Michał Beim, PhD
Jakub Majewski, PhD

The EU Transport Policy Institute
The Pultusk Academy of Humanities

Rail Baltica Growth Corridor
Work Package 4 Final Report
Contents

Contents ..................................................................................................................................... 2
1. Preface .................................................................................................................................... 4
2. Research methodology ........................................................................................................... 8
3. Executive summary .............................................................................................................. 11
   3.1. Data interpretation and the main implications for the whole project ..................... 11
   3.2. Findings assessment in the view of Project implementation ................................. 11
   3.3. Project reinforcement elements ........................................................................... 12
   3.4. Project risks and shortcomings ............................................................................. 12
4. The statistical background ................................................................................................... 14
   4.1. The general characteristics of the states .................................................................. 14
   4.2. Transport infrastructure ............................................................................................ 17
   4.3. Transport infrastructure evaluation .......................................................................... 20
   4.4. The transport intensity of the economy .................................................................... 22
   4.5 The carrier infrastructure and the volume of motorised transport ....................... 23
   4.6. Passenger transport ................................................................................................. 30
   4.7. Freight transport ....................................................................................................... 33
5. General attitude towards the Project .................................................................................. 37
6. The characterisation of particular countries and their opinions ........................................ 41
   6.1. Germany ..................................................................................................................... 41
       6.1.1. The organisation of railway services ................................................................. 41
       6.1.2. Passenger transport ......................................................................................... 42
       6.1.3. Freight transport .............................................................................................. 44
       6.1.4. Report conclusions ......................................................................................... 46
   6.2. Estonia ......................................................................................................................... 48
       6.2.1. The organisation of rail services, and passenger and freight transport .......... 48
       6.2.2. Report conclusions ........................................................................................ 49
   6.3. Latvia ............................................................................................................................ 50
       6.3.1. The organisation of rail services, and passenger and freight transport .......... 50
6.3.2. Report conclusions ................................................................................................. 51
6.4. Lithuania ....................................................................................................................... 53
6.4.1. The organisation of rail services, and passenger and freight transport .............. 53
6.4.2. Report conclusions ................................................................................................. 54
6.5. Poland .......................................................................................................................... 55
6.5.1. The organisation of rail services, and passenger and freight transport .............. 55
6.5.2. Report conclusions ................................................................................................. 56
6.6. Finland ......................................................................................................................... 58
6.6.1. The organisation of rail services, and passenger and freight transport .............. 58
6.6.2. Report conclusions ................................................................................................. 59
7. SWOT analysis .................................................................................................................. 60
8. Recommendations for further surveys, and for concept and implementation work .... 62
9. Summary .......................................................................................................................... 64
Bibliography ....................................................................................................................... 66
List of tables and figures ..................................................................................................... 66
  Tables ................................................................................................................................ 66
  Figures ................................................................................................................................ 67
1. Preface

This Final Report summarises the research carried out under the Rail Baltica Growth Corridor (RBGC) Project. The Project was implemented with European Union funds under the European Regional Development Fund – Baltic Sea Region Programme 2007-2013. The Programme aims at providing technical support for the implementation of the Rail Baltica investment to enhance the competitive edge of the Baltic Sea Region and to improve the transport accessibility of north-eastern Europe.

This Report summarises the research findings under Work Package 4, whose objective was to identify the crucial agents in private passenger and freight transport within the Baltic Sea Region, and to assess their growth prospects against the transport network in this area, with particular attention to the Rail Baltica railway.

The Rail Baltica project is one of the EU priorities and is included within the Trans-European Transport Networks (TEN-T). Connecting the railway systems of north-eastern Europe and other systems within the European Union, this railway is intended to ensure a high-quality link for Finland and the Baltic states with Poland and Germany. In its first stage the project provides for the establishment of a rail connection from Tallinn (Estonia) via Riga (Latvia) and Kaunas (Lithuania) to Warsaw (Poland). A preliminary outline of the Project postulates Rail Baltica to be of critical importance for connecting Poland and Lithuania.

Some historical developments have pushed the two principal routes connecting the Baltic states with the Central Europe outside EU territory, whereby one runs through the Kaliningrad Oblast (Russia) and the other through Grodno (Belarus). Travelling across these countries entails some formal and legal problems, such as crossing the EU customs and Schengen Area borders.
Long-term plans include the construction of an undersea tunnel running across the Gulf of Finland to allow rail connections around the entire Baltic Sea basin, without the need to leave the EU. On the western side, it is already possible, with the bridge over the Sound Strait (commissioned in 2000), which tops the series of investments aimed at constructing bridges over Danish straits with a view to establishing a rail link between the Scandinavian Peninsula and the Central and Western Europe. Although permanent rail and road links have been established, the actions for the enhancement of the accessibility of Denmark and the Scandinavian Peninsula have not been finished yet. By the year 2020, Denmark is planning to implement several pivotal investments, such as providing electrification to main railways and upgrading them to double-track lines, and the construction of a permanent link with eastern Germany via a road and rail tunnel under the Fehmarn Belt (German: Fehmarnbelt-Querung, Danish: Femern Bælt-forbindelsen). The estimated cost of the investment is EUR 5.1 billion.

The Rail Baltica project has been considered in two options:

1. the modernisation of the existing railway lines and increasing the maximum speed along the way up to 160 km/h, while maintaining the twofold track gauges - the standard gauge in Poland and Germany, and the Russian gauge (in Lithuania, Latvia and Estonia), and

2. the construction of a new rail link throughout the territories of the Baltic states, to allow a maximum speed of 200 km/h, with the standard track gauge, thus disposing of the need for Baltic-state carriages to use gauge conversion, which is a time-consuming process that entails additional costs.

Preliminary cost estimates included in the “Feasibility Study on Rail Baltica Railways” study produced in 2007 at the EC’s request, suggest an outlay of EUR 1.5 billion for the first option and EUR 2.4 billion for the second. The choice between the options is to a large extent determined by the interest of individual entities using rail transport, and in particular freight transport, which – as indicated by the research – will play the central role in the Rail Baltica corridor. This Report was designed to meet this need and serves as an analysis of opinions
and growth prospects for the potential users of the Rail Baltica route, who constitute major players in the passenger and freight transport sectors.

The cardinal importance of the Rail Baltica route is expected to lie in the growing role of railways in the structure of goods transported between the Central Europe and the Baltic states and Russia. Currently, the dominant means of transport in this respect is the car. This is detrimental both to traffic safety and to the environment (noise and air pollution, and carbon-dioxide emissions). Such transport-induced inconveniences are particularly burdensome for the north-eastern parts of Poland, since to a large extent lorries use regional and local roads. Also, in the remaining parts of the country, a considerable number of traffic participants avoid paid motorways and national roads, choosing regional or even district roads instead.

The Rail Baltica railway will also play an important role as an alternative to the Via Baltica road project (carried out according to the standards of an express road). The latter, however, has provoked some controversy, since it reinforces adverse trends, such as making the economy dependent on road transport, and produces a hardly-optimum distribution of transport tasks.

The Rail Baltica route is also considered as an opportunity for passenger transport, although to a lesser extent. The route would have a major effect on short-distance journeys, such as links between Warsaw and some north-eastern Polish cities, and for ensuring smooth international traffic between the Baltic states. According to estimates, the significance for long-distance traffic, e.g. along the Berlin–Tallinn route, will be considerably smaller. Nevertheless, the Rail Baltica project can play an important role in stimulating tourism, e.g. by improving the conditions for bicycle touring, popular among German tourists. At present, the development of this form of spending free time in Poland and other Baltic states is hindered chiefly by the lack of rail links to facilitate travelling with your bike to quality-environment areas. The Rail Baltica railway investment will thus provide a valuable
contribution to the EuroVelo European cycle route network, with particular benefits for the EV2 (Capitals Route), EV10 (Baltic Sea Cycle Route), and EV11 (East European Route) trails.
2. Research methodology

In summarising the research on the Rail Baltica transport corridor, this Final Report draws from two previous reports commissioned under the Rail Baltica Growth Corridor project.

- “Private transport market stakeholders in the area of Rail Baltica”, produced in December 2011 by EU-CONSULT Sp. z o.o. and the Lappeenranta University of Technology (Finnish: Lappeenrannan teknillinen yliopisto), and
- “The functioning of the transport market and new solutions proposed under the RBGC Project”, produced in November 2012 by the “INDICATOR” Centre for Market Research.

Findings produced by the above-mentioned reports are presented against the socio-economic characteristics of the six states that are to accommodate Rail Baltica, i.e. Germany, Poland, Lithuania, Latvia, Estonia, and Finland. Statistics used in this study were supplied by Eurostat and national statistical bodies, including the Central Statistical Office in Poland (GUS), and the Federal Statistical Office (Statistisches Bundesamt, Destatis) in Germany. It was necessary to complement data published by Eurostat with data from Destatis and GUS, in order to present a detailed view (including the freight-transport structure and the breakdown of passenger transport by regional and long-distance lines) on the two largest rail markets - Germany and Poland. The study utilises the most up-to-date information available in all the states covered. Generally these data refer to 2010.

The information on rail service providers and infrastructure administrators was obtained from national administrative bodies responsible for supervising their respective rail markets in the individual countries of the Baltic Sea Region. In principle, it refers to 2010.

The first survey was carried out in all the states covered by the Rail Baltica Growth Corridor project. Germany, Poland, Lithuania and Latvia were surveyed by EU-CONSULT, and Estonia and Finland by the Lappeenranta University of Technology. These surveys took the form of
individual in-depth interviews, conducted on a face-to-face basis with representatives of companies heavily relying on freight transport, freight- and passenger-transport service providers, logistics operators and shipowners. Qualitative research was aimed at assessing the Rail Baltica project by private business entities which use rail-transport services and could potentially be interested in developing rail infrastructure along the rail corridor. Accordingly, the study evaluated the international economic relationships of these entities and the possible impact of the Rail Baltica investment on their operations.

The initial research, ending in the 2011 Report, focussed on:
- the expectations of private business entities towards the rail link,
- the sourcing of recommendations for improving the use of rail infrastructure,
- the impact of the Rail Baltica investment on the surveyed businesses’ operations,
- the orientation and transport intensity in the international exchange of goods and services among the surveyed businesses, and
- transport and logistics-services markets.

