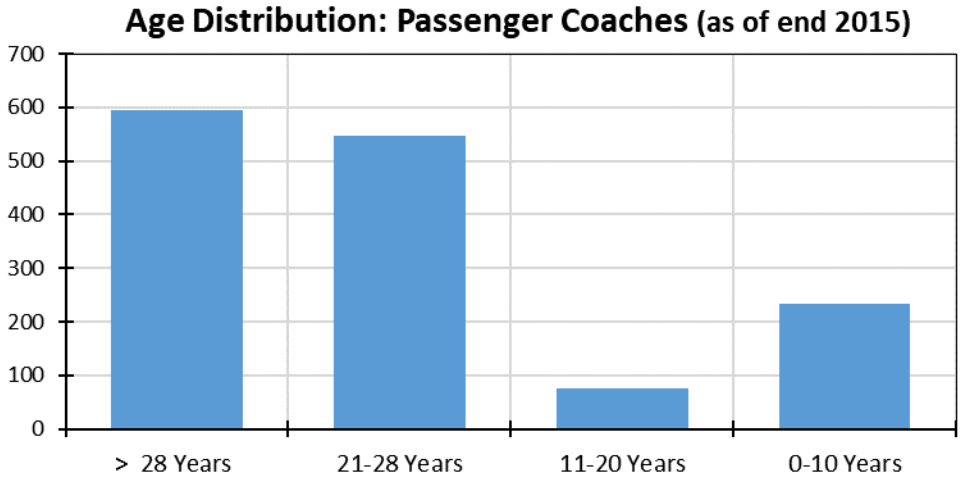
As previously discussed, BCh passenger traffic has declined over the last 15 years (see chart below). The decline is driven in part by increased motorization in Belarus, and in part by increases in international fares. Rail passenger journeys have decreased by 48% since 2000 (about -4.3%/year) while passenger kilometers have declined by 60% (or about -5.9%/year).



The result is declining passenger trip length. In part, this is because rapid real fare increases for international travelers (traditionally those with longest trip lengths) and declining fares for regional and inter-regional passenger travel (see chart below).



Adjusted for inflation (as measured by the CPI), International rail passenger fares increased at about 9%/year since 2004 while inter-regional fares declined by about 3% and regional economy fares declined by 4% per year. An analysis of price elasticities in the Broad Assessment Report showed that international rail passenger travel was elastic (so higher fares would tend to reduce travel demand), while demand for domestic transport is relatively inelastic (so fare levels have less impact on travel demand). Even with reduced real fares, domestic passenger travel has been susceptible to diversion to road transport, especially as economic conditions improve, and investments are made to improve roadways. Overall, BCh passenger traffic has declined over the last 15 years and the largest share of its passenger transport business (domestic and commuter services) has seen a decline in real tariffs – regional and local economy tariffs are only about 40% of what they were in real terms in 2004.



BCh's passenger coach fleet is aging and will require increased investment soon (see chart above). While passenger traffic has declined and some of these coaches can be retired, nearly 80% of the BCh coach fleet is more than 20 years old, 45% over 28 years old. Replacing this aging fleet will require significant investment, perhaps US$500 million or more, further increasing financial pressures on BCh.

3.2 Rail Passenger Services Management

Currently, BCh rail freight business subsidizes its passenger business. The Broad Assessment Report showed that the cross-subsidy crowds-out investments needed in the rail network and freight business. This is a concern given the current market situation in which the railway needs financial resources to maintain its market share. Since most BCh freight traffic must compete with an increasingly empowered and competitive road transport sector, a new mechanism should be found to fund and manage socially important rail passenger services.

BCh should consider mechanisms to build greater separation between its passenger and freight activities so that it can seek alternative support and financing for both businesses. One mechanism would be to reorganize its freight and passenger services into different business groups: a Freight

Business unit, and a Passenger Business unit. Each business unit would have separate balance sheets, income statements, and assets; but each would be an integrated state-owned enterprise, owned by BCh. This will require modification of railway law, consolidation of many currently independent units, a valuation of BCh assets, and modification of current accounting systems.

The Passenger Business unit could then seek local subsidies for commuter and urban related services and regional and national subsidies for inter-regional and international services. Rolling stock modernization and equipment replacement can be financed with the support of local, regional, or national government bodies.

At the same time, BCh should develop an infrastructure policy and tariff regime specifically for the passenger business unit which would be designed to eliminate cross-subsidies from the freight service. The BCh infrastructure policy should outline what investments BCh will make on behalf of the passenger business unit and what investments the passenger business unit should finance itself. Generally, BCh would be responsible for any infrastructure jointly used by the passenger and freight businesses while the passenger business unit would be responsible for finding finance for infrastructure that only supports its activities – for example passenger stations, parking lots, coaches, EMU and DMU equipment, locomotives specifically designed for passenger services.

Under such a policy structure, BCh would be responsible for financing maintenance, renewal and construction of railway lines, electrification, signaling, and related assets used either by the freight business or in common with the passenger business. The tariff policy would be agreed with government and would likely include only the avoidable costs of passenger services using the infrastructure. Should changes in passenger services require investment in additional infrastructure capacity (because of added passenger services, or a desire for higher-speed passenger services on some routes, or other reasons), BCh would discuss funding for the additional investment requirements with the passenger business unit and appropriate government agencies.

The passenger business unit would organize itself according to its major markets – likely international, commuter/suburban, inter-regional services. Each unit would be responsible for developing market and business plans and negotiating with appropriate government units to define services to be supplied, performance measures, fare levels and levels of government support. Eventually, these negotiations would be expressed in service contracts with appropriate governmental units – becoming PSO contracts (Public Service Obligation). It might be expected that at some point in the future the concerned government units may want to call for bids for the services covered by the PSO contracts. The bids could include provision of rolling stock and operation of the services.

Formation of a passenger business unit will help focus the unit's management to improve existing services and develop new ones to increase its appeal to passengers. It will also be better able to focus on costs and efficiency, putting attention and assets into markets with the greatest potential for

success while withdrawing from the least attractive services. Management attention will also be drawn to ways to increase efficiency, reduce fleet requirements, improve asset utilization, and provide better services.

3.3 Transformation Approach

The formation of a Passenger Business unit, focused on operating, marketing, pricing, and funding passenger services in Belarus is a significant task. It must be accompanied by reforming BCh's current Association structure, and formation of comparable business units in freight services, and for core railway functions such as infrastructure and perhaps major maintenance facilities. These changes will likely require revisions in the Railway Law and agreement of high-level government policy makers.

Additional changes will be needed to assemble various currently "independent" units, including consolidation of accounts, assets, staff, and dividing operating responsibilities. For example, should there be a separate rolling stock unit? Where are depots and workshops assigned. To answer these questions, a railway reform strategy should be developed.

Accounting systems will be needed for each strategic unit within the restructured BCh. These systems will be used to develop infrastructure tariffs to be charged to the Passenger Business unit. The systems will be based on a set of asset allocations and costing assumptions that form part of the reform strategy. For example, they should address such questions as whether track and facilities used only by the Passenger Business Unit should be transferred to that unit, which would then be responsible for renewal, investment, maintenance, and operation of those facilities. Or, should they remain BCh corporate assets and the Passenger Business Unit charged only marginal costs for their use. This could have the effect of continuing some cross-subsidies from the freight business.

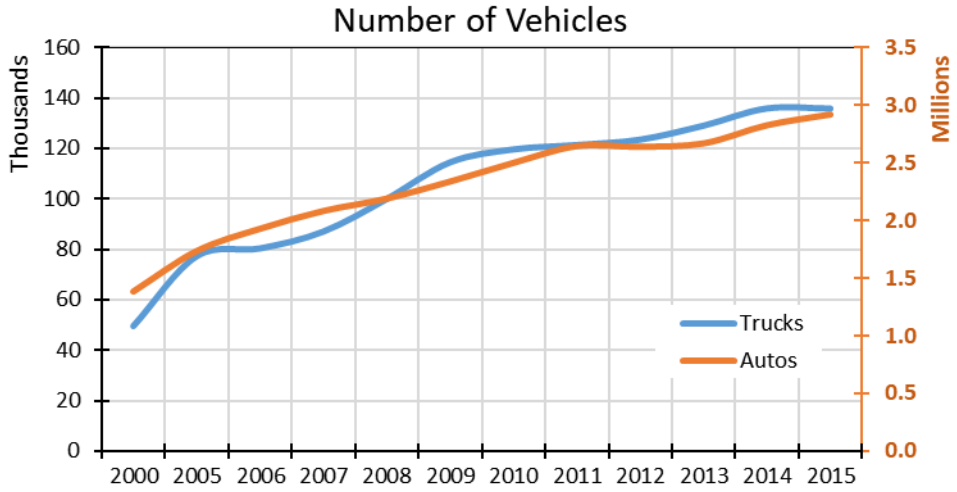
The reform strategy should include an organization structure for the Passenger Business Unit which includes units specifically to manage passenger operations, develop marketing and business plans, and to negotiate with government bodies for desired services, level of support, and service measures.

