AIR TRANSPORT PRIVATIZATION TRENDS

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Abstract: It is important to consider basic principles, practical results and consequences, in order to understand practical results and consequences of privatization. In case of airline privatization trends, it is obvious that this process is very intensive, but without guarantee for success on the air transport market. Analysis of the European airlines members of Association of European Airlines in the period 1991-2015 is confirming trends of privatization for solving the problem of “distressed state airline syndrome”. Airline foreign ownership and control rules is one of the limiting factors in privatization processes worldwide. Procedures and principles for the privatization process of airports and air navigation services are in accordance with ICAO’s standards and recommended practices. The ownership structure is not the central issue of an airport privatization with different structure of solutions in practice. In the sector of Air Navigation Services or Air Traffic Control, privatization is not so frequent but still existing. From government perspective, it is important for the selected operator to be well reputed, financially stable and experienced enough. Analysis of air transport privatization points out complexity of different options in process of sustainability in very dynamic global changes and challenges on the aviation market.

Keywords: Air transport, privatization, airlines, airports, air navigation services.

JEL classification: F20, G30.

INTRODUCTION

From the very beginning, air transport was in detail regulated at both international and national level for reasons of security, defense, and safety but at the same time also for consumer protection and even competition on the market. Globalization of the cyclical airline industry, characterized by rapid technological changes, stimulated many trends including deregulation, liberalization and privatization processes followed by cost optimization and productivity improvements. Peter S. Morell (2013), Anne Graham(2014, 2017), Stephen Shaw (2011), Ruwantissa Abeyratne(2016), Peter Belobaba et al. (2016), Rigas Doga-
nis (2006, 2010), Adam Pilarski (2007), Bijan Vasigh et al. (2013, 2015), John G. Wensveen (2015), Stephen Holloway (2010), Steven Truxal (2013) are among authors with significant research contributions towards aviation privatization processes which was mostly encouraged during the 1980s by World Bank, European Bank for Reconstruction and Development (EBRD) and Asian Development Bank. The complete or partial privatization of many government-owned airlines has been one of the most important industry transformations and mostly with positive impact on efficiency, productivity and profitability. Similar situation is in general with two principal components of the world’s aviation infrastructure: global system of airports and the world’s air-traffic management systems. Trends of privatization in air transportation sector are rising all around the world and it is important to analyze all consequences and specific results, which will be helpful to understand better difficulties of privatization structural changes.

BASIC PRINCIPLES OF THE PRIVATIZATION PROCESS

According to the well-known definition, privatization refers to transfer of ownership and control of government or state assets, firms and operations to private investors (OECD, 1993), assumed that the performance of state-owned enterprises could not be improved without the privatization of ownership. In general, it is obvious that private and public ownership have different objectives. Main goal of private enterprise is profit maximization, but the goals of public enterprise in air transport include safety issues and additional arguments, which is related to the concept of economic externalities (Pilarski, 2007: 195-196). The level of privatization in various industry sectors is different. In European Union (2005), airline sector was leading in share (25.6 percent) of state ownership (Figure 1).

**Figure 1:** Share (%) of state ownership (EU25) in selected industries in the year 2005

| Industry          | Share (%) |
|-------------------|-----------|
| Finance Real Estate | 16.5      |
| Manufacturing     | 11.7      |
| Petroleum         | 15.4      |
| Services          | 8.7       |
| Telecommunications| 13.8      |
| Trade             | 4.8       |
| Utilities         | 25.1      |
| Airlines          | 25.6      |

**Source:** According Alfredo Macchiati and Giovanni Siciliano (2007: 128), prepared by authors.
Besides, there was relatively high (63) total number of European withdrawn privatizations in the period 2004-2015 (Gabriele Lattanzio, 2017: 49).

Air transport sector with marginal profitability in many cases discourages implementation of privatization in the way it is present in other industries. Extremely dynamic market changes with continuous technology improvements keep constant pressure on the need for new, relatively large investments. The analysis of ownership structure in air transport indicates the following possibilities (Philip Shearman, 1992: 18-19):

- Private property by an individual entrepreneur or multiple partners,
- Private ownership through shareholders, with the possibility of reselling company shares to the stock exchange,
- Public property at the city, municipality, region,
- State ownership controlled or managed by the Government or of the relevant ministry,
- Combination of the above possibilities.

