LIBERALIZATION OF THE OPERATION OF EUROPEAN AIRPORTS

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Abstract. The liberalization of the operation of European airports is concerned with the influence of these factors on the development of air transport in Europe. The basic theoretical background is elaborated in the article. Air transport has had to make significant technological developments to come to the state as we know it today. At the same time, a new regulation and measures must be adopted, which were then not previously necessary given the nature of the air transport in the past. The measures that have shaped the current state of air transport in Europe, also known as liberalization measures, have fundamentally affected the development of air transport in Europe, which has also affected other areas of the industry.

Keywords: Liberalization, operation of airports, air transport, impact of liberalization on air transport

1. INTRODUCTION

The global shift towards the liberalization of the aviation market from economic regulation has brought short-term benefits to many consumers of air services. The services provided have become more innovative, flexible and the European market has also started to provide a wider choice of suppliers and generally lower prices. Airlines providing comprehensive services are forced to adapt their business plans in response to institutional changes as well as new technologies, management concepts and new consumer trends. Traditional carriers are entering larger and larger strategic alliances in the main global network. At the same time, they have developed a hub-and-spoke system to provide basic air services to a wide range of the public on short routes as well as between major hub airports. One of the main factors in reducing air transport prices is the opening of state markets and the creation of an EU single aviation market, which has stimulated competition and provided more routes and destinations. A good example is Dublin Airport, where the number of flights within the EU has changed from 36 (in 1992) to more than 190 destinations in 42 countries operated by almost 50 airlines. It is the tenth largest airport in the European Union. (in 2020) [1].

Another positive example is the economic impact of an open skies agreement based on the theory of trade and investment. This stipulates that full liberalization of the market for international air transport services will increase its efficiency and provide additional benefits to market participants. The main reasons for these changes are the use of economies of scale to reduce unit costs, expand the aviation market as well as replace less efficient organizations with more efficient ones [1]. The benefits of liberalization have their roots primarily in increased competition and in the development of new products that target new market segments. In this way, low cost carriers (LCC) have created demand for air services in a segment not previously covered by full service providers (FSCs). Experience shows a slight increase in competition between FSCs. LCC's entries into the market has led to a rapid increase in demand for passenger transport and airport development. Although there is a large number of a publication on the impact of liberalization on air transport, there is a lack of publications on specific research into the impact of the Open Skies Agreement and the appearance of the LCC on airport productivity and efficiency. At the same time, airports face pressure to reduce unit

charges for air services as well as the risk of flight cancellations. Depending on the strength of the above effects, liberalization may lead to an increase or decrease in the efficiency of airports in terms of financial or technical performance. However, increasing competition in the aviation market has a positive effect on airport efficiency. As deregulation and the signing of an open skies agreement increases competition between airports and as increased competition leads to increased airport efficiency, it can be assumed that accession to an integration organization such as the European Union with a common aviation market regulated by multilateral open skies agreements should also increase airport efficiency [2].

2. LIBERALIZATION OF AIR TRANSPORT IN EUROPE

The new air transport agreements signed between the EU and its main aviation partners around the world have brought even more destinations and lower prices to the EU, mainly due to the continuing expansion of new routes and consumer demand. Smaller regional airports continue to grow, helping to ensure balanced economic growth in the EU [3].

