AIR CARGO TRANSPORT IN SERBIA: ANALYSIS, DRIVERS AND TRENDS

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Abstract: *This paper attempts to provide an overview of air cargo transport development in Serbia in terms of volume and network flows. The air cargo side of the industry in Serbia has been often underestimated, yet just below 1% of the total cargo transport is carried by air. After a long period of stagnation, air cargo is recording an upturn in the recent years, with average growth rate over 25 % in last three years. In order to continue this trend, it is important to understand the air cargo transport development and to identify the key drivers and constraints of this industry in Serbia. Taking into account that air cargo plays an important role in the transport chain and in the globalized economy, this analysis offers valuable information for better management and regulatory decisions.*

Keywords*: air cargo, network flows, key drivers*

1. INTRODUCTION

It is well known that air transport is preferred solution for carrying higher value, time sensitive and economically perishable goods, i.e. the goods for which the most important parameters are speed, reliability, and security. According to Arcandia Consulting (2016), 30% of shipped goods are perishables (by nature: food or flowers, or by destination: press); and the 70% are manufactured goods (spare parts, chemicals, pharmacy, etc.).

The demand for cargo transport, including air cargo, is dependent on economic activities. Trading activity between countries pulls the air cargo traffic. Although economic activity (expressed through the GDP per capita, foreign direct investment (FDI), international trade of goods (IT_g)) is the primary influence on air cargo development (Kuljanin et al.), other factors must be considered such as inventory management techniques, modal competition, environmental regulations, globalization, market liberalization, national development programs, and the introduction of new air-eligible commodities, (Boeing, 2016). Therefore, the aim of this paper is to research which factors have been responsible for air cargo growth in Serbia in last few years.

Namely, 27 million tonnes of freight is carried from/to Serbia by all mode of transport in 2015 (54% by road, 19% by river, 15% by train and 12% through pipelines). Despite low volume (less than 1 permille of total tonnes), the value of goods carried by air is high, which is in accordance with the world trend. The demand for air cargo transport in Serbia grew 31% in 2014, 29% in 2015 and 17% in 2016. In order to understand what drives this trend, it is important to analyse the air cargo transport development and to identify the key drivers of this industry in Serbia. This paper attempts to provide an overview of air cargo transport development in Serbia in terms of volume and network flows. We try to reveal what are the main causes of the air cargo growth in Serbia. Analysis in this research is based on data from Statistical Office of the Republic of Serbia (SORS) database.

2. AIR TRANSPORT SYSTEM IN SERBIA

2.1 Airports

There are two airports in Serbia - "Nikola Tesla" in Belgrade and "Constantine the Great" in Niš which handle the air cargo traffic from/to Serbia through the scheduled and chartered freighter services. Airport "Nikola Tesla" is dominant in terms of cargo volume - in 2015, it handles the greatest air cargo volume taking into account airports in countries such as Croatia, Bosnia and Herzegovina, Macedonia and Montenegro. In recent years Belgrade has been one of the fastest growing air cargo airports in the region and its development is closely related to three recent events in Serbia: liberalization of air transport market, liberalization of foreign trade and transformation of loss-making JAT Airways into Air Serbia.

The share of total air cargo volume, handled by Niš Airport over the period 2004-2016 was below 5% with exceptions in 2010 (17%) and 2016 (12%). These exceptions are results of ad hoc charter flights. Excluding these two years, the average share of Niš Airport in total air cargo volume in Serbia was 4.4%. The growth is expected to be continued in following years, since Turkish Airlines started the schedule cargo flights in the winter season 2016/2017 between Niš and Istanbul. Niš Airport management plans to benefit from their geographical location and to develop the regional center for cargo traffic through which the goods will be exported from Bulgaria and Macedonia.

2.2 Airlines

There are four type of operators in air cargo industry: *combination carriers*—passenger airlines offering cargo services, *all-cargo airlines* offering chartered and/or scheduled services, *integrated carriers* offering door-to-door services by combining air and land transport, and *leasing companies* providing aircraft on dry or wet lease (World Bank Report, 2009).