4 Railway Freight Transport

4.1 Status of BCh Railway Freight Services

Rail is one of the most important modes of freight transport in Belarus. Rail freight generates more than 62% of all transport tonne-kilometers, excluding pipelines.[1] Belarus Railway plays a key role connecting Asia and Europe, Ukraine and the Baltic States. BCh is a transit crossroads for freight and surface passenger travel in the region. But, the country is not large – roughly 600 kilometers east-to-west and 500 kilometers north-to-south. As a result, the railway's domestic and a large part of its export and import traffic is vulnerable to mode shifts.

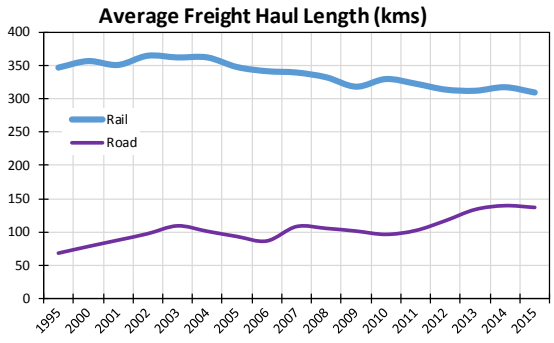
In recent years the Government of Belarus has invested in improving motorways and highways in the country. These investments and economic development in the country have driven motorization of the economy, especially for domestic transport. Since 2000 the number of freight motor transport vehicles (trucks) has increased by a factor of 2.75; the number of passenger cars by a factor of 2.1 (see chart below).



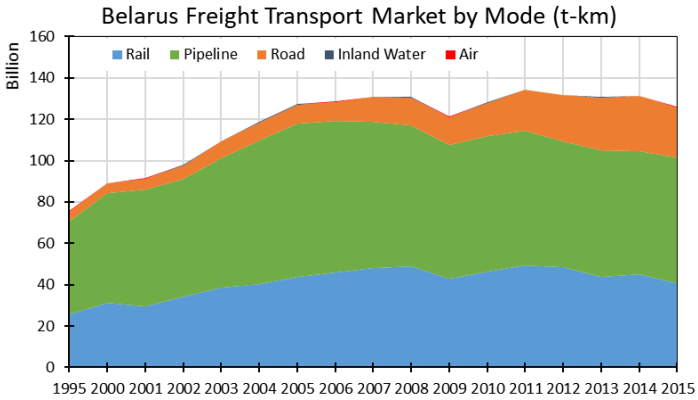
Both passengers and freight traffic have migrated from rail to road and rail market shares have declined. Rail freight transport has been most resistant to this trend. However, over the period from 2000 to 2015, rail freight turnover (tkm) has increased at about 1.9% per year while road freight transport increased at more than 11% per year. Rail tonnes transported increased by 2.7% per year while road tonnes transported increased by 7.1% per year. It is not unusual for road tonnes to increase more rapidly than rail tonnes because many cargos are transported by road to a rail terminal,

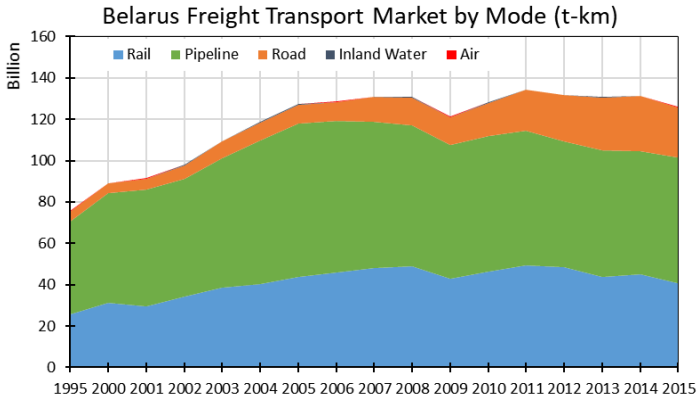
[1] In 2015, surface transport of commercial freight represented more than 99% of all freight transport in Belarus. Pipelines generated 48%, rail 32%, road transport nearly 20%. Excluding pipelines, rail generated 62% of remaining freight tkm

then transported by rail, then transported from a distribution center again by road. Each tonne so handled gets reported twice by road, once by rail.



Rail transport is most efficient for large loads traveling long distances while road transport is more efficient for door-to-door movement of smaller shipments. Improved highways and road transport facilities, a proliferation of road transport vehicles, and relatively short haul lengths makes road transport very competitive. Over the last 15 years, rail average haul length has declined by more than 13% to 310 kilometers; while road haul lengths have nearly doubled to about 138 kilometers. Since road transport includes local pick-up and delivery, road haul lengths will always be relatively short, but the modal changes and lengthening hauls indicate the increasing competitive pressures on rail transport. Most railways find that competing with road transport on hauls less than 400 kilometers is quite difficult; service quality and the price of transport are increasingly important for shippers. This is particularly true for higher value goods where speed is an important factor – most consumer goods, some building materials, chemicals, steel products – but is less true for bulk commodities such as fuels, cement, and bulk grain transport.





Imported rail freight comes to BCh already moving via rail. But, this traffic is also subject to competitive pressures, depending upon where it is loaded. Where BCh and originating railways have coordinated services to provide speedy reliable transport, goods are more likely to be shipped via rail. If there is speedy domestic rail transport, some imported consumer goods may be transported by road to a Belarusian loading center, then move via rail to a distant distribution center for local distribution from there (a domestic movement). Similarly, for export goods, coordinated speedy rail service to popular destinations are more likely to attract freight traffic.

Containers are transforming transport markets around the world. Containers now outnumber wagonloads on US railways; international transport, especially of consumer goods is dominated by container transport. The most rapidly growing international rail routes in recent years are dominated

by container transport. Even so, railways have been at a disadvantage in container transport. Generally, rail freight managers are not commercially oriented, or particularly knowledgeable of market conditions, shipper interests, or of the price and service offerings of their competitors. Railway commercial and marketing departments have been "order-takers" not "market-makers".

Where rail container transport has grown fastest, growth has been initiated by private logistics providers, not railways. In most countries, railways have struggled to keep up with an ever-changing container transport market place while also protecting their wagon-load business. Railways freight businesses have used several different methods to increase their container business and supplement wagon load freight traffic: associations with existing logistics companies; development of multi-user distribution terminals; partnerships with road transport companies. Some railways also operate their own logistics enterprises, including road transport services. These techniques, however, require commercially oriented management and a very deep understanding of transport markets.

4.2 Managing Railway Freight Services

Railway organizations worldwide have been reforming their freight activities, organizing them as freight business units – enterprises focused on increasing the profitability of railway freight transport. Commercially oriented freight business units work to maximize the utilization of assets, focus services on the most profitable traffic flows, and seek out partnerships to strengthen their access to new freight markets and customers.

To effectively manage railway freight services, the freight business unit must have sufficient control of the assets needed to provide the services. It must also have sufficient pricing and investment freedom to tailor its service offerings to the marketplace. Most importantly, the freight business unit must have a capable management team knowledgeable not only of railway operations and asset management, but also of freight transport markets and the competitive transport landscape.

A freight business unit is different than the vertically integrated structure typical of many state-owned railways. It is also different than the way BCh is currently organized, as an association. While additional reforms in the BCh structure are discussed in a later section, the formation of a Freight Business Unit is recommended to help focus the commercial aspects of railway freight services in Belarus.

The freight business unit should have several independent organizational units. An operational unit should be responsible for planning, organizing, and operating train services, including shunting and gathering services. Train dispatch and control should be part of this unit.

The Freight Business Unit should also include commercial sections responsible for major market segments. For example, sections might include: containers & logistics terminals; bulk goods transport; wagonload and other commercial transport. These sections should include managers and commercial specialists in the respective major market segments. These sections should be

responsible not only for customer relations but also for conducting market research into customer transport and service requirements as well as develop an understanding of the road transport market place, including services and prices.

In addition, an operational planning unit should be established to work with the market segments specialists to better design railway services to support customer requirements and, where possible, leverage rail transport advantages. The commercial unit would also look for and find ways to work with transport and logistics services partners to enhance customer benefits and help reduce their transport costs by maximizing the advantage of rail transport. These activities will help build BCh traffic and increase its market share. The commercial units will also focus on transport prices and use its knowledge to develop pricing adjustments for railway tariffs, working with the BCh tariff unit on regulated tariffs, and setting prices where tariffs have been deregulated.

