

OPERATING LEASE AS A SPECIFIC FORM OF AIRLINES OUTSOURCING

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Abstract

Fleet is an essential element of the business model of airlines. The amount of aircraft operated, the way they are purchased and their use in service has a significant impact on the economy of the airline. This article focuses on the way of aircraft acquisition – operating lease. During the lease term or after termination, the aircraft is not owned by the airline, but the aircraft is rented. It is a specific form of outsourcing and the routine practice of airlines around the world. The article describes all the reasons, procedures and requirements of operating leases. It analyses the integration and reporting of operating lease costs in the carrier's cost structure. The main benefit of this research is the analysis of the development of the fleet ownership structure of the four largest low-cost airlines in Europe. The study focuses on leased fleet trends with respect to the total number of aircraft in the fleet age context. Each of the controlled airlines has its own specifics. In general, the total number of aircraft

in the fleet is still increasing. However, the number of leased aircraft does not have this trend, and during the development we have seen the phases when the number of leased aircraft declined. The average age of aircraft in these companies was 5.4 years at the end of fiscal year 2017.

Key words: airlines, lease, aircraft, low-cost, outsourcing

1. INTRODUCTION

With the growth in demand for air travel, the number of flights and therefore the number of aircraft that are put into service are increasing. In order to keep pace with market development, airlines acquiring more aircraft to the fleet. The process of acquiring aircraft is financially demanding, so it is necessary to choose the right form of acquisition and financing. There are 2 basic ways of acquiring, each with several execution options. These differ in terms of funding arrangements, ownership of aircraft, conditions and obligations of stakeholders. Basic forms of aircraft acquisition:

- A. Purchase of aircraft (new, used aircraft) – purchase contract
 - Company's own resources
 - Credit
 - Export financing/Export credit financing
 - Other external sources
- B. Lease of aircraft (new, used) – leasing contract
 - Finance lease
 - Operating lease: dry lease or wet lease
 - Leaseback – combination of operating and finance lease

The main difference between these forms of acquisition is the different ownership of the aircraft. In the case of a purchase, the airline (buyer) becomes the owner of the aircraft at the moment of its takeover. This airline is registered as the owner and at the same time as the aircraft operator in the Aircraft Register of the state in which airline is registered.

Buying aircraft from proprietary sources is capital intensive due to the high cost of aircraft. The Airbus A320 price is 101 USD millions (Airbus, 2018). More common financing is using credit purchase. In the case of a loan, the Buyer concludes, in addition to a sales contract with the manufacturer, a credit agreement with a bank or a consortium of the finance provider. Export financing is offered by the ECA – Export Credit Agencies. The OECD lists 38 official ECAs on its website. Those Export Agencies – Export Credit Groups are bound with the terms and conditions arranged by OECD (OECD, 2018). ECA products covered about 27% of new aircraft financing in 2016 (Bisset, 2017). For purchase, the costs associated with the purchase of the aircraft are reflected in the airline's depreciation.

In the case of dry lease, the airline becomes only the operator of an aircraft, the owner is its lessor and the aircraft is registered in the lessors land of registration. A lessee is responsible for its technical, operational and airworthiness, maintenance

and insurance. Airline provides its own crew, technical handling and payment of charges associated with aircraft operations.

In the case of wet lease, the lessor is both the owner and the operator, the airline acts only in the role of the lessee, so wet lease can be considered as a service because the aircraft is rented out to the operator with the crew, maintenance and insurance from a lessor. Responsibility for eligibility, crew and insurance has a lessor (except for passenger insurance). This form of the lease is also called the A.C.M.I. leasing (aircraft, crew, maintenance, insurance) and is more expensive than a dry lease. It is implemented in a shorter way, for example, when it is necessary to cover increased seasonal demand, and it is not necessary for the aircraft to acquire or recruit new employees.

Leaseback is a form of leasing when the airline first buys an aircraft from the manufacturer. This form may be used for example in the case when an airline can not obtain external financing under acceptable conditions. At the moment of delivery, the aircraft is handed over to the new owner – the leasing company, which will pay the part of the purchase price and lease the aircraft back to the airline. It is also a possible way of securing funds for the purchase of aircraft. Another reason for this choice may be finding solutions to financial liquidity problems - an increase of funds caused by the sale of assets.

Financial leasing is a specific form of purchase and acquirement of aircraft. It is a 4-party relationship: airlines, manufacturer, SPC (Special Purpose Company) and bank. The owner of the aircraft during the lease term is SPC, but the airline carries out all the risks associated with the operation of the aircraft. The airline becomes the owner of the aircraft after payment of all installments. Basically, it's a loan that has its own specifics. Financial leasing, unlike credit, is subject to tax burdens. The airplane is registered as a taxable asset in the airlines accounts. It is the airline, not the credit institution, which is responsible for the maintenance of the aircraft as well as for all applicable taxes and insurance fees that are necessary for its use.

