

ECONOMIC SUSTAINABILITY OF EUROPEAN BUSINESS AVIATION AIRPORTS

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Dr. Yves Corrodi

Masterplanner
Flughafen Zürich AG



Josua Hildbrand

Head Apron & General
Aviation Services
Flughafen Zürich AG



Max Steiner

Senior Project Leader
Flughafen Zürich AG

1. INTRODUCTION

An airport is one of the core infrastructures of an urban area and its economic impact is substantial – either on metropolitan or regional level [1] [2]. This becomes evident, regarding the mega airports, which are currently being constructed in Istanbul, Dubai and Shanghai. Each of them claims to develop the largest airport in the world connecting a metropolitan area. Besides being a major international gateway for an existing catchment area, new cities will develop around airports [3]. Airport operators are actively investing in airport cities and innovation hubs close to their existing infrastructures. Orthographic pictures of major cities reveal that airport areas can easily cover an urban centre. The development of an airport is therefore also a question of spatial exploitation.

IATA publishes above-trend air passenger growth and record load factors [4]. The UN expects the population living in urban areas to increase from 55% to 68% by 2050, which adds another 2.5 billion people to urban areas [5]. Considering these trends, the demand for air transport is expected to increase within large, complex and dynamic urban systems, while spaces remain limited. Due to capacity limits, major European cities built new airports slightly outside the city centres (for example Paris, Frankfurt, London, Milan or Munich) focusing on the scheduled and charter business. Existing city airports and smaller airfields then concentrate on General Aviation (GA) and Business Aviation (BA). Is this a sustainable use of land – are these airports economically sustainable, who owns and operates them and what are the related success factors? This paper summarizes and discusses the results of the thesis «Economic Sustainability of European Business Aviation Airports» [6].

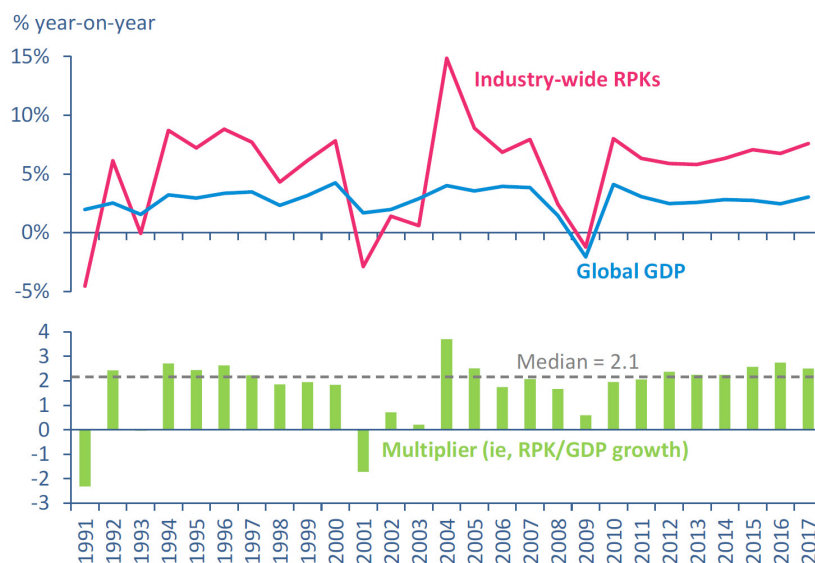


Figure 1: Industry-wide RPK vs. global GDP [4]

2. LIMITED INFORMATION ABOUT THE EUROPEAN BA MARKETS

Aviation is generally grouped into military and non-military aviation. The term civil aviation includes all non-military flying activities, both scheduled air transport as well as GA/BA aviation. The user segment GA/BA comprises of non-commercial private (GA) and commercial private (BA) air traffic. All non-military flights that are not assigned to commercial scheduled or charter traffic are listed under the term GA/BA. The differentiation between GA and BA is more challenging, because an aircraft movement might be classified both depending on regulations (i.e. diplomatic or rescue flights). Since the term GA also includes training and leisure flights, it is more promising to evaluate airports with a significant share of BA movements. These Airports typically provide higher technical standards (for example instrumental flight rules) and better aviation infrastructures, which allows a comparison of their respective value chains.