4.3 Marketing Freight & Logistics Services

As a part of its more commercial focus, the BCh freight unit will likely want to develop closer relationships with independent logistics and road transport companies. A primary focus of these relationships will be the development of freight terminals to concentrate freight loading and allow the railway to operate frequent and perhaps scheduled freight services that shippers, logistics firms, and road transport providers can rely on.

There are many actions that the BCh freight group may want to take. Some examples of market oriented actions taken by other railways are discussed in Chapter 6. The freight business unit may wish to develop its own multi-user terminals in some locations, and to help other logistics and road transport enterprises develop rail served distribution centers and terminals in others. The freight business unit should consider participating in the development of international terminals and distribution centers, working with local railway operators to develop quick and reliable services for longer hauls between countries. The freight business unit goal will be to develop closer relationships with shippers, logistics companies, and road transport concerns rather than competing with them. These relationships will take some time to develop and the freight business unit will have to be aggressive but sensitive to shipper needs at every step.

The market focus for these distribution centers and for the freight business unit is import, export, and domestic traffic. The purpose is to attract new traffic to the railway and keep existing railway traffic from migrating to higher-service level road transport operators. For logistics companies and road transport operators, the railway should seek to offer service-responsive longer distance hauls between terminals, allowing the logistics and road transport operators to specialize in local pick-up and delivery and building customer relationships. The freight business unit should also work to develop closer customer relationships but as a longer-haul service provider.

Existing bulk goods transport should also receive closer attention from the freight business unit specializing in bulk transport. The bulk business unit should consider service changes that can help

reduce costs for bulk goods customers. Many railways have found many ways to reduce bulk transport costs including: analyzing traffic flows and train schedules to help improve equipment utilization, perhaps offering higher discounts for private wagon owners, working with shippers and receivers of bulk goods to reduce loading and unloading times and transport costs.

BCh has less influence on transit traffic, especially long-distance transit (between Europe and China, for example). It's service and prices play a smaller role in this traffic, and have less influence on routing. Nevertheless, the freight business unit's transit group should be working to both improve transit traffic performance and reducing its costs. The group should also work with logistics companies (often also known as "platform operators") at locations far afield from Belarus to find and direct transit traffic through a Belarus gateway. In doing this, the BCh freight transit group would be expected to work closely with its existing partners to develop service offerings that are attractive in the market place.

Many studies suggest that reductions in transit time are more important than reductions in tariffs for high-value goods, including containers. Some forms of inter-railway cooperation should be developed to enhance rail freight performance and reduce transit times. These might include scheduled run-thru services to ports and some cooperation with customs services in neighboring countries to use electronic documents to reduce or eliminate border delays.

It will become much more important for the BCh freight business unit (and the passenger business unit, also) to have an accurate, detailed, and reliable cost accounting system. This need is paramount no matter what happens with tariff regulation or with other reforms. It is difficult to discuss cross-subsidies, marginal costs, or other basis for determining the fairness or objectiveness of tariffs without an accurate and relatively detailed costing system. It is likely that some costing concepts should be described in law or regulations so that there is a common understanding of their meaning and application to prices, or the determination of tariffs or subsidies.

To be useful, the costing system should not only be based on historical cost records but also on prospective costs. This is especially true in inflationary or deflationary environments. Renewal costs should be based on current costs and design standards. If BCh wants to upgrade or down grade a major line segment (to higher or lower engineering standards to reflect changes in traffic), the railway would propose the change to Government and present an impact analysis – how much renewal costs will increase or decrease once the change is made.

Investment proposals would be developed as part of the investment plans of each business and core unit of the railway and each unit would support its investment plans with financial and economic justification required by government.

4.4 Transformation Approach

The formation of a Freight Business unit, focused on operating, marketing, pricing, and funding railway freight services in and across Belarus is a significant task. It must be accompanied by reforming BCh's current Association structure, and formation of comparable business units in passenger, freight services, and for core railway functions such as infrastructure and perhaps major maintenance facilities. These changes will likely require revisions in the Railway Law and agreement of high-level government policy makers.

Additional changes will be needed to assemble various currently "independent" units, including consolidation of accounts, assets, staff, and dividing operating responsibilities. For example, should there be a separate rolling stock unit? Where should rolling stock depots and workshops be assigned – separately to the freight or passenger business units, or in a central engineering & facilities unit? To answer these questions, a rail sector organizational strategy should be developed.

Accounting systems will be needed for each strategic unit within the restructured BCh. These systems will be used to develop infrastructure costs to be borne by the Passenger and Freight Business units. The systems should be based on a set of asset allocations and costing assumptions that form part of the reform strategy. For example, they should address such questions as whether track and facilities used only by the Passenger Business Unit should be transferred to that unit, which would then be responsible for renewal, investment, maintenance, and operation of those facilities. Or, should they remain BCh corporate assets and the Passenger Business Unit charged only marginal costs for their use. This could have the effect of continuing some cross-subsidies from the freight business.

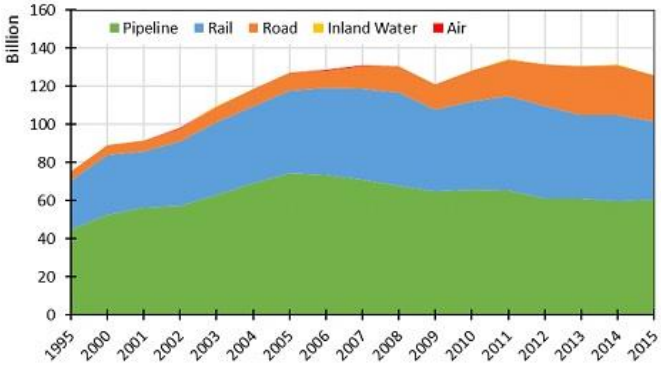
The reform strategy should include an organization structure for the Freight Business Unit which includes units specifically to manage trains over the network (including dispatching), various freight service operations, develop marketing and business plans, and to develop joint ventures that satisfy freight customer needs. A particular issue will be how to organize the BCh logistics service, BelInterTrans. The restructuring and reform strategy should address whether this unit should be part of the Freight Business Unit or operate independently.

5 Freight Tariff De-Regulation

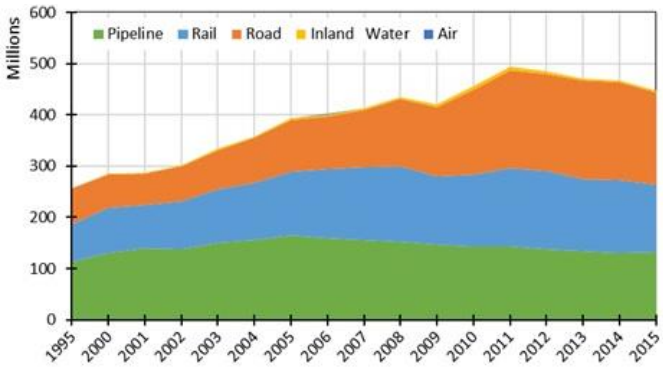
5.1 Rail Freight Market Conditions

Over the last decade or so BCh has been losing freight market share to road transport. Tonnes moved via road grew by nearly 60% over this period, while rail share remained the same – about 30% of total Belarus tonnes transported. Road market share measured in tonnes-km increased from 6% to 20%, while rail share didn't change over the same period, remaining at about 33%. Because road transport is usually more expensive than rail this means that shippers value other benefits of road transport vs. rail.

Freight Transport TKm by Mode



Freight Transport Tonnes by Mode



If BCh reduces its tariffs further,[2] to attract more freight from road transport, it may just weaken its revenues and financial stability. Instead, BCh should improve other terms of service to compete with road transport: prepayment arrangements, advance time to order locomotive and wagons, speed of delivery etc.

However, making rail tariffs more flexible and deregulating them at least partly would allow BCh to be more market responsive and use more market opportunities to increase revenues and improve financial stability. The legislation on which rail tariffs regulation is based (the Law on natural monopolies and Law on competition) should be modified to say that "what is a natural monopoly today – may not be a natural monopoly in the future." And MART, as regulator, should review markets and issue a new list of regulated services mandatorily every 3-5 years (or, by request of BCh, shippers, wagon operators, or other market players) to determine whether the services provided by a regulated subject are not a natural monopoly any longer.

[2] BCh is allowed by the regulator (MART) to reduce tariffs but not below the costs. This is different from the regulatory practice in Russia or Kazakhstan where RZD and KTZ cannot reduce their tariffs below the level set by the regulators.

This is what UK Regulator does every 3 years. Similar arrangements exists in most EU countries. The process should be public and transparent – that all market participants could take part in it. The methodology of market analysis by the regulator is determined by the respective Law (usually Law on natural monopolies).

We believe that several rail freight markets – first of all, Class III commodities, can be deregulated, as BCh acts here in a very competitive environment with road transport. But MART should look at each market segment (or commodity) individually to make the final decision. Class III freight in universal covered box wagons and containers should be the first candidates for deregulation.