2. SIMILAR RESEARCH OVERVIEW

Durmaz & Adiller, in their article, states that in a highly competitive aviation environment, business strategy is a question of survival in the market. Outsourcing is one of those strategies. In their contribution, they discuss the importance of outsourcing for airlines. The result of the analysis is that outsourcing leads to increased productivity, profitability and cost reduction. The case study of Turkish Airlines describes the need for outsourcing in following areas: catering, cabin cleaning, spare aircraft parts storage, wet aircraft leasing, pilots and aircraft maintenance - the most preferable outsourcing item. (Durmaz & Adiller, 2010)

After the liberalization of fast-growing aviation industry in Turkey, the growing fleet has become a critical factor in the competitiveness of airlines. The aim of Karagüle's research is to analyze the structure of the Turkish airline fleet and their decision-making about the fleet from strategic management point of view. It analyzes the structure of the fleet of 3 types of airlines: state-owned, private airlines operating regular flights and airlines operating non-scheduled flights. The results show

a different structure for each type of company. Each structure is tailored to company business model and demand. Effectiveness of the decision regarding the fleet is the main success factor in the fierce competition. It is also important to modernize the fleet, as carriers compete in terms of age and comfort of their aircraft. (Karagülle, 2012)

Cost minimization drives airlines to form strategic alliance-based cooperation. The study "Fleet dry / wet lease planning of airlines on strategic alliance" presents a model that deals with fleet purchase, dry / wet leases and disposal of aircraft, including the impact of a strategic alliance between airlines on fleet planning. Created dynamic model provides better determination of the initial optimal amount and type of aircraft. In the model, the parameters of the alliance can be modified. The analysis of acquisition costs allows airlines to better preset the ratio of leased and owned aircraft. (Hsu et al., 2013)

Outsourcing of maintenance, repair and overhaul of aircraft is addressed in another article, which states that fleet size, fleet mix and percentage of leased aircraft are entering the decision-making process. The result of this research is the relationship between the degree of outsourcing and cost rate and also punctuality of airlines. (Al-kaabi et al., 2007)

The model created by Oum and his co-authors is able to determine the optimal combination of leased and owned aircraft in the fleet, taking into account the demand for air transport that is uncertain and cyclical. Empirical results based on the model suggest that for the most effective service of 23 major airlines in the world would be the optimal amount of the fleet on operating leases between 40% and 60%. (Oum et al., 2000)

Empirical measurement of the impact of aircraft leasing choices on airlines financial performance is provided by Bourjade et al. One of the measurement results concerns low-cost airlines. The impact of the lease on the operating profit of the airline is stronger for low-cost carriers than for full-service carriers. Deviation from the optimum lease level may have a worse impact on low-cost airlines than on a full-service carrier. (Bourjade, 2017)

2.1. Goal of This Research

The authors of the above articles commonly deduce that efficient fleet management is an essential element of the business of airlines. It affects competitiveness, productivity and profitability. Leasing of aircraft is a form of cost reduction. At the same time, it is necessary to increase the number of aircraft in the fleet, thus keeping pace with the increasing demand for air transport. The importance of fleet modernization is related to comfort and reduction of costs as well, especially maintenance costs.

For low-cost airlines the cost reduction is based on the business strategy from the beginning of this concept. Therefore, the aim of our research was to find out:

- How the number of aircraft leased for these companies developed.
- How the proportion of leased aircraft has changed in relation to the total number of aircraft in the fleet.

- What was the average age of the fleet over the past 13 years (in the context of reducing costs).
- Whether there are common characteristics of this development over the period under review.

3. BENEFITS AND SPECIFICS OF OPERATE LEASE

A dry lease is carried out for a longer period than a wet lease, but it is a shorter period compared to a financial lease. The airplane is registered in the register of the lessor, carries registration number of the lessee and the lessee is registered as its operator. The most common form of aircraft acquisition in the Czech Republic is dry lease (Ploch et al., 2014). Dry lease does not require such large initial placement as buying an aircraft. The lessee has to pay the Security Deposit - the financial amount which has to be paid to the lessor before the aircraft is imported. Part of the deposit is paid when signing the Letter of Intent or when signing the lease. It is a form of insurance that the lessor can use in case when the lessee fails to fulfill any of his obligations, eg he does not pay a regular lease payment or fails to manage the insurance, etc. Lessee must continue to pay installments, regular maintenance reserves and some of the legal fees. The amount of lease payments depends on many factors such as current demand and supply on the aircraft market, aircraft equipment or age. All aircraft operation costs are covered by the airline.