Liberalized policies present in the air transport field, drive the development of the industry, bringing economic benefits for states, industry and consumers, such as growth in passenger/cargo traffic and aircraft movements (Abeyratne, 2016: 54). As an important part of those processes, privatization has changed the competitive market environment. In the past state ownership has always been a virtual guarantee that an airline would not go out of business, due to various forms of state subsidy. Competition with a privately owned airline has always been a different proposition from that with a state owned carrier, which have been able to take greater risks in defining their business and marketing strategies. However, Shaw (2011: 63-65) emphasizes that government owned airlines often suffered from a poor image associated with subsidy and bureaucracy and they sometimes had poorly motivated staff, making it very difficult for them to implement changes designed to improve service to customers. The basic reasons for justification and valorization of airline privatization are strategic and financial (Table 1).
Table 1. Strategic and financial reasons for privatization

| Strategic reasons for privatization | Financial reason for privatization |
|------------------------------------|-----------------------------------|
| Reducing the involvement of the state in the provision of goods and services; | Reduction of government budget deficits with these sources of cash; |
| Promotion of economic efficiency; | Allow space for reduction of taxes; |
| Generation of benefits for consumers; | Shifting the financial burden to another promising private sector |
| Promotion of an enterprise culture; | |
| Achievement of wider share ownership. |

Source: According to Morrell (2013: 161) prepared by authors.

According to the above mentioned possibilities of financing, taking into account the advantages and disadvantages of the private sector in relation to the state management model, there is no ideal solution. Thus, the disadvantages of state ownership are (Mirko Tatalović, Ivan Mišetić and Jasmin Bajić, 2017: 42):

- Lack of financial balance sheet as capital investments are treated as part of the budget deficit;
- Flexibility and limitations in the amount of paid salaries of employees;
- Political constraints on voters;
- Different levels of interest between federal and local governments;
- Inert relationship to the prices of services and maintenance related investment.

On the other hand, the private sector’s disadvantages are (Tatalović, Mišetić and Bajić, 2012: 224):

- Non motivation to raise the quality of service if there is no competition on the market;
- Possibility of raising the prices of services motivated by profitable reasons;
- Possibility of bankruptcy;
- Limited financial strength for some major financial projects.

If the process of privatization is understood as a simple formula for replacing an inert and uninitiated state with movable and efficient private entrepreneurial impulses, there is a real danger for serious consequences, which can lead to financial losses, recovery, and bankruptcy processes (Tatalović, Mišetić and Bajić, 2017: 43). For an airline efficiency improvement, it is necessary to pass through transformational changes on three basic stages (Triant G. Flouris and Ayse Kucuk Yilmaz, 2011: 166-167): (1) unfreezing process of existing levels of
behavior, (2) moving to a new behavioral level, (3) refreezing at this new level. Besides, the author Truxal (2013:49) emphasises five commonly used criteria for efficiency: Pareto Optimality and Superiority, Possibility of Compensation, Coase Theorem and Tax Efficiency. These types of efficiency use criteria to compare two states of the world, to determine the parameters of their relationship in terms of relative “efficiency”.

In the document “Manual on privatization in the provision of airports and air navigation services - Doc 9980”, the International Civil Aviation Organization (ICAO) defines the procedures and principles for the privatization process of airports and air navigation services in accordance with ICAO’s standards and recommended practices. The manual consists of the following chapters (ICAO, 2012): (1) Developments in ownership and management; (2) ICAO’s policies and guidance; (3) Ownership and management options; (4) Preparing for change in ownership and management structure, including regulatory aspects; (5) Selection of a private provider. Privatization according to ICAO rules is important because of the existing monopoly power of airports and air traffic control providers. Monopolies might be economically efficient in industries with very high fixed costs as in the case of air traffic control - natural monopoly (Holloway, 2010: 212).

AIRCRAFT PRIVATIZATION TRENDS
Development of airline partnership, stimulated by industry liberalization and leading to privatization, has continuity of progress starting from mid-1970s until today (interline agreements, code share agreements, antitrust immunity, global alliances, joint venture agreements, mergers, acquisitions...). Those processes are present, without exception, all over the world, and the achieved degree of privatization is different from case to case, depending on many parameters. For example, profit generation, export services and active foreign exchange balance, support for national tourism promotion, linking of ethnic groups abroad, strategic fleet planning decisions, technology improvements, quality education, etc. When it comes to the airline privatization, the mode of its implementation differs depending on whether the process involves (Lucien Rapp and Francois Vellas, 1992: 49):

• Capital, management and legal status of airlines,
• Substantial change of ownership (well known formula 51:49)
• Individual airline or airlines group.