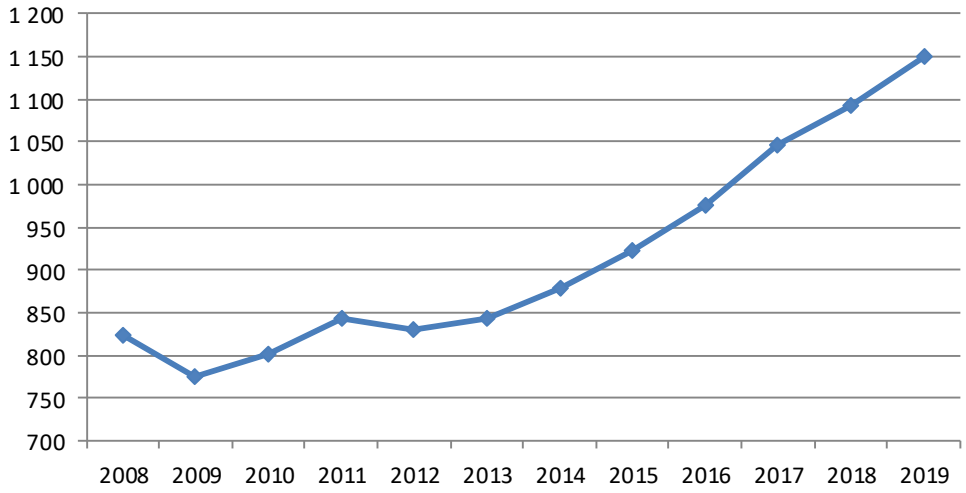

Figure 1 Statistics of transported passengers in the EU 28 (2008 - 2019) in mil.

In the long run, there is evidence of insufficient revenues for air carriers to cover their total costs due to low net margins. The main characteristic of the European aviation market, which, however, also contributes to its problems, is its atypical structure within a longer supply chain. From an institutional point of view, the problem is in the liberalization of the aviation market, but economic competition policy has been implemented in the traditional way.

An example of individual factors influencing European air transport can be found in Figure 2 [3].

In the picture we can see the scenario of the development of air transport in Europe prepared by EUROCONTROL, which was very accurate until the end of August 2020 and for February 2021 assumed a decrease of 16% [4].

Taking into account all this information, EUROCONTROL assumes that:

- States will remain uncoordinated in the field of air transport in Europe,
- Passenger demand will remain extremely low due to uncertainty, unpredictability and ambiguity regarding state restrictions / quarantine measures,
- Airlines will further reduce flight capacity in response to the collapse of early bookings,
- The resumption of intercontinental flights will continue to be very limited [5].

