SHOULD CZECH REPUBLIC AND SLOVAKIA HAVE RAIL BALTICA STRATEGY?

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1 INTRODUCTION

In most recent White Paper from European Commission (2011) it was made clear that current oil dependent transportation logistics could not continue to be used in the future, and reductions on GreenHouse Gases (GHG) by 2050 should be made at level of 60 % (compared to situation in year 1990). Even if this goal sounds demanding, so are the short-term goals of reducing emissions by 20 % to year 2020 or by 30 % to year 2030 (long-term goals have technology development besides them, but in short-term its aid is relatively small; think about age of passenger cars and how long it takes to renew them all). However, these demands have been nothing new, since already ten years ago they were taken to discussion (European Commission, 2001). This time situation is different from past as in both global (successors of Kyoto protocol) as well as continental scale (EU) we have binding contracts to prevent environmental emissions. Of course these demands are now in the first stage implemented for industrial operations (heavy industries and electricity production), but transportation will share its part in near future (Ellerman et al., 2010). This for the reason that transportation (passenger and freight) in general accounts one fourth of GHG (and is growing, despite earlier wishes and demands; see Stead, 2006), and it has been so far "freerider" in GHG reduction programmes. If environmental and GHG reduction programmes will persist, and oil scarcity will become reality (Sandalow, 2008; Maggio and Cacciola, 2009), then countries need to rethink their strategies of transportation logistics. We can't stop the economy and trade flows, but could complete transportation in more environmentally friendly way.

To replace road transportation, we have basically two very infrastructure dependent mode alternatives, water transport (basically rivers) and railways. Both require corridor structures, where main transportation volumes are directed to one main line, which is then served with e.g. diverting smaller routes (e.g. completed with road transport). Even if water transport options sounds lucrative alternative from environmental perspective, its short- and medium-term prospects are not looking promising. International Maritime Orgnization (IMO) and European Union are implementing within very short period of time new sulphur emission restrictions (Entec, 2010), and for example their impacts to Finnish export industry has been estimated to be extremely costly (due to reason that 80 % from Finnish foreign trade volume proceeds through sea ports, and

Baltic Sea is the first pilot area for this new very tough legislation; Finnish Forest Industries Federation, 2011).

In this research work we would like to bring in discussion of Czech Republic and Slovakia the development of Rail Baltica railway corridor investment, and what kind of opportunities it could bring for these two export countries. Our investigation is based on trade flows (import and export) from last decade (2001-2010). We have also taken look on railway transportation flows from Slovakia and Czech Republic to Lithuania and Estonia (as an good proximate example), and found that transportation flows are currently extremely small, and have been declining in recent years towards zero (Statistics Estonia, 2011; Statistics Lithuania, 2011). However, trade flow analysis from these two countries of interest shows that volumes have increased by 200-300 % within decade time period to Rail Baltica corridor countries. So, there is clearly transportation and volume in place, but currently it is taken care with other modes. For example, domestically usage of railway transport has halved within previous decade time in Czech Republic and Slovakia, and road transports takes 70-75 % from freight volume (European Union – Eurostat, 2011).

This manuscript is structured as follows: In Section 2 we introduce Rail Baltica corridor and different alignment options in light of contemporary research and policy decisions taken. Thereafter, in Section 3 is analyzed trade flows of Czech Republic and Slovakia to Rail Baltica corridor countries and motivation is built why these two countries should take this north-east corridor in their logistics development agenda. We conclude our work in Section 4, where is also given recommendations for further research in the area of European transportation logistics.

2 RAIL BALTICA CORRIDOR

Developing rail based high volume transportation corridor is nothing new in Baltic States. Already in 1930's it was identified as a link of east and west, and alignment went to directly from Riga-Kaunas route to near of Königsberg (after II World War known as Kaliningrad as Russians took the leadership from the area; nationality of citizens changes completely, see Komornicki & Miszczuk, 2010), and continued thereafter directly to Berlin (see Figure 1 in below, map is still available in the railway station of Jelgava, Latvia). To reach east, connections were built through Latvian territory, and all important cities such as Leningrad, Moscow, Tokyo and Peking are mentioned in the 80 years old map.

