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The Role of Air Freight Transport in Polish Economy

Abstract: Air transport is currently one of the major branches of transport both in national and global economies. It is one of the fastest, most expensive, but at the same time also most effective types of transportation. It plays a very important role in global economy, particularly in transcontinental carriage of goods and passengers. Its availability and quality constitute a powerful driving force for country's development.
International trade dynamics and demand for transport services are growing year by year. Their growth factors may be seen in context of the rising volume of goods movement and average distances of journeys. They foster development of global logistics and global supply chains, consequently leading to further selection of streams of goods movement, thereby establishing a basis for the new economic order on a global scale.
Operations of modern economies depend on an efficient flow of goods, services and capital between individual markets. Air transport is a key element in combining local markets with global markets, which in turn preconditions their growth.
Air freight transport, both in Poland and worldwide, is seen mostly from the angle of long-distance passenger flights. Given that, one often tends to forget the role of this transport branch with regards to freight transport. Air cargo transport is a booming branch with great development potential. This, however, is related to considerable experience and knowledge on the part of both goods carriers and owners with regards to technical capacities of a given aircraft, maintenance costs, and rule awareness. The purpose of the following study is to draw attention to air cargo as a key freight transport branch and to analyse and evaluate its current situation, inclusive of its risks and barriers. The study endeavours to determine the role and meaning of air freight transport in Polish economy.
In view of the vast scope of the subject, the issues in the study were elucidated mostly on the basis of existing airports.

Key words: Freight, air transport, Polish economy, air cargo.

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Introduction

Air transport is one of the key elements of country's economic infrastructure, as it is the fastest, most expensive, and at the same time most effective type of transportation. In the era of fast developing global economies, it is of special importance also for long-distance, or transcontinental, transport services. The availability, but also the quality of services provided by air carriers, constitutes a powerful driving force for country's growth.

According to the International Air Transport Association [IATA], only just above 1% of the global freight is carried by air, which is 35% of the world's trade in terms of value. Upon accession to the European Union, the Polish domestic air transport market became available to EU carriers. However, our country was not prepared for it [Kuczek 2015].

One can impose a question why the country was unprepared. Upon entering the European Union in 2004, the Polish government did not negotiate any transition periods that would protect domestic markets against competition. These were the times of a new flying era, new conditions and legal rules, and most importantly, a gradual increase in affordability of tickets for the Poles. What is more, air carriers began to realize hidden potential of individual regions.

On 18 December 2000, Poland signed a treaty with the European Commission regarding complete liberalization of the air transport market. The Air Law adopted in Poland in 2002 allowed transposition of the relevant EU provisions. Moreover, it comprehensively regulated the following: market access, air staff, technical issues, and strengthening of aviation administration through the creation of the Civil Aviation Office (in Polish: Urząd Lotnictwa Cywilnego). In 2003, an agreement was signed establishing the European Common Aviation Area, which allowed foreign air carriers compete with PLL LOT.

Liberalization activities in air transport undertaken within the EU led to emergence of new carriers on the aviation market – low-cost carriers (LCC). Consequential fast competition growth ultimately led to aviation cost reduction, price cuts, and gains in air transport accessibility. Furthermore, the quality of passenger and aircraft services increased significantly. Airports ceased to be seen as „lonely islands", as they began to be one of more important elements of transport branches, closely related to railway and urban communication.