Since the first BA aircraft took off in 1927, BA has grown to be a substantial contributor to the European economy. This contribution has often been little understood and few organizations have been able to determine the exact economic value and business benefit the sector truly offers. A recent study by EBAA analyses aircraft operators as well as ground handlers and concludes that business aviation enables economic growth, increase business efficiency and enables connectivity. The industry creates 87 billion EUR in revenues and generates a gross value added of 32 billion EUR. France, Switzerland, Germany and the UK are the main players in the sector [7]. Studies and data specifically focusing on GA/AB airports are very limited. The economic importance of scheduled and charter business for these airports as well as the private nature of business aviation might be one possible explanation.

Based on the existing flight statistics from Eurocontrol [8], the Deutsche Handelsblatt [9] and the Aviation Week Network [10], the major European BA airports are located in France, England, Switzerland and Germany.

3. EVALUATION OF MAJOR EUROPEAN BA AIRPORTS

Seven airports with a significant number of GA/BA aircraft movements are evaluated [6]: Paris Le-Bourget Airport (LBG), Geneva Airport (GVA), Nice Airport (NCE), Luton Airport (LTN), Zurich Airport (ZRH), Milan Linate Airport (LIN) and London Biggin Hill Airport

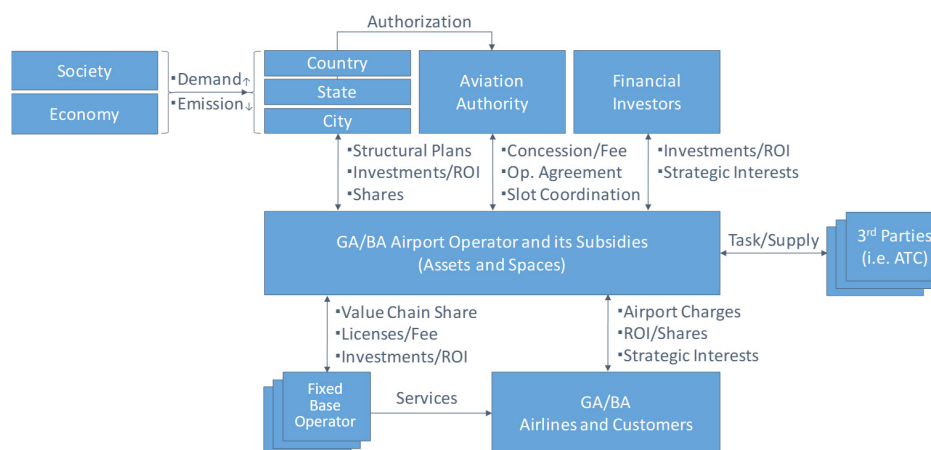


Figure 2: Typical governance structure of a GA/BA Airport [6]

(BQH). Paris Le-Bourget and London Biggin Hill Airport are GA/BA aviation only airports. The study further considers Düsseldorf Airport (DUS), which recently invested in GA/BA infrastructures, as well as St. Gallen-Altenrhein Airport, where airfield and operating airline are owned by the same individual. For a systematic approach, the typical governance structure of a GA/BA airport operator was developed in Figure 2. Especially the interactions among these stakeholders are of interest and the corresponding conclusions are listed below:

Stable GA/BA Aircraft Movements

The average annual aircraft movements during 2013-17 were evaluated. Beside the GA/BA only airports, typical shares of GA/BA aircraft movements compared to the overall number of aircraft movements are between 6% (Düsseldorf Airport) and 40% (Nice Airport). London Biggin Hill showed the most remarkable increase in aircraft movements, while Geneva Airport and Milan Linate Airport showed a slight decline in GA/BA movements. Considering the airports which also handle scheduled and charter flights, the overall increase in aircraft movements is not reflected in the number of GA/BA movements. Since Paris-Le Bourget Airport operates three runways, a shortage of infrastructure seems to be an unlikely explanation. However, the market tends to be saturated in Paris. Based on the years 2013-17, there are no indications for any airport to assume a significant increase in GA/BA aircraft movements.