Figure 1 *Former Rail Baltica Plan in Global Context (picture taken in railway station of Jelgava, Latvia, by Dr. Saranen during Feb. 2011).*

Currently situation regarding to Rail Baltica corridor could be considered as complex one; from Berlin alignment proceeds to Warsaw and from there to East Poland and its largest city, Bialystok (Figure 2 in below). Thereafter, railway connection continues to Lithuanian territory (through Sestokai intermodal terminal, where European standard 1435 mm and Russian standard 1520 mm gauge widths meet each other), and first larger city being reached is Kaunas (currently center of e.g. car sales in Lithuania). From this onwards to north, there exist actually at least two options to proceed further, using traditional and existing route, and second one being planned direct connection (west coast connection) to Tallinn through Riga. Even if direct connection looks and sounds nice on map, its price tag is very high, estimated to be 4 bill. Euros (Ojala et al., 2005). To renovate existing route, price tag is much lower roughly a bit above 1 bill. Euros (Bröcker et al., 2010). These estimates include making connection as fast one, 200 km/h (Kakulis, 2011). However, plans are rather ambitious for current shape of Polish and Baltic States railway network, and therefore current projects in Poland (PKP PLK, 2011) and Lithuania (Kaminskas, 2011) as well as in Estonia (VR Track, 2008) are aiming that speed could be 120 km/h – considerable improvement from earlier state (and still in great parts current), where trains are restricted to proceed 40-60 km/h.

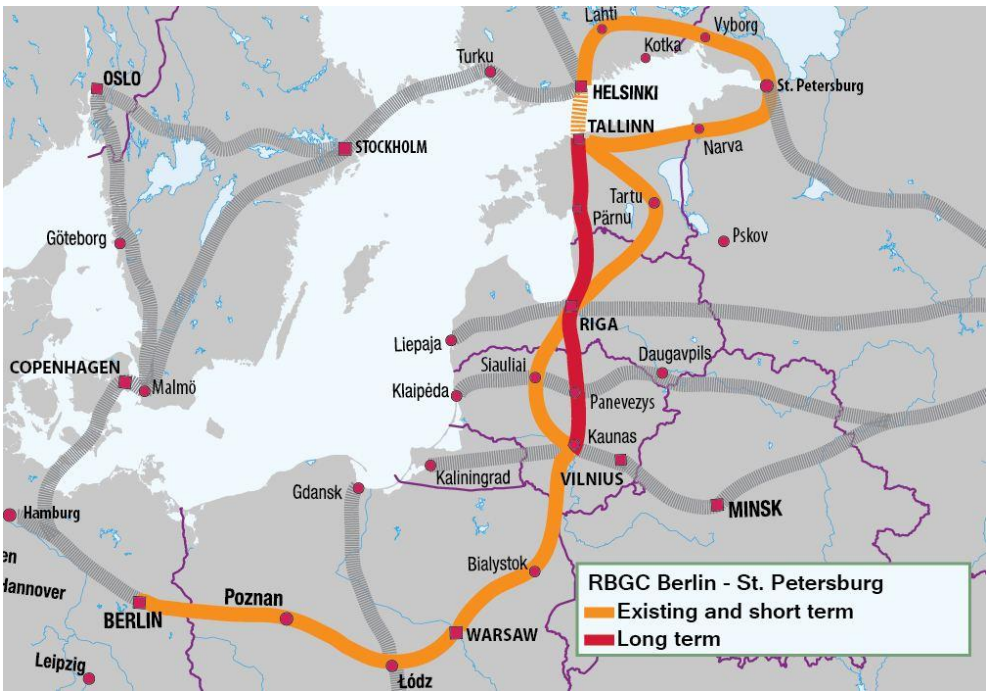

Figure 2 Rail Baltica Growth Corridor (RBGC), where existing and long-term planned one are marked with different colours.