Airlines are using dry lease for short periods (3-8 years). They are constantly changing the fleet, so airline customers feel that they are flying in constantly new and modern machines. The company presents itself with a young fleet - low aged aircraft is considered more safe and reliable. The main and decisive factor for dry lease is the delivery time of the aircraft. Delivery time in case of direct buy from the manufacturer is several years, while in the form of an operating lease it takes a maximum of several months. New aircraft have lower maintenance costs. First years of operations are covered by manufacturer's warranty. The largest low-cost airlines operate new mid-line aircraft until the first overhaul inspection, which is more expensive than lower maintenance levels (Pruša et al., 2015). This overhaul control is transferred the new owner. Maintaining a low aircraft age may be a part of the business strategy of airlines. Ryanair and EasyJet have introduced this strategy and act as a pioneer of modern aircraft. A significant part of the funds will be returned by selling still young aircraft. In some cases airlines favor dry leasing even if they have a strong capital base. E.g. Emirates has the majority of aircraft in the fleet on operational leases. This allows them to have new modern aircraft in the fleet. The part of the business strategy of Emirates is the presentation of the latest modern aircraft with new conveniences and technologies. Emirates tends to be the first - the first to allow the use of a mobile phone and a free wifi on board, the first to introduce a first-class personal entertainment system, first ordered a huge number of aircraft at once. The company has a trademark for the lounge, spa, and passenger cabins in the aircraft.

Table 1. Ownership fleet structure and aircraft average age of the selected airlines

Airlines Average age	Forms of acquisition	Share of the total number of aircraft in the fleet
Emirates 5,5	Operate lease	59,4 %
	Finance lease	39,8 %
	Ownership	0,8 %
Air France 12	Operate lease	43,6 %
	Finance lease	21,2 %
	Ownership	35,2 %
EasyJet 6,7	Operate lease	27,4 %
	Finance lease	5,4 %
	Ownership	67,3 %
Southwest 12	Operate lease	11,5 %
	Finance lease	7,1 %
	Ownership	81,4 %

Source: Kaločayová on the basis of Annual Reports of Emirates, Air France, EasyJet and Southwest Airlines 2016 (Kaločayová, 2017)

3.1. Formalities

The lessor (the owner of the aircraft) of dry lease is usually a large leasing company, or a subsidiary of large financial group, funds, or banks. The airline is responsible for the operation of the aircraft and all the related matters. It can be said that the lessor after the transfer of the aircraft has "no worries" - all technical and operational responsibilities are handed over to the lessee. This principle is called Quite Enjoyment and is a specific part of the leasing contract (Ploch et al., 2014).

Leasing contract terms includes:

- **Lease rent** - the lease payment is either fixed or increased after a certain period of time. Payments are made according to the repayment schedule.
- **Deposit** - purpose, amount, payment schedule. The deposit is used to pay for unpaid lease payments or other costs for which the lessee is responsible. Upon termination of the leasing on time, in order and in the prescribed condition, the lessor returns deposit to the lessee.
- **Maintenance reserves** - a typical dry lease matter. These conditions make it obligatory for the lessee, in addition to rent, to pay lessor's contributions for future higher level maintenance. A lessee is responsible for the regular maintenance and technical condition of the aircraft, but usually returns aircraft before expensive higher level maintenance. Maintenance reserves are being created to provide costly maintenance.
- **Lease length** - is individual, very roughly about 3-8 years, depending on the specific conditions and whether rented aircraft is new or used.

- **Insurance** - hull all risk insurance (agreed value of aircraft and deductible for a lessee) and liability insurance by Reg. (EC) No 785/2004 (in respect of liability for passengers, baggage and cargo, in respect of liability for third parties).
- **Technical conditions for delivery and return** - aircraft should be able to fly at least one year after takeover, have functional systems and may only show normal adequate wear and tear.
- **Conditions precedent** - a list of conditions and documents that both parties have to supply and meet prior to deliver the aircraft.
- **Representations and warranties** - statement by both Contracting Parties of their status, economic situation and obligations.
- **Taxes** - the tax transfer clause to the lessee.
- **Operating obligations, maintenance, repairs** - all contracts related to the operation are concluded by the lessee. The lessee is also responsible for all planning activities.
- **Events of default** - list of errors, cases when gross violation of the contract occurs.
- **Compensation** - the lessee must indemnify the lessor for all damages incurred due to the operation of the lessee.
- **Conflict solving** - determines under what law will any disputes be resolved, through court or arbitration, in the case of arbitration the contract contains its terms. According to Geneva Convention, aircraft property disputes are dealt with in the State of aircraft registration.

3.2. Costs

This section provides an overview of direct operating costs related to aircraft operations. Due to low margins in air travel (Pruša, 2015), company must pay high attention to cost structure and closely watch all costs. The operating margin indicates the percentage of profit from revenue generated by the passengers. In addition to sales for transport itself, airlines also have the so-called ancillary revenue, for example, from the extra charge for seat selection, additional checked baggage, meal on board etc. These revenues have a rising trend (CAPA, 2016).