There are basically four models of the airline privatization process available (Tatalović, 1994):
• Fully state ownership;
• Fully private ownership;
• Majority state ownership (> 50 percent)
• Majority private ownership (> 50 percent).

Faced with continuing losses and a liberalizing marketplace, many countries have decided to privatize their state-owned airlines. This decision is driven by several considerations (Gerald N. Cook and Bruce G. Billig, 2017: 296): a) Growing free market economy with increases of national wealth and the standard of living; b) Need to increase airline efficiency and competitiveness and, consequently, relieve the fiscal burden caused by continuing subsidies; c) Desire to create stakeholders with a vested interest in the financial success of the airline, including owners, employees, suppliers, and customers; d) Restrictions on government subsidy especially within the European Union.

In professional and scientific literature, the term “distressed state airline syndrome” is frequently used, characterized by (Doganis, 2006: 227-234):
• Serious financial difficulties;
• Too much frequent top management changes;
• No clear development strategy;
• Very powerful unions, and exhausting negotiations;
• Inadequate fleet structure;
• Bureaucratic and over-centralized management;
• Poor service quality in the air and on the ground;
• Political instability.

According to Morrell (2013: 162) the average government stake in the largest 25 international airlines ranked by level of international revenue passenger kilometers (RPK) dropped from 28 percent in the year 1996 to 21 percent in 2001. Next 25 largest international airlines in 2001 had average government stake of 59 percent. The situation was very different from continent to continent - 100 percent privately owned airlines in North America, Europe and Latin America around 90 percent, Asia and Africa 50 percent and Middle East only 10 percent. Table 2 shows a private ownership share of selected European airlines in the years 1991, 2004, 2008 and 2015.
Table 2. Airline private ownership share (%) changes in Europe 1991-2015

| Airline                      | 1991 | 2004 | 2008 | 2015 |
|------------------------------|------|------|------|------|
| Adria Airways                | 0.0  | 22.0 | 12.3 | 30.1 |
| Aer Lingus                   | 0.0  | 4.8  | 74.8 | 74.9 |
| Air France (AF/KL)           | 0.5  | 81.3 | 82.4 | 84.1 |
| Air Malta                    | 3.6  | 2.1  | 2.0  | 0.0  |
| Alitalia                     | 13.6 | 37.6 | 95.6 | 100.0|
| Austrian                     | 33.1 | 50.0 | 51.4 | 100.0|
| British Airways (IAG)        | 100.0| 100.0| 100.0| 100.0|
| Croatia Airlines             | 0.0  | 1.6  | 1.8  | 0.5  |
| ČSA                          | 0.0  | 45.6 | 8.5  | 44.0 |
| Finnair                      | 20.3 | 41.6 | 40.3 | 31.4 |
| Iberia (IAG)                 | 0.2  | 100.0| 100.0| 100.0|
| Icelandair                   | 20.0 | 20.0 | 20.0 | 100.0|
| JAT / Air Serbia             | 0.0  | 0.0  | 0.0  | 49.0 |
| KLM (AF/KL)                  | 61.8 | 96.0 | 82.4 | 84.1 |
| LOT                          | 0.0  | 32.0 | 32.0 | 0.2  |
| Lufthansa                    | 43.1 | 100.0| 100.0| 100.0|
| Luxair                       | 63.5 | 63.5 | 51.2 | 61.0 |
| Malev (bankruptcy 2012)      | 0.0  | 2.0  | 100.0| -    |
| Olympic Airways (ceased operation 2009) | 0.0 | 0.0 | 0.0 | -    |
| Sabena / SN Brussels / Brussels Airlines | 4.9 | 45.0 | 45.0 | 100.0|
| SAS                          | 50.0 | 50.0 | 50.0 | 50.0 |
| Swissair (Swiss)             | 79.6 | 79.7 | 100.0| 100.0|
| TAP                          | 0.0  | 0.0  | 0.0  | 100.0|
| Tarom                        | 0.0  | 7.3  | 5.0  | 0.0  |
| Turkish Airlines             | 1.3  | 24.8 | 50.9 | 50.9 |

Source: Tatalović, Mišetić and Bajić (2017: 44).