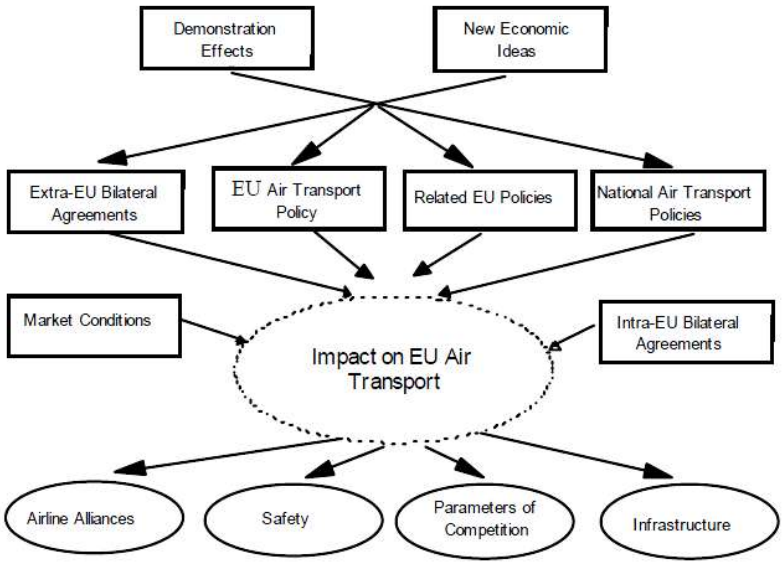

Figure 2 Simplified flowchart of factors affecting air transport in the EU

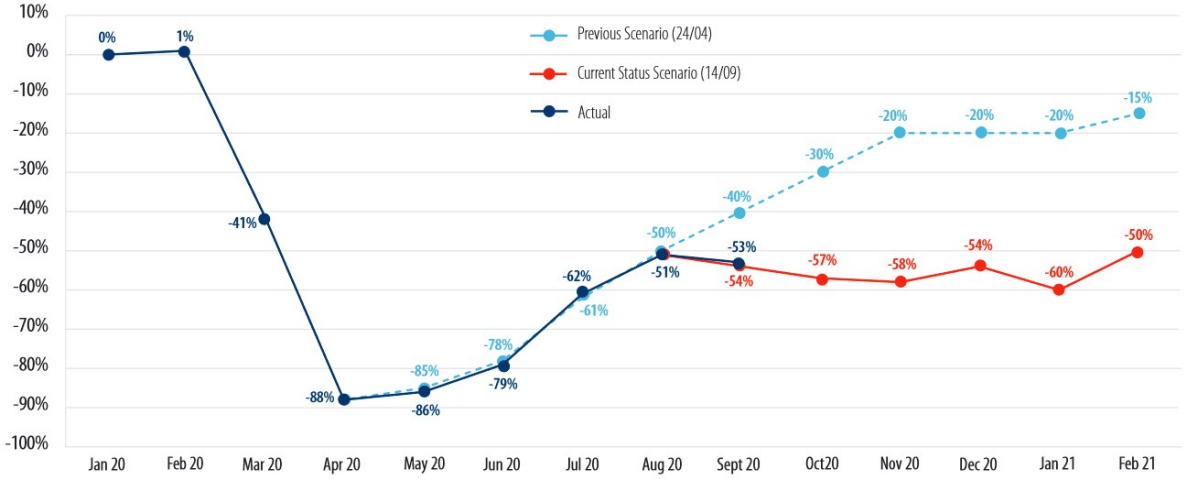

Figure 3 Scenarios for the development of air transport in Europe until 2021 [4]

At the same time, EUROCONTROL has published a new forecast focused on the possible development of air traffic in Europe for the next 5 years. The forecast shows that developments in the aviation industry strongly depend on how soon the effective vaccine will be widely available and on the level of public confidence.

The forecast is based on three main scenarios:

- Scenario 1 - Vaccine available in summer 2021 - by 2024, air traffic will return to the level of 2019.
- Scenario 2 - Vaccine available in summer 2022 - by 2026, air traffic will return to the level of 2019. In 2024, this value would be at the level of 92%.
- Scenario 3 - The vaccine is not effective: The ongoing pandemic and low passenger confidence will cause air transport in Europe to reach only 75% of the flights achieved in 2019 by 2024, with the level of 2019 flights expected to be reach in 2029 [4, 5].

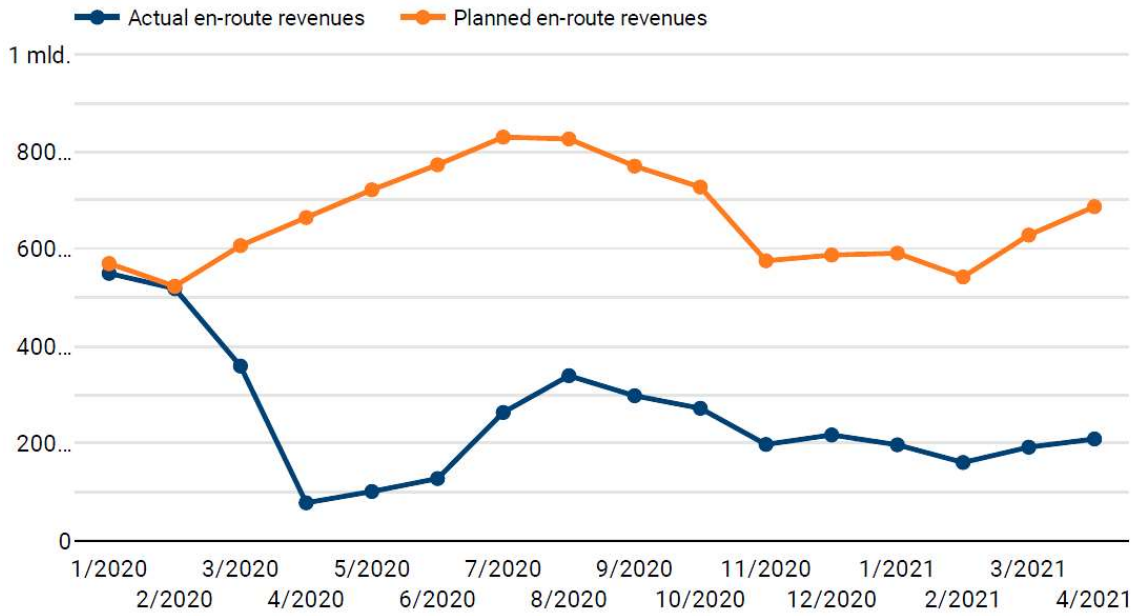

Figure 4 Revenues from flight fees - monthly development in € [6]

Figure 4 provides an insight into the impact of the COVID-19 crisis on overall projected air fare revenues. It also provides an estimate of the loss of revenue to be borne by air navigation service providers and airspace users under the current cost recovery schemes in force [6]. Potentially, the aviation industry (airlines, airports, air navigation service providers) in Europe has a total loss of almost € 500 million (April 2021).

