THE ROLE OF WATERWAYS FOR CURRENT EAST EUROPEAN GRAIN TRADE

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THE problem of infrastructural networks access for trade development in different branches is well known and were analyzed in huge number of papers during last two centuries. In this paper we would like to describe just a small part of this problem related to recognition of the role of the European inland waterways with competitive of some East European countries. Some of them have not been on so suitable geographic positions for high activity at the food markets. So, those countries had to find some transit ways and use all accessible ways for participation at the trade process.

Key Words: Danube River Ports, Visegrad 4, Ukraine, Grain Trade.

Introduction

The idea of this paper was born during last few meetings of Visegrad 4 countries and following the Danube strategy creation and promotion. Danube as one of the biggest European river has own history of relations with trade and traders. So, it is important to recognize the role for all ports at the Danube and Black Sea for grain trade promotion according to new challenges of the World market. The spatial distribution of commodities is determined by the quantities supplied and demanded in each of the competing regions or markets and by transportation and handling rates. This study analyzes the efficiency of using waterways for grain trade.

Historical Aspect – Mighty Comeback

The low value of many of the commodities moved and the high costs of land transportation urged movement of water craft as far inland on rivers as practicable. But river navigation posed some physical difficulties. There were large tides, low water levels during some seasons, and dredging needs. Mill operators had dams and resisted releasing water for navigation. Owners with riparian rights claimed tolls for improvements or for the use of embankments for pulling boats or transhipment. They sometimes resisted river improvements. There was government involvement early when City of London started developing the River Thames in 1179, and by 1500 several city corporations had been given river development authority. Upstream, the Crown gave development authority to local landowners who put forward specific development and toll schemes. The river experience yielded the first institutional form for canals, and there were carry over technological experiences. River development utilized dredging, flash boards, and a few locks. The flash board system required a good water supply as boards were removed and flood water raised boat levels, and canals could not be so wasteful of water. Lock technology, in particular, could carry over directly as could dredge technology. Also, there was learning about construction. William Smeaton, later a famous canal engineer and recognized as the Father of British civil engineering, obtained his first experience on river projects.

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The beginning of the English canal era was marked by the Duke of Bridgewater's 7.5 mile (12 km) canal from coal mines on his estate at Worsley to Manchester. Construction began in 1759, and the canal opened 6 years later. Bridgewater's canal had some interesting technological features. It tied into his mine drainage scheme, and the boats ran into the mine for loading. Although the canal could accommodate larger boats, the within-mine operations kept the beam of the boats to about 7 feet (2.2m); they were 50 feet (15m) long. In order to hold water, the canal was lined with puddle clay, and to avoid extensive lock construction, an aqueduct was constructed over the River Irwell. This canal caught the imagination of the public. As a financial success it motivated developers and investors. It served as a model for subsequent construction and about 3,000 miles (4,800 km) of canals were opened in the next 90 years. Waves of canal building followed in Europe and North America. Systems expanded in France and the US to about the size of the English system.

There was a flurry of inland navigation acts between 1759 and 1794. Most of these were for narrow canals, using the 7 foot beam boat design from Bridewell's canal. Adoption of the 7 foot boat kept construction costs down and saved water, a problem for many canals. Boats ran 70 feet (21.4m) in length, and could carry about 30 tons and be hauled by a horse or mule moving along a tow path alongside the canal. Canal building yielded much experience with earth moving, lock structures, bridges, aqueducts, tunnels, etc. Firms were organized for contract construction and engineers, managers, and labourers gained experience.

Although navigation acts were private acts, the policy-institutional aspects of canal building began to fall into a pattern. Canal companies were organized and issued stock. There was carryover of rights of use from roads, and acts began to require that anyone could operate a boat if tolls were paid. Companies emerged to offer canal plus pickup and delivery services. Where the terrain was difficult and/or water in short supply, incline planes was constructed. Building on the fringe of the feasible pressed for suitable technologies, and some small tub canals were constructed. Commodities were moved in trained, 6-10 ton "tubs". Each could be moved by a horse on a near-level tramway, and they could be handled relatively easily on inclines. By about the second decade of the 1800s the era of canal building in England was over. In part, the system was "built out" in that the feasible canals had been built. Also, rail competition came alone. The modern modes owe much to canals. They demonstrated the pay-offs from capital intensive transportation improvements. They increased construction know how and institutional experiences. They also provided management, financial, and operating experiences and related institutions. There was also important learning by the public – learning about investment opportunities and about the off-system developments induced by transportation improvements (Garrison, 2003).