Methods of privatization are essentially one or a combination of the following solutions Morrell (Morrell, 2013: 164-177): (1) Full privatization through flotation – public subscription (British Airways); (2) Full privatization through trade sale and flotation (Qantas); (3) Gradual privatization (Lufthansa); (4) Partial
privatization (Kenya Airways); (5) Full privatization and trade sale (Iberia); (6) Gradual privatization and acquisition (Air France).

One of the limiting factors for further liberalization and multinational integration in air transport industry is different restriction of foreign ownership and management rules (Table 3). According to the Airline Leader (2017: 12-17) there is a growing consensus in the airline industry that the 70-year-old provisions restricting the foreign ownership and control of airlines are archaic and should be significantly liberalized - or abolished. The ownership restrictions involve placing explicit numerical limits on foreign nationals’ ownership of the voting equity share capital of airlines. However, “effective control” is not so easy to define and monitor. It is not always possible to express numerically the level of influence that an investor has in the management of an airline.

Table 3. Restrictions of foreign ownership by selected states

| State      | Restriction of foreign ownership                                                                 |
|------------|---------------------------------------------------------------------------------------------------|
| Australia  | 49% for international (25% single); 100% for domestic                                               |
| Brazil     | 20% of voting equity                                                                               |
| Canada     | 25% of voting equity (15% single)                                                                  |
| Chile      | Principal place of business only                                                                   |
| China      | 35%                                                                                                |
| Colombia   | 40%                                                                                                |
| European Union | 49%                                                  |
| India      | 26% for Air India, 49% for privately owned domestic carriers, 74% for charter and cargo           |
| Indonesia  | Substantial ownership and effective control                                                        |
| Israel     | 34%                                                                                                |
| Japan      | 33.33%                                                                              |
| Kenya      | 49%                                                                                                |
| Korea      | 50%                                                                                                |
| Malaysia   | 45% for Malaysia Airlines (20% single), 30% other                                                 |
| Mauritius  | 40%                                                                                                |
| New Zealand| 49% for international; 100% for domestic                                                          |
| Peru       | 49%                                                                                                |
| Philippines| 40%                                                                                                |
In United States, the private ownership in airlines is a constant. In spite of that, some of the financially distressed U.S. airlines operating under the protection of Chapter 11 bankruptcy laws clearly have priced primarily for survival (John G. Wensveen, 2015: 243). From Table 4 it is obvious that almost all major U.S. airlines (except Southwest) passed through reorganization and some protection from creditors during different Chapter 11 periods. In the case of liquidation – Chapter 7 consequences are grounding of aircraft and cease of operations.

| Airline                  | Chapter 11 period                  |
|--------------------------|------------------------------------|
|                          | Entrance   | Exit         | Total months |
| Braniff (1)              | May 1982   | April 1984   | 23           |
| Continental (1)          | September 1983 | September 1986 | 36           |
| Eastern                  | March 1989 | January 1991 | 22           |
| Braniff (2)              | September 1989 | November 1989 | 2            |
| Continental (2)          | December 1990 | April 1993   | 28           |
| Pan American (* bankruptcy) | January 1991 | December 1991* | 11           |
| Midway                   | March 1991 | November 1991 | 8            |
| America West             | June 1991 | August 1994  | 38           |
| TWA                      | February 1992 | November 1993 | 21           |
| US Airways (1)           | August 2002 | March 2003   | 7            |
| United                   | December 2002 | February 2006 | 38           |
| US Airways (2) (** merging with America West) | September 2004 | September 2005** | 12           |
| Northwest                | September 2005 | May 2007    | 20           |
| Delta Air Lines          | September 2005 | April 2007 | 19           |
| AMR Corp                 | November 2011 | December 2013 | 25           |

Source: According to Morell, P.S. (2013: 267), prepared and supplemented by the authors.

United States Chapter 11 bankruptcy restructuring plan during their periods under bankruptcy protection prevented liquidation of those carriers. Some foreign governments have even complained that Chapter 11 gives US airlines an unfair competitive advantage in the market as a significant measure of protection from bankruptcy (Bijan Vasigh, Kenneth Fleming and Barry Hamphreys 2015: 65).
PRIVATIZATION OF AIRPORTS

Historically, nearly all airports at a national or local level were government-owned. However, privatization trends during the last couple of decades go towards shifting airport ownership and management into the private sector or to a private-public partnership. According to Graham (2017: 80) the reasons for this vary, although most often it is to improve efficiency and financial performance and/or to provide new funds for investment or access to capital markets. Airports as a part of the air transport system are multi-product providers convenient for privatization. They supply three basic services to the companies and passengers including (Kenneth Button, 2010: 64): (1) aeronautical services, (2) aeronautical-related services and (3) commercial services. It should be noted that operating profit margins are more favorable and higher compared to those of airlines.

