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Koralova, Petya

School of Economics and Management in Public Administration -  
Bratislava

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# **Perspectives for the development of trade relations between Slovak Republic and Republic of Bulgaria via Danube River**

*Assistant professor Petya Koralova, PhD, Todor Kableshkov University of Transport, department "Economics and accountancy in transport", BULGARIA,  
E-mail: [petyakoralova@gmail.com](mailto:petyakoralova@gmail.com)*

## ***Abstract:***

*River Danube is an international inland waterway that is part of the Rhine – Danube Core Network Corridor. The favorable geographic location of Slovakia and Bulgaria, as well as their outlet on the River Danube, are key factors for the insurance of better transport and trade relations among West of Europe and Middle East. In this regard, the main objective of the report is to reveal the perspectives for development of the trade relations between both countries via inland waterway transport.*

*For that purpose, a review of the status quo of Bulgarian and Slovak ports is made, as well as an analysis of the cargo turnover, export, import and balances of trades of the countries. As a conclusion, the results of the current research are summarized.*

***Key words:*** *trade relations, inland waterway transport, cargo turnover.*

**JEL Classification: F16**

The Danube is the second longest river (2,845 km) in Europe and is essential for the countries through which it flows: Germany, Austria, Slovakia, Hungary, Romania, Bulgaria, Croatia, Serbia, Ukraine, and parts of Switzerland, Poland and Moldova. As part of the Main - Danube Canal the river is linked to the Black and North Sea.

Depending on the terms of navigation, Danube is divided into three main sections:

1. Upper Danube - from source to Vienna - the riverbed is wide, but it is enough for navigation. In this area the water level is highest between May and August, and lowest water levels are recorded between October and March (Via-Donau 2006);
2. Middle Danube - from Vienna to Iron Gate. The river is the deepest in April and March and low water levels are observed between August and October. Slovak ports are situated on this section of the river;
3. Lower Danube - from Iron Gate to Sulina. Fluctuations in the water level of that section have been observed during the same periods of the year that are typical for Middle Danube. Bulgarian ports are situated on this section of the river.

In accordance with the European transport policy, inland waterway transport, together with rail transport are seen as the transport modes that fully respond to its main objectives to achieve sustainable and competitive transport system, where all transport services are provided by energy efficient and environmentally friendly transport modes. Moreover, inland waterway is characterized by the following advantages:

- High degree of security, safety and reliability during freight transportation – the number of accidents in inland waterway transport is 60 times lower than these in road transport and 15 times lower than these in railway transport;
- The cost of inland waterway freight transport services is much lower than the cost of freight transportation services in road and railway transport – approximately between 30% and 60%, depending on the cargo type and distance (UNECE 2011);
- Environmentally friendly and energy efficient – green house gas emissions by inland waterway transport are 3 times lower than these in road transport (UNECE 2011)

Danube River is also part of the Rhine – Danube Core Network Corridor (Commission, About Us: Mobility and Transport 2015) which provides the main east-west link between continental European countries, connecting France, Germany, Austria, the Czech Republic, **Slovakia**, Hungary, Romania and **Bulgaria** along the Main and Danube Rivers to the Black Sea. In this regard, there is good opportunity for inland waterway transport on the River Danube to serve the trade traffic between Slovakia and Bulgaria. First of all, Danube flows through the territory of both countries as their main river ports, which serve as export and import centres, are Bratislava and Komárno in Slovakia and Rousse and Lom in Bulgaria. Secondly, the favourable geographic location of both countries in Europe is a prerequisite for their importance of ensuring the cargo and traffic flows from West of Europe to the Middle East and Asia.

