Prepared on behalf of the EBAA

Oxford Economics

The Role of Business Aviation in the European Economy

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OXFORD ECONOMICS

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Executive Summary

As the name implies, business aviation is devoted to the needs of commerce. Business aviation is predominantly used by business leaders, enabling travel by entrepreneurs whose enterprise and energy are a cornerstone of economic growth, rather than wealthy people travelling for leisure. As such, business aviation flights take on an importance wholly different from the operations of commercial airlines and other forms of general aviation. In policy terms, however, the added value of business aviation flights is often either overlooked in favour of the much larger number of commercial flights or attributed into a broad category alongside all other various forms of general aviation.

Closer consideration, of the kind found in this report, shows its true value. While it is already widely appreciated by the business community, a broader appreciation of the role of business aviation – reflected particularly in policy – will enable the industry to become an even more significant contributor to the overall health and dynamism of the European economy.

- Business aviation is a crucial part of the European transport network

Business aviation is a rapidly evolving and dynamic sector. The sector posted robust growth over the years prior to the economic crisis, growing from 500,000 movements per year in 2001 to 800,000 per year in 2007. The sector was heavily impacted when the global economic crisis hit in 2008-09, but stabilised in 2010-11, helping to catalyse trade and investment around Europe. Overall, business aviation has generated substantial and sustainable employment, and promises to be an important and unique contributor to a wider economic recovery.

- Business aviation is a diverse but distinct sector

The term "business aviation" is something of a simplification, covering a range of operator and airline types, and a wide variety of services. Several different business models have emerged, ranging from operators offering one-off charter services, to fractional jet ownership, right up to the in-house airlines operated by many of the world's largest firms. This reflects the different needs of the clients they serve, from occasional users to major multinationals which need to link production sites, offices or business partners in different countries, effectively providing services from any location and at any time.

Running through all forms of business aviation are the principles of flexibility and responsiveness, and for many fliers it is nothing less than business-critical. Unlike scheduled air services, business aviation is specifically tailored to the needs of the client. This report finds, for example, that 96% of city pairs served by business aviation have no daily scheduled direct connections. The remaining 4% represent however more than 1/3 of business aviation traffic in volume. While these routes may not be considered viable by scheduled airlines, they are clearly important to business aviation users and the companies they represent. To fly any other way requires multiple

flights, lengthy transfers or overnight stopovers, and visits to busy hub airports. One user we spoke to told us that with business aviation, "four days becomes four and a half hours".

Taking these advantages together, we estimate that a typical business aviation user places a value on business aviation flights that is between eight and fifteen times higher than the comparable scheduled trip.

- Business aviation complements the scheduled network

The degree of flexibility on offer makes business aviation very different from the scheduled network. While the scheduled network provides "thick connectivity", based on economies of scale and concentrated at major cities, business aviation offers "thin connectivity", carrying a low volume of passengers between a much larger number of destinations. Even through the global crisis the network continued to widen, reaching 88,000 airport pairs by 2011.

We believe this "thin connectivity" can play a particularly crucial and complementary role in integrating regions of Europe less well served by scheduled airlines – a key policy goal for the European Union. Business aviation is also playing an important role in supporting economic links to emerging markets – for example, in 2011 there were over 1,400 flights between Europe and India using business aviation. Over a quarter of one major operator's revenues in 2011 were derived from multiple destination itineraries as opposed to one way or return trips. As economic leaders, the users of business aviation are in the vanguard of opening up emerging markets in Europe and beyond.

- Business aviation is a key corporate tool

Business aviation is perceived by some who are unfamiliar with the sector as the preserve of the wealthy, used exclusively by rich individuals for leisure. But this is a misconception: one of the sector's leading firms estimates that around 80% of its accounts are held by corporations and entrepreneurs, including a quarter of the firms in the Euro Stoxx 50 (the Eurozone's 50 leading companies) and 20% of those in the DAX (the German equivalent). In a recent survey on M&A success factors[1] , two thirds of respondents said that face-to-face contact was crucial in deal-making. Business aviation facilitates this like no other form of transport can which again differentiates it from other forms of general aviation.

Because business aviation carries key decision-makers on high value-added trips, we estimate that each additional passenger flown on a business aviation flight generates the same contribution to GDP as nine business passengers on a scheduled flight.

- Business aviation benefits local economies

Business aviation delivers substantial benefits to its clients, and in boosting their productivity the sector makes an important contribution to the European economy. But there are also important economic benefits for the local communities where business aviation airports and firms are based.

Business aviation operations play a crucial role in driving demand in a much wider set of activities, including maintenance, research and development, training services and hospitality. The combined impact of business aviation on local economies can therefore be many times the direct impact of business aviation flights themselves. Previous work commissioned by the EBAA[2] found that the sector supported a total of 164,000 jobs around Europe in 2008, and though the sector was impacted by the downturn, industry experts do not expect this figure to have changed substantially since that study was completed.

Although these jobs are distributed around the continent, the growth of clusters at locations such as Farnborough, Paris Le Bourget and Geneva, underlines the importance of business aviation to the local economy in specific locations. For example, at TAG Farnborough Airport in the UK, direct on-site employment is estimated at around 1,000, but an additional 4,000 jobs in the local area are part of the airport's wider supply chain. The manufacture of business aviation aircraft is also crucial to certain local economies – this was illustrated recently when it was estimated that NetJets' recent $9.6 billion order for new planes will help sustain 5,000 jobs in Belfast into the medium term.

1 Doing the Deal 2012, Mergermarket

2 The Economic Impact of Business Aviation in Europe, 2008, PricewaterhouseCoopers

- Business aviation can drive employment growth

We also find evidence to suggest that business aviation offers a key opportunity for employment growth in the coming years. All the operators we have spoken to underlined the pace of growth in their headcount in the years running up to the economic crisis. The management of Paris Le Bourget Airport told us they expect demand for business aviation to grow twice as fast as GDP over the medium term. This demonstrates that the sectors relying on business aviation are those that grow fastest, and as such the industry has a crucial role to play in facilitating a European economic recovery.

Assuming a supportive stance from local, national and European governments, the business aviation sector can make an important contribution to employment growth during Europe's recovery from the economic crisis.

- Business aviation invests in its workers and in local infrastructure

There is evidence to indicate business aviation invests more in training its workers than firms in other sectors, or in the economy as a whole. This is no doubt partly due to the regulatory and technical environment in which the sector operates. But the sector's other characteristics, including the flexibility demanded of staff, the high levels of customer service provided, and the need to keep ahead of rivals in a highly competitive marketplace all drive companies to invest in their staff. Some operators we spoke to even underlined their preference to find and develop local workers who didn't have experience in the sector before, in order to ensure they were trained to their own high standards.