Potentials for the Development of Several Reference Market Points Alongside the Danube River and Canal

It is recognized that each major exporting country has one or several major reference trading points: e.g., Vancouver, Port Cartier, and Thunderbay in Canada; several points alongside the Mississippi from St. Louis to New Orleans in the United States; in the west, Portland; and, in the east, Baltimore, etc. Similarly, Rouen and Bordeaux are reference markets for French grains, or Rotterdam, in the Netherlands for both imports and exports. With some exceptions, these reference trading points are located at the mouth of major waterways and are equipped with efficient handling and storage facilities. Similarly, it is likely that some locations on the Danube River would be developed as reference trading points for grain and feed. Reference trading points come as a result of the development of infrastructure and trade. They improve the economic link with international markets: In the specific case of the Danubian region, when developed, they would play an important role in creating awareness about marketing techniques that are used in international trade and that could be adapted to domestic commerce. It is likely that, when properly equipped, Constanza in Romania, Burgas and Varna in Bulgaria – three ports situated on the Black Sea – will become prevailing reference points for Central Europe. However, numerous constraints for such developments will slow this process. They include trade barriers (e.g., export restrictions, including between countries in the region), preference for domestic port facilities to save foreign exchange in handling operations to/from ship, quality and availability of storage, handling equipment, port infrastructure, connections with railroad, remaining quasi-

monopolies, contract intermediation and contract enforcement, market surveillance by governmental agencies or parastatals; inspection services; custom procedures; ability to trade in foreign exchange denomination; etc. *(www.fao.org)*

Visegrad 4 Countries Waterways - Dependence and Use

The Danube basin is formed by rich agricultural plains situated in the above-mentioned countries. Transportation on the Danube waterways suffers, on several sections, from significant political unrest, embargoes, and severe economic crises resulting from the on-going transition from a centrally-planned to a market-oriented economy. The Danube River is, therefore, still underutilized for the transportation of bulk commodities and other goods. However, in the longrun, in order to make domestic agricultural production internationally competitive, it is critical to the region that waterways become a major route for the transportation of grain and feed products (for local trade as well as for imports and exports to/from the region). For several decades before World War II, the Danube River was the main outlet for a country like Romania. In these countries, grain exchanges were operating on a rather large scale, the main ones were located in the main cities (e.g., Sofia, Budapest, Bucharest), but also in the production regions and in the main ports (e.g., in Romania, Braila, Constantia, Galatz, Timisoara, Chisinau –now the capital city of Moldova). After World War II, flows of products changed direction. Most of them became either inward oriented, or directed toward the Soviet Union for which train was, by large, the main transportation mode. Since 1989, the adjustments linked to liberalization and market reforms in the region very much affected production and trade in all the countries surveyed by the mission. The current order of magnitude of imports of grain, soybean and soymeal by Romania, Bulgaria, Hungary, the Czech and Slovak Republics and the Federation Republic of Yugoslavia was, over the 1988-92 period, between 5 and 7 million tons, while, for the same countries and the same period exports situated between 3 and 5 million tons. These figures were used on a conservative basis to assess the benefits from the proposed public and private infrastructure development and rehabilitation. At this stage, it is fair to say that changes in grain and feed production and trade are, however, not likely to remain marginal in the three countries visited by the mission.

Now Danube is the 2,857 km drains 817,000 sq. km including all of Hungary; most parts of Romania, Austria, Slovenia, Croatia, and Slovakia; and significant parts of Bulgaria, Germany, the Czech Republic, Moldova and Ukraine. The river basin also includes parts of Yugoslavia, Bosnia and Herzegovina and, through its network of tributaries, smaller parts of Italy, Switzerland, Albania and Poland. The Danube River discharges into the Black Sea through a delta which is the second largest natural wetland area in Europe *(http://waterwiki.net/index.phd/Danube-TEST)*. As we can see, it is rather big and important part of European transportation and trade infrastructural system.

The River Grain Terminal System

It is anticipated that over the medium term, the grain production and export marketing system of the region revitalized, modernized and privatized so that this region regain its position as a one of the major players in international grain trade. In addition, it is assumed that all countries of the basin continue to be major grain and livestock production areas. It is not a surprise that main role here playing countries of the V4.

During last ten years all countries of V4 played an important role in European agriculture. Historically, the countries of central and eastern Europe had own specialization in agrifood production, and only two of them were the grain growing countries – Poland and Hungary. The problem of river transportation of grain for now is extremely important just for Hungary (Figure 1), mainly because of different trade flows direction.

