The Rail Reform Issue: Case of Railway, Mongolia

Ulziinorov Gansukh¹, Xu Ming²

¹Lecturer at Railway Institute of Mongolia; PhD student at Donghua University, Shanghai, China;
²PhD, Professor at Donghua University Shanghai, China

Abstract: The railway organizations’ main objectives are the efficiency, productivity and competitiveness of the transport operation. In order to improve efficiency and productivity, future development of the railway, it is reasonable to develop a new policy which support the further sustainable development of organization. The evidence based study show that the railway organizations which have implemented the effective restructuring options become more developed and get the positive results. The aim of this article is to contribute the conceptual knowledge of the railway policy issue in Mongolia. The paper presented an overview of the railway reform theory, as well as other countries experience such as China railway corporation. Moreover, it has analyzed the statistical indicators of freight and passenger traffic and capability analysis of the railway transport of Mongolia in regional context. In last but not least, it formulates the need of reforming processes for railway sector of Mongolia by investigating railway top managers’ opinion and some stakeholders’ point of view on this issue. Findings of research are following: a) Analysis of statistic data show, there has a high correlation (R=0.87) between GDP and freight transportation of Mongolia. b) In the regional context, Mongolia’s transport statistics main indexes performance somewhat in the middle position among the CAREC country c) The result of the research show that, for further sustainable development of rail sector of Mongolia, reform is extremely important, and interest needs for different stakeholders were highlighted. As a research method used quantitative and qualitative methods, as well as the Mendeley Deskrip program and SPSS programs. The data collection based on a questionnaire, interview, the analysis of strategic documents, secondary data, including statistical data obtained from the Central Statistical Office in Mongolia, Statistical Office in UBTZ (Ulaanbaatar Railway Mongolian-Russian Joint-stock Company), OECD (Organization for Economic Co-operation and Development) official site, International Union of Railway (UIC) official site and World Bank official site.

Keywords: restructuring and reform of a railway, UBTZ (Ulaanbaatar Railway Mongolian-Russian Joint-stock Company), MoRTD (Ministry of Road Transport and Development) China railway reform, quantitative and qualitative research methods, railway stakeholders

1. Introduction

The railway organizations’ main objectives are the efficiency, productivity and competitiveness of the transport operation. In order to improve efficiency and productivity, further development of the railway, it is reasonable to develop a new policy which support the further sustainable development of organization (Thompson, 2007). The evidence based study show that the railway organizations which have implemented the effective restructuring options become more developed and get the positive results (Sharipov, 2010).

The railway is the most important infrastructure sector of Mongolia, due to the geographical features-the lack of direct access to the sea, the vastness of the territory, the raw material structure of production-rail transport plays an extremely important role in the country's economy (UBTZ, 2017). Therefore, one of the main tasks of the long-term expansion of the Mongolian railway transport is introducing of reform, liberalization as well as restructuring, so that the competitiveness of the country’s railways market will increase. The consist of this paper is firstly, to investigate the railway reform overview from different source, secondly for more detail understanding reform theory getting some experience have investigated China Railway reform pathway; thirdly, by analyzing current condition of UBTZ, taking in an interview and doing some observation with rail authorities have clarified their opinion on reform issue of rail sectors. The main methodologies of the paper were questionnaire and an in-depth interview.

2. Railway Reform Overview

2.1 Background to the Railway reform

The fundamental aim of the reforms has been to improve the efficiency and competitiveness of the rail system; it is important to realize that key differences in approach about how this was to be accomplished (Murray, 2014). Since the end of 20th century purposeful efforts have been put in the European Union single market creating conditions for competition in the railway market, to separating the management of infrastructure and transportation services. Broadly, there are three models used to reform railway sectors by introducing more competition and private sector investment (Nikitinas and Dailydka, 2016): vertical separation of infrastructure management and railway operations (as per EU Directives and clear in the UK and Sweden); third part access (such as in Germany and France); horizontal separation (in the USA, Canada and Mexico).