Business aviation also makes a key contribution to physical investment in the local economy, and demand for local construction firms. The sector has seen a rapid spell of investment spending over the past decade or so, as airport operators have developed facilities to deal with the demands of business aviation operators. Looking ahead, business aviation can continue to be a bright spot for investment in local economies – for example, Paris Le Bourget airport expects to spend around €70m in the coming decade upgrading its facilities. The sector's appetite to invest provides a marked contrast to wider economic uncertainty, and the reliance of other parts of the transport system on public support for investment.

- Business aviation is crucial to European economic recovery

In conclusion, the business aviation sector plays a crucial role in connecting firms across Europe, providing a level of flexibility and responsiveness that the scheduled network can't deliver – but that business leaders require. In complementing the scheduled network the sector generates substantial economic benefits for Europe as a whole, while also delivering jobs and growth directly in the communities where it is based. Business aviation therefore has a key role to play in facilitating a recovery from Europe's current economic crisis, and this should be better recognised in policy formulation.

Business Aviation - The Facts

- **96%** – proportion of city pairs served by business aviation in 2011 that had NO scheduled connection. The remaining 4% represent however more than 1/3 of business aviation traffic in volume.
- **Twice as fast as GDP** – expected medium-term growth rate for business aviation demand at Paris-Le Bourget
- **70%** – proportion of business aviation flights taking off and landing at airports handling fewer than 100 departures per day
- **66%** – proportion of corporate decision makers regarding face-to-face meetings as critical to M&A success
- Up to **25%** of operator revenues are derived from multiple destination journeys
- **164,000** – persons employed in business aviation around Europe
- **€9bn** – value of business aviation aircraft manufacturing

Foreword

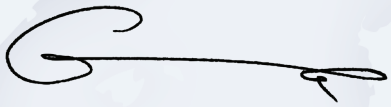
By Fabio Gamba, Chief Executive of European Business Aviation Association

The decade before the economic crisis, it seemed the sky was the limit for business aviation. From 1998-2008 movements in business aviation grew three times as fast as scheduled aviation movements, and the sector was deservedly praised by EU institutions for its remarkable achievements and its contribution to European economies. The conclusions of a study, commissioned by the European Business Aviation Association (EBAA) in 2008, could for the first time quantify the substantial contribution business aviation was bringing to the economy, by outlining unequivocally the number of jobs, movements, city-pairs, and investments the sector was ensuring.

Four years on, in the aftermath of a financial and economic crisis and ongoing uncertainty about the future of the Euro, we felt the time had come for a reminder of the formidable impact business aviation has on economies. While previous studies have underlined the scale of business aviation (in a nutshell, 88,000 city pairs, 650,000 yearly movements, 160,000 jobs, over 4,000 business jets in Europe alone) there has been less recognition of its catalytic impact on growth in other sectors. As we demonstrate in this report, business aviation is first and foremost a service that facilitates interaction between businesses. It doesn't offer an alternative to commercial airlines; it is a crucial complement. The sector also provides valuable economic impacts in the communities where it is based. As such, the sector's needs should be better understood by the policy-making community at local, national and European levels.

Demonstrating the sector's economic contribution is the purpose of this study. We very much hope that its findings will help convince decision-makers in Brussels and across the EU that the sector makes a crucial economic contribution, and help dispel any notions that the sector operates in a world set apart from the everyday economy that affects hundreds of millions of Europeans. Similarly, we hope that the important initiatives undertaken by the Commission under Barroso II, such as the Emissions Trading Scheme (ETS), the "Better Airports Package" composed of the slot allocation recast, the noise recast and the ground handling recast, and others (e.g. revision of the State aids at regional airports, etc.) will take the importance of business aviation to their core, ensuring the policies that arise deliver a framework in which the sector can continue to play a crucial (and growing) role.

We invite readers to ask themselves what would economic and financial powerhouses such as London, Paris, Frankfurt or Milan be like without access to business aviation, and how would the regions of the EU be affected? In today's highly globalised economy, in which opportunities arise in ever more surprising locations, businesses must rely on rapid, flexible and direct access to markets. Business aviation needs to be allowed to flourish in order to ensure Europe can continue to seize these opportunities, and help deliver a sustainable economic recovery.



Fabio Gamba
Chief Executive of European Business Aviation Association

1 Introduction

Business aviation is an ever-more crucial part of the modern global transportation network, yet the contribution it makes to the economy is not well understood by policy-makers or the public at large. This might be partly because fewer people have exposure to the world of business aviation than to the more familiar commercial services offered by major airlines. It could be due to the misconception that business aviation is the preserve of the wealthy flying to and from their holiday villas (in fact around 80% of NetJets Europe's accounts are held by corporate companies, not individuals). Or it could simply be that the dynamic nature of the sector, with rapid growth, innovation, and a range of operating models obscures the common threads that characterise the core business aviation offering.

1.1 The business aviation offer

The core offer of business aviation is a transformation in the level of flexibility and responsiveness users gain compared to scheduled airlines. This is manifested in a number of ways:

Business aviation services fly where the user wants. The range of destinations that can be reached via a business jet widens exponentially compared to the confines of the scheduled routes. One user, an executive in oil and gas exploration, told us: "If we fly commercially we face four days of travel, the risk of delays and forced overnight stays. With business aviation four days become four and a half hours". In addition, business aviation users can combine multiple destinations in a fraction of the time taken on the scheduled network. Over a quarter of one major operator's revenues in 2011 were derived from multiple destination itineraries as opposed to one way or return trips.

Business aviation enables users to achieve more in the same number of hours or days, delivering a valuable productivity boost.

Business aviation flies when the user wants. There are a number of formats for business aviation (set out in more detail in the next section) but the common theme is that the user has access to the aircraft when they want it. This enables them to seize opportunities that their competitors using only the scheduled network may miss.

In addition, business aviation users have access to the full range of aircraft so they can choose the one that suits their needs, from a helicopter or small plane with four seats to a full-size commercial jet that scheduled passengers would be familiar with. Business aviation can be used to transfer one person from one place to another, or to transport an entire team to multiple destinations over several days with on-board office facilities.

1.2 How the sector works

In responding to the needs of business aviation users, a number of operating models have evolved in the sector.

Charter services offered by a business aviation operator. These offer clients a point-to-point or multi-leg trip in the air much in the same way as hiring a car and driver would on the ground. The client does not have ownership; he or she merely uses the aircraft on a pay-as-you-go basis.