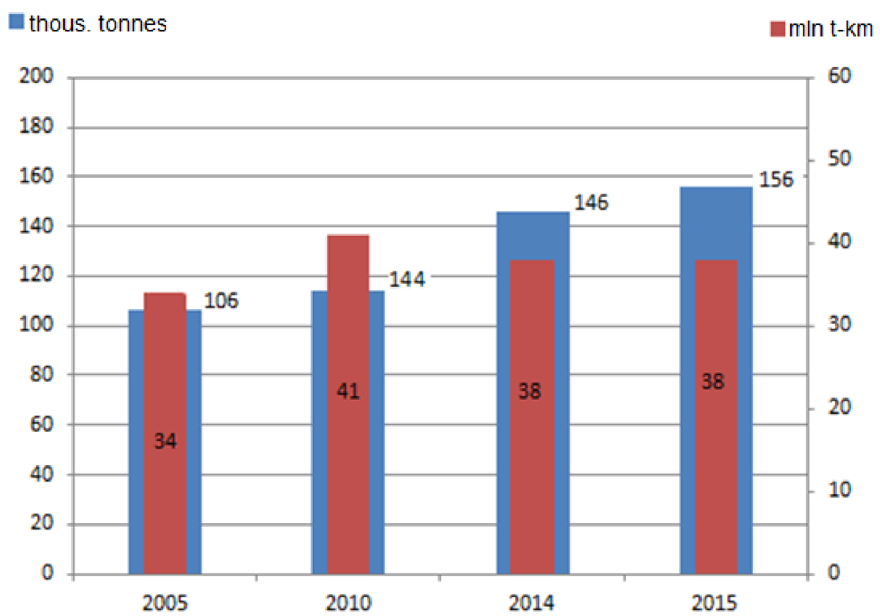
It is estimated that the total annual input of the aviation sector in the world's economy is approximately 2.6 trillion USD, and the estimated employment – 60 million people. About 5.2 million people is employed in air transport in the European

Union and the sector itself generates 380 billion Euro, which is 2.5% GDP. In the 21st century, aviation is closely linked to economic development, labour market, trade and international transport [dlapilota.pl 2016].

Air freight market in Poland

Air freight market in Poland is currently served by three largest airlines: Polish Airlines Lot SA Cargo (18.3%), Lufthansa (17.6%), and Emirates (9.3%), which combined constitute 45% of the transportation market. Some time ago the above group was supported by the following: Qatar Airways with flights to Warsaw performed by wide-bodied A330, and Turkish Airlines. Remaining market share is served by other airlines. The Polish market of air freight forwarders comprises more than 120 companies. The biggest of them are: DHL Global Forwarding, with 16% of the transport market from Poland, CEVA Logistic – 7.6% and DB Schenker – 6.4% [dlapilota.pl 2016]. In 2016, 76,200 tonnes of goods were carried by air in Poland, which was nearly 1% of the European air freight then. The figure below shows transport growth dynamics during 10 examined years.

Figure 1. Transport of goods by air in Poland (2005, 2010, 2014, 2015)



Source: Own study compiled on the basis of: wnp.pl 2016.

In 2015, Polish airports handled as little as 81.5 thousand tonnes of air freight, which accounts for 0.15% of global transhipments. The highest proportion of air cargo output in Poland, i.e. 58.2 thousand tonnes, was recorded in the Warsaw Chopin Airport – see Table 1.

By comparison, it is worth noticing that the Hong-Kong airport, which is now the largest air transport hub in the world, only last year handled 4.4 million tonnes of freight; whereas, the biggest hub in Europe located in Frankfurt am Main – 2.1 million tonnes. The only consolation is that our airports feature high transhipment dynamics (11.8% in 2015 compared to 2.2% of global dynamics).

Table 1. Air cargo transhipments in Poland (2015–2016)

Airports	2015 (in thousand tonnes)	I–VI 2016 (in thousand tonnes)	Change I – VI year-on-year (in %)
Warsaw Chopin	58.2	32.24	16.0
Katowice-Pyrzowice	14.5	7.45	7.3
Gdańsk Lech Wałęsa	4.4	2.16	-10.7
Rzeszów-Jasionka	4.0	0.38	-82.7
Wrocław-Starachowice	0.09	0.56	2821
Total	**81.5**	**43.53**	**11.0**

Source: P. Stefaniak 2016, p. 43.

Given the foregoing, it is worth to remind one of the words of the Director of Warsaw Chopin Airport, Mariusz Szpikowski, who depicted the situation on the market of cargo operations in 2015 as follows: „Year 2015 was a strong year in terms of cargo operations. Chopin Airport has been the Polish leader in the movement of goods for many years now. Forecast indicated that this year demand for goods carried by air to and from our part of Europe will continue to rise. We are negotiating with new cargo carriers. We are on a growth and development path in this category of air services" [pasazer.com 2017].