Problems regarding to Rail Baltica corridor start after Warsaw, since currently modern and fast passenger trains between Berlin and Warsaw are reality (takes approx. 6 hours, aver. speed is roughly 100 km/h). However, thereafter challenging part starts. Currently it is so that Polish railway network to east is not in sufficient condition for modern time needs – approx. 200 km journey from Warsaw to Bialystok takes roughly 2.5 hours (average speed drops to 80 km/h), and from Bialystok to Lithuanian intermodal exchange town, Sestokai, it is required 3.5 hours (average speed is then below 60 km/h). Thereafter, slow speeds are everyday life, and between Baltic States international connections are rare, and numerous changes of trains take place, if journey is continued towards Riga and Tallinn. Reasons for south-north axle ignorance are revenue and profit related – in all Baltic States railways need to cover their expenses (not only operations, but also infrastructure renewal and maintenance), and they have one purpose, to take care of east-west transit transports (in Estonia mostly Russian transit oil, in Latvia in large parts transit coal from Russia, and in Lithuania e.g. fertilizers from Belarus). Transit is so important in all Baltic States, that it could be characterized as own critical industry, along with tourism and industrial production.

However, plans and actions are changing to favour south-north axle more. For example, in Polish side significant investment plan to railway network from Bialystok towards Lithuania is under environmental evaluation, and in Lithuanian side investments have already been made after border area to

Sestokai, and in tunnel located in Kaunas. Also Estonian railways have renovated Tallinn-Valga section, and speeds of trains could be in theory increased, but these sort of improvements would require new rolling stock acquisition. So, basically within five year time period entire Rail Baltica corridor should be ready to serve passenger and freight volumes. Not with very fast or high speed trains, but with speeds of 100-120 km/h. Railway gauge width in this old alignment will most probably stay as Russian standard, 1520 mm.

Besides with current corridor, Rail Baltica is developing also through long-term priority project of Trans-European Transportation Network (TEN-T), where current plan is to use as straight alignment as possible (Figure 2), and aim is to integrate Baltic States into European standard railway system (1435 mm). Average speed for passenger trains is planned to be 170 km/h, and top speed in best sections 240 km/h (Kakulis, 2011). Journey from Tallinn to Lithuanian border within passenger train would take 4 hours and 8 min, while in freight side lead time would be 10 hours and 23 min. This configuration is planned through dual track network, where intermodal centers are located in Kaunas, Riga and Tallinn. Intermodal services are not only needed for rail-to-road connections, but also to changes of rail-to-rail (from European to Russian standard). It should be reminded that these fast train and straight connection values are totally opposite to reality of today; train trip from Tallinn to Riga is in old configuration taking 8 hours.

3 SHOULD CZECH REPUBLIC AND SLOVAKIA HAVE RAIL BALTICA STRATEGY? FOREIGN TRADE ANALYSIS

In current TEN-T priority projects Czech Republic and Slovakia are having two main corridor connections under development (TEN-T, 2011). In motorways development efforts are given for motorway on axis of Gdansk (Polish sea port), Brno (Czech) / Bratislava (Slovakia) and Wien (priority project 25). Similar sea port driven is also railway axis, which proceeds through same cities as well as it goes through Warsaw too (priority project 23). Both of these projects are without a doubt beneficial, and e.g. railway corridor have been argued to be one of the most profitable projects among TEN-T priority list (Bröcker et al., 2010). However, their weakness is on the reliance on sea transport through Baltic Sea. This alternative is under very heavy pressure to have high price tag due to sulphur emission restrictions by IMO and EU. Also trying to reach Russia or other northern markets through sea vessel based operations is time delayed and hinders weaknesses as transportation modes are unnecessarily changed several times. So, we argue that these two corridors of TEN-T should be integrated to Rail Baltica corridor, and actually the latter one should be ready and operational, before these two corridors from Czech and Slovakia are integrated into it. However, quite much depends, whether we have justification for this in terms of freight traffic. And this drills down to trade activity. This is analyzed in the following.

Within previous decade time period (Figures 3 and 4) trade of Czech Republic and Slovakia have increased very significantly to Rail Baltica countries. Of course development is much dependent on Germany, but it could be argued that trade growth is coming from emerging markets, like Poland and Russia.