Fractional ownership schemes, whereby a number of separate parties jointly own an aircraft and split the available flying time and associated costs between them. This allows regular usage to make substantial savings against frequent chartering, while retaining the security of the operator's support services such as providing crew, maintenance staff, hangar facilities and so on.

In-house aviation, whereby a non-aviation firm such as a manufacturer or financial services company operates its own aircraft to support its day-to-day operations, much in the same way that it might a lorry or company car. Several major European manufacturers such as BMW and British Aerospace operate aircraft on their own account to link production sites and headquarters.

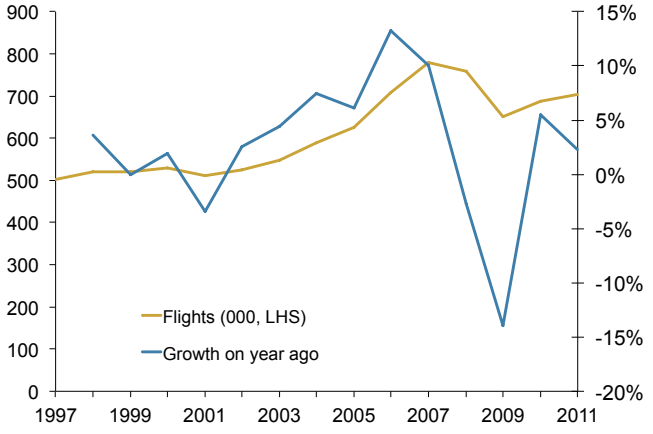
In this report we do not discuss in much depth the difference between different types of operators. But

it is nevertheless useful to bear these distinctions in mind, since the range of operator types underlines the breadth of users who are able to exploit the value of business aviation as a driver for their business – from a sole trader using a one off charter to get to a crucial meeting, to a multinational manufacturer using its own in-house service to enable key decision-makers to get around the production network.

1.3 Business aviation in Europe – recent performance

As Fabio Gamba noted in the foreword to this report, business aviation as an industry saw a period of rapid expansion over the years leading up to the economic crisis. Having been broadly stable from 1997-2001, the number of flights rose by 5-10% annually, reaching a peak in 2007. At this point it is estimated that around 73,000 city pairs around the continent were being connected by business aviation.

Business Aviation Movements



Source : Oxford Economics/Haver Analytics

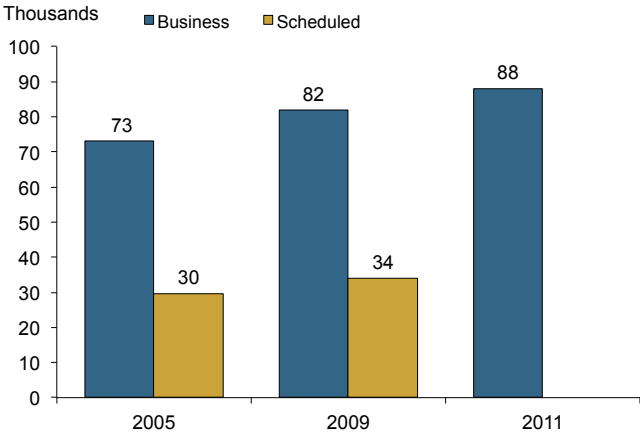
During the height of the economic crisis the number of flights contracted substantially, falling by 15% in 2009 alone. However, this was not reflected in a narrowing of the number of routes available to business aviation users – this continued to rise up until the latest point for which we have data, 2011, when 88,000 city pairs were being connected. This underlines both the flexibility of the sector and its role in providing connections that scheduled carriers cannot. In the years since 2009 there has been stabilisation in the volume of business aviation traffic. The number of flights rose modestly in 2010 and 2011, leaving the overall level of activity in the sector broadly equivalent to 2006 levels.

1.4 The aims of our report

In order to better quantify and understand the benefits that the wider business aviation sector brings to the European economy, the European Business Aviation Association (EBAA) commissioned Oxford Economics to produce this report. We aim to build on previous work on the economic impact of business aviation, in particular the 2008 report prepared for EBAA by PricewaterhouseCoopers, 'The Economic Impact of Business Aviation in Europe'.

That report, prepared at the start of the deepest global economic downturn in living memory, looked at the direct economic impact of the business aviation sector in terms of output generated and employment demand. Rather than repeat the work done in that report, we aim to extend and broaden the analysis of the sector's contribution in two important ways:

Airport pairs served by air transport type



Source : Oxford Economics/Eurocontrol

Firstly, we examine how the business aviation sector complements the scheduled network. Business aviation offers "thin connectivity" (low volume serving a large number of destinations) whereas the scheduled network provides "thick connectivity" (high volume and more concentrated on major hubs). We explain the reasons why businesses

demand this "thin connectivity" and estimate the value they place on it. We also estimate the economic benefit from expanding business aviation.

Secondly, we focus on the impacts of business aviation on the local economies where it takes place, with a focus on clusters of expertise, skills and investment.

The next two sections of this report set out the approach and results of these two halves of the research. If you have any queries around the approach taken to analysing the economic impact of business aviation in this report, please contact:

Philip Thomas

Senior Economist

T: +44 207 803 1446

E: pthomas@oxfordeconomics.com

Tom Rogers

Senior Economist

T: +44 207 803 1444

E: trogers@oxfordeconomics.com

> "With business aviation four days become four and a half hours."
>
> - Business aviation user

Photo courtesy of Bombardier Aerospace

2 The economic benefits generated by business aviation connectivity

2.1 Business aviation and European connectivity

How important is business aviation to the European economy? One way to answer this question is to measure the size of the sector, measured, for instance, in terms of the number of jobs it supports. By this approach, the industry directly supports 66,000 jobs across Europe, while also supporting a further 98,000 jobs in other sectors of the European economy. This section of our report looks at this question from a different angle. We focus on the benefits that business aviation generates for its users and what this means in terms of the value of business aviation as one part of Europe's wider air transport infrastructure.

In 2011 there were over 704,000 business aviation flights in Europe, 7.1% of all flights[3]. The network is thinly spread. Business aviation flies to over three times the number of airports connected by scheduled services.

In 2011, business aviation connected 88,800 European city pairs. Of these 88,800 city pairs, 98% do not have a daily scheduled connection. By filling in gaps in the scheduled network, business aviation makes a valuable contribution towards promoting a single market across Europe. And while difficult to quantify, anecdotal and survey evidence suggests that it can act as a powerful enabler to investment and regional development.