The Separated Model (Swedish model). The essence of this model is a complete separation of infrastructure and railway operations [7]. In 1989 Sweden took the infrastructure away from its major rail operator and placed it in a completely separate state-owned organization. Number of countries, mostly in northern and Western Europe, followed the Swedish model, though with detailed differences. Of these, only Britain took the steps of breaking up and privatizing its train operating company as well as privatizing the infrastructure, Britain was also unique in completely reorganizing as well as privatizing its railways in just 3 years (1994–1997).

The Integrated Model (Germany, Italy, Austria). This model may be implemented by a vertically integrated model, i.e. a holding structure (Murray, 2014). Although this
structure remains the subject of hot debate both within Germany, where doubts are being raised as to its suitability for privatization, and at the European level as to whether it really provides the required degree of independence for the capacity allocation and charging activities, several other countries, mainly within Central and Eastern Europe, have followed this model (World Bank, 2017).

The French model. is in one sense more curious, in that it involves a degree of separation of infrastructure from operations, but – at least initially – no competition. It comprises a separate infrastructure manager but one which in turn subcontracts much of its activity to the major operator. The aim of this model seems to be to create a separate source of ability on rail infrastructure planning and investment issues and to separate financing of the infrastructure from operations (Grushhevska et al., 2016). It is a model which has been followed in some other parts of the world, such as Vietnam and Indonesia, where there has been a wish to show infrastructure planning and finance as a government issue but operations as a commercial one. As we see, there is no single ideal model for railway reform - every model will have costs, weaknesses and problems. Transferring wholesale, models adopted elsewhere is not a realistic course, as each model has been developed to meet the unique circumstances of each country.

Next, we will study China’s railway reform pathway, thereby get some experiences for Mongolian railway. And try to highlight some problems which facing railway for the further development.

2.2 China’s Railway Reform Pathway

Many researchers have been studied China’s Railway sector reform issue from various point of view, such as corporate governance (Government and Ministry of Railway (former) relationship in term of organization structure reform), financial sector reform, tax policy of railway etc (Wu and Nash, 2003). This section intends to highlight the main stages of reform China railway and its benefits so far.

Broadly speaking, China’s Railway industry has been experienced five stages of reforms so far (Zhi, 2013). There are: Allowing rights and profits reforms-the first stage (1978-1985), Railway “all-round contract system” stage (1986-1990), The contract system continuous stage (1991-1992), The pilot of the modern enterprise system and deepening reform stage (1993-2002), leapfrog development stage (2003 - present). During the first stage of reform, it was proposed a reform for “full economic responsibility” for local railway bureaus, with more control over finance and human resources. The goal was to drastically reduce MOR’s financial dependence on the Central Government, gain more decision making power and stimulate innovation. In the second to third stage, in mid-1990s, faced with a financial deficit in the rail sector. In the fourth stage period in1993, China’s railway first transport company Guangzhou Railway (Group) Company was set up. It marked the Chinese railway market-oriented reform process officially cross from the primary contracting system experiments compare deepening into the pilot phase of the corporate system (Zhi, 2013). The MOR initiated six rounds of “speed up campaigns” from 1997 to 2007 to increase average service speed of existing tracks. Meanwhile, many projects on double-tracking, electrification, improvement in grade, and installation of continuous welded rail were undertaken to increase service speed and capacity (Song et al., 2016). In 1998, the Ministry of Railways have tested as a pilot “responsibility system” for the management of state assets in the Liuzhou, Nanchang, Hohhot and Kunming railway bureaus (J. H. Wu & Nash, 2003). As a result, the responsibility system achieved some results: “First, production quotas have been implemented on a per-worker basis, accounting has been implemented to the work group level, and staffs’ performances have been subject to check-ups at every work post. Secondly, labor, worker and staff as well as distribution system’s reform have achieved a significant progress due to such efforts as linking the amount of work done with efficiency and cutting down on surplus labor force. Thirdly, the Ministry of Railways has speeded up its pace of shifting its administrative functions, streamlining its staff and organization, and increasing its work efficiency (Wu and Nash, 2003).