The main trade flow for Hungary is the countries of Black Sea basin and some Asian countries. Here it is important to say that the biggest port in this region is Constatze in Romania. Other ports and facilities can be considered mostly as substitution (because of long river traffic and chipper shiftment).

One of the main problems for all countries, involved in international trade is the access for transport and transit facilities and guarantee of fast and quality shipment.

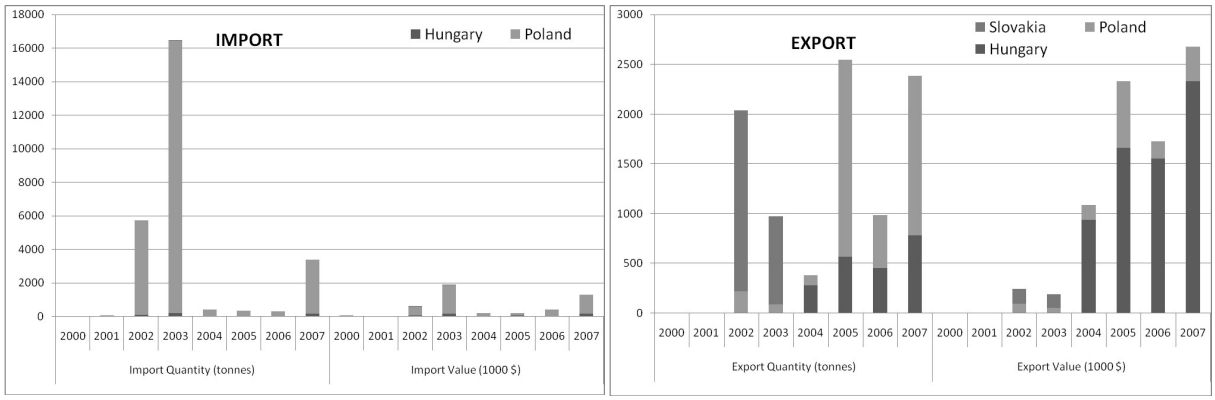

Figure 1: V4 Graine Trade Value and Volume, 2000-2007

Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

There are currently two inter-linked systems for grain and feed shipments: rail and river transport, both to and from these countries to the Black Sea. In addition, the Danube is also now a major waterway to northern Europe. With significant improvement, the river system of terminals would facilitate general commerce and trade as well as the importation of required protein meals, concentrates, and other bulk commodities. Professionals in the trade believe that, on the short- to medium-term, a majority of shipments will be made-through the Danube waterways. Agricultural trade of bulk commodities with Western Europe would mainly consist of oilseeds to the Netherlands and Germany, with return shipments of soymeal and other bulk commodities. With regard to eastern destinations, shipments of agricultural products would consist mainly of cereals, with transhipments in the delta region either to overseas destinations, through the Bosporus Strait, or to the Don-Volga river system; and return shipments of bulk products would be for a large part made of fertilizers. In this context, port facilities alongside the Danube and the Black Sea should again provide interface between international and domestic markets. Privatization and the development of market-driven economies in these countries would require more cost-effective and flexible shipping facilities and equipment. In order to work out such changes, linkage with rail is already largely available, but investments into specialized grain hoppercars would be needed both in Bulgaria and Hungary. Trucking in the three countries is mostly done by small trucks, handling only 15 tons. Investment in semi-trailer trucks (30 tons) would be advisable in order to improve cost-efficiency for short distance and urgent deliveries (e.g., to complete the loading of a barge without waiting for another train) *(http://faostat.fao.org)*.

Ukraine – Part of the European Transit System

Ukraine has developed seaport infrastructure and strong cargo handling capabilities. Ukraine has 20 sea ports along its Black Sea and the Sea of Azov coastline. However, the number of private terminals, which operated as independent legal entities in major ports, has been steadily growing.

The aggregate berth line of Ukrainian seaports totals more than 30.8 km. Ukrainian ports may be broken down into several groups, depending on geographic location and capacity:

1. Odessa, Illichivsk and Yuzhny are the three largest Ukrainian ports, all co-located in the north-western part of the Black Sea. These three ports alone account for 60% of the total marine cargo turnover, offer the best approach ways, and are able to handle large ocean vessels with a draft from 11.5 to 15 meters. Odessa and Illichevsk also have the largest container handling capabilities among Ukrainian ports.