## **I. Current status and characteristics of river ports in Slovakia and Bulgaria**

### ***a. Port Bratislava***

The port is located in the southeast part of the capital Bratislava, on the left bank of the Danube River (1865 - 1866 km). It is the largest of the Danube ports in Slovakia, and its total area is 1,431,586 m<sup>2</sup>. The port is linked to the main industrial centres of Slovakia, Czech Republic, Austria and Hungary. It has direct connection by road and rail with the Baltic-Adriatic Core Network Corridor, as well as to the pipeline network of the country. The port is located close to the international airports of Bratislava, Budapest and Vienna and is linked by rail with the European railway networks C-E63 and C-E61. The port is specialized in handling

and storage of bulk, general, oversized and liquid cargoes. It is equipped with the following facilities:

- Covered warehouses with total area of 25 790 m<sup>2</sup>;
- Open storage area – 75 335 m<sup>2</sup>;
- Ro-Ro ramp for handling of transport units with capacity of 400 cars per hour, which is too rarely used;
- 17 cranes with capacity between 2,3 and 32 t;
- 2 cranes for handling of oversized cargoes with capacity 280 t each;
- Tri-modal container terminal, which covers a territory of 25 000 m<sup>2</sup> and facilitated with 5 reach stackers and railway tracks with length of 250 m. The total capacity of the terminal is 50 000 TEUs per year and it serves the container traffic between Bratislava, Bremerhaven and Budapest. The main problem is that 86 % of its capacity is not used efficiently.

There is a terminal for handling and storage of liquid cargoes (LPG, light and crude mineral oils and their derivatives) which are shipped directly from the Slovak refinery Slovnaft (Balis 2012).

#### ***b. Port Komárno***

The port is situated on 1767 kilometre of the Danube River and is specialized in handling and storage of bulk and general cargo. The port is equipped with transshipment facilities which include 8 portal cranes with capacity of 16 tonnes; mobile crane with capacity of 17 tons and 4 universal cranes. Its storage warehouses cover an area of 23 130 m<sup>2</sup> and its open storage areas are respectively 6597 m<sup>2</sup>. The port is very important for the foreign trade of Slovakia with the countries from the Black Sea and North Sea area (Balis 2012).

#### ***c. Port Lom***

Port Lom is of national importance as it is on the intersection of Rhine – Danube and Orient – East Med Core Network Corridors, and is located approximately 160 km north of the capital Sofia, on the right bank of the Danube River. Its territory covers a total area of 299 380 m<sup>2</sup> and has 13 berths. The total length of the waterfront is 1463 meters and the proposed maximum depth of berth is 1,8 m. Port Lom is specialized in handling and storage of bulk (ores and coal), general cargoes and containers. For loading and unloading operations are used 22 cranes with capacity of up to 10-20 tones, 6 universal cranes with capacity of 3-5 tones. The predominant age of the transshipment facilities is between 58 and 65 years. The port total open and covered storage area is 121 014 m<sup>2</sup> and is equipped with terminal for

liquid cargoes with capacity of 188 m<sup>3</sup>. Total capacity of the port at the existing operational mode is: berth throughput 3 100 t/dwt and storage – 5 860 t/y. It is open for transit traffic from FYROM and Greece and has a good connection with the port of Thessaloniki, which is the largest transport hub in the Mediterranean.

By March 2013 the port was managed by Executive Agency “Maritime administration”, then its management and operation is borne by the concessionaire “Port Invest” Ltd through public-private partnership. The contract is signed for a period of 35 years (Koralova 2014).

#### ***d. Port Rousse***

"Port Complex Ruse" Jsc is the largest transportation hub in the Bulgarian section of the Danube River with a total area of 920 000 m<sup>2</sup>. Its importance is determined by its geographical location as an intersection point of Rhine – Danube Core Network Corridor, "The Route of Silk" and corridor TRACEKA. Port Rousse is a multimodal center, which is set at two port terminals:

- Rouse-West – specialized in the transshipment and storage of bulk and general cargo. It is equipped with loading facilities, including 11 universal cranes with capacity of 3-5 items. The capacity of the terminal is 500 000 t per year;
- Rouse East – is equipped with Ro-Ro terminal for handling of cars and trucks, universal cranes (17 to 32 tons capacity), forklifts (20 with 3-5 tons capacity), and pneumatic devices with average age between 30 and 40 years. The total cargo that can be handled along the harbor of Port Rousse East for a year is 1.5 million tones. The port is equipped with its own railway track with total length of 4700 m, and the distance to the nearest road is 2 km. It has an artificial estuary with vertical quay wall to facilitate loading and unloading of vessels at low water levels.