More than ten combination carriers operate regular scheduled and charter flights at Belgrade Airport. Besides combination carriers, four cargo airlines offer direct scheduled cargo flights from/to Belgrade airport. Turkish Cargo operates once per week on the route Istanbul Ataturk (via Moscow Vnukovo) – Belgrade – Istanbul Ataturk. European Air Transport Leipzig offers every working day flights from Budapest to Belgrade and further to Linz or Leipzig, as well as Mediterranean Air Freight on the route Ljubljana – Belgrade – Ljubljana. Finally, Swiftair operates every working day from Cologne/Bonn to Belgrade, and then to Sofia. European Air Transport Leipzig is one of DHL's subsidiaries which offers services in Europe and parts of the Middle East and Northern Africa Region. This airline belongs to the group of integrated carriers.

3. ANALYSIS OF AIR CARGO TRANSPORT IN SERBIA

Over the past three years, Serbia has a sharp rise in air cargo traffic, with average growth rate more than 25% (Fig. 1). In 2016, Airport Niš had notable contribution in terms of freight tonnage (nearly 2000 t). Fig. 2 shows the development of air freight between 2004 and 2015. It can be observed that from 2004 to 2013 air cargo industry showed stagnating level (close or over 8000t carried by air). In 2013 and 2014 air cargo volume grew on average 30% per year. It is clear that foreign airlines penetrated the Serbian market from the beginning of process of liberalization (the Open sky agreement was signed in 2006 and ratified in 2009). The air cargo market share of foreign airlines increased from 50% in 2004 to more than 80% in 2015.

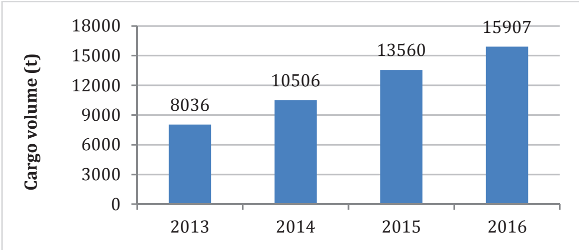

Figure 1. Total air cargo in Serbia, 2013-2016

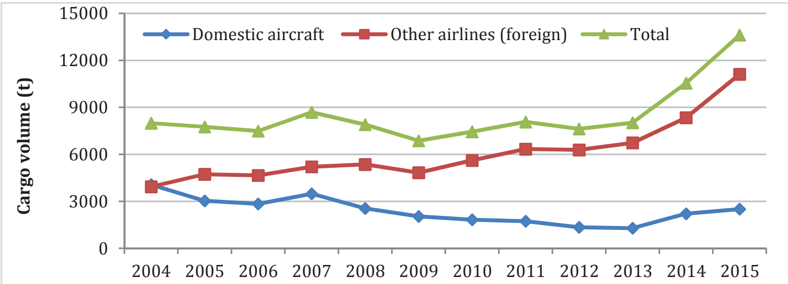

Figure 2. Total air cargo, air cargo carried by domestic and foreign aircraft in Serbia, 2004-2015

Although, the liberalization of Serbian market started back to 2006, the government protected its flag carrier (JAT Airways) up to 2013. In 2013 the Government of Serbia and Etihad Airways entered into an agreement which reorganized the operations of JAT Airways and renamed it Air Serbia. The flag airline had over 50% in 2004 of the total air cargo market share which was reduced step by step over a time. The average air cargo market share of national airline in last four years was 18% (Fig. 2).

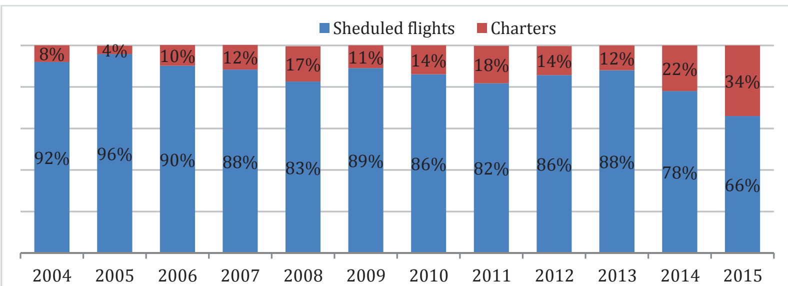

Figure 3. Shares of scheduled flights and charters

The air cargo traffic from/to Serbia from 2004 to 2013 was performed mainly by scheduled flights (on average of 88% of total traffic per year). In last few years this share is changed. In 2015, one third of air cargo traffic was operated by charters flights (Fig.3).