Polish airports transport also post, which accounts for approximately 15% of the total transport volume. In the year 2015, a slight drop was observed in the transport of post compared to its transport the year before, which was about -7.4%. Chopin Airport handled more than 14 thousand tonnes of post. Domestic operations, similarly to the preceding year, decreased by 48%. However, the mass of post transported on international and national routes increased by 2.2% – see Table 2.

Table 2. Tonnage of post transported in 2015

		Outgoing	Incoming	Total	Change 2015/2014
Post [kg]	Total	8,181,244	5,889,230	14,070,474	- 7.41%
	International flights	7,447,195	5,096,387	12,543,582	2.21%
	Domestic flights	734,049	792,843	1,526,892	-47.79%

Source: Own study compiled on the basis of: pasazer.com 2017.

Most post from the Warsaw Airport is delivered to Frankfurt, London, Paris, Amsterdam and Copenhagen. In 2015 the largest increase was recorded by Paris (39.5%), and the biggest drop by London (by 12.1%) – Table 3.

Table 3. Cities to which most post was delivered in 2015

City	2015	2014	Change 2015/2014
Frankfurt	1583.3	1663.3	-4.8%
London	1486.4	1691.8	-12.1%
Paris	1160.8	832.1	39.5%
Amsterdam	888.4	781.9	13.6%
Copenhagen	660.3	581.1	12.1%

Source: Own study compiled on the basis of: pasazer.com, 2017.

The above data refer to 2015. For comparison, it is also important to note the situation on the market of cargo operations in the previous years. Annual dynamics of changes in air cargo traffic in Poland in the years 2013–2014 and 2015/2014 are presented in the Tables below.

In 2014, there was a fast growth of air freight transport in Poland. Relying on data from the Civil Aviation Office, more than 72 thousand tonnes of goods were carried at the time, which was an increase by 17% when compared to amount of goods transported the previous year. Most goods from Warsaw Airport were transported as part of international traffic and only 688 tonnes were transported within the country. Import was approximately 29 thousand tonnes and export 23 thousand tonnes. In addition, 15 thousand tonnes of post flew from there.

The second place in air cargo transport at the time was Katowice-Pyrzowice Airport with more than 14 thousand tonnes. Every year, more and more goods are being transhipped at the airport.

Table 4. Air transport in Poland – number of shipments handled in national and international traffic (2013–2014)

Airport	Change 2013/2014	2013	2014
Chopina w Warszawie	10,9%	48 219,0	53 474,0
Katowice Pyrzowice	65,1%	8598,0	14 197,0
Gdańsk im. L. Wałęsy	-4,3%	4326,0	4138,0
Rzeszów-Jasionka	331,1%	187,0	805,0
Poznań-Ławica	-13,2%	168,0	145,0
Wrocław-Starachowice	24,6%	93,0	116,0
Szczecin-Goleniów	-48,8%	42,0	21,0
Bydgoszcz-Szwederowo	-22,1%	1,9	1,5
Port Lotniczy Lublin	-94,5%	12,0	0,7
Kraków-Balice	-100%	446,0	0,0
Total	17,4%	62 112,9	72 898,2

Source: Own study compiled on the basis of: forsal.pl, 2015.

Table 5. Air cargo – number of shipments handled in national and international traffic in 2015

Airport	**Unit (tons)**	**Dynamics of changes 2015/2014**
Warszawa	58 282	9%
Katowice	14 519	2%
Gdańsk	4432	7%
Rzeszów	3863	380%
Poznań	261	70%
Wrocław	89	-23%
Szczecin	54	150%
Lublin	15	2185%

Source: Own study compiled on the basis of: biznes.gazetaprawna.pl, 2016

In 2015, there were almost 82 thousand tonnes of goods carried on board aircrafts, i.e. 12% more than in the previous year. Citing Marta Chylińska, the spokesman of the CAO, the reason behind it was: „(...) economic growth, infrastructure development, and increasing presence of wide-body aircrafts on our market".