Balance between Shareholders and Governmental Owners

The airports discussed officially opened around the two world wars. These airports can be considered as successors, while their smaller predecessors are often only used partially, for example for GA or military activities. Figure 3 shows that there is no similar airport operator ownership structure observed among the selected airports. Each airport has its individual conditions: The airport operators of Paris Le-Bourget Airport, Nice Airport and Milan Linate airport are aviation groups (ADP, Aéroports de la Côte d’Azur respectively SEA), which are mainly owned by governmental entities and institutional investors with minimal cross-investments by other Aviation/Infrastructure Groups. In contrast, individuals own the airport operators of the two smaller airports London Biggin Hill and St. Gallen-Altenrhein. The other airports have again a different situation – for example, Flughafen Zürich AG is listed on the Swiss Stock market, but the canton Zurich still holds a blocking minority in the case of noise-related decisions or runway extensions.

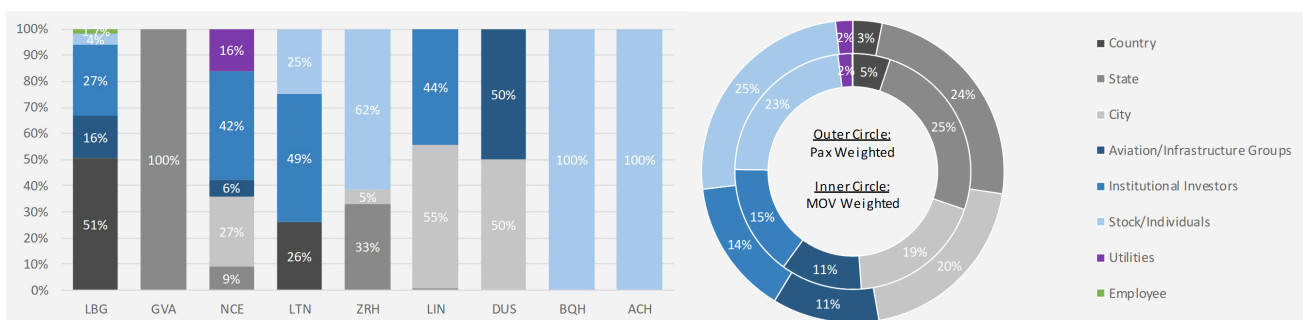


Figure 3: The bar diagram (left) shows the ownership structure of each airport; the pie chart (right) weights these ownerships by the average amount of Pax (outer loop) and the average amount of aircraft movements (inner loop). An equal share for governmental entities and financial investors results. [6]

The ownership structures of all airport operators can be weighted by either the number of passengers or aircraft movements. The results are illustrated in the pie diagram Figure 3. Shareholders such as Aviation/Infrastructure Groups, Institutional Investors as well as Stock/Individuals hold 49% of the shares, while governmental owners (Country, State and City) are holding an equal 49% of the airport operators. Both groups focus on the return on investment, however governmental entities also take responsibility for the national economy. This is a rather different development compared to the privatization of the airline industry since the 1970s [11] [12].

Strongly Varying Charges

By excluding the two GA/BA only airports Paris-Le Bourget and London Biggin Hill, it can be observed that none of the airports have a specific document on GA/BA charges. Nice airport is the only exception as it provides set tariffs for aircraft with an MTOW smaller or equal to 25 tons. On average (of all nine airports) a frequent turnaround flight (arrival Weekday 22:15, departure the next Weekday 19:15) costs about 315 EUR for a Pilatus 12, 800 EUR for a Falcon 2000 and 1'300 EUR for a Gulfstream 500. This includes the aircraft landing charges, aircraft parking charges, passenger charges, additional airport charges, noise charges and the VAT – the two most important charges are the aircraft landing and parking charges. Figure 4 compares the average total charges (average of the three aircraft types) with the aviation revenues per aircraft movement at each airport including scheduled and charter movements.