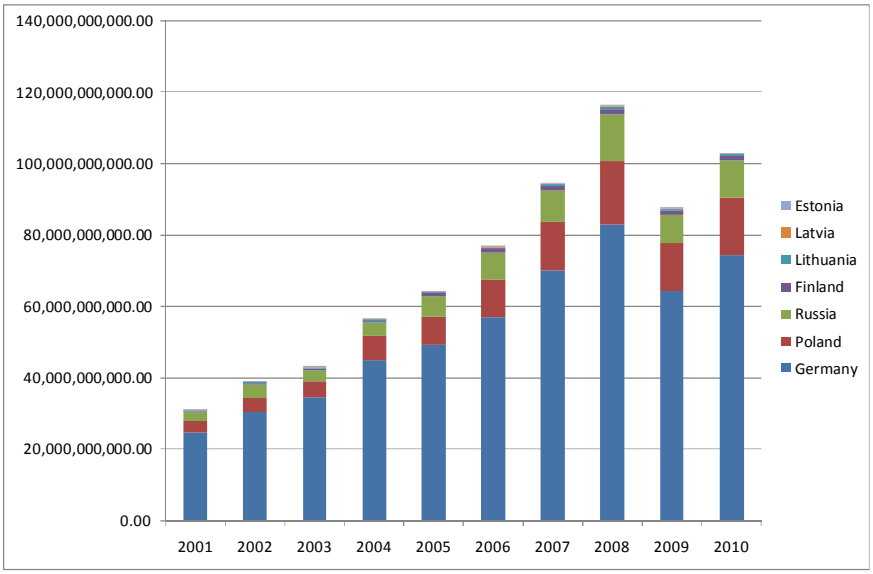

Figure 3 *Czech trade (import and export) with Rail Baltica Growth Corridor countries during period of 2001-2010. Source: United Nations (2011)*

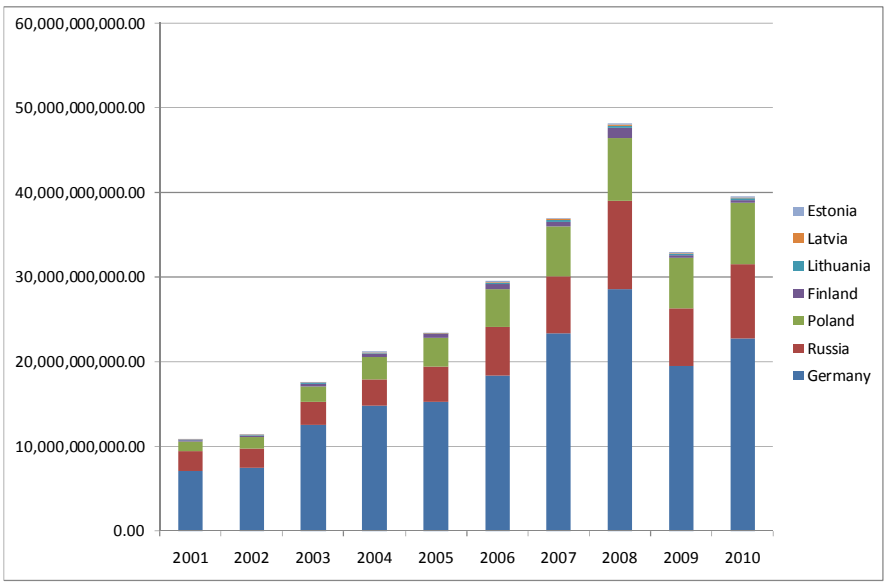

Figure 4 *Slovakian trade (import and export) with Rail Baltica Growth Corridor countries during period of 2001-2010. Source: United Nations (2011)*