5.2 Railway Tariff Regulation in Belarus

The Broad Assessment uncovered the need to provide BCh more flexibility in setting its freight and passenger tariffs. An agreement on the need to pursue this item was reached subsequently to the circulation of the report and dialogue with BCh, the Ministry of Transport and Communication (MoTC), the Ministry of Finance (MoF), and the Ministry of Antimonopoly Regulation (MART). As a result of this agreement, MART requested some support from the World Bank transport team on the implementation of a new regulatory framework, especially as it pertains to exempting commodities that are in a competitive market and do not need to be regulated.

This chapter explores some options for tariff deregulation while the rail sector remains in the hands of a single vertically integrated railway enterprise. If the government ever decides to permit the operation of independent rail carriers over Belarusian railway lines, some very different pricing structures will be needed. BCh would be required to form an independently managed railway infrastructure unit (an Infrastructure Operator, or IO) with separate accounting and costing systems. The IO would manage what most countries call the "natural monopoly" railway infrastructure. Licensed carriers would operate over the infrastructure and pay regulated tariffs for access to rail infrastructure facilities. This is similar to how European Railways operate, with multiple freight and passenger operators using national rail infrastructure. Kazakhstan is currently analyzing this approach to rail sector organization and is developing infrastructure pricing methodologies.

Here, we consider deregulating tariffs or tariff components while retaining a vertically integrated (infrastructure, freight and passenger services combined into one state-owned enterprise) rail sector. In Belarus, it is clear that for many freight traffics, the railway does not have a natural monopoly.

5.3 Commodity Exemption Principles

The World Bank recommends that MART establish a set of principles that will be followed in the future regulatory approach for railway tariffs. The two main guiding principles upon which commodity exemption should be determined are the following;

1. State of competition in the transportation market for the particular commodity or route
2. Effectiveness of the competition in limiting BCh's pricing power.

Rail transport of commodities that are in a competitive market and for which competition is effective in limiting the railway's pricing power should be exempted from regulation.

Usually railways compete with road transport in what railway's call Class III commodities and goods. These are finished products like machinery and equipment, semi-finished industrial products, consumer goods, some oil products, steel and steel products etc. All of them have high market value and rail transport costs in this market value are typically below 10% of product values. Such goods are being transported either in covered box wagons or containers, but some – on flat wagons (vehicles, agricultural tractors etc.). Road transport is very competitive for these commodities because of their high value – it is worth higher transport prices for quick, secure, custom delivery. These commodities are the first candidates for deregulation.

One can say that this market segment is a priority – without knowing details of Belarus marketplace – because the railway does not have a monopoly for transportation of such freight. In a country with a dense network of good quality highways, road transport is already competing with rail in this segment and already has a high market share. MART should determine the market shares of various companies (not transport modes) in this segment (by physical measures) and deregulate BCh tariffs for such goods. If BCh is not a monopoly in the segment, the Law on competition can be used to determine whether or not the railway has a dominant position in the market.

A dominant market position is usually defined when one company has at least a 30-35% market share (depending on the country and local legislation). This share could give the company enough market power to influence prices or deter the entrance of new carriers. But regulation under Law on competition is less restrictive and provides more flexibility to the market players. Eventually, when and if this market share drops below 30-35% all regulations would be lifted.

Besides deregulating rail transport of many Class III commodities and goods, we also see opportunities for several Class II goods. Class II goods are those where transport costs represent a moderate share of their final marker prices – between 10% and 15% (may be 20%). For Belarus these are such goods as, for example, agricultural tractors' parts and components (shipped by rail in covered box wagons or containers) – as Belarus is worldwide known as a producer of such equipment. Oil products made locally (petrol, diesel fuel) and shipped to local customers in tank-wagons compete with road tankers. So, transport of these and similar Class II goods could be considered by MART for deregulation purposes.

Container transport should be completely deregulated for domestic, exports, and import commodities. Containers are by definition compatible with road transport competition. Typically containers are taken to and from rail terminals by road transport and can easily be hauled to destination via road. Containers have been among the first commodities whose rail transport tariffs have been deregulated in many countries, including in North America, Australia, Europe, and Kazakhstan.

We provided only a handful of commodity examples for deregulation, but are certain that there are many more – for example, local ET SNG and GNG nomenclatures of goods contain hundreds and thousands of various commodities, goods, and types of freight. The point here is that if BCh looks through its freight market segments carefully, it will find that it has considerable road competition in many of them, particularly higher-value goods and consumer goods. In such conditions, there is no reason to regulate rail transport prices.

5.4 Route Exemption Principle

MART can also apply a route or distance principle for deregulation of freight tariffs by setting a minimum total delivery distance (rail route kilometers) below which rail tariffs can be deregulated due to strong road competition. For example, Belarus is importing most of its steel from either Russian or Ukrainian steel mills. Some steel mills – like NLMK and Severstal are located quite close to Belarus (in Lipetsk and Cherepovets respectively), 400 to 600 km from Belarus border, as are Ukrainian steel makers. On such distances road transport is quite competitive with railway. MART could deregulate rail tariffs for the Belarus part of the respective routes towards these steel mills to give BCh the opportunity to earn more while competing with road. But routes to/from steel mills located much further (Urals – Magnitogorsk, Chelyabinsk or Nizhny Tagil) may remind regulated as road transport cannot compete as well on on such long distances with rail.

Similar deregulation can be applied to Belarus exports to, say, Russia. RZD would collect most of the tariff due to the longer distances in Russia, but on Belarus territory, BCh could enjoy higher tariffs carrying such exports goods.

These are just examples. MART should study major routes individually to make deregulation decision(s). These decisions should not contradict WTO rules if Belarus is going to join it one day.

Distance could be criterion for making tariffs deregulation decisions, even for cheaper Class I commodities within Belarus. For example, mineral construction material (sand, ballast, stones and the like), cement and grain are usually transported on comparatively short distances and are not traded much internationally (except grain). On short distances road transport in very competitive. Therefore it is logistical to de-regulate rail tariffs when there is plenty of competition.

5.5 Deregulating The Tariff Wagon Component

Another means to improve BCh's financial performance is to increase the so-called wagon component of the tariff. This will encourage private investors to invest in wagons, reducing BCH's financial obligations. Experience in other CIS countries shows that private wagon operators help improve relationships with shippers, improve wagon fleet utilization, and provide significant private capital for the rail sector.

The wagon component is that part of the rail tariff charged by BCh which covers the costs of owning, maintaining, and using BCh wagons. In Russia, where the tariff reform was first launched in 2003, shippers using their own wagons did not pay the wagon component of the full rail tariff. They paid only part of the tariff which covered locomotive traction (locomotive component) and rail infrastructure (infrastructure component). Generally, the wagon component in current tariffs is considered to range between 18% and 22% depending on the type of wagon.

The wagon component varies and depends on the type of wagon (universal or specialized) and distances. Universal wagon usually have very large wagon component up to 40-60% on the headhaul move, and much lower level – on the backhaul move. This principle is supposed to stimulate universal wagons owners to search for the return freight – to increase total productivity of the railway system and reduce empty return. Universal wagons – gondolas, covered box wagons and universal flats - can carry various types of freight; they usually find such a freight for the return move.

On the other hand, specialized wagons, generally carry only one type of freight: oil tank-wagons, grain hoppers, steel coil flats, cement hoppers etc. They usually come back empty. Wagon component for such wagons is smaller than for universal wagons – 15% to 18%.

The Russian example in attracting private investments into freight wagons by using quite large wagon component of the tariff is very illustrative: between 2005 and 2015, Russian private wagon owners bought about 500,000 new wagons. This fleet cost some US $25 billion and was financed by private wagon companies. There was no chance that RZD would be able to finance so much investment from its own funds – as the company has many other investment needs for locomotives and infrastructure.