Directions of transport

The volume of export and import of goods by air in Poland continues to be small. Amongst most frequented transportation routes are: Europe – 44% and the United States – 24%. Only 4 to 5% of goods are delivered to the Far East, Africa, South America, Australia and Asia. The following airports prevail in the field of cargo transport in Europe: Frankfurt, Amsterdam, Paris, London and Leipzig. Amongst airports offering cargo services, the Polish Warsaw Chopin Airport is placed 176th, with an annual transhipment of more than 60 thousand tonnes. Relying on data from 2015, the above airport handled 58 284 thousand tonnes of freight, in which import accounted for 32.2 thousand tonnes and export for 25.5 thousand tonnes – see the Table below.

Table 6. Freight handled in 2015

		Outgoing	Incoming	Total	Change 2015/2014
Cargo [kg]	Total	25,844,334	32,439,708	58,284,042	8.99%
	International flights	25,491,947	32,243,640	57,735,587	9.38%
	Domestic flights	352,387	196,068	548,455	-20.29%

Source: Own study compiled on the basis of: pasazer.com 2017.

The most popular directions for cargo transport to and from Warsaw were: Leipzig (8.1 thousand tonnes), Cologne (7.9 thousand tonnes), Dubai (6.1 thousand tonnes), New York/Newark (5.8 thousand tonnes) and Chicago (5.06 thousand tonnes). Directions of air freight transport from and to Poland quite often overlap with passenger plane routes because most goods are transported in hatches of liners departing from and arriving in Warsaw. In 2016, 76,200 tonnes are transported by air in Poland, which constitutes 1% of the total air freight in Europe. The most frequently transported goods include: parts and maintenance materials for heavy industry, medicines, books, and newspapers.

Amongst the air freight growth factors we can distinguish the following: an increase in competitiveness of the Polish export and in air transportation capacity. In order to maintain the available capacity in the period of decreased demand for passenger flights, in winter LOT Cargo offers additional Boeing 767-300 „all cargo" flights across the Atlantic. The present macroeconomic situation resulting from significant appreciation of the American dollar and continuing export to the USA may augment transport to America and Canada [log24.pl 2017].

Perspectives for development

Despite numerous actions, Polish air cargo transport growth prognostics remain uncertain. This can be ascribed to the following:

- limited demand for air cargo transport from Poland since as much as 80% of transported goods go to the EU by cheaper means (cars, rail, ships);
- cargo Road Feeder Service (RFS); frequent pooling of goods in German air hubs (transatlantic shipments) where goods are delivered within 24 hours with the use of cheaper road transport;
- low level of domestic air services.

Major transport development opportunities can stem from new investment activities of Warsaw, Rzeszów and Katowice airports [Stefaniak 2015, p. 57]. Recently, Polish airports have been focusing not only on passenger but also cargo infrastructure development. Nevertheless, these activities lack a common, nation-wide concept. With a view to the above, the following should be implemented:

- an overall approach to the Polish air market as part of a national strategy for the aviation sector;
- following the actual needs of the market of sustainable investments in cargo infrastructure.

The most important investments in cargo infrastructure across Polish airports are presented in the Table below.

Table 7. Investments in Polish airports

No.	Name of Airport	Planned investment
1.	Pyrzowice	- May 2016 – launch of most innovative cargo terminal in Poland; - 2017 – plans of new cargo airfield development; - target – cargo city development.
2.	Rzeszów	- development of terminal base on the basis of cooperation with private investor; - conclusion of numerous contracts with “Aviation Valley” companies; - launch of cargo flights from Rzeszów to Miami.
3.	Warsaw	- construction of international air courier terminal at Warsaw Chopin Airport. Transhipping area and target efficiency of sorting devices will be twice that of the second largest DHL Express unit in Central Europe. Total cost of planned investment is 65 million PLN.

4.	Gdańsk	- early 2018 – commission of new cargo terminal (total construction cost estimated at 17.4 million PLN)

Source: Own study compiled on the basis of: Raport Kierunki rozwoju lotnictwa w Polsce 2016, Warszawa, pp. 37–38.