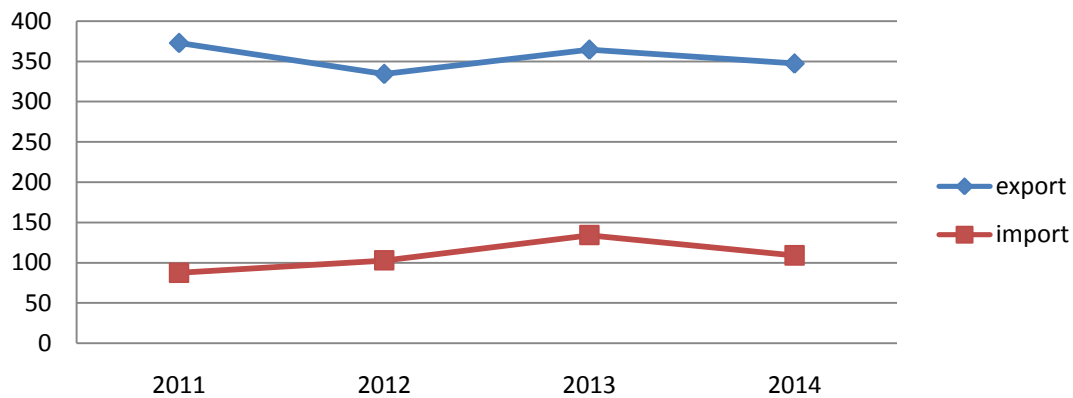
Port Rousse plays a major role in the national transport system, being directly connected to the biggest Black Sea port of Bulgaria – Varna, which could provide opportunities to attract transit cargo flows from Europe to the Near and Middle East (Koralova 2014).

## **II. Analysis of the ports cargo turnover by import and export**

Turnover is defined as the amount of money, taken by a business in a particular period. (Press 2005). Rebates and price deductions are taken into account as well as special charges that the customer might have to pay. Turnover does not include VAT or similar deductible taxes (Nozharov 2014) Turnover of river ports and inland waterway carriers in foreign trade is primarily associated with the balance of trade of both Danube riparian countries: Slovakia and

Bulgaria. It is necessary, so as to be explained in monetary terms the trade relations between these countries. Turnover of river ports and river operators in foreign trade manifested as revenues from export or import is decisive in calculating the net export, whose values are determinant for the formation of positive or negative countries' balance of payments.

**Trade relations between Bulgaria and Slovakia through export and import**

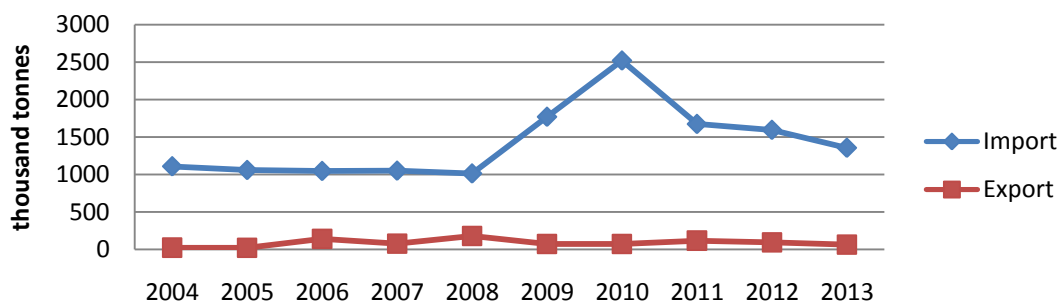


**Figure 1**

*Source: Statistical Office of the Slovak Republic*

As can be seen on the figure above, the highest share of trade relations between Bulgaria and Slovakia is occupied by exported cargoes – 76.6% and the rest is for the imported products – 23.4%. The export to Bulgaria forms 0.7% of the total export of the country, as the import from Bulgaria constitutes only 0.2% of the total import of Slovak Republic. The general trend that is observed is of slight increase after 2012 in the volume of exported and imported goods to and from Bulgaria. In 2014 import increases with 24.7% compared to 2011, while export decreases with 6.9%, compared to 2011.