| Airport                             | State          | 2006    | 2008    | 2010    | 2012    | 2014    | 2016    |
|-------------------------------------|----------------|---------|---------|---------|---------|---------|---------|
| Fraport                             | Germany        | 15.4    | 17.1    | 19.6    | 20.3    | 20.2    | 26.8    |
| Schiphol Group                      | Netherlands    | 30.5    | 25.5    | 25.1    | 21.9    | 28.0    | 29.3    |
| Aeroport de Paris                   | France         | N.A.    | 19.8    | 22.5    | 24.4    | 22.6    | 25.1    |
| Heathrow Airport Holdings / BAA     | United Kingdom | 31.6    | 22.5    | 24.4    | 32.0    | 35.5    | 35.8    |
| Munich Airport Group                | Germany        | 18.4    | 19.6    | 27.0    | 23.5    | 22.2    | 21.3    |
| Aena Aeropuertos                    | Spain          | 5.5     | 3.5     | 1.0     | 13.7    | 33.2    | 38.9    |
| Copenhagen Airports                 | Denmark        | 42.8    | 39.4    | 45.4    | 60.0    | 37.8    | 40.7    |
| Aeroporti De Roma                   | Italy          | 26.9    | 16.9    | 24.9    | 26.9    | 37.3    | 46.2    |

Source: From airports annual reports prepared by authors.

In the year 2008, airlines scored EBIT (earnings before interest & taxes) margin -0.3 percent due to extremely high fuel prices and global economic crisis. Probably the best ever airlines net profit result and EBIT margin of 8.8 percent in the year 2016 (IATA, 2017) is still three to five times lower compared to selected European airports data.

According to author Graham (2014: 6), three key development processes are crucial: 1. Airport commercialization - from a public utility to a commercial enterprise; 2. Airport privatization - transfer of the ownership and control to the private sector by a different methods; 3. Airport ownership diversification - different types of new investors and operators of airports. Participation of the private sector in the management, financing and/or ownership of airport infrastructure-
may include any or a combination of the following (ACI, 2017: 4): a) Freehold - full private sector ownership and control for an unlimited time; b) Listed companies - owned by stock exchanges listed companies; c) Concessions or leases - public sector has given rights to private companies to operate and manage an airport for a limited period of time which also includes build–operate–transfer (BOT) schemes in all their variations; d) Management contracts - private sector obtains a fee for the management of all or parts of the airport or certain key aeronautical activities; e) Government-owned companies - the participation of government-owned companies in other airports as a private investment or for a fee.

Analysis by Airports Council International (ACI, 2017: 5) summarizes the proportions of airports falling under different ownership models by world regions. The majority (86%) of the estimated 4,300 airports with scheduled traffic are public - owned by a government (Figure 2).

![Figure 2. Share (percentage) of state ownership in airports by regions 2016](image)

**Source:** According to ACI (2017: 5), prepared by authors.

From Figure 2 it is obvious that North America region recorded the lowest level of privatization. In United States the airports are still mostly public non-profit companies, managed by six different entities under the jurisdiction of the state administration (ACI 2011): (1) Cities - 33 percent (Atlanta, Austin); (2) Counties - 15 percent (Fort Lauderdale, Las Vegas); (3) States - 7 percent (Honolulu, Anchorage); Port authorities - 9 percent (New York, Oakland); Airport management - 30 percent (Washington Reagan National and Dulles, Nashville); Other - 6 percent (Dallas Fort Worth - a contract between two cities and Monterrey). However, author Amedeo Odoni (2016: 38) emphasises that U.S. airports are among the most “privatized” in the world, in the sense that they outsource most of their financing, planning and operating activities to private companies. Consequently, the operators of major airports in the United States directly employ relatively small number of persons.
Main reasons for airport privatization are (Graham, 2017: 80):
• To improve efficiency and financial performance;
• To provide new airport investment funds;
• To bring financial gains to the government;
• To reduce government influence in airport operations;
• To improve airport service quality;
• To enhance airport management effectiveness;
• To allow diversification into new non-aeronautical areas;
• To encourage more competition.

In addition, it is important to take into account specific strengths and weaknesses of airport regulatory approaches.