The quantitative research, concluded in a report entitled “The operation of the transport market and new solutions put forward under the RBGC project”, examined the prospects for the private sector in respect of the developments in the transport network within the Baltic Sea Region eastern areas. The study covered all the countries participating in the Project. The surveys in 2012 were carried out by way of Internet interviews targeted at four groups of entrepreneurs: freight- and/or passenger-transport service providers, logistics-centres operators, and freight-transport services recipients. Questions were addressed to competent decision-making staff. The structure of the questionnaire enabled the interviewers to both collect individual opinions (multiple-choice questions) and in-depth reflections with the rationale behind them (open-ended questions).

This research pursued similar objectives as the analyses of 2011, namely to investigate the attitude of entities using rail and road transport towards the new project. The main research
areas of interest included:

- current interest in using the Rail Baltica link in ongoing operations,
- expectations towards the development of the corridor along the Rail Baltica link,
- the cooperation and competition of private business entities in respect of logistics and transport services,
- the evaluation of the Project impact on the railway system utilisation, and
- growth opportunities for international business relationships between logistics and other transport service providers in the Baltic Sea Region in relation to the Rail Baltica project.

In the case of both reports, only just over a dozen percent of operators agreed to take part in the survey.

In should be noted that, similarly to the two previous reports, the Russian Federation was not included. This is due to the lack of research findings on the Russian territory that could be compared with the data from other countries located on the Rail Baltica route, coupled with the inconsistency of Russian statistics with the data collected in the European Union and several other European states.

Data from the above-mentioned reports and statistical data were supplemented with information gathered from literature on the subject and some other reports (such as the Global Competitiveness Report by the World Economic Forum).
3. Executive summary

3.1. Data interpretation and the main implications for the whole project

Both report findings indicate that rail systems could play a much more important role in the Rail Baltica states than they do nowadays. The rise in rail’s prominence is conditional on the provision of cost-attractive services and quality infrastructure to guarantee short travelling times, high safety levels in respect of freight and passenger transport, and also service reliability.

In addition, respondents expect Rail Baltica to ensure greater interoperability of rail transport, i.e. to reduce the negative consequences of technical barriers and to eliminate administrative and legal obstacles. The research findings show the need for placing the investment within a broader context of infrastructure development in individual countries. Respondents underline the necessity for achieving synergy from the integration of various forms of transport and placing the domestic investment requirements in the railway sector into context.

Even though entrepreneurs show support for the investment, none of the countries covered by Rail Baltica perceive it as a priority in rail infrastructure development. Such a relatively low ranking in the investment-priority hierarchy results predominantly from the comparatively weak economic bonds between the Baltic Sea Region states.

3.2. Findings assessment in the view of Project implementation

The findings of studies carried out under Package 4 argue for the implementation of the Rail Baltica project, though respondents consider it of secondary importance. Special attention must, however, be given to the investment environment (e.g. the issues of logistics centres) and on placing the new route within the context of national plans for railway development.

Another outstanding important problem to be addressed is the track gauge within the Rail
Baltica in the Baltic states. On the one hand respondents call for the elimination of technical barriers, which should translate into the construction of a standard gauge line. On the other, though, the strong transport and economic links of the Baltic states, including Finland, with Russia and other former Soviet republics, argue in favour of maintaining the Russian track gauge.

3.3. Project reinforcement elements

Project reinforcement elements can be defined as the overall development of the freight-transport auxiliary infrastructure, with particular attention to trans-shipment terminals. Another step to further the investment is to reinforce the position of Rail Baltica within the transport context of individual countries. Based on the available analyses, a statement can be made that this route will mainly serve transport purposes within the individual countries or connections with neighbouring states (e.g. Poland-Germany, Estonia-Latvia). Highlighting the benefits brought with the investment for the railway services in individual states, could provide considerable assistance in obtaining social and political support for Rail Baltica.

3.4. Project risks and shortcomings

The major risk for the project is the spatial structure of economic relationships and the consequent transport needs. These indicate a much greater need for the development of connections along the east-west axis to facilitate freight transport between the Baltic Sea Region states and Russia, Ukraine and Belarus. Economic relationships between the Project’s participant countries are weaker, except for those between Poland and Germany. At the same time, transport demands consequent to economic relations between the countries located along Rail Baltica are already being satisfied by road transport and shipping, in the case of goods, and air and road (individual and by bus) transport, in the case of passenger traffic.

The project suffers from the lack of political determination to further it. Not a single country has been found to perceive Rail Baltica as its priority rail-transport investment. Germany is focussed more on international north-south connections, and the Baltic states, including
Finland, centre on connections with Russia. Poland, in turn, concentrates on infrastructural projects for the inward servicing of domestic traffic (e.g. the “Y” high-speed railway project). Moreover, new EU Member States, Poland and Lithuania in particular, prioritise investments in road transport rather than in rail.
4. The statistical background

4.1. The general characteristics of the states

The Rail Baltica Growth Corridor covers six countries, each markedly different in terms of their socio-economic make-up. What they have in common, however, is the fact that all of them, except for Finland, have undergone a systemic transformation after the demise of the Eastern Bloc, followed by a change in the institutional framework forced by European integration.

Table 1
The general socio-economic characteristics of the RBGC states in 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>81 843 743</td>
<td>357 124</td>
<td>30 300</td>
<td>5.9</td>
</tr>
<tr>
<td>Estonia</td>
<td>1 339 662</td>
<td>45 226</td>
<td>16 800</td>
<td>12.5</td>
</tr>
<tr>
<td>Latvia</td>
<td>2 041 763</td>
<td>64 589</td>
<td>14 800</td>
<td>16.2</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3 007 758</td>
<td>65 303</td>
<td>16 600</td>
<td>15.3</td>
</tr>
<tr>
<td>Poland</td>
<td>38 538 447</td>
<td>312 679</td>
<td>16 200</td>
<td>9.6</td>
</tr>
<tr>
<td>Finland</td>
<td>5 401 267</td>
<td>338 145</td>
<td>28 900</td>
<td>7.8</td>
</tr>
<tr>
<td>European Union</td>
<td>503 679 730</td>
<td>4 324 782</td>
<td>25 200</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Source: own study on the basis of Eurostat data

In the case of Germany it was a matter of acceding the German Democratic Republic to the Federal Republic of Germany, involving a very intensive investment campaign to modernise the transport infrastructure and reconstruct historical or construct new transport corridors to connect former Lands (federal states) with new ones (the so-called Verkehrsprojekte Deutsche Einheit – German Unity Transport Projects). The overall effort resulted in furnishing the new federal states with a high-class railway, road-, sea- and air-transport infrastructure.
Having reclaimed their independence in 1990 -1991, the Baltic states (Lithuania, Latvia and Estonia) faced the need to create new institutional and organisational models. Their development was oriented towards European integration. In 2004 these countries were admitted into the European Community. Their acceleration in terms of infrastructure was connected with pre-accession and EU funds.

Similarly, Poland’s growth policy of the last two decades has been driven towards European integration. Like the Baltic states, infrastructure development was financed from European funds. The essential difference in transport management was the lack of rapid changes in organisational structure, as in the case of the Baltic states, following their restoration of independence, or in East Germany after reunification. Nonetheless, Polish rail transport has undergone profound transformations in its organisational and economic aspects.

Finland has been subject to the least invasive changes. Throughout the whole post-War period, this country, having maintained special mutual relationships with the Soviet Union (including the refusal to take part in the Marshall Plan), preserved its democracy and market economy. In 1995 Finland joined the European Community.

In terms of their demographic composition, the Baltic Sea Region states are markedly different. The two countries with the largest populations are Germany (81.8 m) and Poland (38.5 m). These are followed by Finland with 5.4 million citizens. The Baltic countries, in contrast, have very similar demographies. The largest of them is Lithuania, inhabited by 3 million citizens, and the smallest - Estonia at 1.3 million.

The three most populated Baltic Sea Region states have territories of similar sizes, and, as a consequence, distinctly different population densities. In Germany, for instance, it is 229.17 people per km², in Poland 123.25 people per km², and in Finland – 15.97 people per km². The Baltic states, in contrast, have similar population density. It is the highest in Lithuania –
46.06 people per km² and the lowest in Estonia – 29.62 people per km². Such profound differences in population and density among individual states justify wide disparities in shaping their transport networks.

Economic composition (GDP per capita and unemployment rates) shows a substantial gap between the former Eastern Bloc countries and Germany or Finland. The difference in the GDP per capita is nearly twofold. Similar inequalities can be observed in unemployment. The lowest rates are in Germany and Finland, while the largest in the new EU Member States.

Figure 1
Population of European states in 2011
Source: Eurostat
Key: Liczba ludności – Population

Figure 2
Population density in Europe in 2011
Source: Eurostat
Key: Gęstość zaludnienia (osoby/km²) – Population density (people/km²);
251 i więcej – 251 or more
4.2. Transport infrastructure

The most extensive rail network among the Baltic Sea Region states can be found in Germany. The country has 37.7 thousand km of rail lines. It is also the longest railway network EU-wide. Second position is taken up by Poland with its 20.2 thousand km-long network. This ranks Poland third (following France with 29.6 thousand km) in the whole European Union.