Direct operating costs related to the operation of aircraft:

- Costs at the departure airport - parking fees, aircraft handling before flight, airport charges related to departure, refuelling charges, other services (e.g. fire assistance). (Mikula, 2017)
- Route costs – jet fuel, route and air navigation charges paid to EUROCONTROL and Air Traffic Management service providers.
- Costs at the destination airport - landing charges, aircraft handling after arrival, parking charges, other services (e.g. aircraft security).
- Variable crew costs - variable payroll component dependent on work performance, e.g. number of services, number of hours in the service, number of departures, diets or pocket money for crews on foreign flights.

- Variable aircraft maintenance costs – costs associated with a given flight (e.g. service fluids supplementation). These costs are dependent on the number of flight hours or cycles of the aircraft and include the cost of removing sudden defects and purchasing spare parts.
- Variable costs of aircraft acquisition in the form of operative leasing - paid rent based on agreed hourly flight rate.
- Variable costs of aircraft acquisition in the form of wet ACMI rental - according to the number of block hours' slots. The cost of the ACMI rental replaces the variable costs associated with the operation of the aircraft (insurance, maintenance, variable crew salary, crew accommodation costs and dietary costs) in the carrier's cost calculation.
- Fixed cost of aircraft is:
 - For owned aircraft – depreciation.
 - For owned aircraft on financing lease – depreciation, indicates their economic viability and residual value, taking into account their useful lifespan (not considering lease term).
 - For rented aircraft – rent, maintenance reserves.
 - For ACMI purchased aircraft – fixed part of the rent.
- Maintenance of aircraft independent of performance - costs of standard line maintenance on fixed operating bases, ground technical staff and its training, maintenance manuals, A-check and B-check costs, periodical aircraft maintenance costs according to the maintenance program (including related defect elimination and the purchase of spare parts and materials), maintenance facilities.
- Aircraft insurance – insurance of aircraft itself and insurance of liability against potential damage to third parties in the traffic.

4. DEVELOPMENT OF THE FLEET OWNERSHIP STRUCTURE

Over the past few years, several airlines switched to leasing aircraft for their operations in order to reduce the financial burden and increase the number of aircraft. As a result, the aircraft rental market has increased significantly (Market Research Future, 2017). According to the statistics of the aircraft operating leased fleet in 2017, the region would have the highest share of leased aircraft in Europe in 2017 (The Statistics Portal, 2018). Authors Dožić & Krnić reported that they have also witnessed a significant increase in aircraft leases in recent years (Dožić & Krnić, 2016). One of the aims of their article was to find out if fleet ownership structure underlining differences that depend on business model. Finally, they note that the business model does not significantly affect the ownership structure of the fleet. We can confirm this. As stated above, the choice of form of acquisition depends on the financial strength of the company as well as on the business strategy of airline. Table 1 shows that the ratio of leased and owned aircraft varies across these companies, regardless of the business model. The most similar is the share of aircraft purchased by financial leasing in low-cost companies.

Our survey focused on the largest low-cost airlines in Europe by total scheduled passengers and the development of their ownership structure over the period from 2005 to 2017. The source of the data was their annual reports. The goal of analysis was to find out how the share of aircraft purchased for operating leases was developing relative to the share of aircraft owned. In our article we have focused on the development of the past 13 years.

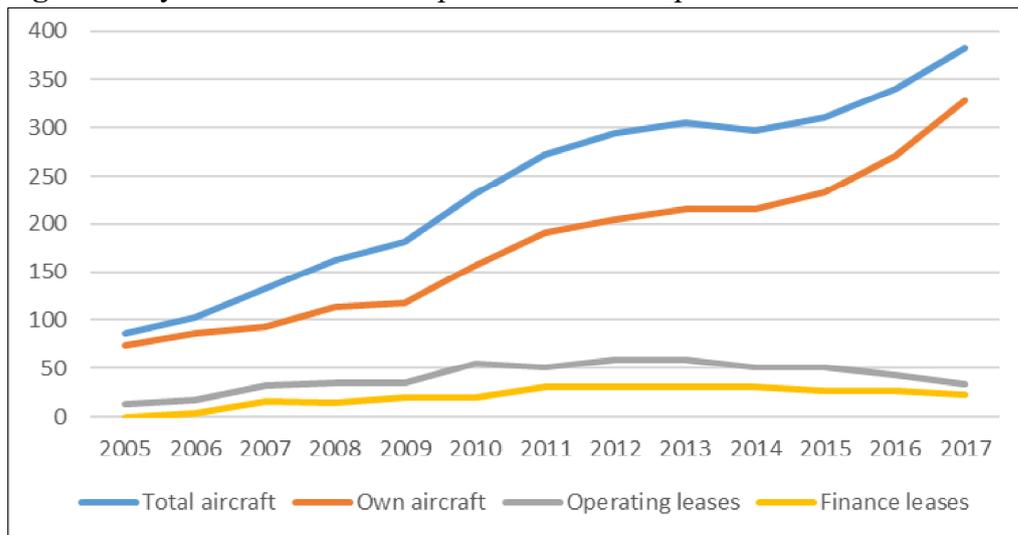
4.1. Ryanair

Ryanair was founded in 1985. Today it is the largest low-cost company in Europe with headquarters at Dublin airport. It operates a single fleet of Boeing 737-800. Ryanair has the largest fleet of inspected low-cost airlines, with 383 aircraft at the end of the fiscal year 2017. The company funded 76 Boeing 737-800 aircraft delivered from December 2003 to March 2014 under the 7-year contract and leaseback agreements with several international leasing companies, according to which each lessor first purchased the aircraft from Ryanair and then leased it to Ryanair on the basis of an operating dry leasing. From October 2010 to March 2017, 43 aircraft of the operating lease were returned to the lessor on the agreed lease maturity date – 31st of March 2017.