Table 5. Airport regulatory strengths and weaknesses

| Predictable Aeronautical Prices | Rate of return | Rate of Return Price Cap | Aeronautical Price Cap | Government Oversight |
|--------------------------------|---------------|--------------------------|------------------------|---------------------|
| Predictable Aeronautical Prices | Moderate      | Moderate                 | Strong                 | Weak                |
| Predictable Airport Profits     | Strong        | Moderate                 | Weak                   | Weak                |
| Improving Airport Operating Efficiency | Weak      | Moderate                 | Strong                 | Weak                |
| Ability to Attract Investment Capital | Strong   | Moderate                 | Moderate               | Strong              |

Source: Paul Stephen Dempsey (2012).

Involving the private sector in the airport infrastructure is different and sometimes there is no room for capital investment (terminal capacity expansion), and opposite in the cases of enlarging a runway and adding a runway. Regulatory versus competitive outcome is crucial (Doramas Jorge-Calderon, 2014: 84-139). One of the newest examples analyzed by Graham (2017: 81) is privatization of Brazilian airports, connected with hosting the football World Cup 2014 and Summer Olympic Games 2016, and suitably urgent modernization and expansion of three major international airports: Sao Paolo - Guarulhos, Sao Paolo – Viracopos/Campinas and Brazilia. State-owned organization Infraero maintained 49 a percent share in privatized airports. Regulation of Australian airports includes activities of Australian Productivity Commission if airport investment is planned (Graham, 2017: 83).

Future trends of airport privatization especially in United States indicate that the sale or lease of US airports is likely to remain politically unfeasible unless airline
opposition weakens. Contractual privatization, in part or in whole, remains the only viable alternative (Bijan Vasigh, Ken Fleming and Thomas Tacker, 2013: 151). Furthermore, where unregulated or benignly regulated monopolists tend to offer less and lower quality output or to sell at higher prices than would prevail in a competitive market, extra profits are in principle feasible which is something a number of privatized airport operators stand accused ownership structure in air transport (Holloway, 2010: 212). Airport privatization trends are very important in the future “aerotropolis concept” with very complex connectivity and coordination of multimodal freight and passenger transportation with functional and planning aspects of the aerotropolis (John D. Kasarda and Stephen J. Appold, 2014: 282).

**PRIVATIZATION OF AIR NAVIGATION SERVICE PROVIDERS**

Progressive growth in air transport creates the need for efficient, globally harmonized and interoperable Air Traffic Management (ATM). These goals and future traffic levels require significant additional financial investments. *Air navigation service providers (ANSPs) are mostly operated by the public sector, even if they are “corporatized”, and when they are privatized, they are operated as regulated monopolies* (Jorge-Calderon, 2014: 149). When considering privatization or private participation in the provision of air navigation services detailed guidance on ownership, control and governance of ANSPs is included in Chapter 2 of the “Manual on Air Navigation Services Economics - Doc 9161” (ICAO, 2013). ICAO recommended several requirements for the air navigation services privatization (Dempsey, 2012): (1) Organization should be subject to the state obligations under the Chicago Convention; (2) Board of directors for the corporation is appointed according to its charter; (3) Organization should be self-financing, obtain funds from commercial markets, and attempt to achieve a financial return on investment; (4) It should apply commercial accounting standards and practices; (5) It should be subject to normal business taxes. It is necessary to emphasize that the ICAO should continue to monitor changes in ANSPs commercialization and privatization.

Author Jorge-Calderon (2014: 149) emphasises that ANSPs usually follow ICAO guidelines regarding air navigation charges, but the implementation of such guidelines varies. Some apply formulas organized by ranges of flight distance and aircraft weight and other set charges as a percentage of air ticket price or per flight. In Eurocontrol example, the air navigation charge increases with distance and with aircraft weight, meeting ICAO recommendations according to the formula:
\[ \text{Charge} = \text{Unit Rate} \times \frac{\text{Distance}}{100} \times \left( \frac{\text{MTOW}}{50} \right)^n \]  \hspace{1cm} (1)

Where:
Unit rate = constant, measured in the applicable currency;
Distance = route length measured as the great-circle distance in kilometers;
MTOW = aircraft’s maximum take-off weight;
n manages the proportionality between aircraft weight and the charge.

Possible air navigation services providers organizational models are (Clinton V. Oster and John F. Strong, 2007: 194): a) Wholly government owned agency; b) Privately owned corporation (NAV Canada established in 1966); c) Public private partnership (NATS United Kingdom established 2001); d) Government corporation (Australia New Zealand); e) Private corporation (not yet existing in practice).