In 2000, there were initiatives for establishing a national railway network company along with several passenger transportation and cargo companies. The effort was to separate the country’s railway networks from the business of transporting passengers and freight, and breaking the MOR’s mixed functions of both government administration and enterprise management. In the fifth stage “the leapfrog development stage” in 2005, started the biggest internal reform in the railway industry, with all 41 railway sub-bureaus being dissolved (Siji, 2012).

The Ministry of Railways has organized number of the large-scale campaigns to increase train speeds on trunk railway lines in 1997, 1998, and 2000 respectively. A variety of measures have been adopted to improve service, streamline business operation and optimize train dispatch timetables. The DRC (Development Research Center) summarizes the lessons learned from these reforms as follows: “The reform carried out over the last few years has enabled those working under the China’s railway transport sector to reach the consensus that the only way out for the industry is to break through monopoly, allow competition, transform the administrative system and management mechanisms, and cultivate market-oriented entities” (Wu and Nash, 2003).

The main point of China railway after 2013 reform indicated as following: The People’s Republic of China was founded in 1949, since then, the development of the railway sector has featured a state monopoly and powerful expansion. The reason of problems arising with monopolies, depended many factors. As, lack of responsibility, low efficiency, have also greatly damaged the further development of the railway sector and the safety of the transportation system (Siji, 2012). The diversified operation will become the breakthrough point of the railway sector’s market-oriented reform. This means that, separating government administration from enterprise management will guarantee entry of private enterprises. So, the main existing problem for China Railway was the relationship between Government and railway enterprises management issue. Before reforming in 2013, the structure of China Railway was a mixture of
government administration and enterprise management that leads to un-controlled internal management of the railway sector, as well as a major reason for the frequent corruption cases in the railway sector is the excessive concentration of power (Siji, 2012). The Ministry of railway was the main body that regulated all issues in railway, including railway function and administration.

In 2013 there was a reform in railway and separated Government policy obligation from enterprise management issue. In China the organization “National Development and Reform Commission” (NDRC) is guiding reform procedure in railway in the national level. After reforming in 2013, there was established China Railway Corporation (CRC) that obligated all management issue and Ministries of transport that obligated policy issue. So the obligations are becoming clearer. After separation of government administration from enterprise management, from 2013, the Ministry of Transport performing only functions of government supervision, represent state assets investment and administer the industry. Other powers and responsibilities distributed to CRC and local railway bureaus which are major market participants (World Bank, 2017).

2.3 The study of railway sector of Mongolia

2.3.1 The Railway Sector of Mongolia in the Regional Context

Since Mongolia is located at the Central Asia region and a member of the Central Asian Regional Economic Cooperation organization, it is worth to investigate the railway of Mongolia in the regional context. Below is the railway statistics among the CAREC countries (International Union of Railways, 2015) /see an appendix.1/

As shown in Table 2, Mongolia’s population density [inhab/km2] is (2) the lowest within CAREC country, compared to other countries such as Pakistan (237), China (143) and Azerbaijan (111). However, the Kazakhstan, Russia, Turkmenistan, and Kyrgyzstan are also low population density countries. Using above data, it is possible to calculate the railway operation capacity index for each country. The transport statistics main indexes (M. N. S. Office, 2008) are the total amount of transported cargo, freight turnover, a total amount of transported passenger, passenger turnover, wagon turnover, transferred ton per km, transportation income respectively. Among them the railway capacity indexes are worth to calculate and to compare country to country. The freight turnover for one km railroad, passenger turnover for one km railroad, wagon turnover per km of railroad, average daily run of the locomotive per km of railroad are the capacity indexes which have been calculated in this part. The freight turnover for 1 km railroad is calculated as the freight turnover divided into the total length of the rail truck. Similarly, the passenger turnover for one km railroad is calculated. According to this methodology, the railway capacity indexes in 2015 has been calculated, among the CAREC countries, as shown in Figure 2 (Gansukh et al., 2018a).