Airport charges for GA/BA strongly vary among the evaluated airports and do not seem to be market sensitive – in one example, the distance between two airports by car is only an hour, but their charges differ by factor 4-5. An airport operator with few scheduled and charter movements has to finance its infrastructure with business aircraft landing and parking charges as well as revenues from FBOs. Larger airports on the other hand tend to optimize their marginal costs and limit the amount of airport slots for general and business aviation. Comparing the airports' average aviation revenues per aircraft movement with its charges for a frequent business aviation flight showed remarkable

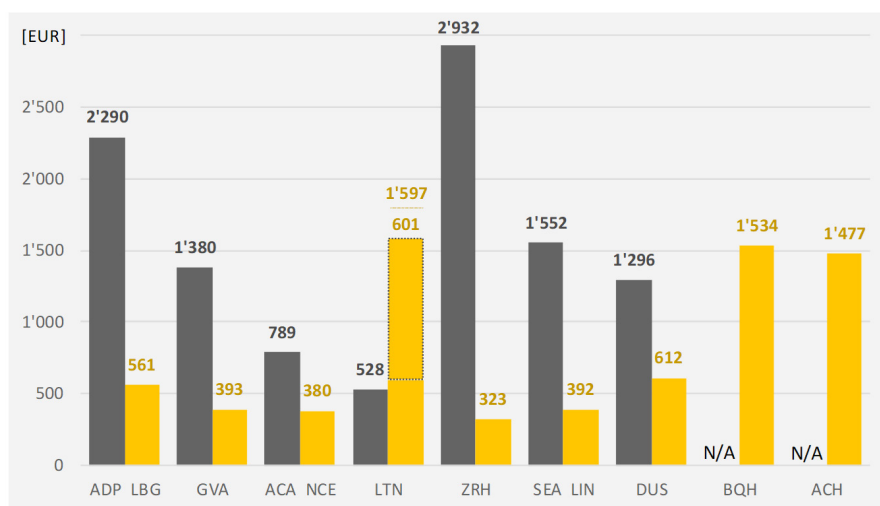


Figure 4: Comparison: ■ average aviation revenues per aircraft movement 2013-2017, ■ average business aviation charges for a frequent turnaround flight (LTN dotted line reflect a steering function for fixed based operator services) [6]

differences – on average 3-4 times, but up to 9 times higher. This variation might be explained by a lack of charges exclusively for GA/BA and the importance of passenger charges.

The evaluated figures indicate a reference value of about 1'500 EUR per aircraft movement in order to achieve a stable financial performance. Revenues on B2B and B2C must be profitable, since up to six fixed base operator focusing on business aviation can be found at a single airport. On average, a fixed based operator handles about 8'000 BA aircraft movements annually.

4. BRIEF DISCUSSION OF THE INTERVIEW

Yves Corrodi holds a Master and Doctoral degree in electrical engineering as well as the IGLUS Executive Master. Correspondingly, he lived several years in Japan. As Masterplanner with the Zurich Airport he engages in long-term infrastructure development as well as business development projects. Further, he is a board director for the large-scale logistic infrastructure initiative Cargo Sous Terrain.

Josua Hildbrand has been with the industry for over 13 years. He holds a BSc in Aviation Sciences from the Zurich University of applied Sciences and a MSc in Air Transport Management from Cranfield University. After numerous international assignments in Ground Handling, mainly focussing on restructuring and integration work, he took on the role as Head Apron-& General Aviation Services with Zurich Airport Ltd in 2017, which includes responsibility for the General- and Business Aviation Section.

Max Steiner is an experienced senior project manager for over 30 years in the aviation industry. He holds an electrical engineering and a postgraduate degree as business economist. As CNS project manager followed by Head of communication technology he realized various projects for Swiss Air traffic control. With the Zurich Airport he was in charge of an engineering team to develop the terminal infrastructure. Currently, he is a responsible expert for the development of the new pier A and the enhancement of the airside terminal.

Question 1: Importance of GA/BA for Zurich Airport and the National Economy

Josua: With a share of approximately 12% of the overall air traffic movements, BA is important at Zurich Airport. Furthermore, it is vital to the national and local economy. With numerous international corporations based in the Zurich area, time saving connections between headquarters are crucial for top executives. Their staff then uses the direct scheduled flights on a regular basis, which helps to sustain many of these city pairs. From a revenue perspective, the significance is much smaller. However, this is mainly owed to different priorities over recent years and is about to be thought over in the near future.