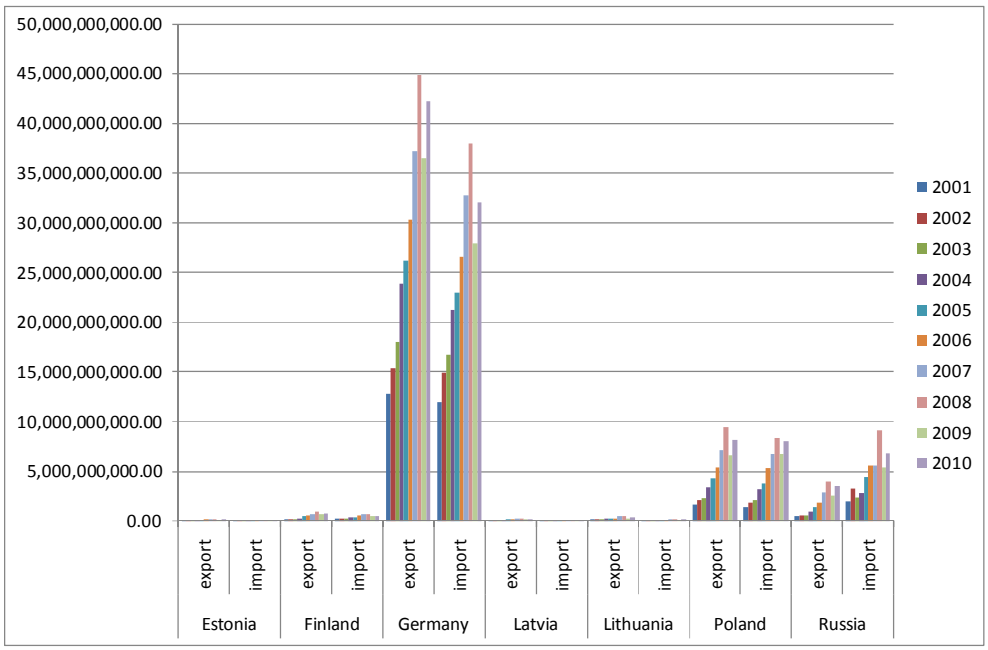

Figure 5 *Czech import and export (both in USD) with different Rail Baltica Growth Corridor countries during period of 2001-2010. Source: United Nations (2011)*

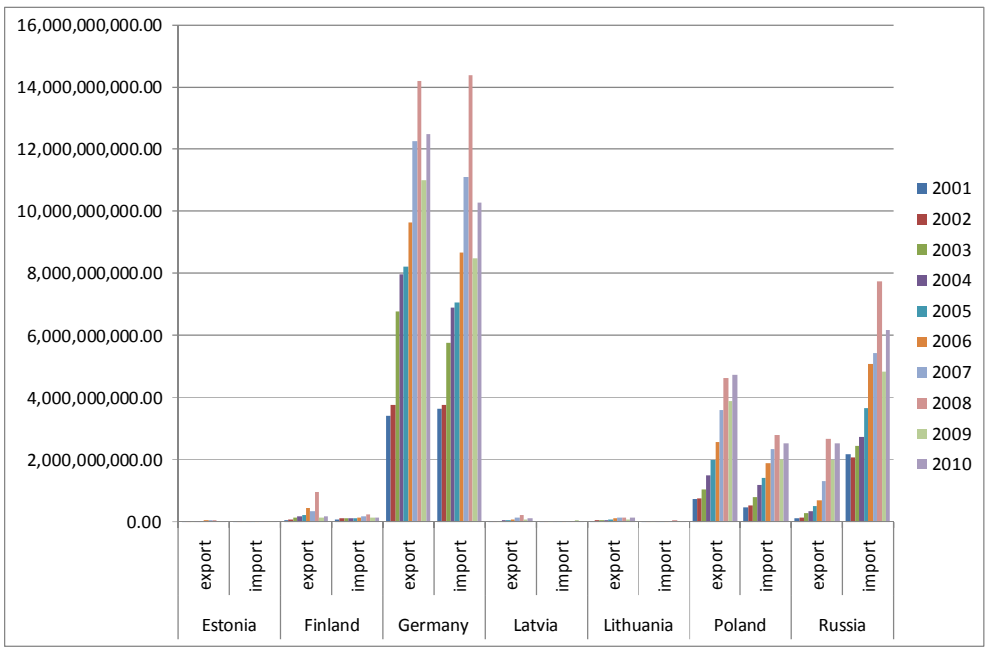

Figure 6 *Slovakian import and export (both in USD) with different Rail Baltica Growth Corridor countries during period of 2001-2010. Source: United Nations (2011)*

Even if trade has increased by 200-300 % to Rail Baltica countries based on Figures 3 and 4, its characterics is not revealed without taking into more detailed examination import and export activity to these countries. From Figures 5 and 6 it could be concluded that for Finland, Germany, Lithuania and Poland both Czech Republic and Slovakia enjoy trade surplus. Trade to Estonia and Latvia is insignificant, but holds also clear surplus (could not be identified from Figures 5 and 6). What makes interesting this deeper trade analysis, is a very significant trade deficit to Russia. However, promising is the rate of increase in both import and export activity, and better logistics connections for general cargo would improve the competitiveness of export products (since Russian import is mostly energy and raw materials).