The comparison of rail network density reveals two groups of countries, namely Poland and Germany (with 6.5 and 10.6 km/100km² respectively), and the other surveyed states where density does not exceed 3 km/100km².
Table 2

The length and density of railway and motorway networks in 2010

<table>
<thead>
<tr>
<th></th>
<th>Railway network length [km]</th>
<th>Railway network density [km/100km²]</th>
<th>Road network length [km]</th>
<th>Motorway network length [km]</th>
<th>Motorway network density [km/100km²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>37 679</td>
<td>10,6</td>
<td>no data</td>
<td>12 819</td>
<td>3,6</td>
</tr>
<tr>
<td>Estonia</td>
<td>1 196</td>
<td>2,6</td>
<td>58 297</td>
<td>115</td>
<td>0,03</td>
</tr>
<tr>
<td>Latvia</td>
<td>1 897</td>
<td>2,9</td>
<td>58 926</td>
<td>0</td>
<td>0,0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1 768</td>
<td>2,7</td>
<td>81 821</td>
<td>309</td>
<td>0,5</td>
</tr>
<tr>
<td>Poland</td>
<td>20 228</td>
<td>6,5</td>
<td>406 122</td>
<td>857</td>
<td>0,3</td>
</tr>
<tr>
<td>Finland</td>
<td>5 919</td>
<td>1,8</td>
<td>105 068</td>
<td>779</td>
<td>0,2</td>
</tr>
</tbody>
</table>

Source: own study on the basis of Eurostat data

Among the states covered by the Rail Baltica Growth Corridor Project, only Estonia and Finland experienced growth in the length of their railway infrastructure in 1990-2010. In absolute numbers, this growth was 170 km in Estonia and 73 km in Finland. In this respect, Poland was at the forefront in terms of closed rail routes. In 1990-2010, 23% of routes, corresponding to 6,000 km, were closed. A noticeable reduction in the length of rail routes was also recorded in Latvia – 21%, equivalent to 500 km. In absolute values, second position was taken up by Germany, with 3,434 km (8%) of lines closed.
Figure 4

Changes in rail network length in the RBGC states throughout 1990-2010 (1990=100%, for Germany 1991=100%).

Source: own study on the basis of Eurostat data

It should be emphasised that in the surveyed group only Germany has high-speed routes (250 km/h or more). Their combined length is 2,428 km, which accounts for 6.4% of the overall rail network length. Finland, in turn, is - according to Eurostat data - the only one to have at its disposal upgraded rail routes (up to 200 km/h), whose aggregate length is 622 km, making up 10.5% of the total rail network.

In terms of road infrastructure, the most extensive motorway network among countries within the Rail Baltica corridor is to be found in Germany. It spans over 12 thousand km, which corresponds to a density of 3.6 km/100 km². The other countries – except for Latvia, which has no motorways – are characterised by a comparable motorway density at or below 0.5km/100 km². Making comparisons within the total road network is difficult, as there are no available data for Germany to specify the aggregate length of its road network.
4.3. Transport infrastructure evaluation

In 2010, the World Economic Forum prepared a global competitiveness assessment. The assessment was carried out on the basis of the annual Executive Opinion Survey and statistical data comparison. The survey investigating national competitiveness was divided into 13 sections. One of these sections examined infrastructure, with transport issues at the forefront of attention. Four transport pillars were probed, including rail-, road-, port-, and...
Respondents evaluated these on a scale from 1 to 7, where 1 denoted the poorest infrastructure, and 7 the best.

From among the states covered by the Rail Baltica Growth Corridor, the infrastructure section of the report was topped by Germany (6.2). Worldwide, Germany ranked fifth, following Switzerland (6.8), Hong Kong (6.7), Japan (6.6) and France (6.5). Further down the ranking is Finland (5.8), leading the way among the Rail Baltica states. The Baltic states found themselves much further down the list, with Lithuania – 4.3, Latvia – 3.9, and Estonia – 3.7. The only Baltic Sea Region country to fall below the global average (3.2) was Poland, receiving a mark of 2.7.

**Table 3**

The assessment of transport infrastructure in 2010

<table>
<thead>
<tr>
<th></th>
<th>Rail-transport infrastructure</th>
<th>Road-transport infrastructure</th>
<th>Port infrastructure</th>
<th>Air transport infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>mark [1 – the lowest, 7 – the highest]</td>
<td>6.2</td>
<td>6.4</td>
<td>6.4</td>
<td>6.6</td>
</tr>
<tr>
<td>Germany</td>
<td>6.2</td>
<td>6.4</td>
<td>6.4</td>
<td>6.6</td>
</tr>
<tr>
<td>Estonia</td>
<td>3.7</td>
<td>4.5</td>
<td>5.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Latvia</td>
<td>3.9</td>
<td>3.1</td>
<td>4.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Lithuania</td>
<td>4.3</td>
<td>5.3</td>
<td>4.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Poland</td>
<td>2.7</td>
<td>2.2</td>
<td>3.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Finland</td>
<td>5.8</td>
<td>5.9</td>
<td>6.4</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>average</strong></td>
<td><strong>3.2</strong></td>
<td><strong>4.0</strong></td>
<td><strong>4.3</strong></td>
<td><strong>4.7</strong></td>
</tr>
</tbody>
</table>

*Source: Klaus Schwab (ed.): The Global Competitiveness Report 2010-2011, World Economic Forum 2010*
Germany has led the Rail Baltica economies across the board. In terms of road infrastructure this country ranked fifth worldwide (with France and Singapore as ex aequo leaders in this area), ex aequo fourth with Finland for port infrastructure (led by Hong Kong and Singapore), and third in air infrastructure quality (again overtaken by Hong Kong and Singapore).

The state with the poorest performance, always below the global average threshold, was Poland. In relation to rail infrastructure it was 62th, road – 131st, port – 110th, and air transport - 108th (ex aequo with Lithuania). The Baltic states generally enjoyed positions slightly above the global average.

4.4. The transport intensity of the economy

The gauge to evaluate the role of transport in national economies is transport intensity. It is defined as the ratio of transport-activity outlays to outcomes achieved by other pillars of the economy or social activities serviced by transport. Transport intensity determines passenger or freight-transport involvement in the functioning of other branches of the economy. It is measured as the number of tonne-kilometres or passenger-kilometres in relation to Gross Domestic Product value.

The highest transport intensity in 2010 among the Baltic Sea Region states was characteristic of Poland and Lithuania. For passenger transport, this ratio was 111.9 and 113.8 respectively, while for freight services – 139.7 and 128.5. The transport intensities of Polish and Lithuanian economies were among the highest in Europe. At the other end of the list, within Rail Baltica states, was the Estonian economy, performing at 88.6 for passenger transport, and 67.1 for freight.
Figure 7
Transport intensity in Europe in 2010 – passenger transport (the ratio of pass-km by rail, by bus and by car to the GDP)

Source: own study on the basis of Eurostat data
Key: Pasażerokilometry... - Passenger-kilometres per DGP; 2000 r. – 2000;
poniżej 85 – below 85

Figure 8
Transport intensity in Europe in 2010 – freight transport (the ratio of km by rail, by road and by inland navigation, to the GDP)

Source: own study on the basis of Eurostat data
Key: Tonokilometry... – Tonnes-km per GDP;
62,1 – 62.1, etc.;
127,1 i więcej – 127.1 or more

4.5 The carrier infrastructure and the volume of motorised transport
As regards rolling-stock equipment, Germany and Poland clearly stand out from other participant countries in the Rail Baltica Growth Corridor Project. Even though general statistics are not published for the whole of Germany, statistics from Deutsche Bahn AG (DB AG), the dominant operator in passenger and freight transport on the German market,
support the above conclusion alone. In 2010 DB AG had at its disposal 5,175 locomotives, 9,928 passenger railway vehicles (rail motor cars, railbuses, electric multiple units.), 253 ICE units (high-speed trains), and 108,840 goods wagons.

At the same time, Poland and Finland, according to Eurostat data, are the two countries where electric multiple units dominate over diesel locomotives. As regards locomotives, the Baltic Sea Region states, show preference for diesel locomotives. In fact, the Baltic states have no electric locomotive engines whatsoever.

**Table 4**
The rolling-stock volume available to rail carriers – self-propelled vehicles, data as of 2010

<table>
<thead>
<tr>
<th></th>
<th>Diesel multiple units and rail motor carriages [units]</th>
<th>Electric multiple units [units]</th>
<th>Diesel locomotives [units]</th>
<th>Electric locomotives [units]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>no data</td>
<td>no data</td>
<td>no data</td>
<td>no data</td>
</tr>
<tr>
<td>Estonia</td>
<td>32</td>
<td>23</td>
<td>318</td>
<td>0</td>
</tr>
<tr>
<td>Latvia</td>
<td>25</td>
<td>79</td>
<td>251</td>
<td>0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>39</td>
<td>16</td>
<td>267</td>
<td>0</td>
</tr>
<tr>
<td>Poland</td>
<td>181</td>
<td>1,213</td>
<td>2,358</td>
<td>1,905</td>
</tr>
<tr>
<td>Finland</td>
<td>16</td>
<td>152</td>
<td>320</td>
<td>156</td>
</tr>
</tbody>
</table>

*Source: own study on the basis of Eurostat data*

* - Germany does not publish aggregate data in this area. The study draws on data for DB AG, based on its annual report.

Both the number of multiple units and locomotives places Poland at the forefront of Europe. Conversely, the Baltic states fall behind the rest of Europe in terms of the available rolling stock. This is mainly owing to the relative insignificance of rail transport, especially passenger-transport services, in these countries and their modest territories and populations.
Disparities are also noticeable in passenger-cars’ and goods-wagons’ volume. Poland, like Germany (data only for DB AG), is at the very forefront of Europe. The other Baltic Sea Region states are much poorer in passenger and freight cars.
### Table 5

The rolling stock available to rail carriers – railway vehicles, data as of 2010

<table>
<thead>
<tr>
<th></th>
<th>passenger cars [units]</th>
<th>goods wagons [units]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>no data</td>
<td>no data</td>
</tr>
<tr>
<td>Estonia</td>
<td>217</td>
<td>17,575</td>
</tr>
<tr>
<td>Latvia</td>
<td>369</td>
<td>9,033</td>
</tr>
<tr>
<td>Lithuania</td>
<td>337</td>
<td>13,352</td>
</tr>
<tr>
<td>Poland</td>
<td>7,885</td>
<td>89,270</td>
</tr>
<tr>
<td>Finland</td>
<td>1,071</td>
<td>10,464</td>
</tr>
</tbody>
</table>

*Source: own study on the basis of Eurostat data*

*- Germany does not publish aggregate data in this area. The study draws on data for DB AG, based on its annual report.*

### Figure 11

The number of passenger cars in Europe in 2010

*Source: own study on the basis of Eurostat data*

Key: Liczba... – The number of passenger cars; 1 000 – 1,000, etc.
When analysing rail-transport growth opportunities across countries located along the Rail Baltica route, it is vital to account for the potential of the competitor – road transport. Among the Baltic Sea Region states, Poland was the unquestioned leader in terms of the number of lorries and articulated lorries. In 2010 there were 2,767,035 of the former and 214,581 of the latter, registered in Poland. Vehicles with a payload of 10 t or more made up 3.6% of the overall volume of lorries. As regards lorries and articulated lorries, Poland surpasses even Germany whose population is more than twice as much as Poland’s. At the time, Germany recorded 178,050 articulated lorries and 2,439,641 lorries, while vehicles with a payload of 10 t or more accounted for 5.5%. The two were followed by Finland with 459,436 registered lorries, every tenth of which had the payload capacity of 10 t or more.