Opposed attitudes are present concerning the initiative for the air navigation services privatization in United States according to Bart Jansen (2017). Most of the airlines are for it. The Airlines for America has been pushing for privatization for many years. The National Air Traffic Controllers Association, which represents more than 19,000 air-traffic control professionals, supports privatization. Privatization works in other countries and might speed up adoption and implementation of NextGentechology (i.e. shift from old radar technology to Global Positioning Systems - GPS). Some airlines are against privatization (Delta, which conducted a study in 2015 telling that privatization will increase user fees by 20 percent to 29 percent) and private jet owners and operators. Arguments are that U.S. air navigation system might be too big, complex and disruptive. The presence of opposed attitudes was recorded in the U.S. Senate on administration’s proposal to privatize air-traffic control. Main argument is worry that the private corporation will be controlled by airlines without public oversight through Congress (Jansen, 2017).

CONCLUSIONS
The aviation industry is showing an increasing privatization trend. It is very important to define appropriate privatization strategy taking in to account detailed-market potential analysis and worldwide benchmarks. Main goals of privatization process include reducing inefficiency, avoiding over regulated civil services and government procurement policies. Besides, increasing access to capital markets, which will stimulate innovation and responsiveness to market needs. Privatiza-
tion process need to disable bankrupt and to prevent private entity from ignoring safety requirements and prevent conflict of interest between one entity and another.

Increasing competition, fuel prices volatility, fast technological changes and improvements, e-Commerce expansion, customer centricity and personalization were leading to optimization of airline business model. In that context different models of privatization were developed.

Potential risks during airport privatization should be taken into consideration. The most important risks are under and unnecessary investments, concession rules and fees, increase in non-regulated aviation fees and other conflicts of interest connected with possible regulatory interventions.

Corporative air navigation services providers are mostly government owned due to high degree of international and national regulations and specific rules worldwide.

LITERATURA / REFERENCES
Abeyratne, R. (2016). *Competition and Investment in Air Transport*, Heidelberg: Springer.
ACI (2011). http://www.aci-na.org/index/ownership_primer (22.3.2011).
ACI (2017). *Airport ownership, economic regulation and financial performance*, Policy Brief 2017/01, Montreal: Airports Council International.
Airline Leader (2017). *Airline Ownership and Control Rules an Enduring Constraint on How Airline Models Evolve*, Issue 40, May-Jun 2017, Singapore: CAPA - Centre for Aviation. pp.12-17.
Belobaba, P., Odoni, A., Barnhart, C. (2016). *Global Airline Industry, Second Edition*, Chichester: Wiley.
Button K. (2010). *Countervailing Power to Airport Monopolies*, In Forsyth, Gillen, Müller, Niemeier - Airport competition the European experience, Farnham: Ashgate 59-75
Cook, G.N., Billig, B.G. (2017). *Airline Operations and Management*, Abingdon: Routledge.
Cosmas, A., Belobaba, P., Swelbar, W. (2008). *Framing the Discussion on Regulatory Liberalization: A Stakeholder Analysis of Open Skies, Ownership and Control*, Cambridge: Massachusetts Institute of Technology.
Dempsey, P.S. (2012). *Privatization: Navigate Carefully*, Institute for Air & Space Law Mc Gill University.
Doganis, R. (2010). *Flying off Course, Fourth Edition*, Abingdon: Routledge.
Doganis, R. (2006). *The Airline Business, Second Edition*, Abingdon: Routledge.
Elek, A., Moore, O., Warrick, E. (1989). *Airport Development by Private Investors*, Montreal: International Aviation Management Training Institute IAMTI.

Flouris, T. G., Yilmaz, A. K. (2011). *Risk Management and Corporate Sustainability in Aviation*, Farnham: Ashgate.

Graham, A. (2014). *Managing airports: an international perspective 4th edition*, Abingdon: Routledge.

Graham, A. (2017). *Airport Management and Performance*, InBudd, L., Ison, S. (ed.): Air Transport Management: An International Perspective, Abingdon: Routledge.