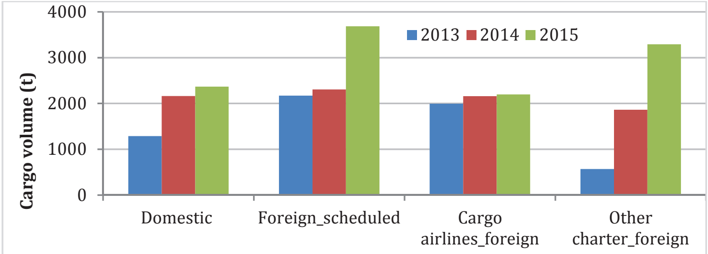

Figure 4. Total air cargo carried by domestic aircraft and foreign airlines (scheduled, cargo and other charter flights)

Fig. 4 shows total air cargo carried by domestic aircraft, cargo airlines and other charters excluding all airlines with schedule flights from/to Serbia. Air cargo volume served by cargo airlines (scheduled flights) in last few years was 2000t on average. Air Serbia recorded the modest performance related to air cargo volume. In 2014 and 2015 Air Serbia carried app. 2000t per year, too. It is very interesting the fact that in 2014 and 2015 there is significant increase in carried freights by ad-hoc charters (570t in 2013, 1863t in 2014 and 3292t in 2015).

4. AIR CARGO FLOWS

The main air cargo flows are presented in terms of cargo volume (Fig. 5), showing that the key markets for Serbia air cargo are the EU, Turkey, Middle East and Russia. The flow Serbia-Turkey grew in 2015 from 1500t to near 2500t. As it can be seen, the air cargo volume Serbia-Turkey is larger than total air cargo volume Serbia-EU (all countries, including Germany). Air cargo flow Serbia-Germany is largest among all countries in European Union (share is app. 23% of total Serbia-EU air cargo volume). The flow to/from Middle East is the third largest flow, which is in accordance with the forecast of Boeing (2016). Serbia has the advantage of trade with Russia in respect to the countries of the EU, because of EU sanctions and impeded exports/imports to Russia. Serbia took this advantage of free trade in goods between Serbia and Russia, but considering the amount of carried freight between these countries, all the potentials and benefits have not been used yet.

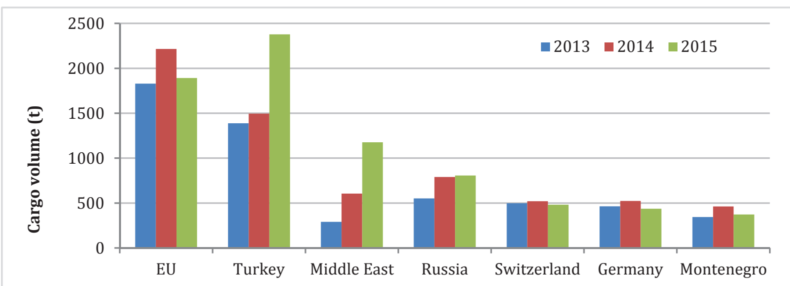

Figure 5. Main air cargo flows from/to Serbia, 2013-2015

Several airlines operate on route from Serbia to Turkey (two full-service carriers Air Serbia and Turkish Airlines and one low-cost Turkish carrier Pegasus). As can be seen in Fig. 6, Turkish Airlines is dominant operator on routes from Serbia. Pegasus has minor contribution related to the transported freight. However, Air Serbia (JAT Airways) did not benefit from this free trade agreement with Turkey, and its share stayed very low over the observed period.