Poland was also the leader in the number of available buses. In 2010 the country had 97,371 registered buses, nearly one fifth more than in Germany.

Table 6
The fleet available to road carriers, data as of 2010

<table>
<thead>
<tr>
<th></th>
<th>Lorries with a payload capacity of up to 10 t [units]</th>
<th>Lorries with a payload capacity above 10 t [units]</th>
<th>Articulated lorries [units]</th>
<th>Buses (line rolling stock) [units]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>2,304,817</td>
<td>134,824</td>
<td>178,050</td>
<td>76,463</td>
</tr>
<tr>
<td>Estonia</td>
<td>66,815</td>
<td>6,119</td>
<td>8,270</td>
<td>4,281</td>
</tr>
<tr>
<td>Latvia</td>
<td>54,597</td>
<td>6,460</td>
<td>10,518</td>
<td>5,679</td>
</tr>
<tr>
<td>Lithuania</td>
<td>103,239</td>
<td>9,874</td>
<td>20,808</td>
<td>13,728</td>
</tr>
<tr>
<td>Poland</td>
<td>2,668,709</td>
<td>98,326</td>
<td>214,581</td>
<td>97,371</td>
</tr>
<tr>
<td>Finland</td>
<td>413,760</td>
<td>45,676</td>
<td>9,601</td>
<td>13,650</td>
</tr>
</tbody>
</table>

*Source: own study on the basis of Eurostat data*
Figure 12
The number of lorries in Europe in 2010 by payload capacity (graph maps do not account for articulated lorries)

Source: own study on the basis of Eurostat data
Key: Liczba... – The number of lorries with payload capacity of: 630,000 / up to 10 tonnes / over 10 tonnes

Figure 13
The number of buses in Europe in 2010

Source: own study on the basis of Eurostat data
Key: Liczba... – The number of buses, coaches and trolleybuses; 1 000 – 1,000, etc.

According to Eurostat data for 2009, the highest number of motorised transport units was present in Finland, Lithuania and Germany. These countries had more than 500 passenger cars per 1,000 citizens, thus exceeding the EU average (473). The second group of the Baltic Sea Region states was made up by Poland, Estonia and Latvia. In 2009 these countries slightly exceeded 400 cars per 1,000 citizens.
Figure 14
The volume of motorised transport
(number of passenger cars per 1,000 citizens) in Europe in 2009

Source: own study on the basis of Eurostat data.
Key: Samochody... – Passenger cars (per 1,000 citizens)

An analysis of apparent trends shows that Germany seems to have stabilised its motorised transport volume at slightly more than 500 passenger cars per 1,000 citizens. A somewhat similar situation at 400 passenger cars per 1,000 is visible in Estonia and Latvia. The remaining countries exhibit continuous growth in this respect.
4.6. Passenger transport

Regarding the share of railways in the passenger-transport structure (calculated as the volume of pass-km travelled), Germany tops the list with 8.0%. Runners-up are Finland and Poland (5.2% each), closely followed by Latvia (4.8%). In Estonia the rail to overall passenger transport ratio is 2.1%, and in Lithuania it is 0.7%. The latter country closes the list of EU Member States using railways. In addition, Lithuania ranks first in the EU in the level of private-car transportation (also measured in pass-km), with Poland as the runner-up.

An analysis of Eurostat data on the structure of passenger-transport services reveals that even though the low share of railways in Poland and Lithuania stems from the volume of individual car transport, in the other countries, Estonia and Latvia in particular, such a situation originates in the strong standing of bus transport.
Among the Baltic Sea Region states, Germany exhibits the lowest share of bus transport. Due to regulations dating as far back as the 1930s, long-distance connections are considerably limited. Bus passengers are restricted mainly to local and regional routes. The exceptions include national inter-city connections. Their number and routes arise from certain Cold-War agreements, which determined the transport connections between West Berlin and the rest of the Federal Republic of Germany (e.g. Berlin-Hamburg or Berlin-Munich). January 1st, 2013 saw the introduction of more lenient regulations in this respect.

Table 7
The distribution of transport tasks in land passenger transport in 2010

<table>
<thead>
<tr>
<th></th>
<th>Railway</th>
<th>Passenger cars</th>
<th>Buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>8.0</td>
<td>85.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Estonia</td>
<td>2.1</td>
<td>83.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Latvia</td>
<td>4.8</td>
<td>79.9</td>
<td>15.3</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.7</td>
<td>91.1</td>
<td>8.2</td>
</tr>
<tr>
<td>Poland</td>
<td>5.2</td>
<td>88.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Finland</td>
<td>5.2</td>
<td>84.9</td>
<td>9.9</td>
</tr>
</tbody>
</table>

*Source: own study on the basis of Eurostat data*

Passenger rail transport in the Baltic Sea Region states generally plays a minor role in traffic services compared with the rest of Europe. The highest share in this group is found in Germany, still this is only slightly above the EU average of 7.2%.
In terms of changes in the railways’ share in the passenger transport structure (measured in pass-km travelled), Germany is the only state to enjoy distinct growth (6.9% in 1991 up to 8.0% in 2010), which – taking into account data from German statistical offices – is predominantly due to regional railways. In Finland, on the other hand, the situation has been stable for the last two decades, while in Latvia it has been so throughout the last decade (data available from 2000). Poland and Lithuania, in turn, see regular drops in the participation of railways in the overall structure of passenger transport. Finally, Estonia, having recorded some falls in the first decade of the 21st Century, is enjoying a steady, albeit snail-paced, increase in this area.
4.7. Freight transport

While the Baltic countries exhibit a significantly lower share of railways in the passenger-transport structure than other EU Member States, in respect of freight transport (measured in tkm), these countries are the European leaders with results well above the EU average (17.1%). Considering the situation in all European states covered by Eurostat data, Latvia and Estonia surpass even Switzerland (45.6%) in this area.

The bottom result in railways’ share in freight transport among all participant states in the Rail Baltica Transport Corridor Project, was found in Poland (19.4%), even though it was above the EU average. Germany and Finland were slightly above Poland (22.2% and 24.8%.
respectively). In the case of Germany, freight transport is largely dependent on inland navigation, making it in fact the only country within this group to put emphasis on this mode of transport. The highest share of road transport was found in Poland (80.6%) and in Finland (75.0%).

Table 8
The distribution of transport tasks in freight transport in 2010

<table>
<thead>
<tr>
<th></th>
<th>Railway</th>
<th>Road transport</th>
<th>Inland navigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>22.2</td>
<td>64.9</td>
<td>12.9</td>
</tr>
<tr>
<td>Estonia</td>
<td>54.2</td>
<td>45.8</td>
<td>0</td>
</tr>
<tr>
<td>Latvia</td>
<td>61.9</td>
<td>38.1</td>
<td>0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>40.9</td>
<td>59.1</td>
<td>0</td>
</tr>
<tr>
<td>Poland</td>
<td>19.4</td>
<td>80.6</td>
<td>0.1</td>
</tr>
<tr>
<td>Finland</td>
<td>24.8</td>
<td>75.0</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: own study on the basis of Eurostat data

Perhaps except for Germany and Finland, which enjoy a rather stable share of railways in the structure of freight transport (measured in tkm), all the Baltic Sea Region states are exhibiting a gradual decrease in the importance of rail transport throughout 1990-2010. The decrease has been the most rapid in Poland (from 66.5% in 1990 to 19.4% in 2010), and most steady in Latvia (77.0% and 61.9% respectively).
Figure 18

Changes in the share of railways in the freight-transport structure (measured in tkm travelled) in the RBGC states throughout 1990-2010 (1990=100%, for Germany 1991=100%)

Source: own study on the basis of Eurostat data
Figure 19
The share of railways in the freight-transport structure (in tkm travelled) in Europe in 2010

Source: own study on the basis of Eurostat data
Key: Udział... – The share of railways in the freight-transport structure (%); 0,8 – 0.8, etc.
5. General attitude towards the Project

Both the qualitative (2011) and quantitative (2012) research produces a number of interesting findings, which reveal the idiosyncrasies of individual countries and differences among them in their expectations towards the Rail Baltica project.

The qualitative research shows that entrepreneurs using freight transport tend to emphasise the immense significance of transport connections with Russia, which is perceived as a principal partner in business transactions. Indeed, the Baltic states and Poland focus more on providing railway connections between Baltic ports and Russia. This interest in developing a solid railway link between east and west is also the consequence of the growing importance of trade with China. Rail transport creates an opportunity to establish a connection between China and Europe, which is faster than maritime shipping and cheaper than air transport.

In addition, respondents highlight the need to strengthen the north-south link, although their interest in this connection is less strong. The north-south axis is considered relevant not only for the improvement of trading relations between the Baltic Sea Region states, but also as an element in the trans-European connection with southern Europe (including e.g. Bulgaria, Italy, and Spain). Whether or not Rail Baltica appealed to the surveyed entrepreneurs was determined, above all, by the existing network of international economic relationships.

Entrepreneurs who use transport services perceive the Project as a window of opportunity for the whole freight-transport industry to boost its competitiveness. In contrast, freight service providers, who, for the most part, rely on road transport, tend to view the investment as a potential threat to their position. Nevertheless, they do see some chances for extending their operations to include rail transport.
Entrepreneurs' expectations towards the Rail Baltica infrastructure generally include the highest-quality routes, ensuring freight transport all the way from Helsinki to Berlin without the need for gauge conversion (in other words – a standard track gauge), and wide availability. The requests for a standard rail gauge, however, stand in opposition to other demands involving the availability of the route in the Baltic states and Finland, and orientating transport to Russia and other former Soviet republics.