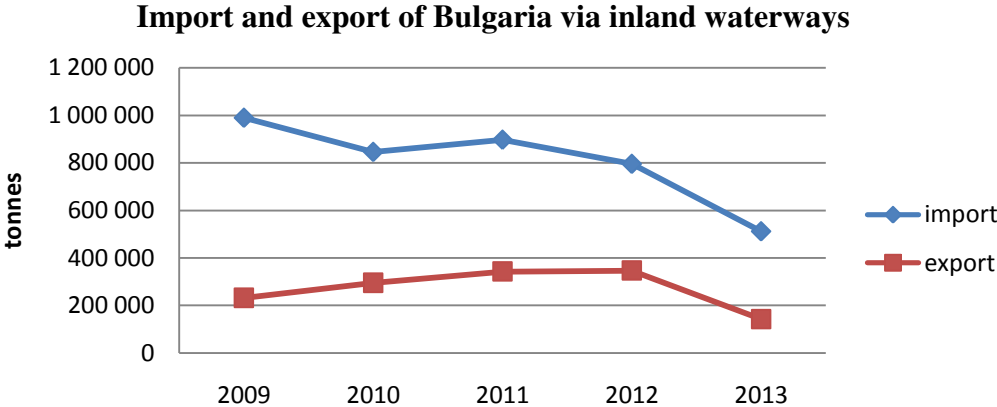
**Transported cargoes by Slovak carriers via inland waterways**



**Figure 2**

*Source: Statistical Office of the Slovak Republic*

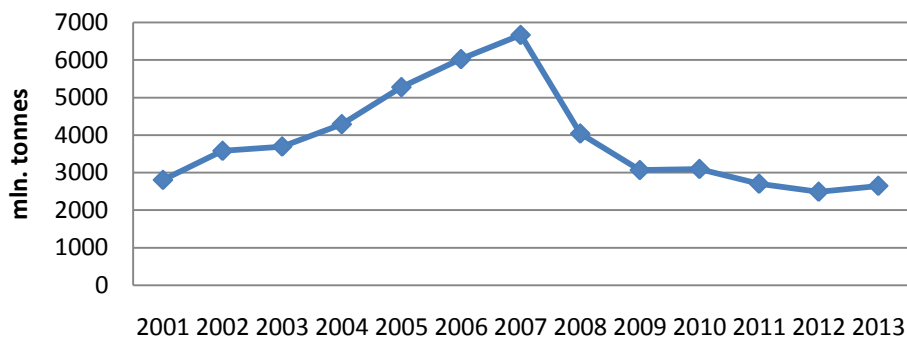
Seen from figure 2, Slovak carriers transport cargoes via inland waterways mostly by import, as its share is approximately 10 times higher than that of export. The volume of exported goods by Slovak inland waterway operators is almost constant during the observed period /2004-2013/ as average 87.7 thousand tonnes are transported per annum. Significant share of the total cargo volume constitutes the imported goods via road or rail from Poland and their export to Bulgaria and Romania via Danube River.



**Figure 3**  
*Source: Executive Agency Maritime Administration, Bulgaria*

The general trend that could be seen on the figure above is of decrease for both import to and export from Bulgaria via inland waterways. The volume of imported cargoes decreases 2 times in 2013 compared to 2009, while the decrease in export is not so significant – only 88 thousand tonnes. The main trade partners of Bulgaria in terms of export are Romania and Republic of Serbia and as far as import is concerned, its trading partners are Slovakia, Austria, Germany and Ukraine, which consisted fewer than 3% of the total import of the country. Exported cargoes are mostly agricultural products and fertilizers, while the imported cargoes consisted of cars, rolling stock and etc. The imported and exported cargoes are predominantly handled at ports of Lom and Rousse, as they are Bulgarian’s largest infrastructure terminals.

### Cargo turnover of Bulgarian river ports on the Danube



**Figure 4**

*Source: Executive Agency Maritime Administration, Bulgaria*

Cargoes handled at Bulgarian river ports on the Danube have increased average with 461.6 thousand tonnes per annum from 2001 till 2007. However, as a result of the world economic and financial crisis, a sharp decrease of 359.3 thousand tonnes in 2009 compared to 2007 is realised. The reason why such kind of tendencies are observed, due to the changes in the world economy, which result in moving industry and services toward small batch production. Obviously, the objectives of the European transport policy in the recent years has great impact on the transport services via inland waterways, as in 2013, a slight increase of 15 thousand tonnes compared to 2012 is presented.