From figure.1 it can be seen that the freight turnover per km is highest in China, Russia, and Kazakhstan, while its low in Pakistan, Tajikistan, and Kyrgyzstan. The Mongolia and Uzbekistan are somewhat in the middle. The passenger turnover per km is highest in the China, Pakistan, and Russia, on contrary Azerbaijan, Kyrgyzstan, and Tajikistan have lowest, but Uzbekistan, Mongolia, and Kazakhstan are comparatively in the middle position. Additionally, the number of staffs per km of a railroad and the number of rolling stocks (total amount of locomotive and rail wagons) for per person have been analyzed. But due to the unavailability of whole data from some countries, the study used only for four countries. The number of staffs per km of railroad in Mongolia is 7, in China 29, in Russia 9, and in Kazakhstan 6. The number of rolling stocks per persons, in Mongolia is 0.2; in China 0.3; in Russia 0.1; and in Kazakhstan 0.7. The number of stuff for per km railroad depends on the innovative technology level of railway and some other specific conditions. From above calculation, the China and Pakistan railway passenger operations are more effective than other countries, while the carried freight is more in Russia and Kazakhstan than that in other countries (ADB, 2014). For Mongolia, the freight turnover and passenger turnover per km of railroad indexes have a different result. If compare to the CAREC country, Mongolia is in the somewhat middle position, after China,

Figure 1: The capacity indexes of Mongolia’s railway within the CAREC countries. Source: (International Union of Railways, 2015)
Russia, and Kazakhstan’s indexes. Mongolia has experienced a major mining boom. So, till 2012 because of the mining boom, in Mongolia a large number of mining products as a coal and iron ore are exported abroad through the railroad. The study said (Otgonsuren, 2015) GDP growth accelerated from 6.4% in 2010 to 17.5% in 2011 before slowing down somewhat to 12.3% in 2012. High prices of copper and other commodities and expansionary fiscal policy have also contributed to the strong growth performance.

For clarifying the relationship between GDP and a rail freight operation, the GDP per capita and railway main indexes were analyzed such as freight turnover and passenger turnover. Thus, some indication of how the Mongolian economy index and the demand for the passenger and freight transport have changed over time.

![Diagram](image)

**Figure 2:** Trends of freight and passenger rail traffic and the GDP per capita of Mongolia period of 2000-2015. Source: Data extracted from (U. Statistical Office, 2017), (The World Bank, 2017)

Figure 2 shows that the passenger traffic does not present any significant changes during the period from 2000 to 2015. It is evident that the passenger transport is in a constant position, regardless of changes in the level of GDP. At the same time increasing trends of freight comparatively higher but does not always correspond to the line changes of GDP. It means that the role of freight transport as a contribution to GDP has varied over the analyzed period. Using Excel Data Analysis Program, the correlation between GDP and freight transport have been calculated. The result shows that there is a strong correlation between GDP growth and domestic freight transport by rail. The correlation between 2000 and 2016, the railway freight and GDP correlation was R=0.87. The strong correlation between this allows the forecast for rail freight rates to be forecasted by GDP growth. From another source (Gansukh et al., 2018) bit is also clear the GDP from 1990 to 2011 grew by about 70%, while the domestic freight by rail was up by about 50%.

3. **Methodology**

3.1 **Data collection method**

According to the aims of this study, have used quantitative and qualitative methods, as well as Mendeley Desktop, SPSS programs. For quantitative analysis it has used a 5-step LAKERT method; for the qualitative analysis have used the open-ended and semi-structured in-depth interview method.