The findings of quantitative research on expectations of trans-shipment terminals (intermodality), freight-transport times, and rail-transport services costs correspond to the findings of qualitative research carried out in 2011. Namely, what entrepreneurs are interested in are competitive service prices and attractive delivery times, and also in furthering the development of trans-shipment terminals.

The Report on quantitative research conducted in 2012 provides some thought-provoking answers to questions related to the interest in expanding business portfolios into rail services in the future. Interest is expressed mainly by Finnish (definitely yes – 8%, rather yes – 48%), Estonian (4%, 37%), Latvian (7%, 30%) and Polish companies (13%, 19%). Opposite opinions are expressed by operators from Lithuania (definitely not – 24%, rather not – 63%) and Germany (28% and 49% respectively). In view of data published by Eurostat, these findings allow the following conclusions:

- in Lithuania, with the very insignificant role of railways, this form of freight transport is not considered promising; also, Lithuania, next to Poland, has one of the largest road-transport fleets, which ensures delivery to other EU states, and also Russia, Belarus and Ukraine;
- Germany has an extensive railway freight transport and intermodal shipping system; this market is characterised by fierce competition, which, in turn, makes the development of rail services irrelevant as the market is well-developed in this respect;
- the other countries, in contrast, show considerable potential for growth, although in
the case of Poland, Estonia, Finland and Latvia, this is consequent to the difficulties related to the maintenance of the railway infrastructure as fully operative (Poland and Estonia), or a limited service package (Latvia, Estonia, and Finland).

The circumstances which would attract interest in rail transportation clearly indicate that the primary barrier to using this mode of transport in the Baltic states is its cost. Yet, this factor is rarely blamed by operators from Poland and Germany. Both these countries offer strong competition in the freight-transport industry (c.a. 1/4 of the market is handled by independent carriers). On top of that, the freight sector in the German railway market is liberalising at a rapid pace (nearly twice as fast as in its passenger sector; cf. Wettbewerber-Report Eisenbahn 2010/2011, mofair e. V., 2011).

Surprisingly, though, Germany puts considerable emphasis on the issue of physical accessibility. Germany is actually a leading European country in terms of rail-network density (closing up on Switzerland and the Czech Republic – if one disregards some city-states), and has a fairly well-developed network of trans-shipment terminals. The problem of accessibility is equally loudly heard in Poland, where, however, entrepreneurs are facing the progressive contraction of railway lines. Finland has the fewest reservations about railway accessibility, which might also seem a little surprising. Still, admittedly, in Finland railway lines run between main urban and industrial centres located within a relatively small area.

The need for increased speed is suggested chiefly by entrepreneurs based in the Baltic states. At the other end of the spectrum are German and Polish entrepreneurs. Also here the Report findings pose some interpretation-related difficulties. The problem of the low speeds of freight trains (according to the Office of Rail Transportation it is approx. 25 km/h) has been hanging in the air in Poland for years. German reports point, on the other hand, to some problems with the traffic-flow capacity of major rail routes connecting ports (Hamburg, Bremen) and trans-European routes (especially to Switzerland), which curb the speed of freight trains. The issue of railway line capacity is brought up mainly by respondents
from Germany, Poland and Lithuania.

Then again, reliability is accentuated chiefly by Polish and Estonian operators. Both these countries indeed struggle with problems resulting from unsuccessful reforms of the railway industry. In the same way, these two states name transport safety as another obstacle.

Taking an overview of respondents' expectations towards Rail Baltica, it can be concluded that German-based operators see the transport and logistics sectors as the most promising for railways, while the Baltic states tend to view its role as a tourism and social-contact stimulator. Germany is also more eager than other states to stress the importance of railways to the industrial and service sectors. For several years now, Germany has been intensely involved in long-distance freight train projects, such as the rail route to China, regular freight connections with crucial economic European centres, and the train ferry running to the Kaliningrad Oblast. In view of the above, the standpoint of German operators prioritising the development of freight connections is hardly surprising.

Respondents from all the surveyed countries clearly confirm that the rail infrastructure within the corridor should accommodate both passenger and freight transport. The need for the separation of these two modes is most readily visible among Finnish operators. They are also the most inclined to underline the importance of passenger transport.

The least inclination towards passenger transport was found among Lithuanian respondents. This fact is somewhat explained by the terrible situation of Lithuanian passenger transport by rail and its marginal share in the overall transport structure. Such a situation can be attributed to certain cultural patterns and economic transformations.
6. The characterisation of particular countries and their opinions

6.1. Germany

6.1.1. The organisation of railway services

In Germany the main rail routes are owned by the Federal Treasury and are managed by the Deutsche Bahn subsidiary, DB Netz AG, which manages 87.5% of all rail routes. Other routes are mostly owned by federal states or districts and communes and are managed by companies belonging to track owners.

The presence of DB Netz AG in the structures of the Deutsche Bahn AG holding raises serious controversies both in the world of economy and politics. The situation is aggravated by issues connected with the transfer of profits from DB Netz AG to DB AG, which has taken place in recent years. In relation to this fact, accusations have been made that the high prices of access to tracks and railway stations which independent operators are obliged to pay do not contribute to the development of the infrastructure but to the support of competition, i.e. other companies from the DB AG group, especially DB Regio AG, DB Fernverkehr AG and DB Schenker AG. These entities are the major players on the markets of, respectively, regional, long-distance and freight transport. At the beginning of the century there were plans to privatise DB AG, so the enterprise was subject to reorganisation. In the end, however, following social protests and political changes, the privatisation plan was abandoned.

In general, the rail market is regulated by three entities. The Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen; usually referred to as Bundesnetzagentur or BNetzA) is responsible for equitable access to tracks. Technical matters associated with, e.g., vehicle approval, are managed by the Federal Railway Authority (Eisenbahn-Bundesamt, EBA). The third entity with influence on the rail market is the Federal Cartel Office.
6.1.2. Passenger transport

A breakthrough in the development of the railway system in Germany marking its renewal was the decision to transfer regional railway transport to the authorities of the states (Lands) of the Federal Republic of Germany. Delegating the management of regional railway transport to local-government authorities, together with the commercialisation of the German Railways (Deutsche Bahn) and guaranteeing all entities equal access to the infrastructure, constituted one of the three major elements of the railway system reform in Germany, implementing the first railway package of the European Community. The delegation of authority with regard to railway management was carried out based on the Act on public passenger transport of 27 December 1993 (Gesetz zur Regionalisierung des öffentlichen Personennahverkehrs – RegG). However, local government authorities assumed responsibility for the organisation of transport as late as on 1 January 1996. The two-year transition period made it possible for the authorities, especially the states, to prepare for the new task.

The German states approached the task very seriously, but, each of them chose slightly different organisational solutions, as a result of which today, with Germany consisting of 16 states, there are 27 entities dealing with the organisation of rail transport. (The situation is even more complex when considering the fact than in Germany there are nearly 100 tariff associations, 2/3 of which constitute associations dealing with the regulation of tariffs of regional railways as well). The main advantage of delegating the management of regional railways to local-government authorities was bringing the decision-making process closer to residents and subordinating the railways to regional development objectives. Trains were to begin to provide access to schools, work, healthcare services, culture and trade. This redefining of objectives caused such significant changes in the range of services (timetables, rolling stock) that from the implementation of regionalisation the number of passengers of regional railways nearly doubled. At the same time long-distance railways, despite numerous
flagship investments (e.g. the Berlin-Hamburg and Cologne-Frankfurt high-speed routes) even recorded slight declines in the number of passengers.

Independent carriers (not owned by the Federation) are increasing their share in the structure of passenger transport. In the regional-transport sector (subject to regulated competition) in 2010 independent carriers had a 12.5% share, and in the segment of long-distance transport 1.0%. In 2010 regional transport constituted 46.6 billion passenger-km, and long-distance transport accounted for 36.0 billion passenger-km. The value of the regional rail transport market is estimated at approx. EUR 8.6 billion, and of the long-distance rail transport market at approx. EUR 3.6 billion (by way of comparison, the value of freight transport is EUR 4.3 billion). The major independent carriers on the regional transport market are Veolia Transdev, Keolis, Netinera oraz BeNEX and AVG The first two companies are owned or co-owned by France (through SNCF and state investment funds), the third belongs to Italy, and the last two are under municipal ownership or co-ownership of Hamburg and Karlsruhe respectively.
Figure 20

Changes in the number of passengers transported by regional and long-distance railways in Germany in the years 1991-2010 (1991=100%)

Source: own study on the basis of Destatis data.

6.1.3. Freight transport

In 2011 freight railways in Germany carried out transport services amounting to 113,317 million tonne-kilometres. In comparison to 2010, this constituted a 5.6% growth. The share of independent carriers (companies not owned by the Federal Government) in 2011 amounted to 26.1% and in the previous year increased by 1 percentage point. The major competitors of DB Schenker are SNCF Geodis, SBB Cargo Deutschland, FS Trenitalia, and Häfen und Güterverkehr Köln. The first three company groups belong to state carriers from other countries (France, Switzerland and Italy), and the latter company is under the municipal ownership of Cologne and the Rhein-Erft district.
The main freight sector in Germany is the transport of machines and vehicles (both finished and semi-products). These goods constitute approx. ¼ of the cargo transported by rail (cf. Figure 21). The share of bulk goods such as coal, aggregates and soil in total also comprises approx. ¼ of the freight transported. The share of this group of products is, however, gradually decreasing.

The main directions of international freight transport to and from Germany in recent years have included the Netherlands, Italy (approx. 20 million tonnes annually of freight transported to and from each of these countries) and Austria (approx. 15 million tonnes). Among other countries are Switzerland, the Czech Republic, Poland and Belgium (approx. 6-8 million tonnes annually each). Freight transport to and from other RBGC countries is insignificant; for instance in the case of Lithuania it amounts to approx. 0.1 million tonnes annually.