We studied Belarus freight rail tariffs in detail (for various commodities and distances between 100 and 700 km) – by using commercial software that allows computing freight tariffs of all former USSR countries. The wagon component in the Belarus freight tariff looks adequate at first sight – both for universal wagons (gondolas, covered box wagons, universal flat wagons) and for specialized wagons (hoppers, wood flats). However, closer analysis showed the following:

- Very expensive empty return for Class I commodities in private wagons – both specialized and universal. The longer the distance – the more expensive is the empty return, and after 300 km it is getting more expensive to return the empty specialized wagons back to the loading station than to ship loaded wagons with freight for 300 kms;
- Return tariff (as computed per 1-tonne of Class I freight delivered) for universal wagons is always higher than the head-haul (loaded) tariff per 1-tonne – this certainly demotivates private investments into wagons;
- The higher the Class of commodity – the smaller the wagon component. The freight tariff is built this way to encourage private investors to carry more Class I – cheap freight (and earn less) than Class II and III freight. This does not motivate private investors to invest;

- The wagon component for private tank-wagons with oil products is actually negative – meaning that it is cheaper to carry oil products in BCh wagons than in private tank-wagons – for oil products imported by Belarus through pipelines (special low tariffs for 2018). Why would anyone would invest into tank-wagons under these tariffs?
- For Class III products wagon component for private universal fleet (gondolas) is getting too small – both in head-haul and backhaul movements – again, making the investments not attractive for private investors;
- There are quite many reefer car owners in Belarus. However, the wagon component for such wagons is also negative for private investors – it is cheaper to transport perishables in railway wagons (though BCh does not have many of them left). Private thermos wagons fleet has higher wagon component – more attractive for investors. However, empty return could be lower. This fleet is quite important – as about 50% of what road transport carries are perishables, beverages and various food stuff. Making private investors more interested in buying such wagons may increase rail transport share quite visibly – by taking share from road transport.
- The wagon component for private container flats and containers is negative for the round trip – meaning, that it is cheaper to ship your cargo in railway containers on railway flat wagons. This does not help to attract investors;

We understand that for some wagon types, particularly universal wagons, the regulator sets quite large wagon component for private wagons (up to 60%), to allow the investor quite early pay back. But this wagon discount for universal private wagons, especially for Class I commodities, is being eaten away by very expensive empty return costs. Belarus is not that large country to easily identify return freight, so the wagon owner might be forced to keep its wagon run another 300-400 kms to find return freight. But, 300 km is the average travel distance for rail freight in Belarus, so the return tariff for universal wagons should be reduced.

Regarding all of the above, it is no surprise that out of some 40,000 freight wagons in the country there are only about 12,000 private wagons (31%). In Russia there is no inventory fleet (railway fleet) today; in Kazakhstan the private fleet is more than 60% of the total country fleet. Out of all Belarus private fleet, some 3,836 wagons (about 32% of all non-railway wagons as of August 2017) belong to Belaruskaliy, the Belarus state-owned potash producer. Two other largest wagon owners – GrodnoAzot and SG-Trans (1,156 and c. 1,000 wagons) are also state-owned companies.

We recommend that freight tariffs in Belarus be changed to make investment more attractive for private investors. These investors (could be Russian investors who set up local wagon-operator companies) would buy freight wagons the country needs, reducing the financial burden on BCh which can better use its funds and loans for other investments (infrastructure, electrification, may be terminals). More private investments into freight wagons would also help keep local wagon-builders busy – in Mogilev and Osipovichi. Private wagons operators are also good in circling the routes to reduce empty returns, may be even in other countries (Russia, Ukraine). They may find better use of the wagon fleet by moving it to those markets where it is needed more. BCh would also save on the maintenance and repair costs of the wagons.

It is also important to define the market boundaries correctly – like Kazakhstan did, when they deregulated the wagon component totally because they saw very strong Russian competition in the country. KTZ wagons were competing with wagons of Russian private wagon operators. If this is also the case in Belarus, then why regulate the wagon component of rail tariffs? At least for some wagon types?

MART and legislators should design such tariffs and services review mechanisms that would allow private shippers, wagon operators and BCh to bring more cases to MART's attention – as they better know real market situation, competitors" rates, market shares etc.

Some managers in BCh expressed concerns about allowing more private investors into freight wagons and the growth of private wagon fleets. They justify their views by pointing to some downsides of the railway reforms in Russia, where RZD and the regulator allowed wagon life extensions in the early 2000s. This was done when few investments were being made into new wagons and massive numbers of wagons were aging beyond their design life. Wagon owners, including railways, tried to cope with the lack of investment funds by extending lives of their old and obsolete wagon fleets. When massive private investments flowed into the wagon fleet, after 2005, regulations regarding wagon life-extension were not revised. This lead to an oversupply of wagons, both new and old in the country, the surplus and a subsequent decline in traffic, created a vast unused fleet of wagons that clogged terminals and marshalling yards. The Russian regulator had to introduce new measures in 2012 to force wagon owners to scrap old fleets.

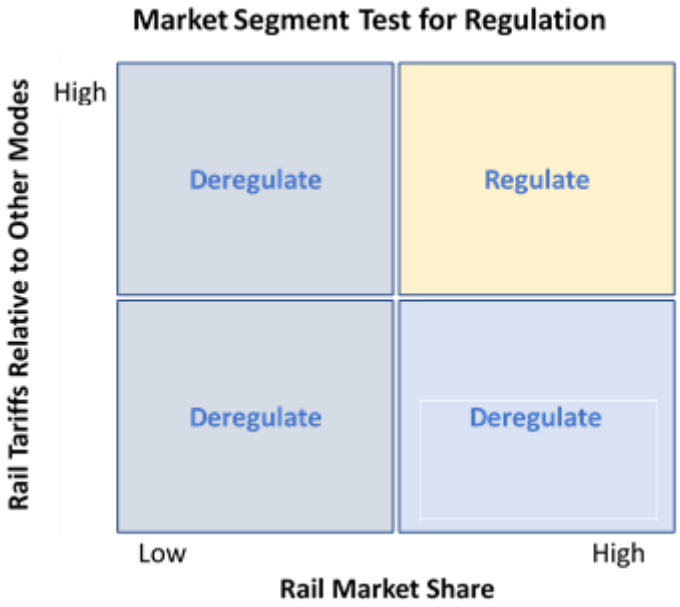
Another reason that national railways managers are not eager today to allow more private investment in wagon fleet and a rise in wagon operators is that they are afraid that private wagon operators will "cherry-pick" the most profitable traffic, (such as Class III traffic) leaving the national railway with the job of providing wagons for cheaper goods and lower revenues. This is a mistaken fear as the traffic still moves on the railway and the wagon discount is only designed to cover the costs and risks of owning wagons. The railway can and should adjust the tariff on other components to compensate for any profit loss. If wagon operators can command a higher tariff, this is only an indication that BCh services and other tariffs are too low for market conditions. The two most important aspects of private wagon ownership and the growth of wagon operators is that someone else finances the investment, and the traffic remains on the railway. Otherwise the traffic is likely to shift to road transport. This is already happening in Belarus.

We also heard opinions that large private wagon fleets would increase empty wagon kilometers in the country and create traffic jams near most popular loading areas. We can say that this negative experience is a typical Russian experience – out of 1,200 million tonnes loaded in the country, almost 30% are loaded in Kuzbass area (coal, other mineral and commodities) which creates an accumulation of empty wagons waiting for loading. Similarly, with Russian Far Eastern ports, Russian shippers export commodities to countries of Asia-Pacific realm, but there is not much return freight for the same wagon types used for export goods. So, the wagon owners, instead of running their wagons 3,000 to 6,000 kms back empty and paying high empty return tariffs, park them near the Far Eastern ports and wait for any return freight. When there is a surplus of wagons in the system (as there was after 2008), empty wagons may wait for some time, clogging the ports

and approach tracks. However, this is not such a concern for Belarus as there are few shippers as large as Kuzbass coal. Brest may handle large export and import volumes, similar to Russia's far east ports, but the haul-lengths for return flows are much shorter. Belarus should not be subject to these types of problems.

5.6 Methodology to Establish Commodity Exemptions

Regulatory exemption principles should be implemented in the most simple and transparent manner. A two-step process is recommended. In this process, the first step is to identify market-shares for a particular commodity or market segment and then to evaluate the effectiveness of competitive road or water transport as a limit to the railways pricing power. The second step is to benchmark the railways tariff against the alternative modes of transport. MART should have a program to review markets. BCh should also be able to suggest market segments for review and eventually deregulation. Based on an analysis of market segments and pricing, MART would have grounds to regulate tariffs, lighten tariff regulations, or simply deregulate tariffs.



Based on the measures described above, MART will need to determine whether the commodities are in a competitive market or not. Measures may be accompanied by a brief description of the commodity's transportation needs such as length of haul, concentration of origin and destinations, and access to alternatives modes of transport (proximity to roads and waterways, ability of other modes to effectively and efficiently provide service).

5.8 Introduction of Tariff Flexibility

According to the Eurasian Economic Agreement, BCh, like RZD and KTZ, can vary its tariffs within a tariff corridor. In other words, EEA railways can, on their own, rise freight tariffs by as

much as 12% or, reduce the tariffs by 13% below the regulated level. MART should implement this part of the EEA agreement, providing BCh with similar flexibility. In Russia the regulator developed quite complicated Rules of use of this tariff corridor. Similar rules can be developed by MART for rail traffic that may remain regulated, if these are needed. An alternative would be for MART to regulate maximum tariffs, or a tariff ceiling, for some rail traffics. Where market analysis shows that shippers have alternatives, the railway would be free to set prices up to the ceiling tariff in an effort to improve its competitiveness.