3.2 **The quantitative method**

The questionnaire design of a quantitative method included two main parts: part one included a personal information section, part two included questions related to rail reform and liberalization. The first part of the questionnaire required personal data, such as: gender, age, organization, job title etc. The second part of the questionnaire included 54 questions related to the rail liberalization. Respondents were identified 22 railway managers, who were responsible for Mongolia’s railway policy and represented organizations such as, MTZ-Mongolian Railway State Owned Company, UBTZ, MoRTD, some State organizations (see the result of quantitative research analysis in 4.1).

3.3 **The qualitative method**

The qualitative method based on the semi-structured in-depth interview with 6 top managers who are responsible with railway police, which 4 of them represented the UBTZ, 2 of them represented the MOT.

Most of the interviewees have worked in the Railway sector more than 20 years and their position and experiments are enough relatively for this research study. The authorities held various point of views about to the restructuring and reform processes of the UBTZ. The survey has conducted at the cabinet of the authorities directly. (Questions which asked from respondents has shown in appendix 3). Total 8 questions have asked by author. After the recording all response the data have coded and investigated (see the result of qualitative research analysis in 4.2).
4. Result of Analysis

4.1 The quantitative research results

Due to the nature of the research topic and questions asked the results combined narrative and numerical formats. Analyses have divided into two subsections focusing on specific issues of: the importance of rail liberalization policy for Mongolia’s rail sector, and the different stakeholders’ interests view in terms of rail reform. The first part of questionnaire focused on following issues /see appendix-1/:

1) How much / Do we need a reform in the railway of Mongolia? 64% answered its extremely important, however 14% said do not know well.

2) How important are the structural reforms of the Ministry of Road Transport and Development? 43% of respondents answered extremely important, 10% of them said not very important, 29% answered do not know well.

3) Is reform important to sector development policy? about 52% of the participants answered that it is very important. But 5% answered that it is not very important. In addition, 55% of respondents indicated that reforms in the legal environment are very important.

Next, we have surveyed detailed questions in some factors.
Fig. 5 shows the Government’s interests to the railway reform. As we see the 71% of participants answered that the after reforming the rail sector, it is important to maintain profitability. However, only 43% of them said increase revenue is the most important. However, 27% said that full-market oriented activity.

As shown in the Fig.6 the 50% of respondents said it’s important to carry out such policy as tax, tariffs, and involvement of third part to the rail operation, 48% indicated that the reducing of corporate and work cost is the extremely important. However, 27% said that full-market oriented activity.

Figure 5

What is the government's interests in reforming railway?

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<thead>
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<th>Option</th>
<th>0%</th>
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<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
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<tr>
<td>After reforming the railway sector, it is important to maintain</td>
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<td>maintain profitability.</td>
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<td>Ensure the safety of rail transportation</td>
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<td>Increase Revenue</td>
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<td>Provides fair competition to the transport market</td>
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<td>As part of railway reform, the government will preserve the social</td>
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<td>security of a growing population.</td>
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Figure 6

The direction of railway organization to sectoral reform

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<th>Option</th>
<th>0%</th>
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<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
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<tbody>
<tr>
<td>Full-market oriented activity</td>
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<td>It is possible to carry out policy such as tax, tariffs, and</td>
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<td>participation of third parties</td>
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<tr>
<td>Transparency</td>
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<tr>
<td>Reducing corporate and work costs</td>
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<td>Efficient corporate governance structure</td>
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Figure 7 shows the importance of employee interests in railway reform. The 70% of respondent said that the participating of organization’s restructuring is the most important, 52% of them answered that strengthening of social position is very important, 33% respondents agreed that reform must be fair and transparent.
From above investigation, we can realize that more than 50% of respondents agreed that the railway liberalization and sustainable development policy as well as legal reform should be the most important issues. Furthermore, the result of investigation by influencing factors show that, for introducing of reform the State Organization, Railway, Ministry of Road and Transport Developments are should participate more responsible position. Once it launches/runs away/of reform process then the Ministry of Road and Transport Development should manage whole reform process and provide it gently and centralized way. Moreover, after introducing reform process, the government must maintain the sector’s profitability and increase salary.