> Business aviation flies to over three times the number of airports connected by scheduled services.

The 500 busiest business aviation routes are shown in Figure 1. That these 500 busiest routes account for only one-third of all business aviation flights demonstrates how thinly spread out the network is.

As seen in Figure 1, business aviation is used to connect cities both between and within European economies. Business aviation supports Europe's internal market by connecting Europe's industry and commerce to the major business centres (Frankfurt, Geneva, London, Paris and Milan). This is reflected in the distribution of flights across Europe, with France, Germany, Italy, the UK and Switzerland together accounting for about 60% of all business aviation flights with the remaining 40% spread across the rest of Europe (Chart 1).

Business aviation is not exclusively short-haul. It also has an important part to play in supporting European trade with the fast-growing economies across the world. In 2011, there were almost 49,000 flights between Europe and rapidly developing economies outside Europe[4]. Of these, around 3,000 flights were between Europe and rapidly developing economies in Asia. Business aviation is increasingly being used to support business with emerging economies. Flights to developing economies outside of Europe have increased by 32% since 2006, while flights between Europe and developing Asia have more than doubled over the same period.

[3] The scope of Europe is taken as the 39 European member states of Eurocontrol, the European Organisation for the Safety of Air Navigation.

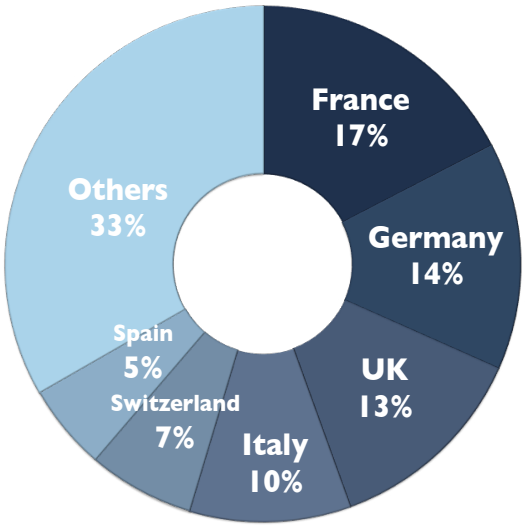
[4] The International Monetary Fund (IMF) identifies 150 emerging and developing countries, 131 of which are outside Europe.

Figure 1: Business Aviation, Europe's busiest 500 business aviation routes, 2011

Source: Eurocontrol

> Business aviation supports Europe's internal market by connecting industry and commerce to the major business centres.

Chart 1: Business aviation supports Europe's internal market [a] [b]

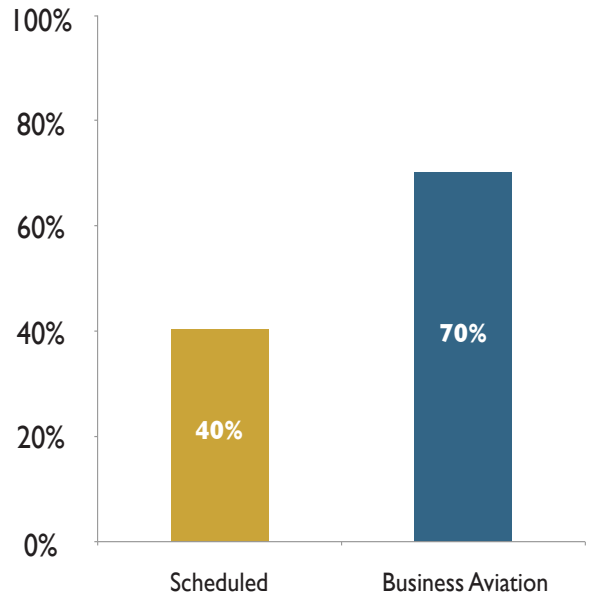


(a) Source: Eurocontrol, data refers to 2011

(b) Percentages do not add up to 100 due to rounding

Business aviation often uses smaller regional airports. Airports with 100 or less departures a day, handle 70% of business aviation flights, compared with 40% of scheduled flights (Chart 2). The number of flights from and to small airports reflects the "thin connectivity" provided by business aviation. It also means that business aviation makes efficient use of Europe's existing airport infrastructure - and provides business for regional airports that cannot rely on scheduled traffic only. However, business aviation clients also need to fly into bigger airports, including heavily congested hubs, making continued access to such airports vital for the sector.

Chart 2: The proportion of flights using regional airports, 2011 [a] [b]

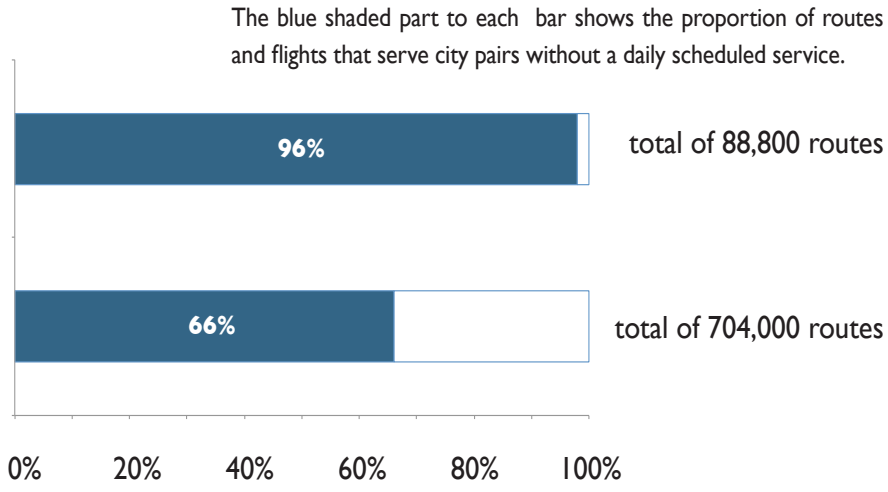


(a) Source Eurocontrol.

(b) Regional airports are defined as those handling less than 100 flights a day.

Business aviation fills gaps in the scheduled network. In 2011, business aviation connected 88,800 European city pairs (Chart 3). Of these city pairs, almost all (96%) were not served by a daily scheduled service. These 96% of routes with no daily scheduled service also account for two-thirds of business aviation flights. Business aviation therefore plays an important role in linking cities across Europe that are not well catered for by the scheduled network.