The company has financed 30 Boeing 737-800 aircraft delivered from March 2005 to March 2014 on 13-year leases in cooperation with JOLCO - Japanese Operating Leases with Call Option. These structures are accounted for as finance leases and are initially recognized at fair value in the Company's balance sheet.

Most of the aircraft on operating leasing (59) were operated by the company in 2012 and 2013. Since then, the number of operating leases has declined to 33. The average fleet over the reference period increased from 3 years to 7.1 years in 2017, the average for this period is 4 years.

Figure 1. Ryanair fleet ownership structure development

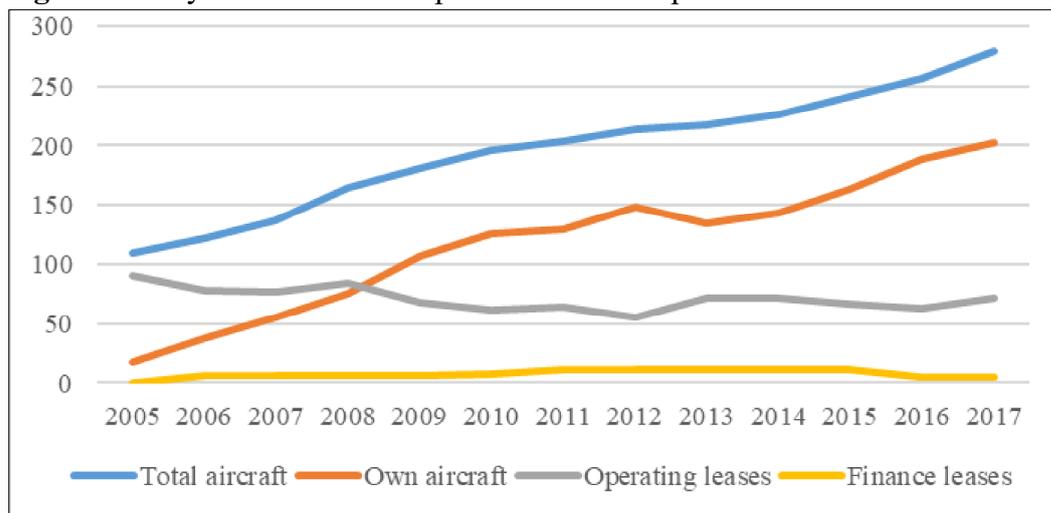


Source: Annual reports of Ryanair (Ryanair, 2005, Ryanair, 2006, Ryanair, 2007, Ryanair, 2008, Ryanair, 2009, Ryanair, 2010, Ryanair, 2011 and Ryanair 2012-2017)

4.2. EasyJet

EasyJet was established in 1995. Its headquarters is at Luton Airport in the United Kingdom. Figure 2 shows that, after 13 years since the company was founded, the number of aircraft owned exceeded the number of operating leases. The average number of aircraft hired in the period under review is 70, with the lowest of 50 and the highest number of 91 aircraft. However, this indicator does not have a rising trend. The average age of the aircraft in the reference period is 3.5 years. In the annual reports for fiscal years 2010, 2011 and 2012, the Company does not report averages of aircraft in the fleet. The indicator of the average age of the fleet has a growing trend. From 2006 to 2017, the average aircraft age increased from 2.2 to 7.1 years in 2017, the average for this period is 4.5 years. Towards the end of fiscal year 2017, EasyJet has a total fleet of 279 aircraft, of which 72 are on operational leasing. 79% of operating leases valid on 30th of September 2017 are based on fixed interest rates and 21% are based on floating interest rates. The length of the lease term is between five and sixteen years. EasyJet is contractually required to maintain these aircraft, costs are reported based on the number of flight hours and operated cycles. 24 aircraft are registered in Switzerland, one is registered in Austria and the other 254 are registered in the United Kingdom.