Because transport markets evolve faster than MART can typically react through its normal statutory processes, the tariff corridor will provide additional flexibility to BCh pricing and tariffing policies. For example, competitive transport modes rates fluctuate, there might be seasonal rates increases and drops. Commodities' prices fluctuate (for example, potash prices may change within a few months, and potash is a traditional Belarus export commodity). BCh should have the ability to adapt to these changes earlier than traditional regulatory mechanisms allow. In these cases, maximum tariff regulation might be an effective means of regulating rail tariffs while allowing the railway freight business unit the flexibility to set prices and design services that are competitive in the market.

MART informed us that they have been working on such corridor for BCh.

5.7 Tariffs: conclusions

Modifying tariff regulations alone would not be enough to ensure BCh's financial sustainability. BCh should improve its services to freight shippers in parallel – developing new payment terms, providing greater service reliability and on-time delivery, offering shippers new market solutions designed for their needs. Some shippers may be happy to pay more for BCh services if they see more value in what they are offered. BCh should develop marketing programs to know its customers better – they all value somewhat different things. Offering them more of what they value most, BCh can charge more, and still satisfy its customers.

What is a natural monopoly today may not be natural monopoly tomorrow. Markets develop, evolve, rates and prices change, more competition emerges every year. Not all service provided by a natural monopoly subject (the national railway company) are monopolistic. Where they are not, prices for these services should be deregulated. Many BCh service are provided in very competitive environment –from road transport, but also from rail routes, companies and wagon operators from other countries. Being a railway does not automatically mean that all services should be regulated. We believe that many rail market segments can be deregulated today (by commodity, by distance, by route, or type of service). The process of deregulation should be reviewed on a regular basis or upon request of BCh or a shipper. For MART deregulation, the process should be public with shippers, carriers and other participants able to participate.

Rail freight tariffs should be modified to make private investment in wagons more attractive. Private investors (could be foreign investors who set up local wagon-operator companies) would buy freight wagons the country needs, reducing the financial burden on BCh who can then better use its limited

funds for other investments (infrastructure, electrification, terminals). More private wagon investment may also help keep local wagon-builders busy.

Private wagons operators are also adept at finding markets to circle routes to reduce empty returns maybe even in other countries (Russia, Ukraine, Lithuania, Latvia). They may even find better use of the wagon fleet by moving between markets where it is needed more from time to time. Private wagon owners will also reduce BCh repair and maintenance costs for freight wagons freeing BCh more funds to other purposes.

MART should start thinking about developing infrastructure tariffs on an RAB (Regulatory Asset Base) basis. This will require that the government and BCh revalue rail sector assets. This is not an easy task, but the process can help change the economic behavior in regulated sectors. With a reasonable regulated return on assets and a medium to long term tariffs regulated period (say 5 years or so), the railway enterprise should be able to keep earnings in unregulated markets and earn a regulated rate of return in regulated markets.

6 Rail Transport in Competitive Markets

The Belarusian Railway is operating in increasingly competitive transport markets. Passenger transport shares have been declining, even as some passenger fares have declined in real terms. Freight traffic shares are also declining, even as Belarus is at the center of increased east-west freight transit traffic. Motorization of Belarus has changed the competitive transport environment; to recapture lost domestic, import and export traffic, BCh must become more competitive in shorter-haul markets; to increase its economic value to Belarus, it should become more sensitive to customer needs in all its markets.

This is a problem that has faced many railways, especially state-owned railways. Worldwide, state-owned railways are notoriously indifferent to customer needs. The nature of railways is that they are difficult organizations to manage – composed of mechanical, civil, signal, electrical, and telecoms engineers, operations specialists, mechanics, drivers, conductors, specialists, inspectors, managers, supervisors, tariff specialists, accountants and other highly specialized personnel spread across a large geographic area, in small towns, rural areas and large cities. Large cadres of specialized staff look inward to standards, practices, budgets, and work plans. State-owned railways are creatures of the state and look to their owners for goals, objectives, instruction, legal, financial, and political support. Railway customers don't get as much attention as other important players in the rail sector.

In competitive markets, customers seek out suppliers who can address their needs. Many railways have sought to organize themselves to help them understand the competitive market place, improve customer communications, and to better respond to customer needs. Railways often use third-parties to help understand and satisfy customer needs in ways that the railway organization cannot. They also make shared investments with customers or third-party companies to help satisfy some customer needs while reducing investment risks.

In this Chapter some of the techniques used by railways internationally are discussed. All of these techniques may not apply in the Belarusian rail sector, or to BCh as it is currently organized and managed. They are discussed here to show the range of responses that railways have available to increase market share, better compete with road transport, and to reduce transport costs for shippers.

6.1 Rail Passenger Revenue Enhancement Efforts

Internationally, railways use many techniques to increase the yield from passenger services and necessary facilities and to sustain quality passenger services. Most often, passenger services are regulated and subsidized by governments (both local and national). These subsidies maintain basic

services and usually also cover part of all of necessary investment costs. The techniques are discussed below:

6.1.1 PSO Agreements

Currently, subsidies for passenger services are not well defined. Their cost is buried somewhere in freight tariffs. But often even freight tariffs for some commodities must be cross-subsidized by other freight commodities, so it is hard to determine exactly what passenger services cost. Most international railways perform passenger services under some form of public-service-obligation agreement (PSO). Passenger PSO-like arrangements may take the form of concessions for passenger services (UK), or general contract arrangements with state-owned railways. Generally, whatever form is used, the arrangements specify minimum service requirements, performance metrics, and some fare levels. Service providers generally take many actions to increase revenue yields while meeting the service and performance measurements specified. They can offer more services, add higher-class services, add supplementary services (catering, preferential treatment for passengers paying additional fees, among other actions).

6.1.2 Peak Period Pricing

Passenger travel during peak-periods, generally involves suburban and commuter services into and out of urban areas in the morning and evening. These peaks in travel demand often determine investment requirements for rolling stock, capacity requirements for passenger stations, platforms, parking lots, and related station facilities. High peak-period travel also drives operating costs and has a significant effect on service provider employment requirements. Peak-period pricing is a pricing mechanism based on negative price elasticities that is often used to increase some travel prices during peak periods to move discretionary travel outside peak periods. This arises because some passengers are not willing to pay higher prices, especially if they can make the same trip at a different time for a lower price. Shifting some travel outside the peak period reduces expenses and investments needed to provide service and generally provides passengers still traveling with a more enjoyable and more reliable service. If permitted in PSO contracts, peak period pricing can increase total revenue yields while also reducing operating expenses and investment requirements.

6.1.2 Premium Services and Amenities

Usually, PSO agreements specify the type of service and prices for passenger services covered by the agreement. The Service Provider can offer premium services, special tours, catering, and other amenities (such as VIP waiting rooms, reward club memberships, better seating arrangements, etc) at prices that are not regulated and so increase its revenue yield from providing the services. The Service Provider can manage its schedules so as to meet contractual obligations related to train and

seat availability and, if it has sufficient equipment, can provide services over and above the obligation if revenue yields are higher than the incremental costs of providing the additional service.

It is common for PSO agreements to include provisions for a single-till – that is to account for all the revenue earned providing passenger services to minimize overall subsidy requirements. However, the agreements can be written in such a way as to permit the Service Provider to share in the supplemental revenue from these extra services, premium offerings, and sale of amenities. If sufficient revenue can be earned, some services may be offered without a PSO.

6.1.3 Identity Branding

Many railways have increased revenue by selling branding rights for some assets or services. This is common in some places where businesses pay for the right to "name" a station (for example, "Alfa Bank Station"), or to name some other facility, like the VIP Room or a meeting hall. In Germany, Lufthansa pays to put branding on trains to several airports (Lufthansa Airport Express) and pays a share of the service costs. They operate passenger and luggage checking facilities at the origin station, issue boarding passes, and handle checked luggage to the appropriate airplane. A company may want to sponsor a specific commuter service to collect and deliver employees; or a special first-class coach to promote their brand. Most commuter railways sell advertising within vehicles; some install and sponsor video screens to show advertising, news and promote their brand. An active passenger business unit should be exploring all these possibilities as means to increase revenues from providing passenger services.

6.1.4 Land Development

Passenger stations are generally located in prime urban areas. The land they occupy can be quite valuable. Direct access to rail passenger services can provide a focus for development and make land and facilities much more valuable. For example, Japan's urban railways use co-development of parking lots, stations, hotels, office buildings, and nearby facilities to support increased rail passenger patronage and maximize revenue from existing facilities – some argue that some private rail passenger service companies in Japan are actually in the real estate development business.

Capturing value from location and provision of passenger services requires that the railway have property rights that can be exploited for services that may not be directly related to rail passengers. Sometimes these joint developments are done under a PPP structure with the private sector contributing financing and sometimes constructing a building on private property that includes rail service access. Such arrangements can be complicated and depend upon the rights the railway has to develop land related to passenger stations, or to provide passenger services to private facilities and buildings.