Holloway, S. (2010). *Straight and Level – Practical Airline Economics, Third Edition*, Farnham: Ashgate.

http://www.adr.it/web/aeroporti-di-roma-en/-financial-reports#, (30.9. 2017).

http://www.aena.es/csee/Satellite/Accionistas/en/Page/1237568524699//Investor-relations.html, (30.9. 2017).

http://www.annualreportschiphol.com/about-us, (30.9. 2017).

http://www.fraport.com/content/fraport/en/our-company/investors.html, (30.9. 2017).

http://www.heathrow.com/company/investor-centre, (30.9. 2017).

http://www.parisaeroport.fr/en/group/finance/investor-relations, (30.9. 2017).

https://www.cph.dk/en/about-cph/investor/Publications/, (30.9. 2017).

https://www.munich-airport.com/financial-report-263372, (30.9. 2017).

IATA (2017). *Economic Performance of the Industry mid year 2017*, http://www.iata.org/whatwedo/Documents/economics/Central-forecast-mid-year-2017-tables.pdf, (30.9. 2017).

ICAO (2012). *Manual on privatization in the provision of airports and air navigation services - Doc 9980*, Montreal: International Civil Aviation Organization.

ICAO (2013). *Manual on Air Navigation Services Economics - Doc 9161*, Montreal: International Civil Aviation Organization.

InternationalAirline Transport, Bingley: Emerald Group Publishing Limited, pp. 281-308.

Jansen, B. (2017). *Senate panel rejects air-traffic control privatization*, USA TodayPublished July 25, 2017, https://www.usatoday.com/story/travel/flights/todayinthesky/2017/07/25/senate-panel-rejects-air-traffic-control-privatization/508479001/, (30.9. 2017).

Jorge-Calderon, D. (2014). *Aviation Investment*, Farnham: Ashgate.

Kasarda, J.D., Appold, S.J. (2014). *Planning a Competitive Aerotropolis*, InPeoples, J. (ed.): The Economics of

Lattanzio, G. (2017). *Failed Privatizations: A European Perspective*, The Privatization Barometer-Report 2015/2016, Milano: Fondazione Eni Enrico Mattei – FEEM,pp. 45-53.

Macchiati, M., Siciliano G. (2007). *Airlines’ Privatization in Europe: Fully versus Partial Divestiture Airlines*, Rivista Di Politica Economica, January - February 2007, Rome, pp. 123-155.

Morrell, P. S. (2013). *Airline Finance, Fourth Edition*, Farnham: Ashgate.

Odoni, A.R. (2016). *The International Institutional and Regulatory Environment*, In Belobaba, P.,
Odoni, A., Barnhart, C. (ed.) Global Airline Industry, Second Edition, Chichester: Wiley.

OECD (1993). *Glossary of Industrial Organization Economics and Competition Law*, Paris: Organization for Economic Cooperation and Development, http://www.oecd.org/regrefform/sectors/2376087.pdf, (15.9. 2017).

Oster, C. V., Strong, J. S. (2007). *Managing the Skies*, Aldershot: Ashgate.

Pilarski, A. (2007). *Why Can’t We Make Money in Aviation?* Aldershot: Ashgate.

Rapp, L., Vellas, F. (1992) *Airline Privatization in Europe, Second Edition*, Paris: Institut du Transport Aérien.

Shaw, S. (2010). *Airline Marketing and Management*, Seventh Edition, Farnham: Ashgate.

Shearman, P. (1992). *Air Transport: Strategic Issues in Planning and Development*, London: Pitman Publishing.

Tatalović, M. (1994). *Dostignuti stupanj privatizacije sustava zračnog prometa u svijetu i u Hrvatskoj*, Suvremeni promet, God. 14., Br.1-2/ 1994, Zagreb, Hrvatsko znanstveno društvo za promet, Zagreb, pp. 45-50.

Tatalović, M., Mišetić, I. Bajić, J. (2012). *Menadžment zrakoplovne kompanije*, Zagreb: Mate d.o.o.

Tatalović, M., Mišetić, I. Bajić, J. (2017). *Planiranje zračnog prijevoza*, Zagreb: Mate d.o.o.

Truxal, S. (2012). *Competition and regulation in the airline industry: puppets in chaos*, Abingdon: Routledge.

Vasigh, B., Fleming, K., Mackay, L. (2015). *Foundations of Airline Finance Methodology and Practice, Second Edition*, Abingdon: Routledge.

Vasigh, B., Fleming, K., Tacker, T., (2013). *Introduction to air transport economics: from theory to applications, Second Edition*, Farnham: Ashgate.

Wensveen, J.G. (2015). *Air Transportation: A Management Perspective, Eighth Edition*, Farnham: Ashgate.