Figure 2. EasyJet fleet ownership structure development



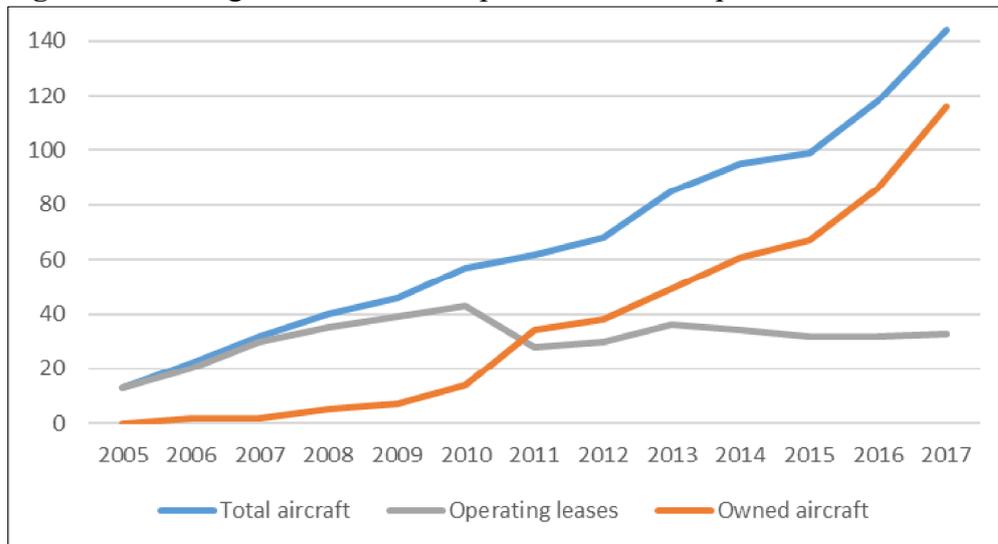
Source: Annual reports of EasyJet (EasyJet, 2005-2017)

4.3. Norwegian

Norway's low-cost airline started its operations in 1993. It is based in Fornebu; the largest air base is located in Oslo. In Norwegian, we discovered the same change in 2010 as with EasyJet - the number of owned aircraft exceeded the number of aircraft on operating lease (see figure 3). This point happened eight years after the company was founded. The number of leased aircraft ranges from 13 to 33 with the highest of 43 in 2010. Norwegian has historically purchased aircraft into its fleet through sale contracts and leaseback arrangements. The fleet of the group consists of leased aircraft and its own aircraft. The number of aircraft in the fleet has increased from 13 to 144

(Norwegian, 2016 & Norwegian, 2017). The average age of the fleet is not stated until 2014 in the annual reports. Over the last 4 years, the age of the fleet has fallen from 4.6 to 3.6 years, representing the youngest fleet of watched airlines. The Norwegian's strategy is to diversify the financing of aircraft through sale and leaseback transactions and term loan financing supported by the export credit agencies in the United States and EU (Norwegian, 2017).

Figure 3. Norwegian fleet ownership structure development



Source: Annual reports of Norwegian (Norwegian, 2005-2017)

4.4. Wizz Air

Wizz Air, founded in 2004, is the youngest of the inspected airlines. On webpage corporate.wizzair.com, the company's Annual Reports are available only for the last 4 years, 2015-2018. Another major source of data was the analysis of the CAPA Centre for Aviation. Wizz Air has all its aircraft used on operating leases, so it was not worthwhile to analyse the development of the proportion of owned and leased aircraft as in previous companies. Wizz Air reports that they have financed all new aircraft deliveries via leaseback and will continue to use this option in the future for the remaining A320ceo deliveries until the end of 2018 (Wizz Air, 2015-2018). For new aircraft deliveries, financial agreements for sale and subsequent leaseback are either in full form or in the form of a letter of intent.

The number of aircraft in the Wizz Air fleet gradually increased from 3 in 2006 to 79 in 2017. The average age of the fleet increased by only 1.4 years, 2006: 3, 2017: 4.4 (Wizz Air, 2015-2018 & CAPA, 2014). Wizz Air has the second youngest fleet of Europe's 4 largest low-cost airlines in Europe. According to CAPA, the company's balance sheet does not include any aircraft items (to date 31st of March 2014), reflecting Wizz air's focus on off-balance-sheet operational leasing (CAPA, 2014). Since 2014, this strategy has not changed. The company's budget includes a depreciation, considered as a residual value over the estimated useful economic lives of each part of an item of property, plant and equipment: land and buildings, aircraft maintenance assets, aircraft parts (Wizz Air, 2015-2018).

5. OUTPUT AND DISCUSSION

The number of leased aircraft in low-cost fleets has not increased since 2005, although the total number of aircraft has increased. We recorded only a slight increase or smaller decrease in the number of leased aircraft. Due to this development trend, the ownership ratio of the aircraft to the total was still higher and the average age of the fleet was slowly increasing. For low-cost airlines that have been on the market for 15 years or more (Ryanair 30 years), the growing trend in the number of leased aircraft has not been confirmed. This suggests that there is an optimal number of leased aircraft in the fleet, which has already been 13 years (observed period) for airlines without full service in Europe (Ryanair, EasyJet, Norwegian). These airlines have a stable position in the market for a long time.