4.2 The qualitative research

The interviewees point of view to date, the Mongolian Railways cornerstone issue is to develop a restructuring policy in institutional level. The vertical integrated option is a more suitable. For instance, to separate the basic units such as Road, Train Operation, Maintenance, Wagon, Locomotives as subsidiaries. Also it can be effective if fulfill the privatization of non-core activity units as a hospital, kindergarten, school, construction bureaus need to be separate from basic units and have to be separate accounts.

Furthermore, for benchmarking analysis, the most of the respondents offer that more appropriate example can be the Kazakhstan railway, due to the geographical position and a type of the freight through the railroad. Today the freight transition of the Europe and South East Asia have transporting mostly through the Kazakhstan than through the Mongolia. The reason of the less transit transportation is a high price of the tariff. For reduction of the tariff we need to be implementing more appropriate reform options. It is possible to reduce the cost of the tariff by having more optimized organizational structure and fewer workers.

Another issue which they have mentioned were the absence of sufficient initiative of reform and restructuring policy. Due to the problem with provisions of some historic document such as “Railway agreement between the Russian and the Mongolian” approved by governments of two countries in 1949. Some items of this document not suited today’s socio economic conditions of the country. Other words we need to change the content of this agreement. The third problematic issue is the necessity of the policies that supporting the private sector participation and the integrity of the public and private sector in railway operations.

5. Conclusion

1) From the evidence based study, should realize that there are no single ideal options for railway reform. However, every option has its own advantages and disadvantages. And the option has been selected depending on the geographical locations, environments and special features of a country. The government policies are definitely important for carrying out the reform processes properly.

2) For the reform issues of Chinese railways, it is reasonable to consider the studies before and after reforming in 2013. As a result of implementing the major reforms in an administrative level, the policies and obligations of the government and railway enterprises are becoming more clear. The government responsibility considers more on development strategies and policies of the rail sector, since China Railway Corporation consider on everyday enterprise management such as transport operation. It is considered as an important reason for decentralizing of former monopoly structure, as well as decentralizing an excessive centralization of power and eliminating the corruption. It also created the possibilities to activate the self-governance activities of local railway enterprises and to work efficiently.

3) According to the analysis on the current situation of Mongolian Railway sector, there have requirements to see back again about carrying out the specific reform policies and carry out them.

4) According to the survey result on reforming of Mongolian Railway sector, over 50% of the interviewees pointed out that reforms and development policies of the railway sector and legal environments are extremely important. In terms of factors influencing it, the survey result shows that state organizations, UBTZ
railway company and the Ministry of Road, Transport and Development play a major role on the restructuring processes of the railway sector and in the future, in the case of the reform completion of the sector, the Ministry of Road, Transport and Development should offer with the centralized and integrated governance (management) and carry out the reform processes slowly step by step.

They also said that after the successful reform of the railway sector, the government needs to pay attention into its operations and increase an income. They also mentioned that within the framework of railway sector reforming, the guiding principles of railway organizations should be focused on taxes, tariffs and ensuring the participation of third parts in a railway sector and it is important to reduce organizational and operational consumptions (expenses) and carry out activities towards the market. Moreover, it is clearly seen from the survey result that employees of railway sector are interested in participating in restructuring and reforming processes of their railway organizations and they pointed out that the reform must be the program of fair public reforming.

5) According to the qualitative research, the main points of the interviewees are:

To perform the institutional reform in the railway sector, the most suitable /ideal/ option is a vertically integrated one, which separated into subsidiary companies of infrastructure, freight transportation, maintenance of rolling stock and depots of wagons and locomotives, to privatize the organizations such as kindergartens, schools, hospitals and construction sections /subdivisions/ which are not directly concerned with railway traffic and their individual financial situations.