The increased interest in rail freight transport in Germany was caused in 2005 by the introduction of toll for trucks on motorways and mostly congested federal roads. It should be mentioned that the toll (unlike in Poland, for instance) does not pertain to buses of all types.
Figure 21
Changes in the structure of freight transport (in million tonnes) in Germany in the years 1996-2009


6.1.4. Report conclusions

German entrepreneurs, similar to their Polish counterparts, considered the issue of improving the availability of rail transport has priority over the costs of railway transport services. Half of those surveyed pointed to this as a factor which could encourage them to choose this form of goods and services transport. The problem of costs was pointed out by 37% of respondents. Third position (20%) was taken by the capacity of the rail network and the reliability of transport.

The expectations towards the Rail Baltica infrastructure in the context of freight transport are very moderate among German entrepreneurs participating in the survey. Despite the fact that most of them point out the issue of costs (69%), other parameters are mentioned almost equally often: transport time (54%), intermodality 50%, and safety (48%).
Also in terms of passenger transport, the structure of replies given by German respondents was different from in the remaining countries. The opinions were quite equally distributed (approx. 30-50% of the selected replies) among the issues of transport costs, reliability and safety, together with the number of connections and links with other means of transport.

As far as the expectations towards the Rail Baltica project are concerned, German entrepreneurs put a definitely stronger emphasis on removing technical (60% of the selected replies), and legal and administrative barriers (37%). German respondents also paid special attention to the issues of intermodal infrastructure: trans-shipment centres (48%) and passenger-transfer centres (29%).

The replies of the German respondents differ from other countries of the Baltic Sea Region in terms of the perception of rail transport; it is regarded as an element in the freight or passenger transport chain, and the market is governed by competition, which causes decreases in prices. The attractiveness of rail transport is not only attributed to the price but also to other aspects of travel and shipping. German entrepreneurs are also aware of the role fulfilled by high-quality transport infrastructure.

According to the EU-CONSULT report, German enterprises in general do not declare an interest in using the northern part of the Rail Baltica route (from Poland towards Finland). The main directions of goods exchange are elsewhere (in particular towards the south of Europe). In the north-east direction movements to and from Russia and Poland are most prominent. Transport with Russia is carried out mainly by sea. Land transport, in turn, runs through Poland and Belarus or Ukraine. The exchange of goods with Poland is carried out mainly with the use of road transport. The issues of tourism development and fast and relatively inexpensive freight transport are identified as opportunities for Rail Baltica; in some situations they could be an alternative to maritime transport (speed) and road transport (price, safety). The significance of passenger transport with the use of Rail Baltica are connected with the growing popularity of bicycle tourism in Germany.
6.2. Estonia

6.2.1. The organisation of rail services, and passenger and freight transport

The rail network in Estonia is owned by two entities – the state treasury and a private company. The state ownership is managed through the state-owned company AS Eesti Raudtee. The private infrastructure belongs to the Edelarauudtee Infrastrktuuri AS Company.

Both administrators of the rail infrastructure provide services consisting of access to rail tracks for all carriers offering passenger and freight transport. AS Eesti Raudtee manages approx. 800 km of rail routes, of which two-way routes cover 107 km, and 133 km are electrified (mainly in the area of Tallinn). Edelarauudtee Infrastrktuuri AS maintains 298 km of routes, 219 km of which constitute the main line.

After the regaining of independence by Estonia, a state-owned enterprise named AS Eesti Raudtee was established. In August 2001 66% of the company’s shares were sold to the Baltic Rail Services (BRS) Company, owned by Railroad Development Corporation, an American railway holding. The government elected in the 2003 changed the rules on access to rail tracks and established maximum rates for access, as a result of which the profitability decreased. In 2007 the private shareholder decided to resell its shares to the state. After renationalisation, two separate entities were created within the AS Eesti Raudtee enterprise: the EVR Infra Company, responsible for the management of the rail infrastructure, and EVR Cargo, dealing with freight transport, and the main carrier in this sector.

Freight transport is closely connected with serving Estonian ports and trade exchange with Russia and other Baltic countries. Apart from the EVR Cargo Company, freight transport is provided by Estonian Railway Services (ERS AS), AS Spacecom, Westgate Transport OÜ and AS Coal Terminal Trans.
Four operators function on the passenger transport market: AS Edelaraudtee (serving its own line and state lines), AS Elektriraudtee (Tallinn suburban rail), AS Go Rail (providing mainly international transport with Russia), Pasažieru Vilciens (serving international connections with Latvia).

The state institution controlling access to the rail network until 2008 was the Railway Inspection (Raudteeinspektsoon). Currently the issues of access to the network and technical matters are the responsibility of the Technical Supervision Office (Tehnilise Järelevalve Amet). The Office is subordinated to the Ministry of the Economy and Communication. Competition and consumer rights also in the rail sector, are supervised by the Competition Authority (Konkurentsiamet).

6.2.2. Report conclusions

Estonian enterprises which did not use rail transport showed little interest in extending their services with this mode of transport. Including rail transport in the range of their interests was conditional for them mostly on a decrease in transport costs (67%), higher speeds (48%), and improvement in transport reliability and cargo safety (33% of respondents selected each of these options).

As far as the expectations of Estonian entrepreneurs towards Rail Baltica are concerned, the most frequently mentioned is the construction and modernisation of a railway rail infrastructure (73%). Despite the fact that this was the main issue mentioned in all countries, only in Estonia was it so strongly emphasised.

In the light of the second report – the research performed by the Lappeenranta University of Technology – the Estonian respondents perceived Rail Baltica rather as an alternative to the existing network of connections. Rail Baltica would strengthen trade connections with Central Europe and southern Europe (maritime transport requires taking a very roundabout route). With regard to passenger transport, the Rail Baltica route is perceived as an
alternative to cars and airplanes for short distances (within the Baltic countries and Poland). The respondents do think that rail is an option for longer trips, e.g. to Berlin. They provide such arguments as the long travel time and the competitive prices of airline trips. Rail Baltica is also perceived as an opportunity to improve domestic transport as the infrastructure in Estonia is thought of as decapitalised and failing to meet quality requirements (among others, the problem of single-line tracks and the resulting limitations in the network’s capacity).

6.3. Latvia

6.3.1. The organisation of rail services, and passenger and freight transport

The rail network in Latvia is managed by the LDz infrastrukūra Company, which belongs to the state concern Latvijas dzelzceļš (LDz, Latvian Rail), headquartered in Riga. Latvian Rail was established in 1991.

The entity dominating on the freight-transport market is LDz Cargo (separated from the structures of Latvijas dzelzceļš in 2007). In 2010 the transport authorities recorded that 49.2 million tonnes of cargo were carried. The largest private competitor in the sector is the A/S Baltijas Tranzīta Serviss Company, the majority of which is owned by the freight port in Riga. The carrier concentrates its activities on freight transport to and from ports in Riga and Ventspils to the rest of the country. In 2009 it transported 9.3 million tonnes of cargo.

The Latvian authorities, placing strong emphasis on transit, maintain full technical compatibility with railways in Russia and other former USSR countries. Ensuring convenient connections of Latvian ports with Russia and Belarus is emphasised in economic and transport strategies. Petroleum and petroleum products have the highest share among transported freight.

The major operator in passenger transport is Pasažieru Vilciens. Passenger transport in
Latvia is characterised by a radial distribution of routes around Riga. Four out of five main routes are electrified. On the remaining routes which do not lead to Riga, passenger trains are scheduled very sparsely, i.e. several times a week. International passenger transport is the domain of LDz subsidiaries – LDz Cargo and Starptautiskie pasažieru pārvadājumi – which offer connections with Saint Petersburg, Moscow, Vilnius and Minsk. As well as from that there is cross-border traffic with Estonia.

The Latvian rail infrastructure is the state property. The issues of the rail market are regulated by the Public Utilities Commission (Sabiedrisko pakalpojumu regulēšanas komisija).

6.3.2. Report conclusions

The analyses carried out by the Indicator Company indicate that enterprises which did not use rail transport showed little interest in extending their services with this mode of transport. Their consideration of rail transport depended mostly on a decrease in costs – nearly 2/3 of companies mentioned it as a condition. Almost 1/3 of the surveyed companies raised the issue of physical availability (the proximity of a rail infrastructure, the presence of sidings and trans-shipment centres), and a similar proportion of enterprises mentioned the increase in the speed of rail transport. Over ¼ of the respondents pointed to improved security and the increased capacity of the rail network.

In the context of the statistical data, the price criterion seems justified – the rail market in Latvia is dominated by the state carrier. This thesis is also confirmed by the fact that Latvians, similar to Estonians, most frequently raised the issue of decrease in rail-transport prices. In the countries with more liberalised markets (e.g. Poland and Germany) this opinion appeared much less often. On the other hand, the market situation in Lithuania and Finland is similar but the issue of rail services costs is not so strongly emphasised by the respondents.
What is interesting is the issue of speed in passenger and freight transport. The request to increase speed was most often put forward by the respondents from Latvia and Lithuania in the context of passenger transport, and the respondents from Finland and Estonia mentioned it most frequently in the context of freight transport. In Poland, where increasing the speed of freight transport is problematic, mainly due to the technical condition and capacity of the infrastructure, the issue was raised much less often. Therefore, it would be useful to determine whether such a distribution of replies results from the type of freight which the respondents transport (e.g. in the case of bulk freight time is not so important) or organisational barriers.

Among the expectations concerning the Rail Baltica project, the following prevailed: the lowering of transport costs (3/4 of replies), better connections with other means of transport (intermodality) and reducing the transport time and improving reliability (50% of the selected replies each). Lowering costs (86% of the selected replies) and reducing transport time (73%) also dominated among the expectations towards the Rail Baltica infrastructure in the context of passenger transport. The issues related to the number of connections (50%) and safety (30%) followed.

The report by EU-CONSULT confirms the expectations of Latvian enterprises towards Rail Baltica expressed in the report prepared by the Indicator Company. It also confirms the assumptions of the economic and transport policy in Latvia, emphasising the significance of freight transport between Russia and Belarus, and Latvian ports. The Rail Baltica investment itself is perceived in a positive light, although it is not expected to have a substantial influence on the national economy. This opinion may result from two facts: the current connections between the Baltic countries and other EU Member States, which are satisfied with the existing transport infrastructure, and the perception of Russia (and other countries belonging to the Commonwealth of Independent States) as very attractive economic partners.
6.4. Lithuania

6.4.1. The organisation of rail services, and passenger and freight transport

In Lithuania the dominating, and, in fact, the only operator is Lithuanian Railways (Lietuvos geležinkeliai), which run a substantial majority of trains in the country. Aukštaitijos siaurasis geležinkeli, i.e. narrow-gauge railways, constitute an exception.