An exception to the described characteristics is Wizz Air. This company is on the market only 10 years and does not own any aircraft at all. Stable economic and operational growth can be observed over the last 5 years. Profitability rises from 2013. (CAPA, 2017) It is possible that there will be a break in this company, as it happen within EasyJet and Norwegian, which also began with leased aircraft only.

Aircraft leasing accounts for half of world's commercial aircraft fleet (CAPA, 2018). This is the latest fact about the total share of leasing in aircraft operations. We have to also consider, that each market has its own specifics, because there are various conditions for doing business as well as there is different demand. Further research may be focused on the state of the art, but also on changes in development related to the past. This may be followed by an analysis of the conditions that are causing the changes. Analysis can be done for different types of airline business models, by continents or sub-markets in relation to demand, financial indicators and market concentration of companies - level of competition. Annual reports contain a wealth of information, but some of the important data may be inaccessible (Wizz Air case), or they may vary in interpretation forms, which may limit the research.

6. CONCLUSION

Aviation is a rapidly growing industry. This is illustrated by the rapidly rising number of aircraft in the fleet of airlines. The aircraft acquisition is a demanding process that requires considerable financial resources. In addition to the purchase of aircraft, the aircraft may be leased. Airline is the operator of the aircraft but, but it does not own it, which can be considered as a special form of outsourcing. The leases options and their specifics are explained in the introductory chapter. The most common form of lease – operational – is subjected to deeper analysis. In this article we focus on development of the fleet ownership structure of the 4 largest low-cost airlines in Europe by total scheduled passengers: Ryanair, EasyJet, Norwegian and Wizz Air. Aim is on evolution of the share of owned and leased aircraft through operational lease in their fleets. After analysis, we can say that these companies do not have tendency to increase leased aircrafts, but the trend is to maintain a fleet of leased aircraft on certain level. The increase on aircraft rental market is the result

of getting leased aircraft in fleets of full-service carriers. We assume this is being done to reduce the costs.

Our graphs show that in the case of low-cost airlines, the total number of aircraft in the fleet increases due to finance leases and the redemption option after the dry lease. With the increase of owned aircrafts, the fleet's average age is slightly rising. In 2017, average age of fleets of 4 examined airlines was: Ryanair 6.5, EasyJet 7.1, Norwegian 3.6 and Wizz Air 4.4 years. Wizz Air presents its fleet as the youngest and greenest. Wizz Air is the only one which does not own any aircraft, the entire fleet is on operating leases.

Maintaining a young fleet is a way to reduce the costs, especially the cost of maintenance, and it is also a part of the business strategy and marketing presentations of the companies. The young fleet is presented as green (fuel-efficient, with reduced emissions per passenger), safe and modern.

7. REFERENCES

Airbus (2018). Airbus Price List, January 2018 [available at: http://www.airbus.com/newsroom/press-releases/en/2018/01/airbus-2018-price-list-press-release.html#media-list-document-document-all_ml_0 access April 5, 2018]

Al-kaabi, H., Potter, A., & Naim, M. M. (2007). Insights into the Maintenance, Repair, and Overhaul Configurations of European Airlines. *Journal of Air Transportation*, 12(2), pp. 27-42.

Bisset, M. (2017). Aviation Finance & Leasing [available at: <https://gettingthedealthrough.com/area/66/article/29107/aviation-finance-leasing-2017-global-overview/> access April 5, 2018]

Bourjade, S., Huc, R. & Muller-Vibes, C. (2017). Leasing and Profitability: Empirical Evidence from the Airline Industry, *Transportation Research Part A: Policy and Practice*, 97(C), p. 30-46.

CAPA (2014). Wizz Air: Growing at 15% Annually, One of Europe's Most Profitable Airlines "Not Desperate" for IPO [available at: <https://centreforaviation.com/analysis/reports/wizz-air-growing-at-15-annually-one-of-europes-most-profitable-airlines-not-desperate-for-ipo-187715> access March 13, 2018]

CAPA (2016). CASK: Europe's Full Service Airlines Have the World's Highest Costs, US Airlines the Lowest [available at: <https://centreforaviation.com/analysis/reports/iata-cask-europes-full-service-airlines-%20have-the-worlds-highest-us-airlines-the-lowest-281609> access April 22, 2018]

CAPA (2017). Wizz Air: Central/Eastern Europe's Largest Airline turns 13; Profit Margin Dip Not Auspicious [available at: <https://centreforaviation.com/analysis/reports/wizz-air-centraleastern-europes-largest-airline-turns-13-profit-margin-dip-not-auspicious-346843> access July 2, 2018]

CAPA (2018). Aircraft Leasing Accounts for Half of World's Commercial Aircraft Fleet. [available at: <https://centreforaviation.com/analysis/reports/aircraft-leasing-accounts-for-half-of-worlds-commercial-aircraft-fleet-lessors-shun-widebodies-404111> access July 2, 2018]

Dožić, S. & Krnić, R. (2016) Overview of Airlines Ownership Structure, *XV international symposium Symorg*, Jaško, O., Marinković, S. (ed.) Faculty of Organizational Sciences, Zlatibor, 10 – 13 Jun 2016, p. 854-862.