Moreover, they said the Kazakhstan Railway is more suitable for benchmarking analysis to Mongolia because of the similarity of types of cargo operation as well as geographical condition.

Today, the majority of transit transport between Europe and Asia is transported through the Kazakhstan, the reasons for which are tariffs and other problems. The main proposals on this issue are being highlighted such as to carry out the restructuring processes in railway sector properly, to make sure the policies encouraging the participation of private sectors and promoting the compatibility between public/state/ and private sectors.

References


Appendix I

Table 1: Railway statistics of the CAREC country (data in 2015/)

<table>
<thead>
<tr>
<th>Country</th>
<th>Surface area</th>
<th>Population</th>
<th>Population density</th>
<th>Railway company</th>
<th>Total km</th>
<th>length</th>
<th>Electrified track/km</th>
<th>Locomotive</th>
<th>Average stock (thousand)</th>
<th>Freight carried (million tons)</th>
<th>Passenger carried (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>1709</td>
<td>143.63</td>
<td>813.8</td>
<td>ERZ</td>
<td>6575</td>
<td>3796</td>
<td>43244</td>
<td>17911</td>
<td>777.07</td>
<td>22.72</td>
<td>3567</td>
</tr>
<tr>
<td>Mongolia</td>
<td>1264</td>
<td>369.6</td>
<td>87</td>
<td>ERZ</td>
<td>6575</td>
<td>3796</td>
<td>43244</td>
<td>17911</td>
<td>777.07</td>
<td>22.72</td>
<td>3567</td>
</tr>
<tr>
<td>China</td>
<td>1303</td>
<td>1376.4</td>
<td>1061</td>
<td>ERZ</td>
<td>6575</td>
<td>3796</td>
<td>43244</td>
<td>17911</td>
<td>777.07</td>
<td>22.72</td>
<td>3567</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>1672</td>
<td>229.5</td>
<td>1591</td>
<td>ERZ</td>
<td>6575</td>
<td>3796</td>
<td>43244</td>
<td>17911</td>
<td>777.07</td>
<td>22.72</td>
<td>3567</td>
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<td>Kyrgyzstan</td>
<td>1475</td>
<td>538.2</td>
<td>360</td>
<td>ERZ</td>
<td>6575</td>
<td>3796</td>
<td>43244</td>
<td>17911</td>
<td>777.07</td>
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<td>Uzbekistan</td>
<td>1643</td>
<td>758.6</td>
<td>1657</td>
<td>ERZ</td>
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Source: (International Union of Railways, 2015)
Appendix-2

How important is the reform process in Mongolia's railway sector?

- Not important
- Not very important
- Do not know well
- Important
- Very important

The necessity of restructuring in Ministry of Road Transport and Development

- Not important
- Not very important
- Do not know well
- Important
- Very important

The rail sector development policy's reform

- Not important
- Not very important
- Do not know well
- Important
- Very important

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The necessity of rail sectors’ legal reform

Appendix-3

The qualitative research questions
1) Do you support the restructuring initiatives in Railway Organizations?
2) How do you think about the current Restructuring Program? Which Reform options do you prefer in?
3) In your opinion, which country’s experiences are more applicable for benchmarking analysis in rail sector of Mongolia? Why?
4) Large amount of country in the world implemented restructuring process in the rail sector. But not all reform initiatives have become successfully. The evidence based study show that the railways that concern on long-term performance become more successful. In your point of view, what are the influencing factors for long term high performance?
5) Railway passenger operations are mostly unprofitable. Which restructuring options might be more suitable, for efficiency of the Railway Passenger operation in Mongolia?
6) In your opinion, have there any cases or observations that implemented railway restructuring more successfully?
7) Are they any other questions which did not ask you?
8) Who will you suggest me, for more information in this issue?