Chart 3: Business aviation fills gaps in scheduled network [(a)]



(a) Source Eurocontrol, data relates to 2011

In its recent *Report on the future of regional airports and air services in the EU,* the European Parliament underlined the need not just to focus on the main routes, but to facilitate much wider connectivity. In particular, the Parliament:

"…encourages the Member States and the Commission to promote connections between regional airports and main airports in the Member States, helping to boost the economy in the areas around regional airports whilst also offering one solution to the problem of air-traffic congestion in Europe"

The importance of this objective was underlined by the EU Commissioner for Transport Siim Kallas, who said in Tallinn in May this year:

"We need airports to allow access to the remoter parts of the European continent, to boost the economies of the communities they serve".

2.2 Economic impact of business aviation connectivity

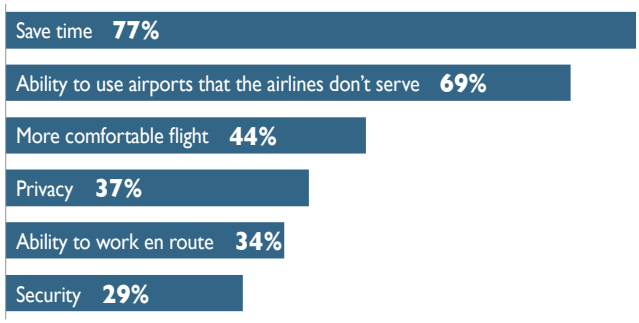
Business aviation offers a number of valuable benefits to its business users. According to survey evidence, business executives value the considerable flexibility, convenience, and time savings provided by business aviation (see Chart 4). Flights can be arranged at very short notice, with the flight times fitted around the user's diary, and the route selected to bring the travellers as close as possible to their final destination. Smaller airports also cut out the lengthy delays common at busy hub airports. Moreover, business aviation makes it possible to arrange multiple leg trips in a single trip without the costly wait for connecting flights. These benefits explain why, according to a recent UK survey, as many as 18% of senior business executives use business aviation[5].

[5] *UK Business Leaders 2011 Travel Survey*, conducted by Clarity Surveys on behalf of PrivateFly. The survey covered 105 senior executives in UK companies with an annual turnover of over £100 million.

Other studies have emphasised the importance of business aviation to deal negotiation[6]. Face-to-face engagement is often felt to be very important in negotiating large and complicated business deals. A recent survey found that almost two-thirds of executives believe that face-to-face meetings are crucial in completing M&A deals (*Doing the Deal 2011*).

Where distance and location would otherwise make such meetings difficult, business aviation has a special role to play in facilitating deals. Chart 4 underlines the importance that time savings and enhanced connectivity play in the decision to use business aviation relative to other factors, using survey evidence from 1,000 users[7].

Chart 4: Reasons business executives give for using Business Aviation(a)



(a) Source: Business Jet Traveler's Readers' Choice Survey, 2011. The survey covered 1,000 executives.

As with any business undertaking, the decision whether or not to use business aviation rests on balancing the benefits against the cost. Where large sums of money rest on the successful completion of a deal, businesses will, naturally enough, place a far greater value on time savings than during more routine trips. A typical European foreign direct investment (FDI) project, for example, involves capital expenditure of about €44 million[8]. For deals of this size, the cost of a business aviation flight, which might cost under €2,000 per person, can easily provide good value-for-money. This will be especially so when delays in moving key personnel might jeopardise a project or escalate existing risks.

Reflecting its role in facilitating important business deals, one would expect the preferences of this important group of customers to have a profound impact on the structure of the business aviation market. In particular, one would expect deal-makers to attach a much higher value to time-savings than that of an "average" business trip. After all, the importance and urgency of deal-related trips should mean that deal-makers are prepared to pay a much higher premium to shave time off a flight than would be the case were the business less pressing.

To test this idea, we use a large dataset on business aviation flights covering 110 routes and approximating 3,400 flights, with information on prices, passenger

> Deal-makers are prepared to pay a much higher premium to shave time off a flight...

[6] See *Doing the Deal,* by Mergermarket, 2012, and *The Economic Impact of Business Aviation in Europe*, PriceWaterhouse Coopers, 2008

[7] Again, see *UK Business Leaders 2011 Travel Survey,* as above

[8] See E&Y European Investment Monitor

numbers, distances flown, the time taken, and the type of aircraft. The statistical analysis isolates the value that business aviation users place on time savings from the numerous other factors that can influence the price of flights. Our analysis of the data indicates that users value business aviation flights eight to fifteen times more than scheduled business flights. This finding is consistent with the claim that business aviation is primarily used for the most pressing and valuable trips, such as facilitating important deals.

It is possible to quantify the economic return generated by business aviation. We estimate that business aviation accounts for around 9% of revenues generated from business-related trips (business class on scheduled flights and business aviation). This compares to its 7% share of flights. So business aviation punches above its weight when its economic value is compared to share of flights. This 9% / 7% finding is even more striking when one considers that business aviation is comprised mostly of small aircraft that carry a few passengers. Expressing the economic return differently, each passenger flown on a business aviation flight generates the same economic benefit as nine business passengers on a scheduled flight.

Case study – The Importance of Business Aviation to Corniche

As part of this study we spoke to Mr Hani Farsi, CEO of Corniche, a family owned investment group based in London with interests around Europe and the Middle East, and a business aviation user. Mr Farsi underlined how crucial business aviation was to his company's success.

"With scheduled travel, you need to plan your day around it," he told us. Instead, the flexibility offered by business aviation allows Mr Farsi to get directly to where he needs to go, when he needs to get there. This includes visiting parts of Europe not served by the scheduled airlines where his company has made significant investments. These trips "simply wouldn't be feasible" for Mr Farsi on scheduled planes given the other demands on his time.

Mr Farsi also stressed the importance of the facilities that allow a journey to become a real workday. He can "have the team talking all the way there and all the way back", which he felt isn't achievable on the scheduled network without risking the security and confidentiality of his business.

In an uncertain economic environment, Corniche is competing with other investors for the opportunities that can deliver sustainable growth. "Being there at the right time is a crucial success factor". Our discussion with Mr Farsi underlines not only how important business aviation is to his ongoing success, but also in enabling the regions he reaches to secure inwards investment, and helping London to continue to thrive as a home to private investment firms.


Photo courtesy of Dassault Aviation

2.3 Conclusions

Business aviation has an important catalytic role in supporting European business. It connects industry and commerce in Europe's regions to its major business centres, a pressing need recognised by the European Commission; it offers considerable time savings; and it plays an important role in facilitating important business deals.

Statistical analysis undertaken for this study provides strong evidence of business aviation's role in deal facilitation. Our findings support the findings of other studies that provide survey evidence for the link between business aviation and deal making.