There are more than 276 airports in Europe serving international and domestic scheduled flights. In the last few years, however, the development of air transport has been mainly linked to the growth of low-cost carriers in Europe and has caused important changes at various hierarchical levels. All these factors influence the direction and dynamics of the airport hierarchy and point to the impact of liberalization in air transport in Europe [6].

The basic problem contains two main aspects of the functioning of the air transport system:

1. changes of the air transport system from HUB – and – SPOKE to the so-called Fully Connected (fully interconnected air transport system),
2. and the impact of air transport deregulation in Europe on the quality of services offered by low-cost carriers [7].

Liberalization of air transport is also closely linked to deregulation and changes in air transport systems. Low cost carriers look for the cheapest airports to minimize their costs and therefore avoid larger, major hub airports such as London Heathrow or Paris Charles De Gaulle and focus on smaller airports such as London Luton or Stansted, which are often far away from the centers of the agglomerations served [8].

National governments have traditionally protected their airlines and used these airlines to support public policy objectives such as increasing tourism, increasing international prestige, increasing national security, reducing unemployment, and promoting domestic aircraft production. With the implementation of the third liberalization package of the Council of the EU, these positions began to change. Airlines originally responded to liberalization by creating massive alliance structures whose benefits for the final consumer were difficult to prove. The European Union is moving closer and closer to a single union "without frontiers". The challenges facing the European aviation community are changing rapidly. The ultimate goal of the European Union is to support the efforts of European carriers to maintain their important role in the globalized market and to allow effective competition against American giants.

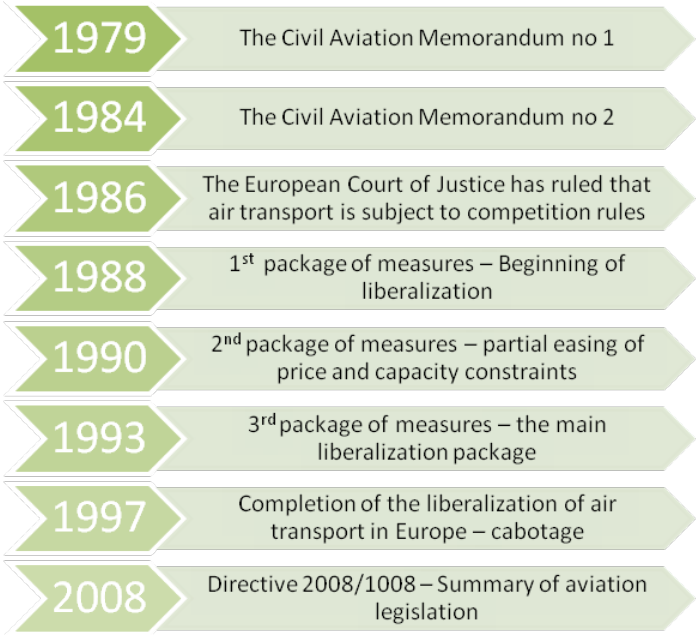

Figure 5 Timeline for air transport liberalization in Europe

Against this background, the European Union has announced a series of compromises on a comprehensive regulation ordering the liberalization of intra-Community air transport. This series, known as packages, culminated in the third package, which came into force in 1993. The third package brought the EU commercial air transport market even closer to real cabotage rights. The following table describes the main events responsible for the current aviation regime in Europe [9].
The liberalization and deregulation of air transport in Europe has allowed airlines with a specific business format to operate on major routes in air transport. These companies rely on reducing the cost of specific flights by limiting the services available to customers, as well as choosing the right airport with the cheapest prices [10].