On the one hand, Czech Republic and Slovakia should secure their competitiveness in Polish, and Baltic States markets among with Finland. One of the building blocks for this is the seamless, and good connectivity as well as alternatives in transportation modes and routes in varying environment (e.g. oil scarcity and environmental changes). On the other hand these two countries would need to enhance export competitiveness to Russia. Solution is the same as what is with former mentioned trade surplus countries. So, therefore for export based national economies, which Czech Republic and Slovakia represent, it would be indeed important to support and build own national strategies per se to Rail Baltica corridor. It should be remembered that approx. one third of foreign trade of these two countries is completed within Rail Baltica region, and securing connectivity and accessibility is vital in changing business environment of the forthcoming decades.

By examining trade surplus and deficit development, argumentation receives more ground. In general Czech Republic has been enjoying very strong export economy development in the previous decade (Figure 7), showing clear trade surplus with all the other countries than Russia from year 2005 onwards. However, it is clearly identifiable that Russian deficit is consistently large, and fluctuates with energy and raw material prices between 2-4 billion USD per annum. Even with these large-scale deficits, Czech Republic has been able to significantly improve its total surplus with Rail Baltica countries, during year 2010 totaling up to nearly 8 bill. USD. It should be noted that this development was not interrupted by world-wide credit crisis (actually linear increase continues).

In Slovakian case export led economy strategy has not played so well (Figure 8) – development is constrained by energy and raw material dependency, which are imported from Russia. Only in last two years of our observation period trade surpluses have been notable with Rail Baltica countries in overall, and surprisingly during the first eight years trade deficit has been 1-2 billion USD p.a. So, in Slovakian case all the efforts are needed to enhance export activity, especially to Russia. Its performance with Germany and Poland is exceptionally good, and has consistently improved during the observation period.

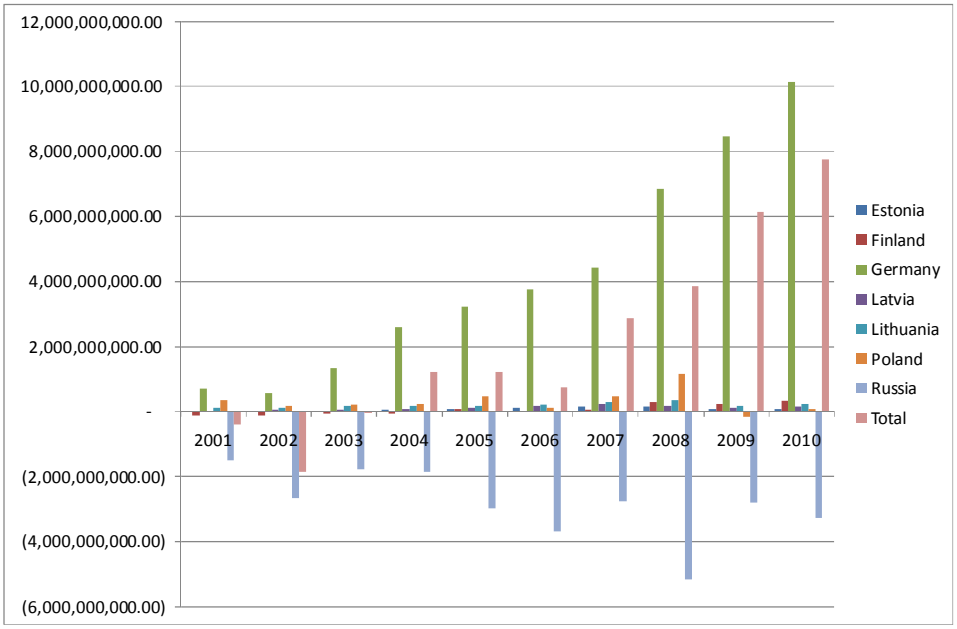

Figure 7 *Czech Republic and trade surplus-deficit development with Rail Baltica countries and in total during years 2001-2010 (currency used USD). Source for data: United Nations (2011)*