6.1.5 Passenger Market and Revenue Enhancement

A BCh passenger business unit will have much to do to get organized and operating under new arrangements. It must determine how it will organize itself – by market segment (for example, international, urban, regional), by function (for example, stations, train operations, rolling stock, government relations). It must help shape a new railway law regarding passenger services. It must also develop improved cost accounting standards, develop a business plan and a financing plan.

As this work evolves over time, the passenger business unit must also begin to understand its markets better, and to develop ways to enhance services, and expand its market shares. Some of the market and revenue enhancement techniques discussed above can help build market share but can also enhance passenger unit revenue and reduce investment costs.

6.2 Rail Freight Marketing Efforts

Commercially oriented freight railways actively seek ways to increase revenue, reduce costs, and add profitable rail traffic to their revenue base. The mechanisms used vary considerably depending on the regulatory environment but the overall goals are always similar – finding ways to satisfy customer

service and pricing needs. The following sections describe mechanisms that other railways have used to increase market share while also reducing costs and capital requirements.

6.2.1 Increase the Use of Private Wagons

Wagon ownership and maintenance costs take up a large proportion of many state-owned railway capital and operating costs – usually around 20%, more or less depending on the type of wagon and return allowed on capital investment. Since about 2003 or so, railway tariffs have been divided into wagon, infrastructure, locomotive, and other cost components, allowing the broad use of private wagons. Russia encouraged private businesses to invest in railway freight wagons and over the last decade private wagon operators have evolved to the extent that nearly all wagons in commercial freight services in Russia are now provided by private wagon operators. Private investors replenished the Russian wagon fleet by investing more than US$30 billion in new wagons over the last decade.

Wagon operators invest in wagons, maintain them, and manage their movements while also selling access to the wagons to freight shippers – their customers. Generally, private wagon operators manage their fleet to maximize the number of loads the wagons carry over time, increasing utilization of the wagon fleet. In addition, wagon operators generally work closely with customers to match supply of wagons to their needs, providing a means to develop closer coordination between shippers and railway freight services. The wagon operators serve as freight forwarders, handling payments and billing, and providing the information needed by the railway to manage train services. In many ways, wagon operators become the marketing officials for the railway, seeking out customers who might use their wagons, finding out shipper needs and production schedules, then coordinating the supply and movement of their wagons to satisfy their customers. Since they are financially dependent on the performance of their freight wagon fleet, operators dedicate a lot of time to working with shippers and receivers. Some wagon operators enter into contractual arrangements with shippers to build fast-loading and unloading facilities to speed wagon movements or help design and operate loading terminals for bulk products.

The economic basis of wagon operators is the discount offered from the full rail tariff and, importantly, that the prices charged by wagon operators are not regulated. Initially, freight shippers using wagon operators paid less than the full rail tariff and received new, well maintained wagons. As wagon operators became larger, they could command a premium over the full tariff for their services. At the same time, their services generally included new, well maintained wagons, movement supervision and coordination, billing and providing the state-owned railway with the required paperwork and documentation, payments, and movement instructions.

Private wagon ownership and the formation of wagon operators should be encouraged in Belarus.

6.2.2 Private Contracts

Railway investments have a long life, freight wagons last from 22 to 35 years. Investors in wagons take the risk that the wagons they purchase will have a long economic life (private operators may sell wagons to other operators, customers, or other investors). Railways take the risk that the investments they make in facilities or new capacity will have a long economic life. An important way to ensure that an asset investment will earn an adequate return is to associate that investment with a contract for the use of the asset. Many shippers themselves have contracts for the supply of their commodity to their customers. Contracts can strengthen the ties between railways, wagon operators, shippers, and others. In many countries, railways routinely provide discounted tariffs for long-term shipping contracts (5 to 7 years); often these contracts provide greater discounts as the volume of goods shipped increases – volume variable pricing. Railways may use the contract to secure financing for wagons, or to build the facilities needed to provide the contracted services, including fast loading and unloading facilities, or make capacity investments necessary to provide for the contracted freight flows.

Often, with a volume shipping contract, the shipper can be convinced to purchase the wagons and loading/unloading facilities. This is a major benefit to the railway as it saves it capital and it locks-in or captures a shipper for a long-term movement.

Commercial railways have the ability to negotiate long-term service contracts and tariffs with major shippers with limited regulatory supervision. The railway will want to make sure that the contracted tariff is above avoidable costs, to ensure that the freight movement makes a contribution to the railways overall cost and capital structure.

6.2.3 Wagon Pool Operators

Demand for many universal wagon types varies over time and geography. If there are traffic flows that cross between independent railways (import, export and transit traffic in Belarus), one way to reduce risks associated with variations in traffic is to form wagon-pools with neighboring railways or wagon operators.

In North America, major railways jointly formed a wagon-pool operator, Trailer Train Company (TTX) TTX is owned by nine major railways in North America. Each railway contributed capital to start the company. TTX entered into wagon supply contracts with the railways, and then financed the purchase of freight wagons (initially container flat wagons, trailer flat wagons, and auto-carrying wagons) from its equity and on the basis of the supply contracts. Wagon debt is carried by TTX, not by the owning railways.

TTX manages the wagon fleet, including maintenance and repairs, and provides wagons from its fleet in either short or long-term contracts to owning railways. The basic idea is that wagons can be used by multiple railways and can shift from railway to railway as demanded by traffic flows. Generally, TTX is responsible for managing the fleet on a macro-basis but not for marketing rail services. However, TTX is able to act as a wagon operator (responsible for marketing the service) with the agreement of its owners. Originally conceived as a means to finance container and trailer flat wagons which had seasonal flows that differed in different parts of North America, TTX has grown to be a large wagon supplier with a fleet of more than 160,000 wagons (133,000 container flat wagons, and 27,000 box and gondola wagons).

In some ways, TTX seems similar to BCh's current participation in UTLC. BCh should consider joint venture wagon pool or wagon operator arrangements with partner railways in Latvia, Lithuania, Estonia, Ukraine, and even Poland. These arrangements can be on a bilateral basis or on a joint basis involving several partner railways.

6.2.4 Bulk Distribution Terminals

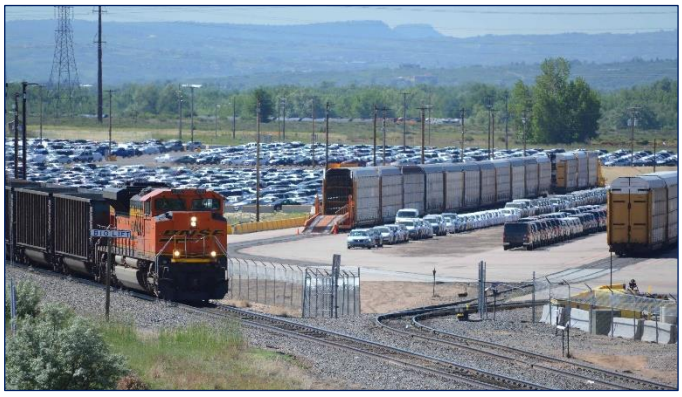
Railways provide low-cost movement of high-volumes of freight between two major points. Road transport, on the other hand, provides transport for single shipments from door-to-door. Road transport is more customizable (supplied to shipper specifications) for shippers, but expensive. Rail movements usually take longer, are not so customizable, but can be much less expensive. When there are many individual smaller customers in a region, railway economics can be leveraged by developing distribution terminals.

Bulk distribution terminals are a specialized example of distribution terminals. Many railways have developed bulk-terminals to permit the movement of large volumes of bulk commodities that may be demanded in smaller quantities by multiple customers. Examples include sand and gravel, various types of grain products, petroleum

products, chemicals and fertilizers, and cement. A bulk-distribution terminal allows the railway to move large volumes of goods, train-load quantities, from a central producer (oil refinery, gravel company, grain elevator, chemical fertilizer producer) to a distant region, unload the wagons into appropriate storage, and then deliver smaller, truck-load quantities of these bulk commodities to local customers via road transport.

Bulk distribution terminals have been built and operated by railways but are often built and operated by a customer alliance joint venture, a local trucking company, or by bulk shippers interested in extending their own market reach. These terminals shift transport of many commodities from road to rail in part because the service is much less expensive and in many ways comparable to the service currently provided by road transporters since it is local from the bulk distribution terminal. Often timeliness of the overall transport is not a key factor, but availability of the bulk commodities at a reasonable price is important.

6.2.5 Auto Transport Terminals



Auto transport terminals are a specialized form of a rail-to-road distribution terminal. In North America, railways transport more than 90% of all newly assembled automobiles. Most automobiles move from assembly plants to local distribution terminals for final delivery. Imported automobiles move from ports to local distribution terminal by rail. The service is generally competitive within about 250 kilometers.