Passenger transport in Lithuania is managed by a division of the state carrier, operating under the name the Passenger Transportation Directorate (Keleivių vežimo direkcija). Railways in passenger transport play a marginal role, as a result of the high motorisation level and competition from bus transport. Regional and agglomeration transport to Vilnius and Kaunas constitute an exception. Within the national traffic in 2009, 3.5 million passengers were transported, and in international traffic 0.9 million, with the prevalence of transit between Russia, Belarus and the Kaliningrad Oblast. The most important international connection is the train to Saint Petersburg through the Latvian city Daugavpils. The most important connection with Poland is the train running on standard-gauge tracks between Šeštokai and Suwałki.

The Passenger Transportation Directorate (Keleivių vežimo direkcija) is the main freight carrier in Lithuania. Transit between the Kaliningrad Oblast and Belarus and the remaining part of Russia in recent years have constituted over 1/3 of all freight transport. The service of the port in Klaipėda also has a considerable share of freight transport. In the structure of the goods transported, petroleum and petroleum products prevail (42%), followed by chemical products and minerals (37%), and food and forage (11% in total).

The infrastructure is maintained by the Railway Infrastructure Directorate (Geležinkelių infrastruktūros direkcija) within the structure of Lietuvos geležinkeliai. The rail network, which is almost 1800 km long, contains two-way sections constituting 567 km in total. The
total length of electrified routes is 122 km and is located only in the neighbourhood of Vilnius and Kaunas. Lithuanian Railways rely on Rail Baltica with regard to the restoration of their position on the passenger market.

The Competition Council (Konkurencijos taryba) is responsible for the supervision of the rail market.

**6.4.2. Report conclusions**

Lithuanian entrepreneurs, in the light of the Indicator Company report, would utilise freight-transport rail services if there were a reduction in the costs of this service (50% of the selected replies), and if the availability (30%) and the speed of transport (28%) improved.

The expectations regarding the Rail Baltica project are dominated by the issues of the infrastructure construction (56%), the elimination of technical obstacles (52%) and the decrease in rail transport prices (50%). Among further issues, although not so evidently prevailing, is the improvement in the quality of rail transport (42%), intermodality in freight transport (33%) and the elimination of legal and administrative barriers (also 1/3 of the selected replies).

Expectations towards the Rail Baltica route in the context of passenger transport are focussed on two major aspects: the price (69% of the selected replies) and the speed (63%) of the connections. The expectations regarding freight transport also emphasise the significance of costs (69% of the replies) and time (55%); however, much more prominent in comparison to the expectations towards passenger transport are the remaining issues: intermodality (55%) and reliability and safety (41% of the selected replies each).

As shown by the EU-CONSULT report, Lithuanian entrepreneurs, despite having a positive attitude towards the Rail Baltica project and perceiving the opportunity to improve connections with other Baltic countries and Central Europe, they perceive rail transport...
mostly in the context of the connections of Lithuanian ports with Russia and Belarus. Rail, despite playing a crucial role in the transport structure – mainly in the area of bulk cargo transport and transit – is of little significance for Lithuanian entrepreneurs.

6.5. Poland

6.5.1. The organisation of rail services, and passenger and freight transport

The transport market in Poland de jure is one of the most liberalised markets in Europe, in both the passenger and freight transport segments. In the area of freight transport, the market is, in fact, open to competition. In passenger transport this is a result of separating from the state carrier PKP S.A. companies named Przewozy Regionalne (Regional Transport) and Warszawska Kolej Dojazdowa (Warsaw Commuter Rail).

The dominant freight carriers in Poland are companies belonging to the PKP S.A. group: PKP Cargo (62.9% of the share in the transport activities performed) and PKP LHS (6.0%). The largest private entities are the CTL group (7.2%), the DB Schenker group (6.4%), Freightliner PL (2.2%) and Pol-Miedź Trans (1.5%). In the transport structure, bulk cargo prevails: hard coal (39.8% in 2011), gravels, rock aggregates and clays (19.2%) and petroleum and petroleum products (6.1%). Freight transport in Poland is characterised by quite low average speed at approx. 25 km/h and a limited share of intermodal transport.

Passenger carriers are mainly outside the PKP S.A. group. The largest entities are Przewozy Regionalne, which in 2011 transported 41.5% of all passengers, Koleje Mazowieckie – 21.5%, SKM Warszawa – 4.5% and WKD – 2.8%. Companies established by province governments have an increasing share in the passenger-transport sector (Koleje Dolnośląskie, Koleje Wielkopolskie, Koleje Śląskie). The only private carrier is Arriva RP, with a share of 0.9%. Companies from the PKP S.A. group, i.e. PKP SKM and PKP Intercity, transported respectively 14.5% and 13.8% of all passengers.
As opposed to Germany, in Poland there are no statistics differentiating between regional railways (within public service) and long-distance railways, which operate at their own economic risk. The analysis of the significance of both sectors of passenger rail transport is hampered due to the fact that the largest companies (PR, KM and PKP Intercity) operate both types of transport.

The administrator of most standard-gauge of rail routes is the PKP Polskie Linie Kolejowe S.A. The company is 72% owned by the state treasury, and 28% by the state-owned PKP S.A. As a way of debt relief to PKP S.A., the state treasury redeems the shares of PKP PLK S.A. In prospect, the PKP PLK S.A. Company is going to become directly state-owned, and the PKP S.A. Company is to be dissolved. Other administrators of the rail infrastructure are mainly province, district and commune local-government units.

In the trade exchange between Poland and the former USSR countries, the broad-gauge route connecting Ukraine with the town of Sławków is of considerable importance. The owner and administrator of the 395-kilometre route is the company named PKP Linia Hutnicza Szerokotorowa sp. z o.o. (PKP LHS). PKP LHS is 99.99% owned by the state treasury, and 0.01% by PKP S.A. The company is also the carrier operating on this route.

A considerable majority of rights concerning the regulation of the rail market in Poland is under the management of the Office of Rail Transportation, including certain tasks associated with competition and passenger rights protection.

6.5.2. Report conclusions

The factors that would encourage Polish entrepreneurs to use rail services include especially better physical access (49% of responses) and higher reliability (36%). These are followed by such aspects as prices (32%) and safety (26%), and by higher capacity (21%). It seems interesting that the issue of increasing transport speed was mentioned by only 15% of respondents. Polish respondents mentioned reliability more often than the representatives
of other countries, as well as - except for Estonian respondents - freight safety. Hence, these results might indicate that closing railroads, thereby taking the infrastructure further from the potential sources and destinations, appears to be the major problem in Poland. At the same time, the railways are not treated by respondents as a trustworthy partner. Juxtaposing these data with the information on average speeds, and with the need to increase them, it can be stated that railways are perceived by respondents mainly as a means of transporting mass freight (such as coal, composite materials and cereals).

Polish entrepreneurs were considerably less demanding, as compared to the respondents from other countries, in formulating their expectations related to the Rail Baltica project. Similar to other respondents, they viewed the construction and modernisation of infrastructure as the most important (57% of responses). This was followed by the need to improve the quality of freight transport (39%), and by the need to lower prices (30%), which was an absolute exception, since this pricing issue was far more often mentioned by the respondents from other countries. Polish entrepreneurs expressed their intermodality expectations the least frequently of all those surveyed, both as regards freight transport (23% of responses) and passenger transport (only 10%).

The expectations related to passenger transport indicated by Polish respondents were connected with low costs (60% of responses) and short travel times (55%). The issues of reliability and travel safety received 1/3 of the responses each. The most important issues in freight transport also included low costs (59%), short travel times (49%), and high reliability (43%).

In the light of the EU-CONSULT report, Polish entrepreneurs express the most enthusiastic approach to the Rail Baltica project, compared to other respondents, mostly indicating its benefits to freight transport. They emphasise that the reference investment will bring tangible benefits not only to the connections between the Baltic Region countries, but also to the east-west and north-south connections. This will contribute to the higher
attractiveness of the entire rail sector. Polish respondents also stress the issue of technical integration (reducing the effects brought about by the need to change the track gauge) and the need to simplify the formal conditions on freight transport by rail.

6.6. Finland

6.6.1. The organisation of rail services, and passenger and freight transport

The state-owned VR-Yhtymä Oy (VR) Company is the leading carrier in Finland. The company was set up in 1995 in connection with the commercialising of state-owned railways. In 2010, the Finnish Transport Agency (Liikennevirasto) was established, which now acts as the state-owned rail infrastructure operator. The Agency supervises (i.e. maintains, designs and constructs railroads, and also supervises rail traffic) not only railways but also national roads and shipping routes. The sub-unit dealing with railways is referred to as the Finnish Rail Administration (Ratahallintokeskus).

VR, the state-owned rail company has a monopoly on passenger transport. Although some of the trains in Helsinki (the Stadler Flirt electric multiple units), serving local transport purposes, are owned by a municipal company (Pääkaupunkiseudun Junakalusto Oy), they are operated by VR. International Allegro trains, connecting Helsinki with St. Petersburg, are owned and operated by Karelian Trains. This is a joint venture of VR and the Russian RZD rails, both parties holding equal share. In Finland, the trains are operated by the VR staff.

The domain of freight transport is open to private entrepreneurs. Nevertheless, most goods are transported by VR. Karhula-Sunila-Railroad is the largest private rail company. It mainly operates the rail line near Kotka. This line is not managed by the Finnish Transport Agency, but by a railway company, which makes it an exception.