3. ECONOMIC AND OPERATION CONSEQUENCES OF AIR TRANSPORT LIBERALIZATION IN EUROPE

Air transport, as well as other transport services, is so-called "derived demand". These services are usually purchased as inputs or intermediate goods for the consumption / production of some other services. Therefore, the demand for transport services is largely influenced by the overall economy. For these reasons, about two-thirds of GDP growth is attributed to transport alone and the rest to other factors, such as trade growth, lower production costs or improved services. This fact is also pointed out by the estimate of the revenue elasticity of air transport set at 1.27. In practice, this means that a 1% increase in GDP will lead to a 1.27% increase in air transport [11].

The International Air Transport Association (IATA) has noted that air transport directly employs four million people worldwide and generates more than $ 400 billion. In addition, improving the efficiency and quality of air passenger transport services contribute to growth in sectors such as hospitality and tourism. [12]. Button pointed out that in the US and Europe, more than 40% of air routes are for commercial purposes. The remaining trips are for leisure, visiting relatives or recreation [13].

InterVISTAS estimates that the creation of the European single aviation market in 1993 created around 1.4 million new jobs in aviation and related industries [14].

The number of international airports (airports with regular international connections) in Europe is stable. New airlines offering low ticket prices are looking for airports where operating costs may be limited. This changes the size structure of airports serving civil aviation. More important are small and

medium-sized airports, which are regional airports in the new "open skies" countries or as new airports for agglomerations, where major HUB airports are fully utilized in capacity and their spatial development is blocked due to nearby urban development [6].

The most developed countries of Western Europe still hold the highest position on the air transport market in Europe. Germany, France, Spain and the United Kingdom together control more than 50% of the air transport market. The development of Central European airports combined with low ticket prices leads to a change in the geographical structure of the air transport market. In the Baltic countries, this development is mainly associated with the development of passenger transport. Ukraine has not reached an "open skies" agreement, but the development of Kiev airports is just as dynamic. In other countries, this growth is also linked to the development of their regional airports, which is reducing the importance of central HUB airports [7].

Sustainable development must be defined as improving the quality of human life while maintaining the capacity that supports ecosystems. This definition has an impact on economic, social and environmental development and was later formally adopted worldwide [15].

Sustainability could be better understood in terms of place, persistence and person who are interdependent and interact in complex ways. Figure 6 shows a five-dimensional sustainability triangle, where the vertices of this triangle are so closely connected to each other that it would not be easy to deal with them in a fragmented way, as is usually the case for economic, environmental and social problems.

The five-dimensional sustainability triangle includes the following dimensions:

1. A place containing three dimensions of space (x, y, z),
2. Persistence as the fourth dimension of time (t),
3. Persons - the fifth, the human dimension (i) [16].

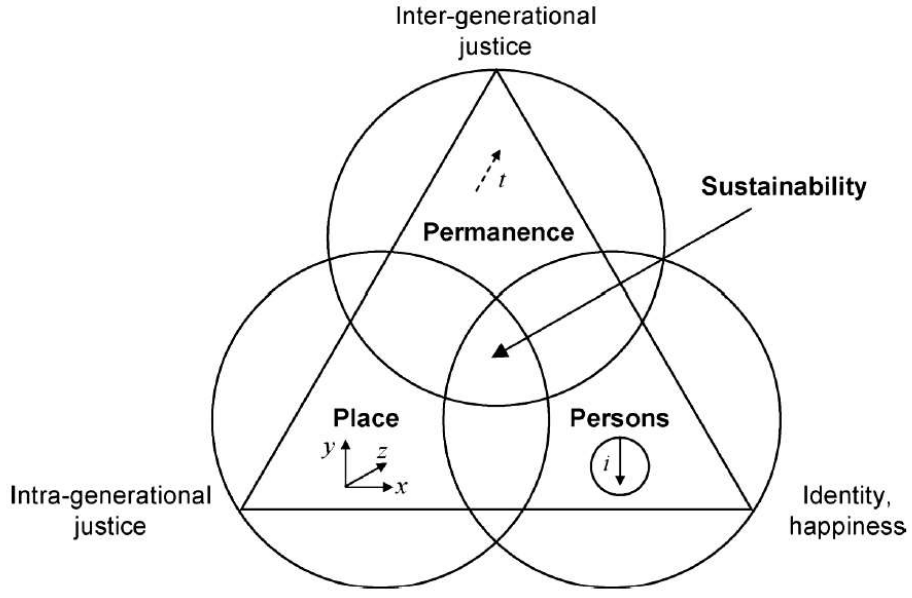

Figure 6 The new five-dimensional sustainability triangle [16]