### III. Conclusions

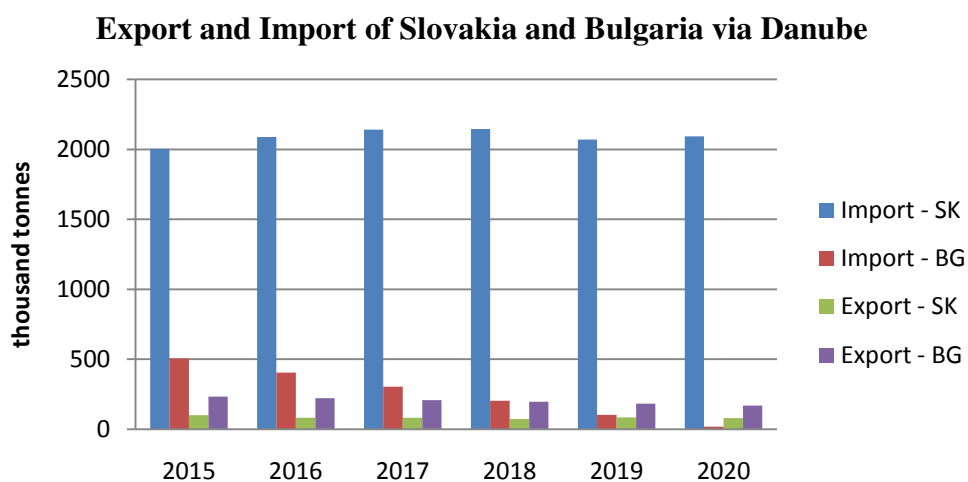
The favourable location of Bulgarian /Lom and Rousse/ and Slovak ports /Bratislava and Komárno/ on the Danube, as well the fact that Rhine – Danube Core Network Corridor passes through their territories, have key role for the trade relations between West of Europe and Middle East. As a consequence of the analysis, it was found out that ports' free capacity is not utilized efficiently, which results in decrease of import and export of cargoes at the ports /the trends are of general decrease for both countries in 2013 compared to 2011, (see figures 1 – 3)/. It was ascertained that ports are equipped with enough storage areas, transshipment facilities to handle variable cargo types and are well connected to the road and rail infrastructure of European transport network. In this regard and in accordance with the European White Paper on Transport for smart mobility, energy efficient and environmentally friendly transport services (DGMT 2011), the transportation of all cargo volumes that forms the import and export between Slovakia and Bulgaria could be shifted to inland waterway transport on the Danube.



Moreover, the application of information and communication technologies (Commission, Directive 2005/44 on harmonised river information services /RIS/ on inland waterways in the Community 2005) at Bulgarian and Slovak ports is in favour of development of the trade relations between both countries via Danube River, because:

- Tracking and tracing of cargoes and vessels in real time may limit the liability of transport operators in the event of force majeure such as loss and complete or partial damage of the transported goods;
- River information services are an innovative way by which the efficiency of river freight transportation can be enhanced. They help improve the terms of navigation and optimize the utilization of vessels and port infrastructure by time.

In this regard, a forecast for the development of trade relations between Slovakia and Bulgaria, on the basis of statistical extrapolation for the period 2015 – 2020 is made. The statistical data used consists mainly of transported cargo volumes by export and import via Danube River.



**Figure 5**

*Source: Author's own calculations*

Seen from the figure above, the balance of trade of Slovakia via Danube River will be formed mainly by import as its values are expected to reach 2.1 million tonnes in 2020, but the values of export will decrease to 81 thousand tonnes. What is observed about balance of trade of Bulgaria via Danube River is that till 2017 import will exceed export but after 2018 the opposite trends will be achieved. It is expected that in 2020 the export will reach the values of 170 thousand tonnes compared to 19 thousand tonnes for import. That is why, the future development of the trade relations between Slovakia and Bulgaria via inland waterway

transport must be directed to attract more cargo flows from Middle and Far East through Bulgarian and Slovak river ports via Rhine – Danube Core Network Corridor.

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