Travellers' willingness to pay for time savings is a useful indicator of the economic importance they attach to their journeys. Our statistical analysis shows that the value-of-time is between eight and fifteen times higher on business aviation trips than on business trips undertaken on scheduled flights.

Reflecting its catalytic role, business aviation delivers a substantial economic return. Its 7% share of flights generates 9% of business-related revenues. Moreover, as regional airports handle two-thirds of business aviation flights, these economic benefits are mostly generated through using spare capacity at Europe's regional airports - although access to hub airports is also critical if the full connectivity impacts and economic benefits from business aviation are to be realised. Based on our statistical modelling, we calculate that, business aviation generates the same economic benefit as nine business passengers on a scheduled flight.

The next section considers in more depth business aviation's catalytic role in supporting local economies.

3 The impact of Business Aviation in the local economy

3.1 Introduction

In this section we look in more detail at the economic impact of business aviation on the towns and cities where it takes place. We consider three types of impact in particular detail: firstly the role that business aviation plays in attracting firms to the locality, secondly the investment in human capital that business aviation operators and airports make by employing and training local workers, and finally the investment in physical capital through construction of business aviation facilities.

We base our analysis on our discussions with a wide range of stakeholders across the business aviation spectrum, including operators, airports, and local economic development agencies. For a full list please see Annex.

In our discussions with stakeholders we generally focussed on locations where business aviation activity is most heavily concentrated, in order to get the best understanding of the sector's impacts. But business aviation also takes place at a multitude of smaller airfields and aerodromes across Europe – as we saw in the previous section the range of destinations is much greater than for scheduled services. As such the sector's economic footprint is much broader than simply the top business aviation airports.

Due to a lack of hard data on business aviation employment our approach is necessarily more qualitative than quantitative, but nevertheless we offer a number of key (and possibly surprising) insights.

3.2 Business aviation's role in generating aviation clusters

Previous studies into the economic impact of business aviation have examined whether or not the presence of business aviation facilities incentivises companies to locate nearby in order to make use of the facilities. These have generally found limited evidence of the availability of business aviation facilities spurring an increase in local investment[9]. In our study we asked stakeholders for their views on this issue, but respondents were unable to provide specific examples of such an effect.

Having said that, a number of well-known European manufacturers have their own in-house business aviation operations, such as BMW, Volkswagen and Daimler in Germany, and British Aerospace in the UK. These operations are used to shuttle staff between production facilities and corporate headquarters with an efficiency that cannot be achieved via alternative means. As such, the availability of business aviation facilities near production sites enables firms to manage multiple sites more effectively, possibly increasing their willingness to invest in production around Europe. However, we have been unable to speak to these companies in order to understand these dynamics in detail, so we do not pursue this here.

Instead we discuss the role that business aviation plays in supporting the development of related services, building up clusters of expertise in areas not immediately

[9] *The Economic Impact of Business Aviation at Farnborough Airport*, prepared in 2009 by Nathanial Lichfield and Partners

obvious when thinking about the provision of flights, but nevertheless crucial for the sector's continued growth, and providing an additional spur to local prosperity.

Many of Europe's major business aviation centres support a wider range of aerospace activity in the locality – for example, the Parisian Chambers of Commerce found that business aviation was responsible for the employment of over 4,000 people within the Le-Bourget Aerospace cluster[10]. TAG Farnborough Airport estimate that there are over 1,000 full-time equivalent positions in aviation and related services at the Farnborough airport site, and around 4,000 including the airport's wider supply chain and induced employment. In this section we consider some of the components of these business aviation clusters in more detail.

> Pilot training seems a particularly promising opportunity for Europe to export high value added services to rapidly growing economies.

Aviation is (rightly) a highly regulated sector, and the safety requirements that operators face generate substantial maintenance spending. Given that one of the defining characteristics of business aviation is the level of flexibility to customer demand, and the need for aircraft to be ready to take off at short notice, business aviation operators need to be flexible in their use of maintenance facilities, and are less able to locate centralised maintenance and repair facilities at "hub" airports, in the same way as commercial airlines. As such, they often rely on local firms to provide these services at the airports they fly to.

In addition, due to the diverse range of aircraft types involved in business aviation (Paris Le Bourget has facilities to handle any aircraft ranging in size from a helicopter to a Boeing-747), the industry demands a wide range of maintenance skills and expertise. This further bolsters the demand for clusters of aviation skills.

Flight operations and management is a further part of the business aviation cluster. At their regional operations centre in Lisbon, NetJets Europe employs around 400 highly skilled professionals to manage the 150 or so flights taking place each day using NJE aircraft.

Training and staff development is another important component of the business aviation cluster. Business aviation pilots are required to undergo annual training. To retain their ratings on specific aircraft typically takes five days per year, and to become accredited for a new aircraft requires ten to fifteen days. As such a number of specialist training providers have emerged to service this demand.

We spoke to CAE, a global flight training provider, about their dedicated business aviation facility at Burgess Hill in the south of England, not far from Biggin Hill, Farnborough and Gatwick airports. At this centre they employ 100 staff and provide training to over 1,500 business aviation pilots from around the world. Operators are also getting in on the act – PrivatAir told us about their pilot training school in Geneva that has recently provided training for staff operating aircraft on the Omani and Brunei royal flights. Given the potential for growth in business aviation in emerging markets over the coming decades, pilot training seems a particularly promising opportunity for Europe to export high value added services to rapidly growing economies.

Europe's major business aviation clusters also attract high-level aviation events generating significant economic activity, particularly in hospitality and tourism. Thanks to the flexibility and ease of access for aircraft (compared to airports serving mainly scheduled airlines), leading business aviation airports provide ideal locations for major international air shows and exhibitions. The Farnborough International Airshow and the Paris Airshow at Le Bourget are probably the two most notable examples of this phenomenon, with the world's leading manufacturers and operators of civil, private and military aircraft converging on these locations in alternate years.

The flexibility of major business aviation sites is illustrated by a finding in a Nathaniel Lichfield and Partners study in 2009, which noted that, "if Farnborough Airport did not exist, it is not clear where else in the UK that this event could be held". Other business aviation locations are also able to generate substantial activity

[10] *L'Aviation d'Affaire et L'Aéroport du Bourget*, Chambre de Commerce et d'Industrie de Paris, 2005

in this area – with Geneva Cointrin Airport hosting the annual European Business Aviation Convention & Exhibition (EBACE), and Business Aviation Europe Expo making Biggin Hill Airport its permanent home in 2011, following the completion of a 55,000 sq ft hangar.