We have long seen capacity problems at European airports, although these problems have often been offset by innovations in airport management and air traffic management. In fact, the situation is more complex due to three important factors which in turn create a geographical picture of airport capacity constraints.

They are:

- variations in the form of the airport infrastructure itself,
- growth in demand for air transport,
- and distribution of demand for air transport.

At the same time, with the very capacity of airports, we can talk about its several forms, which include:

- airspace and the role of air traffic control in maximizing air traffic movements,
- airport infrastructure - runways, aprons and terminals,
- and as the most important, multi-modal exchange terminals for land access to airports.

Air transport capacity in Europe itself is closely linked to take-off capacity and runways. Runway capacity is thus a function of the airport layout, with parallel runways surprisingly supporting larger capacities than converging or single runways. The data also suggest that, regardless of the geometry of the tracks, only a slight increase in capacity can be achieved without the construction of additional infrastructure [17]. Problems with airport capacity, congestion and pollution caused by follow-up land transport are concentrated mainly in the busiest so-called central parts, although the secondary core is composed of some leisure-oriented airports in southern Europe [18]. In essence, Europe is running out of airport capacity (however defined) in the regions with the most concentrated demand for air transport. Although more than 450 European airports use scheduled traffic, the 20 busiest make up about 55% of all planned seating capacity and virtually all long-haul capacity. In principle, however, in the European Union, airport capacity is or will soon become an environmental capacity with environmental criteria, and criteria directly related to the capacity of the physical infrastructure, which increasingly determine the size of air traffic, will not be taken into account. Airports will be free to plan their operations provided that the total sum of the environmental impacts of their activities does not exceed a predetermined level [19].

Environmental capacity raises a wide range of issues, including:

- aircraft noise and ground transport,
- emissions from aircraft engines in the atmosphere,
- congestion of access to airports,
- the impact of airports on the surrounding land use,
- wastewater,
- and waste management.

Noise in particular remains crucial for environmental capacity, as it is a major source of complaints and the most likely cause of political participation in limiting the use of existing infrastructure for its further development. In this context, any increase in airport capacity, in whatever form, depends on a proactive environmental policy by airport operators, which focuses not only on noise but on the full range of environmental externalities caused by the aviation sector. Although environmental spending may not be justified in terms of direct economic costs, any further increase in capacity is based on a visible and effective environmental policy [20].

4. CONCLUSION

The subject of the study is a statistical evaluation of whether the liberalization of air transport in Europe had, in terms of statistical significance, an impact on the development of air transport itself and, if so, what impact (positive / negative) individual liberalization measures caused. At the same time, we will assess the level of air transport in Europe after the end of the liberalization process (2008), on the basis of which we will get a clear overview of whether this process has a positive impact on air transport in Europe even after its completion.

To perform this analysis, the following data will be included in the calculations:

- Liberalization measures taken in the period 1979-2008,
- Number of passengers carried by European air transport in the period 1979-2008,
- Number of passengers carried by European air transport in the period 2008-2020.

Air transport in the European Union has seen an unprecedented boom in recent years. Its efficient operation is one of the basic conditions that must be met in order to ensure the highest quality air services. Liberalization measures have been reflected in the number of passengers carried, but this has also had an impact on environmental and capacity requirements. However, all this would not be

possible without appropriate empirical knowledge from the given areas. This information and data can serve as a suitable springboard for further research into the analysis of aviation developments in the European Union, especially after the end of the measures related to the Covid 19 pandemic.

The very impact of liberalization is important for understanding the development and growth of air traffic and its predictions for the next period. It is an important factor in ensuring the necessary capacity of individual air transport components and services.

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