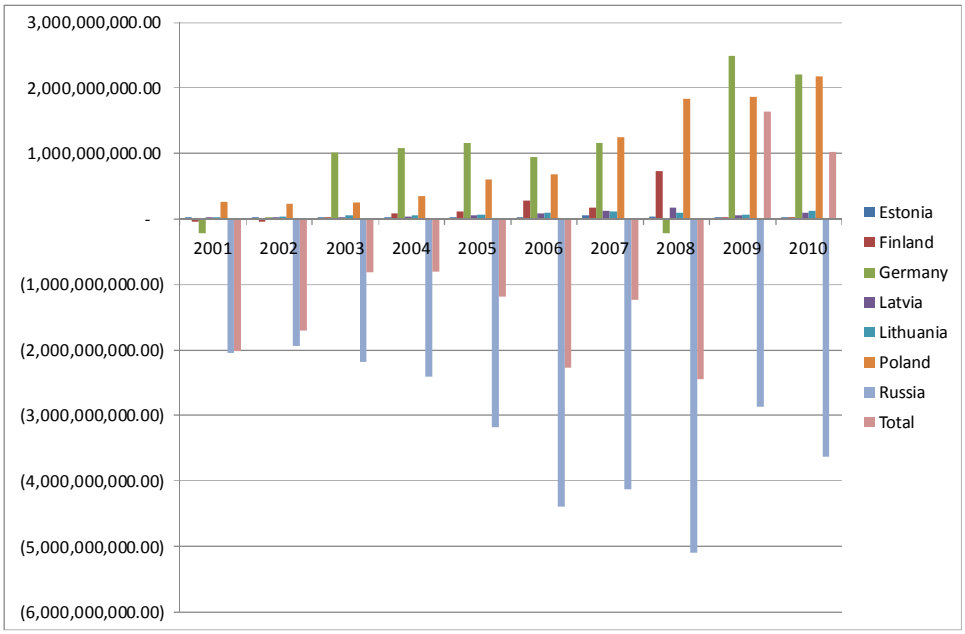

Figure 8 *Slovakia and trade surplus-deficit development with Rail Baltica countries and in total during years 2001-2010 (currency used USD). Source for data: United Nations (2011)*

4 CONCLUSIONS

Despite the free movement of capital and goods over the European landscape, transportation logistics has not deserved as much attention and investments as it should have been. Forthcoming two decades contain numerous changes in this area, and these are dependent on two issues, scarcity of oil and continuously stricter emission allowances. Based on current knowledge, this change means hard time for road transport of freight, but also for short-sea shipping in European context. Used solutions are intermodal by their nature, most probably combination of railway corridors and road transports. By using railway more, also other emerging countries, still relaying on rails in large-scale, could be reached more conveniently (e.g. Belarus and Russia, possibly also Kazakhstan). So, in Europe about to happen change in transportation logistics is merely cost issue for export companies, but in larger context it could be turned as an advantage, if more efficient solutions for intermodal transports are being innovated and implemented.

Our purpose in this research work was to investigate, whether Czech Republic and Slovakia should form own strategy for Rail Baltica corridor. Based on shown TEN-T corridor structures (for road and rail), and analyzed trade development, we could clearly state that they should. If entire transportation logistics to north is implemented with road transport or use of sea port of Gdansk, it does not necessarily bring competitiveness for export industries in forthcoming two decades. Actually opposite is the case. So, therefore more environmentally friendly transportation logistics solutions should be eagerly investigated, and implemented. In short-term it will increase costs, but in medium- and long-term will change as advantage (under the given future outlook).

For further research, we would like to continue including emerging economies of Central and Eastern Europe in the potentiality analysis of Rail Baltica corridor. Among these, it would be extremely interesting to include in the examinaion the potential of arctic route, which has been widely discussed in Finland in recent years (mostly moderated by Myllylä, 2011). As ice in arctic is smelting continuously, and it is having longer and longer time of open water, this route has become very attractive (Laulajainen, 2009). Also technological development in combining ice brakers and freight vessels (as these could be combined into one vessel) improves operational period from the year. Lead time advantage as compared to deep sea route through Suez Canal or around Africa is clear, and subtantial (especially reaching northern parts of China and Japan).

AFFILIATION

Author of this manuscript is affiliated with Rail Baltica Growth Corridor (RBGC) project, financed by European Union's Baltic Sea Region Progreamme (2007-2013). Project details and consortium could be accessed through visit to website, www.rbgc.eu. However, all opinions, statements and analyses given in

this manuscript are solely author's own, and do not represent any common statement or recommendation from large consortium of RBGC project.

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