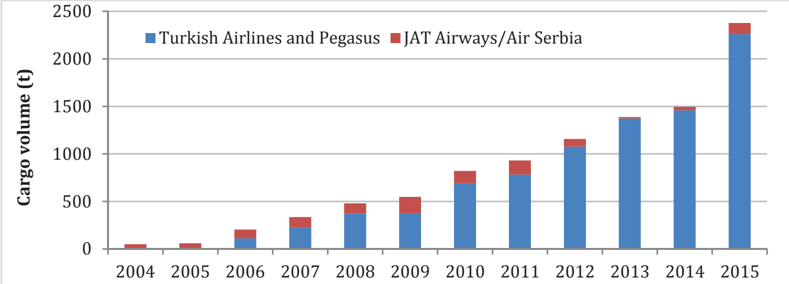

Figure 6. Total air cargo between Serbia and Turkey, 2004-2015

In recent years, Turkey has made significant investments and legal arrangements to improve and diversify its transportation system including the aviation sector. These efforts had positive impact on production and contributed to the development of its foreign trade (Transportation in Turkey, 2011). Moreover, liberalization of foreign trade in Serbia contributed significantly to growth of exported values. Medar et al. (2016) stated that the best indicator of such a contribution is the value of exports growth in the year of trade liberalization. For example, in the year 2011 when free trade agreements came into force between Serbia and Turkey (this agreement was signed in 2009), the average value of exports more than quadrupled (from the 34.2 EUR mil. to 151 EUR mil.). The average growth rate of exports for Turkey increases from 5.2% before liberalization to 43.6% after liberalization. All above mentioned facts can explain impact of Serbia-Turkey air cargo flow to air cargo development in Serbia.

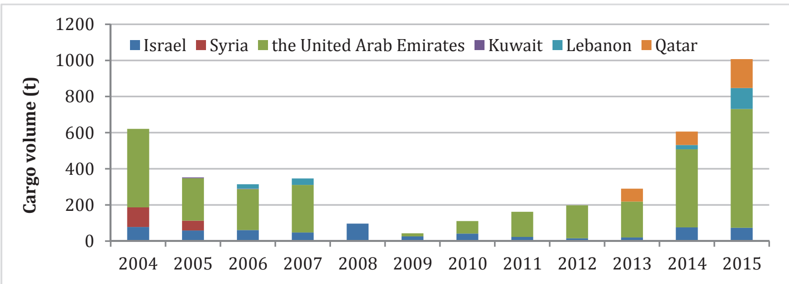

Figure 7. Total air cargo between Serbia and Middle East, 2004-2015

Although very important, the flow Serbia-Middle East significantly varied in the last decade (Fig. 7). Namely, in the period 2004-2012 the national carrier JAT Airways operated on route Belgrade-Dubai and this flow is only constant with small oscilations (along with the Serbia-Isreal flow, but the amount of transported good on this flow is much lower). Other destinations such as Syria, Kuwait, Lebanon are also covered by Serbian national airline or some ad-hoc charter flights, but these flows were not steady in the reporting period. "The Arab Spring", world economic crisis and deterioration of JAT had a strong impact on existence of these flows. Fortunately, in the recent years the flows to Middle East showed the signs of recovery. Particularly, all the credits of their re-growth goes to the airlines from Midlle East. Arabian Gulf-based airlines are among the fastest growing full service airlines in the world. Whereas world scheduled freight traffic, measured in freight tonne-kilometres, grew strongly by 4.6% in 2014, Middle Eastern airlines recorded the fastest performance in freight traffic with a growth of 11.3% (Arcandia Consulting, 2016). Two of „big three" Gulf airlines (Etihad Airways and Qatar Airways) operate at Belgrade Airport as well as Flydubai, low-cost airline with hub in Dubai. Fly Dubai started with operations in Belgrade in 2011. Qatar Airways introduced flights from Belgrade to Doha in 2012. Etihad Airways started to fly every day from Belgrade to Abu Dhabi in

2013. The most prosperous countries of the Middle East (i.e. oil-producing) invested substantially in the aviation sector and created positive conditions for airlines which started to benefit from both geographical positions, cost structure which allows tremendous savings in many cost categories and additionally generated demand for air cargo, (Kuljanin et al., 2015). A portion of these investments spilled over to the trends towards Serbia air cargo transport.

5. CONCLUSION

Based on this analysis, it can be concluded that a sharp rise in air cargo traffic in Serbia may be explained on following way. Besides the common drivers (GDP, FDI and IT_g), the liberalization of Serbian aviation market, penetration of some fast growing airlines, as well as bilateral free trade agreements with some countries, are certainly the additional reasons that pull air cargo traffic in Serbia. Precisely, based on data analysis, it is obvious that Turkish airlines and Middle East airlines contributed mostly on the increment of the air cargo transport in this part of region.

However, the significant contribution to the air cargo upturn in Serbia in the recent years gave the ad hoc charter flights. Their share in 2015 was 25% in total air cargo volume. Unfortunately, what drives this segment of flights is not transparent from the SORS data in available publications.

ACKNOWLEDGMENT

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