Not only do these events generate valuable short-term revenue for the local economy (Farnborough International estimated that the impact on the local economy was around £17m in 2010), but as noted by Brandon O'Reilly, CEO at TAG Farnborough Airport, they showcase the wider local economy to the world, providing a valuable marketing opportunity.

Overall therefore the impact of business aviation on local economies spreads much wider than merely the GDP and employment generated by the flights themselves, important though these are. Away from the direct business aviation clusters there is of course also a substantial impact on the manufacturing sector. These impacts have already been discussed in depth in the PWC report in 2008, which found that manufacture of business aviation aircraft contributed around €9bn to European GDP. But it is worth noting that the sector has not stood still since then – for example, in June this year NetJets signed an agreement for at least 100 new jets from Bombardier, helping to sustain 5,000 jobs in Belfast. These additional parts of the business aviation industry need to be borne in mind when considering the contribution made by the sector to the local economy.

Case study – The range of economic impacts from NetJets Europe

NetJets Europe was founded in 1996 and today is the leading business jet company in Europe. Starting with 2 planes and 10 employees, NetJets Europe has since grown to over 130 aircraft and 1500 staff employed at a range of locations around Europe.

Major investments over the course of the past decade and a half include the development of a centralised operations centre in Lisbon, employing over 400 skilled professionals. Alongside the operations centre, NetJets Europe opened a centralised training facility in 2010, providing training for around 900 of its staff per year. Together, NetJets Europe estimates it has spent over €105m on supplies from Portuguese companies since 2008 in the setup and operation of its two facilities in Lisbon.

Alongside its major investments in Lisbon, in 2009 NetJets Europe acquired an 80% stake investment in Frankfurt Egelsbach Airport in order to provide enhanced connectivity with Germany's financial hub. The airport supports 700 jobs directly and acts as a site for around 30 related companies.

NetJets Europe also makes a substantial contribution to public finances in the countries where its employees live. NetJets Europe contributes tens of millions of Euros in annual income tax, national insurance contributions and in corporation taxes across Europe.

3.3 The sector's impact in the local labour market

Given the current economic situation around the European Union there is an understandable focus on employment generation, especially amongst young workers who have been hit disproportionately hard by the recession in many countries. Business aviation is of course not immune to the economic downturn – business aviation flights were hit hard by the global crisis of 2008-2009, and in light of the weak

global recovery, the recovery in the sector may take some time. Yet the long run need for more flexible aviation is in no doubt. As we saw in section two of this report, users enjoy substantial benefits from the flexibility that business aviation provides, while the sector boosts wider productivity in the European economy. As such, business aviation is a key part of a thriving, innovative economy, and (assuming its growth is supported by regulators) will continue to generate employment in substantial volumes.

In this section we look at what this means for the workforce in key business aviation locations. Based on our discussions with airports and operators, we focus on the types of workers that business aviation employs and what the industry offers them. Since for an industry of business aviation's size, there is little official data on employment, wages and other relevant issues our approach is necessarily anecdotal. But nevertheless we provide some key insights that should be of interest to policy-makers.

3.3.1 Employment growth in business aviation

Previous work has underscored the total employment impact of business aviation (see PWC's report *The Economic Impact of Business Aviation in Europe*). This report, published in 2008, found that business aviation flight operations and maintenance was responsible for generating 24,000 jobs around Europe, with an additional 42,000 posts sustained in the aircraft manufacturing sector.

However, this snapshot doesn't capture the dramatic growth of employment in the sector over the decade prior to the economic crisis. For example ABS Jets, founded in Prague in 2004, has grown from 30 employees on formation to over 200 today. We canvassed across a range of other leading operators for information on how their workforce had changed in the past decade or so, and found that although two had kept their workforce stable over this period, most others had increased their workforce by 50-100%. Paris-Le Bourget airport told us that their rule of thumb for planning was that demand for business aviation rose twice as fast as GDP.

> "...demand for business aviation rose twice as fast as GDP."
>
> - Paris-Le Bourget airport

Photo courtesy of BBA Aviation

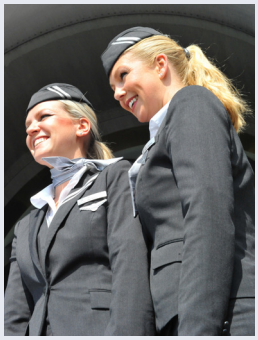
Given the role the business aviation sector plays in helping firms seize new opportunities, the likelihood is that once the economic uncertainty around the Eurozone is resolved, demand for business aviation services will rebound rapidly, as confidence recovers, and firms look to beat the competition to the best deals. As such it seems fair to expect that in the medium term business aviation can be one of the sectors that provide employment growth around Europe, assuming the other conditions necessary for the sector to thrive are in place.

3.3.2 The importance of local workers and flexibility

One of the key characteristics of business aviation is the flexibility it provides for its clients, who are able to charter an aircraft, have it serviced, or land at an airport, at relatively short notice. This places demands on the companies involved being as flexible as possible, and in our discussions with operators and airports we have been struck by how this translates into a demand for local workers. Although most business aviation airports tend to be well connected to the major city they serve (opening up a very broad potential employment pool), the workforce is often found to be from the locality itself. TAG Farnborough airport told us that the vast majority of its employees live within a ten mile radius of the airport. Similarly, most of the operators we spoke to underlined the importance of local workers to their ability to respond swiftly to customer demand – VibroAir, based in Dusseldorf, noted that all its employees with the exception of the directors, were hired locally.

In contrast, at airports offering scheduled aviation services, staff are more able to locate at a distance from the airport itself - less than half of Heathrow staff live in the five surrounding boroughs (see *Towards a Sustainable Heathrow,* Heathrow Airport, 2009). These five boroughs are collectively home to around one million people, so there would seem to be plenty of potential local labour supply. As such, there is reason to believe that employment growth generated by business aviation could benefit those living closest to the airport, more than an equivalent amount of employment generated by scheduled aviation.

Case study - PrivatAir collaboration with Ecole Hôtelière de Lausanne



While flexibility and connectivity are the primary attractions for business aviation users, many operators also aim to deliver an onboard passenger experience as good as, if not better than, leading airlines' first class offerings. This demands substantial investment in training in customer service, to ensure the needs of discerning passengers are fully met.

At PrivatAir, all new cabin staff undergo a 4-6 week programme to hone customer service. For the past 10 years this has included a spell at Ecole Hôtelière de Lausanne (EHL), where they focus on culinary skills. This collaboration has in turn produced a joint venture between EHL and PrivatAir to provide training at PrivatAir's own premises to other aircraft operators. Students attending PrivatAir's in-flight service training can expect to be educated in a range of subjects relevant for providing a safe, hygienic and pleasurable flying experience.