Rail movement of automobiles provides many advantages over road transport. First, automobiles traveling by rail are generally protected in enclosed wagons, so there is almost no loss-and damage from the transport. Next, a single distribution terminal can serve many cities and automobile dealerships via road-transport from the regional distribution terminal.

Generally, the loading terminal is a large parking lot with rail access. Pre-shipment treatments (e.g., plastic wrapping) can be provided and the loading terminal operator generally coordinates vehicle specifications and special orders with the manufacturer and with the final distribution terminal. A single train can carry automobiles from many manufacturers (loaded at a port, for example, or from an industrial park serving many automobile assemblers). At the destination terminals, the terminal

operator can provide additional preparation services for manufacturers or dealer customers. For example, final assembly of mirrors, special wheels, removal of plastic wraps, and final preparation of the automobiles for customers.

Auto distribution terminals are financed, owned, and operated in many ways – by auto manufacturers, dealer associations, specialized road transport companies, railways, ports, and in joint venture companies composed of some of these.

6.2.6 Warehousing and Distribution Facilities

In the more motorized competitive environment facing BCh one way to expand its market share is to serve warehouse and distribution terminals. Railways can cooperate with specialized transport companies, with third-party logistics providers, or with road transport consortia to develop rail-served distribution facilities. These facilities allow railways to bring various commodities on mixed trains longer distances to be distributed by local road transport companies. The benefit of general purpose warehousing and distribution facilities is that they can serve many different commodities, including those requiring cold-chain logistics (refrigerated or thermos wagons and cold storage capabilities) and service many different road transport companies for local deliveries.

The warehousing capability allows local customers and/or shippers to store inventory near customers. Local customers can receive different goods from many different shippers that have been consolidated at the distribution terminal (e.g., wood products, wall-board, plaster, cement in bags, consumer goods from many different sources) and then loaded out on a common truck for local delivery.

Typically, warehousing and distribution facilities are built by third-party logistics providers, often in conjunction with a road transport operator. However, BCh already has several such facilities operated by BelInterTrans. For BCh, it may be better to involve local third-parties to spread financing burden and risk, relying on BelInterTrans as its representative in such ventures.

6.2.7 Intermodal Terminals and Services

Currently, rail container transport in Belarus is focused more on transit traffic. However, for railways in North America, Europe, Australia, and increasingly China, container transport is the fastest growing segment of freight markets. Over time, more rail traffic is likely to shift to container transport. BCh should encourage this transition by providing specialized container services serving local markets.

The opportunity to develop inland port terminals in Belarus should be investigated, to allow customers to drop-off or pick-up containers for/from the major ports in the Baltics. One inland port terminal can service multiple ports and serve as a collection and distribution point for goods moving in import or export trades. Container terminals need not be expensive developments – gravel parking areas with a reach-stack-loader and one or more rail lines would be sufficient for lower volumes. As volumes grow, additional equipment can be acquired and parking areas expanded. To serve as a true inland port, a customs office and secured area for containers would be required.

Initially, import and export services should be the primary market for inland terminals and smaller intermodal distribution terminals since this traffic will have a longer length of haul. But eventually a major terminal could be located in a central location, such as Minsk, and regional services offered to small intermodal terminals arranged in a hub-and-spoke type service.

6.2.8 Freight Markets Summary

BCh has many opportunities to increase its market share. Most of these do not require significant investment by BCh but can be financed through joint ventures, service contracts, and private investors.

As the freight business unit develops and begins to analyze the market more carefully, we are sure more opportunities will be discovered. Those discussed above have been implemented by railways internationally to increase market reach, share and to capture traffic from road transport competitors.

7 Summary, The Way Forward

This report addresses several important issues in the Belarusian rail sector, including policy changes, changes in the railway law, new organizational structures for BCh, formation of business units (or enterprises under a reorganized BCh holding company), and changes in rail tariff regulations, including deregulation of tariffs for many rail traffic flows. In addition, the report contains a discussion of railway freight and passenger marketing strategies and approaches to freight logistics services from our international experience. The principal changes are summarized below.

7.1 New Railway Organization & Strategy

The Belarusian rail sector should be reorganized and consolidated into a single entity state-owned enterprise. This will likely require changes in the Railway Law and will require accounting changes, revaluation of the assets, and may allow the separation and perhaps privatization of some existing railway units.

The railway strategy development effort should include a full range of strategy analyses, including analyses of freight and passenger markets and forecasts, investment needs and requirements, and organization structures. The strategy analysis should include a financial analysis, and consider estimated asset valuations, and alternative levels of private sector participation.

This report has suggested a vertically integrated holding company type structure with freight and passenger units (may be separate businesses, with the overall BCh structure as a holding company – like DB, the German railway). But, the Government and BCh should develop an integrated railway company structure based on the strategic analysis. For example, should there be a separate rolling stock unit or should freight related rolling stock be included in the freight unit and passenger rolling stock in the passenger unit? Where should depots and workshops be assigned. Additional changes will be needed to assemble various currently "independent" units, including consolidation of accounts, assets, staff, and dividing operating responsibilities. Over time, as the sector develops, new organization forms can be implemented to provide greater commercial focus or encourage private sector participation.

New accounting systems will also be needed for BCh as an integrated entity and for each strategic unit or enterprise within BCh. These systems should be used to develop more detailed costs and infrastructure tariffs to be charged to operating business units. The systems should be based on a set of asset allocations and costing assumptions that form part of the rail sector organization strategy. For example, they should address such questions as whether facilities (e.g., stations) used only by the Passenger Business Unit should be transferred to that unit, which would then be responsible for renewal, investment, maintenance, and operation of those facilities.

These changes may take some time and need not be rushed. But it is important to begin to establish an integrated rail sector with more market focused business units, develop investment strategies, and the accounting systems that will reduce and eventually eliminate the necessity for BCh freight services to cross-subsidize rail passenger services. This new organization strategy will help attract private sector capital and financing to the rail sector.

7.2 Legal & Regulatory Framework

A new railway law, defining a state-owned enterprise structure, and clearly describing what services constitute the railway natural monopoly (generally, the railway infrastructure network, including tracks, bridges, related structures, electrification facilities, signaling and dispatching facilities). Other services (such as transportation services) occur in a competitive market, especially in Belarus. Property laws governing such issues as financial and operational leasing should be reviewed to encourage financing structures for railway assets. Land laws may need revision to permit development of railway properties under certain conditions. Eventually, new rail safety regulatory structures may need to be established to govern safety performance outside of the state-owned railway enterprise.

This report recommends a careful review of BCh markets and suggests that many freight tariffs can be deregulated. Preliminary recommendations for markets that can be deregulated include many Class III commodities, and domestic, import and export container traffic. The rail sector strategy study will reveal more. This report also recommends increasing the wagon component in tariffs and regulatory changes to encourage private investment. The report also recommends the implementation of the EEA recommended tariff corridor to give BCh business units increased flexibility in dealing with markets where tariffs remain regulated.

7.3 Develop Business Plans and Commercial Strategies

Once the rail sector strategy and organization structures are established and agreed, the new business units should develop commercial strategies and develop business plans, including investment plans and pricing strategies. In addition, BCh should develop business plans for the remaining rail sector units (e.g., infrastructure, rolling stock, supply units) and detailed development plans, coupled with the plans and commercial strategies of the business units. A development plan for the accounting systems, financial organization, and information systems should also be prepared, reflecting the new sector structure and regulatory framework.

7.4 Establish and Implement a Digital Development Plan

Efforts to restructure BCh's environment should be underpinned by an aggressive use of digital technology. This is necessary in order to be able to compete effectively in the passenger and freight markets. Therefore, another important step in long-term sustainability is the development of a Digital Development Plan and its systemic implementation. Digital technologies are proving to

improve customer service, increase operational efficiency and support infrastructure management in a cost-effective manner. BCh would greatly benefit from looking at emerging technologies and implementing them in a methodical way throughout its system.

Some of the technologies currently allowing railways accrue greater efficiencies are the use of data analytics, artificial intelligence, or machine learning. Technology is not limited to software but also to hardware such as drones or track inspection gadgets. Due to the great variety and rapid evolvement, BCh should establish a plan on how to continuously implement new technologies to support its long-term viability and competitiveness.

7.5 Implementation Steps

These types of strategic changes take many years. The first step is to initiate the rail sector strategic study to define the unitary enterprise structure of the railway, and perform the market analyses necessary to define the business unit/enterprise structure. This type of study typically takes six to eight months. At the same time, work can begin on reforms to the Railway Law, and on review of railway markets and deregulation strategies. This work cannot be completed until the sector strategy is done.

The formation of a new Railway Law and other regulatory reforms can also be started early in the process. This activity should include a review of changes required in the railway law, land, and leasing laws. These activities will take additional time and changes may still be required as the sector evolves and markets change.