Nowadays, on top of airport infrastructure, LOT Cargo is increasing its share in goods and post transport on the domestic market. Relying on data from 2016, LOT Cargo handled 20% of freight, competing for position on the Polish market against e.g. Lufthansa, which in 2011 took over 40% of the market. In addition, air cargo transport services capacity increased significantly with Boeing 787 Dreamliners. Dreamliners departing from Warsaw offer more than 50 tonnes every day during the summer season. This capacity is used particularly on flights to the USA, Canada and China.

In the next two years LOT Cargo is going to buy two more Dreamliners to increase its freight capacity. Current transport market situation gives a competitive edge to customers from Poland and Central Europe who use direct air transport from Warsaw. However, despite the fact that air cargo potential in Poland is estimated at 150-180 thousand tonnes, Poland continues to be treated by other airports as an area of cargo supply rather than an area of freight business development.

On the issue of developmental perspectives for air cargo transport, the words of the former director of the PLL LOT Cargo and Post Office will be quoted: „Generally, perspectives for air cargo transport development for the next 20 years as presented by aircraft manufacturers' or IATA' analyses are good. In the year 2015 a 2.2% drop in cargo business worldwide was noted. Air transport services business is related to the global economic situation. Every economic situation fluctuation is preceded by a change in the transport volume. Additionally, one should bear in mind the scale of business in Poland. Warsaw is 181st on the list of the largest airports in the world, whereas Katowice is nearly 300th. Consequently, global trends have a smaller influence on cargo business development in Poland than long-term, targeted actions providing competitive advantage to companies operating on the Polish market. Accordingly, even the slightest, limited growth will mean more than global trends" [rynekinfrastruktury.pl 2017].

In view of above data, one should also mention some of the barriers to cargo market development in Polish airports. The largest barriers are:

– lack of suitable load handling infrastructure;
– high service cost of handling companies due to lack of competition and low market potential;

– high prices of space and storage area rental, disproportionate to quality;
– competitiveness in terms of other transport branches;
– inability to deliver parcels „door-to-door" [log24.pl 2017].

On the other hand, air transport growth factors in Poland include:

– country's economic development;
– wealthier societies;
– demographic changes;
– transport infrastructure development (airports, possible construction of a central airport – CA);
– supplementary transport branches development, particularly high speed rail – HSR);
– domestic airlines and airports development, particularly PLL LOT and construction of the central airport or further development of the carrier along Warsaw airport development;
– air space structure development and air traffic management elements development;
– financial support for the domestic carrier thanks to strategic investors;
– domestic market structure modification – a regional hub;
– low-cost air carriers expansion growth;
– new actions in the field of transport development with regard to the state and European Union policies, particularly Trans-European Transport Network (TEN-T) development [Fechner I., Szyszka G. 2016, pp. 95–96).

Conclusions

In view of data from other European Union member states, it is safe to say that the Polish air transport market developed rapidly over the past decade. The characteristic features of the Polish market are great social potential, somewhat different from EU standards, GDP growth, and Poland's economic location. Year by year, we are witnessing a growing influence of air transport on economy associated with an increasingly evident relation between regional development and airport development. A number of various actions have been undertaken with the intention to adapting air transport services to expectations of all market segments.

The Polish segment of air freight transport is definitely evolving. But despite considerable potential, our country is only a „small spot" on the map of the European cargo transport market, lagging behind Western EU countries. Lately, we have been observing growth in the volume of transported goods and reinforcement of regional airports positions. At the same time, one needs to point out that air cargo transport is, so to speak, one of the priorities of transport policy of the country. Research conducted reveals that more effective air carriers operations are a result of efficient services in the freight transport segment and interest on the part of foreign investors. With a view to the above, one can say that the role of air cargo transport will continue to grow along economic development of the country. Nevertheless, it is clear that Poland will not become a competitive market for the EU member states anytime soon [rynekinfrastruktury.pl 2017].

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