Durmaz, V. & Adiller, L. (2010). Outsourcing in Air Transportation Industry: the Case of Turkish Airlines, *5th International conference - Theoretical and Practical Issues in Transport*. University of Pardubice, Pardubice, 11– 12 February 2010, p. 277-281.

EasyJet (2005-2017) Annual Report 2005-2017 [available at: <http://corporate.easyjet.com/investors/reports-and-presentations/archive> access March 14, 2018]

Hsu , Ch.-I., Chao, Ch.-Ch. & Huang, P.-S. (2013). Fleet Dry/Wet Lease Planning of Airlines on Strategic Alliance, *Transportmetrica A: Transport Science*, 9(7), p. 603-628.

Kaločayová, M. 2017. *Purchase of Aircraft*. (Unpublished bachelor thesis). Czech Technical University in Prague, the Czech Republic, Prague.

Karagülle, A. Ö. (2012). The Evaluation of Fleet Structures in Turkish Aviation Industry from Strategic Management Point of View, *Procedia - Social and Behavioral Sciences*, 58, p. 93-97.

Market Research Future (2017). Aircraft Leasing Market Research Report – Global Trends and Forecast to 2023 [available at: <https://www.marketresearchfuture.com/reports/aircraft-leasing-market-4247> access May 8, 2018]

Mikula, B., Szabo, S., Rozenberg, R. Tobisová, A. & Puškáš, T. (2017). A Brief Overview on Ground Handling Charges and Some Costs Reduction, *Central European Conference in Finance and Economics*, Gavurová, B., Šoltés, M. (ed.) Faculty of Economics TUKE, Herľany, September 20-21, p. 519 – 524.

Norwegian (2005-2017). Annual Reports 2005-2017 [available at: <https://www.norwegian.com/ie/about/company/investor-relations/reports-and-presentations/annual-reports/> access March 8, 2018]

Norwegian (2016). Annual Report 2016. [available at: https://www.norwegian.com/globalassets/documents/annual-report/nas_annualreport_2016.pdf access March 8, 2018]

Norwegian (2017). Annual Report 2017. [available at: <https://www.norwegian.com/globalassets/ip/media/about-us/company/investor-relations/annual-report-2017.pdf> access March 8, 2018]

OECD (2018). Official Export Credit Agencies. [available at <http://www.oecd.org/tad/xcred/eca.htm> access March 8, 2018]

Oum, T., Zhang, A., & Zhang, Y. (2000). Optimal Demand for Operating Lease of Aircraft. *Transportation Research Part B: Methodological*, 34(1), p. 17-29.

Ploch, J., Pavlovský, J. & Holba, K. (2014). Management leteckých podniků – způsoby pořizování dopravních letadel, 1st Edition, Prague: University College of Business

Pruša, J., Brandyský, M., Hlinovský, L., Horník, J., Pazourek, M., Slabý, F., Třešňák, M. & Žežula, J. (2015). *Svet letecké dopravy*, 2nd Edition, Prague: Galileo

Ryanair (2005). Annual Report 2007 [available at: <http://www.annualreportowl.com/Ryanair/2005/Annual%20Report> access March 20, 2018]

Ryanair (2006). Ryanair Full Year Results 2006 [available at: http://blog.triambak.com/wp-content/uploads/2017/02/AC3143_Full_Year_Results_2006.pdf access March 20, 2018]

Ryanair (2007). Annual Report 2007 [available at: <https://www.ryanair.com/doc/investor/2007/070920annualreport.pdf> access March 20, 2018]

Ryanair (2008). Annual Report 2008 [available at: <https://www.ryanair.com/doc/investor/2008/20F%202008.pdf> access March 20, 2018]

Ryanair (2009). Annual Report 2009 [available at: https://www.ryanair.com/doc/investor/2009/Annual_report_2009_web.pdf access March 20, 2018]

Ryanair (2010). Annual Report 2010 [available at: https://www.ryanair.com/doc/investor/2010/Annual_report_2010_web.pdf access March 20, 2018]

Ryanair (2011). Annual Report 2011 [available at: https://www.ryanair.com/doc/investor/2011/Annual_Report_2011_Final.pdf access March 20, 2018]

Ryanair (2012-2017). Annual Reports 2012-2017 [available at: <https://investor.ryanair.com/results/> access March 20, 2018]

The Statistics Portal (2018). Distribution of the Global Aircraft Operating Leased Fleet in 2017, by Region [available at: <https://www.statista.com/statistics/673999/aviation-industry-aircraft-leasing-by-region/> access April 22, 2018]

Wizz Air (2015-2018). Annual Reports 2015-2018 [available at: https://corporate.wizzair.com/en-GB/investor_relations/governance access March 22, 2018]