2. Mykolayiv, Kherson, Oktyabrsk and Dnipro-Bugsky (structural subdivision of the Mykolayiv alumina plant), all co-located at the mouths of Ukraine's major rivers - Dnipro and Pivdeny Bug – form another important grouping of sea ports.

3. Crimean sea ports: Yevpatoria, Sevastopol, Yalta, Theodosia and Kerch. Given the Crimea's tourism appeal, the ports of Yalta and Sevastopol have great prospects for passenger and cruise line development. Port Theodosia specializes in crude oil and petroleum handling.

4. Berdyansk and Mariupol, on the northern coast of the Sea of Azov, are the main export gateways for large industrial enterprises in Donbass and Pryndiprovya. The major commodity groups processed at these two ports are industrial metals, coal and ores, fertilizers and containers. Genichesk is the smallest of Ukrainian ports also located in the Azov Sea area.

5. Three Ukrainian merchant seaports are based in the lower Danube: Reni, Ismail and Ust-Dunaisk. Before the war in the Balkans in mid-1990's, these three ports played an important role in handling the Danube cargo traffic, but in recent years these ports have been among the enterprises suffering great setbacks, mainly, because of the United Nations embargo on trade with Yugoslavia (in 1992-1995), and destruction of Yugoslav bridges over the Danube in 1999. Two if them – Reni and Ismail are going to associate with European transport system.

Grain and Feed Trade through the Black Sea

The recent large experienced net deficit in grains has reversed the role played by the sea port of Constanza which is the main access gate for imported grains. And the main trade flows from Central and East Europe, as we can see in Figure 2, goes for Asian and African countries, which demand in wheat and grain is constantly increasing. The main gate for trade with Asian and African countries both for V4 countries and Ukraine is the Black Sea. And here is important to recognize the role for all ports along Danube and seacoast. Among 5 main ports of Danube basin the most powerful as we said before is Constanze (Romania). Then we have a group of ports, including 2 in Ukraine (Reni and Ismail), one in Moldova and two in Hungary. The role of any of them is tracking of cargo from inland facilities upon shipment. And here is international trade activity extremely important for all countries. So, the expectation for Danube basin development is rather strong, especially in the perspective of new trade flows tendencies at the World market.

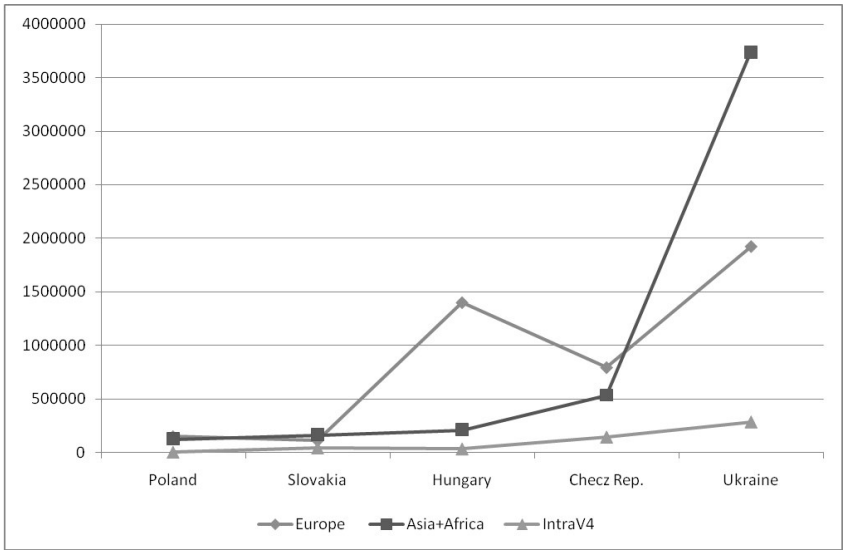

Figure 2: The Main Importers, by Regions, 2005, MT.

Source: http://faostat.fao.org

It is significant to say that all of grain producing countries predominantly oriented for external markets. European and Scandinavian countries oriented for domestic market demand. All extra grain redirects for the same Asian and African market.

Conclusion

There are three major conclusions from the study. First, relatively large changes in rail rates can require stimulating a diversion of traffic from eastern markets for export. Second, sea rates to the Asian and African markets would increase substantially before a significant diversion would occur away from westbound shipments. Third, increased Asian and African demand would result in larger quantities of stock supplied from other regions. Producers' prices and net revenue would also increase.

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