The role of the rail market regulator in Finland is performed by the Finnish Transport Safety Agency (Liikenteen turvallisuusvirasto - TraFi).
6.6.2. Report conclusions

Finns indicate low rail utility costs as the major postulate in terms of the planned construction of Rail Baltica (61%), both with regard to freight and passenger transport (68% of the responses each). As regards the former, Finns also postulate shortening travel times (71%), and as regards the latter, increasing the frequency of services (51%) and ensuring a higher level of safety (48%). Apart from constructing new infrastructure (61%), the Rail Baltica investment is perceived as a chance to reduce the costs of transport services (46%) and to eliminate technical barriers (44%). In this context, it is worth noting that Finland uses its own track gauge, which is 4 mm wider than that in Russia and in other Baltic countries. However, in principle, it is possible to transfer freight trains between both systems without the need to replace carriages.

The report drafted by the Lappeenranta University of Technology reveals that Finnish entrepreneurs believe their national railways are less competitive due to the much more convenient roads network and its condition. Finnish respondents express a positive attitude towards the Rail Baltica project and they think it will be beneficial to the economies of those countries through which the railway will run. However, this investment is not perceived as a priority. In contrast, rail connections with Russia and with Finnish sea ports are extremely important to entrepreneurs.
7. SWOT analysis

In order to properly structure and summarise the information flowing from both reports and from statistical analyses, together with the knowledge on transport and energy policies, the SWOT method is applied. To this end, an assumption was made that “strengths” and “weaknesses” should be understood in terms of internal, while “opportunities” and “risks” in terms of external factors. Additionally, the yellow background colour was used to highlight those factors that correspond to the information based on both reports.

Table 9

<table>
<thead>
<tr>
<th>SWOT analysis of the Rail Baltica investment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>General information</strong></td>
</tr>
<tr>
<td>- low costs of the Rail Baltica project as compared to other large infrastructural projects</td>
</tr>
<tr>
<td>- political and financial EU support for the Rail Baltica project</td>
</tr>
<tr>
<td>- passenger traffic potential along Rail Baltica (tourism, local border traffic)</td>
</tr>
<tr>
<td>- freight traffic potential, especially in terms of the possible partial shift of road transport into rail transport</td>
</tr>
<tr>
<td><strong>Survey information</strong></td>
</tr>
<tr>
<td>- expectations related to cheap and fast passenger and freight transport</td>
</tr>
<tr>
<td>- growing potential of economic relations between the countries located within Rail Baltica</td>
</tr>
<tr>
<td>- respondents’ support for the construction and modernisation of rail infrastructure</td>
</tr>
<tr>
<td>- large significance of the investment in terms of international connections and improved conditions of travelling inside individual countries</td>
</tr>
<tr>
<td>- Rail Baltica being perceived by freight transport users as an attractive alternative to road transport, offering a more diverse choice</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Opportunities</td>
</tr>
<tr>
<td>---------------</td>
</tr>
</tbody>
</table>
| **General information** | - growing EU interest in supporting rail transport (as compared to road transport)  
- EU transport policies related to increasing the interoperability of rail systems  
- growing petroleum prices, fostering the use of rail transport  
- EU energy policies related to reducing CO2 emissions, air pollution and noise  
- growing prices of road access “Peak car” phenomenon | - revised EU policies related to supporting infrastructural investments (generally lower outlays on infrastructure)  
- competition from other infrastructural projects co-financed from European funds  
- long-term economic slump |
| **Survey information** | - growing interest in environmental-friendly means of transport, resulting from the evolving ecological awareness of entrepreneurs  
- decision makers being aware of the need to improve transport connections and to strengthen economic relations between the Baltic countries and Central Europe  
Substantial reliability and safety of rail transport | - strong connections between the Baltic countries, Finland, Poland and Germany with Russia, which mostly determine the need to establish east-west connections rather than Rail Baltica  
- the project area being too broad to make it attractive to passenger traffic  
- low flexibility of rail transport  
- low costs of air and road transport |

*Source: own study*
8. Recommendations for further surveys, and for concept and implementation work

Large infrastructural investments constitute an interesting area of scientific research, starting with technical issues, to social and economic issues, and ending with environmental aspects. However, the following recommendations for further surveys concern only the issues that might contribute to the effectiveness of the Rail Baltica investment and to the better utilisation of its economic development potential, flowing from the construction of a high-quality rail road.

The surveys conducted by Indicator and EU-CONSULT (in cooperation with the Lappeenranta University of Technology) in the countries of the Rail Baltica corridor have revealed a certain development potential of the railways connecting Germany, Poland, Lithuania, Latvia, Estonia and Finland. Speaking in actual terms, the responses given indicate that this potential is surrounded by various entrepreneurs’ expectations related to detailed parameters characterising the new investment. The interest in rail services is especially conditioned on prices, on closing the technical gap between various rail systems, and on making the rail infrastructure easily accessible to potential users.

Nevertheless, the declarations of interest in using rail transport in Baltic Sea Region countries are made on a large scale. In order to obtain more detailed information that would help estimate the real transport needs to be satisfied by the Rail Baltica corridor, it seems indispensable to conduct more thorough surveys in the following areas:

1. Making attempts at determining both the optimum price of access to the rail infrastructure and the level of service costs in passenger and freight transport. The solution to this query may be facilitated through analysing:
   a. the social acceptance of passenger-transport costs,
   b. entrepreneurs’ acceptance of freight-transport costs,
   c. cost comparisons between countries,
d. the factors influencing the current price level,
e. the opportunities to optimise the costs of constructing and maintaining the
e. the opportunities to optimise the costs of constructing and maintaining the rail infrastructure.

2. Identifying the legal and organisational barriers to the interoperation of freight and passenger railways within the Rail Baltica corridor.

3. Improving access to rail transport. Indicating the accompanying infrastructural projects, in order to achieve the synergies in constructing the Rail Baltica corridor:
   a. establishing intermodal freight junctions,
   b. constructing railroads for passenger and freight traffic of regional and local significance,
   c. constructing new railway stations and intermodal passenger junctions.

4. Identifying technical barriers and the possible means of overcoming them or mitigating their effects, including the problem of different track gauges, and support for the decision on choosing the optimum variant for the Baltic countries (1435 mm or 1520 mm).

It is worth mentioning that the EU-CONSULT report (drafted in cooperation with the Lappeenranta University of Technology) aimed at answering certain questions of travel times and costs. The entrepreneurs surveyed were asked to indicate the optimum fares that would make the rail services competitive, and the maximum time of freight transport. However, this is not the full picture and the 2011 report should be considered preliminary as regards the answer to the first survey question.

The above compilation of survey recommendations concerns various areas of interest, including economic, organisational, legal, planning-related and technical issues. This stems from the fact that the success of the entire Rail Baltica investment will depend on a comprehensive approach to the investment and on a prompt reaction to the emerging needs of the economies and communities within this transport corridor.
9. Summary

The presented summaries of the surveys included in the Indicator and EU-CONSULT report (drafted in cooperation with the Lappeenranta University of Technology) indicate that Rail Baltica can play a crucial role in the economic development of the region, including especially south-eastern Poland and the Baltic countries.

This investment in railways might also contribute to reversing the unfavourable trends which are being observed especially in Poland and in Lithuania, i.e. the gradually-growing significance of road transport of freight and individual motorisation. Rail Baltica would be beneficial not only to international traffic, but also to the rail traffic in individual countries, shortening the travel time (which is of special importance in Poland) or improving the rail network capacity (which is especially important in Estonia and in Lithuania).

The development of rail connections is inhibited mainly by technical issues, resulting from three different track gauges, i.e. the standard gauge in Poland and in Germany, the Russian gauge in the Baltic countries, and the Finnish gauge in Finland. Nevertheless, the surveys indicate that technical limitations are not perceived by entrepreneurs as the only deterrent to using rail transport. Administrative and legal barriers are seen as equally discouraging, making it impossible to achieve one of the EU policy objectives, i.e. the interoperability of the railway system.

Putting their faith in the investment in question, entrepreneurs stress that the Rail Baltica construction should fall within the wider context of modernising the rail transport infrastructure in individual countries. The investment should be especially combined with constructing trans-shipment terminals and passenger transfer stations.

The existing network of economic relations, together with the resulting needs related to freight transport, should be viewed as the major threat to the project. Practically speaking,
all participating countries consider their trade exchange with Russia and with other post-Soviet countries as the most important, with the exception of the exchange between Poland and Germany. According to the entrepreneurs, priority should be attached to developing east-west connections, which should be followed by north-south links.
Bibliography


List of tables and figures

Tables

1. The general socio-economic characteristics of the RBGC states in 2011
2. The length and density of rail and motorway networks in 2010
3. The assessment of transport infrastructure in 2010
4. The rolling-stock volume available to rail carriers – self-propelled vehicles, data as of 2010
5. The rolling stock available to rail carriers – railway vehicles, data as of 2010
6. The fleet available to road carriers, data as of 2010
7. The distribution of transport tasks in land passenger transport in 2010
8. The distribution of transport tasks in freight transport in 2010
9. SWOT analysis of the Rail Baltica project

Figures

1. Population of European states in 2011
2. Population density in Europe in 2011
3. Gross Domestic Product per capita in Europe in 2011
4. Changes in rail network length in the RBGC states throughout 1990-2010
5. Rail network length in Europe in 2010
6. Rail network density in Europe in 2010
7. Transport intensity in Europe in 2010 – passenger transport
8. Transport intensity in Europe in 2010 – freight transport
9. The number of multiple units, railbuses and rail motor carriages in Europe in 2010
10. The number of locomotives in Europe in 2010 by power source
11. The number of passenger cars in Europe in 2010
12. The number of lorries in Europe in 2010 by payload capacity
13. The number of buses in Europe in 2010
14. The volume of motorised transport (no. of passenger cars per 1,000 citizens) in Europe in 2009
15. An overview of changes in the motorised transport volume (no. of passenger cars per 1,000 citizens) in the RBGC states throughout 1991-2009
16. The share of railways in the passenger-transport structure (in pass-km travelled) in Europe in 2010
17. Changes in the share of railways in the passenger-transport structure (measured in
pass-km travelled) in the RBGC states throughout 1990-2010

18. Changes in the share of railways in the freight-transport structure (measured in tkm travelled) in the RBGC states throughout 1990-2010

19. The share of railways in the freight-transport structure (in tkm travelled) in Europe in 2010

20. Changes in the number of passengers transported by regional and long-distance railways in Germany in the years 1991-2010