The industry is widely underestimated. A healthy business aviation sector is vital to our economy. According EBAA, 34'000 direct and indirect jobs as well as revenues of 14.6 billion EUR are generated. This is a substantial contribution to the economy.

Switzerland plays an important role in the European market, due to its geographical location. Situated in the heart of Europe, it serves many fractional operators as a base for operations across the entire continent. While scheduled carriers serve 185 destinations out of ZRH, BA serves four to five times that number, thus connecting remoter regions, alternative airfields in crowded city centres or developing markets, where scheduled

traffic is still years away.

Max: Since slots and airport spaces are limited resources at the Zurich Airport, the BA is in competition with the scheduled and charter airlines – the existing concession agreement prioritise scheduled and charter flights. This lowers the flexibility and quality of the business aviation product and corresponding revenues for an airport operator.

The importance for the national economy is not fully researched. BA could hold big companies in the area, because their high-level management demand flexibility and exclusivity (i.e. special terminals). However, comparable services are offered as first class and VIP services for scheduled flights. Therefore, the customer's role and purpose to use BA remains often unknown.

Yves: Interestingly, only few publications on the BA can be found and even less data on BA airports are available. The economic importance of the BA compared to the scheduled and charter business as well as the private nature of the BA business might be an explanation. According to a 2015 study by InterVISTAS evaluating the economic impact of European airports, airports contribute 12.3 million employees earning 365 BEUR per year. Overall, they generate 675 BEUR, which corresponds to 4.1% of the European GDP. Even if the direct economic impact of BA is not comparable with these figures, the indirect impact is important, as it is observable during the WEF in 2018: A large number of well-known people from business and political communities have been expected and delegations from almost 100 countries arrived. Many of these guests will use their private aircraft. During five days, there will be numerous additional take-offs and landings beyond regular operations, on a par with recent years. The expected peak during the WEF will exceed the daily average of around 130 aircraft movements. Depending on the size of the aircraft, there will be 62 stands available for WEF aircrafts, which are already reserved for the registered delegations. Due to space restrictions, other WEF visitors' aircraft have been given time slots of maximally three hours for landing and departure. They have been required to leave the Zurich Airport.

Question 2: Is a GA/BA Airport a Public Service for the National Economy?

Josua: BA is a catalyst for the national economy. Due to the wide range of destinations served and the savings in travel time, it is an indispensable service. However, the public perception of the sector unfortunately is still very poor. The majority confuses the important point-to-point connections for business passengers with the celebrities and jet set community, which does not have much to do with the daily business.

Yves: The study did not indicate any price sensitivity for airport charges and analysed some success cases. Challenges might be more related to the historic development of an airport focusing on GA/BA as well as its governance structure preventing major changes. GA/BA airport operators must be able to set sustainable GA/BA charges and control FBO licence conditions. If an airport cannot control these two items, the operation of a GA/BA airport tend to be a public service.

Max: BA should not be seen as a public service and not all BA customers are holding a decision-making competence. Other location factors are more important than the availability of BA services – i.e. settlement of global companies will not mainly depend on it. Nevertheless, some special events such as the WEF depend on BA. The attractiveness of exclusive tourist destinations might be supported.

Question 3: Is the BA market saturated?

Yves: Since the financial crisis in 2008, the overall air traffic (including the scheduled and charter traffic) substantially increased year by year. Focusing only on BA aircraft movements, this trend is not observable and the impression of a saturated market results. Typically, the scheduled and charter turns in as soon as a corresponding demand is available suppressing the BA movements. Further, financial resources for BA flight might be limited in the European context.

Josua: The market is saturated in a relatively healthy way. However, it is currently rather hard to find second hand aircraft on the market, which is a sign for a healthy demand. Airport operators are facing much bigger challenges from airfield and airspace constraints these days.

Max: The BA market in Zurich is close to saturation. There is still some market potential, if flight restrictions could be lowered and especially early morning arrival/departure slots are available to the BA.

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IGLUS | Innovative Governance of Large Urban Systems
A: EPFL, Station 5, 1015 Lausanne, Switzerland
P: +41 (0)21 6930003
E: chloe.gaspari@iglus.org
W: iglus.org

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