3.3.3 Training and upskilling

A third key feature of the labour market impact of business aviation is in the amount of investment in staff made by airports and operators. This incorporates a range of activities, from training in mandatory issues such as safety and regulations, training intended to raise the level of customer service, and collaboration with local educational institutions to provide apprenticeships and work experience. Estimates of average spend by operator vary, but according to one the investment in training admin staff cost around €3,500 per year, while another told us their mechanics received training costing on average €5,000 per year. Operators we spoke to spend an average of €20,000-30,000 per year training their pilots.

By comparison, in the UK on average financial sector firms spend an average of just £800 (€1,000) per year training employees, and firms in the manufacturing sector £1,200 (€1440). As such, not only do the local economies around business aviation airports benefit from employment growth, they also seem to enjoy greater investment in their skills bases.

We also found substantial evidence of business aviation tying in with the local educational sector to provide apprenticeships and work experience. At Paris-Le Bourget, management offer 50 local students the opportunity to undertake work experience in a variety of operational roles around the Airport. Around half of the operators in our sample did likewise. At Farnborough, TAG Aviation started its Advanced Apprenticeships in Aeronautical engineering scheme in 2008, offering four local students per year the opportunity to work in aircraft maintenance.

Interestingly, despite the highly technical nature of most business aviation roles, and the heavy regulatory requirements incumbent on the industry, some operators we spoke to underlined their eagerness to hire workers who had not previously worked in the industry before, in order to provide their own training, and develop staff in a company ethos. While some other firms we spoke to preferred to hire experienced workers, the fact that so many were keen to recruit "raw" talent underlines the potential for business aviation to offer young workers a career – in the context of soaring youth unemployment rates around Europe, the importance of such an offer should be acknowledged.

3.4 Business Aviation investing in local infrastructure

The rapid growth of business aviation traffic over the past couple of decades has generated a substantial amount of investment in facilities around Europe, and our discussions with airports and operators suggest this trend will continue over the coming years. We consider this impact in more detail in this final section.

The development of business aviation facilities around Europe has entailed substantial investment over the past decade or so. In many cases (such as Farnborough, Biggin Hill and Madrid-Torrejon), this is partly due to the conversion of a previously military-use airfield to civil aviation, with all necessary infrastructure. In other cases where no standalone site is available to provide business aviation facilities, the addition of corporate terminals to existing airports also entails substantial investment.

TAG Farnborough Airport told us in detail about their investment to transform the site from a mixed military-civil site into the UK's leading business aviation airport. Since 2002 they estimate they have spent over £100m in developing the airport's facilities, including around £10m on the main terminal building, which in 2006 won an award from the Royal Institute of British Architects. Their view is that the airport facilities themselves are now well set to deal with growth from around 25,000 movements per year to an anticipated 50,000 by 2019. However this has not resulted in a cessation of investment spending - the airport continues to invest in products and services and has recently opened a new three-bay hangar.

Much of the investment made by business aviation operators is of course in aircraft themselves (although these are often financed through leasing companies or other third parties). This is likely to have limited economic impact in the community where airports are located, unless manufacturing also happens to take place there. But we also consider operators' investments in their facilities - most of the airports we spoke to are operated on a model where the airport operator leases space to aircraft operators, who then construct their own hangars and maintenance facilities on site. This has been the model at Geneva-Cointrin, where PrivatAir estimates it has spent around €10-15m over the past decade developing its facilities, mainly channelled through local companies.

Case Study – Investment at Paris Le Bourget over coming decade

Investment at Paris Le-Bourget over the coming decade will support the wider development of the *Grand Paris* transportation infrastructure upgrade, designed to radically transform accessibility into and around Paris. Aéroports de Paris (ADP) told us that around €70m has been spent upgrading Le Bourget's facilities since 2004, and it is likely that the same amount would be spent over the coming ten years.

This investment would continue the programme of renovating the range of airport infrastructure including buildings, runways and taxiways. ADP noted to us that they anticipate a similar level of investment by the operators and manufacturers based at the airport, generating around €120m in investment spending over the coming decade. In addition, ADP told us they estimate 80% of their own capital spending was channelled through firms located within the Ile De France region, concentrating the employment impact of their investment on the surrounding area.


Photo courtesy of Cessna Aircraft Company

Most of the operators we spoke to were anticipating a substantial on-going investment programme over the coming years. For example, Tyrolean Airways, who operate a fleet of seven aircraft from Innsbruck airport, expect to commit around 50% more to their non-aircraft capital spending in the coming five to ten years than in the past decade. Key areas include enhancing maintenance facilities and improving aircraft management procedures – they expect this will enhance productivity and boost the capacity of their existing fleet by around 20%. At Paris-Le Bourget, DARTA aviation expects to invest around €8-10m in building the largest hangarage facilities on the airport site, in order to meet future demand. In many cases operators underlined the importance they attach to working with local contractors with whom they have established good working relationships.

Overall therefore, from our discussions with operators and airports there does seem to be a clear sense of optimism about the long-term future for business aviation, and a willingness to invest and create jobs. This optimism and appetite to create new capacity provides a welcome contrast to the wider sense of uncertainty in the European economy. It is also worth noting the ability of the business aviation sector to generate infrastructure investment without recourse to public funding – in contrast with other parts of the transport infrastructure, and particularly valuable given the current economic climate around Europe.

3.5 Conclusions

Business aviation operations play a crucial role in driving demand in a much wider set of activities, including maintenance, research and development, training services and hospitality. The combined impacts on local economies can be many times the direct impacts of business aviation flights themselves.

Business aviation employment was growing rapidly in the run-up to the crisis and has the potential to do so again as the European economy recovers. Evidence suggests that a larger portion of business aviation employees live locally to the airport than is the case for wider aviation, concentrating the positive employment impacts in the immediate vicinity of the airport.

There is evidence to indicate business aviation invests more in training its workers than firms in other sectors, or in the economy as a whole. This is no doubt partly due to the regulatory and technical environment the sector operates in, but it also seems to be a conscious decision on the part of operators to develop local talent.

Business aviation has seen a rapid spell of investment spending over the past decade or so, as airport operators have developed facilities to deal with the demands of business aviation operators. Looking ahead, our discussions with operators indicate that business aviation should continue to be a bright spot for investment in local economies against an otherwise uncertain economic backdrop.

Annex – List of Participating Organisations

Oxford Economics and EBAA would like to thank Avinode for their support in providing data for the first section of the study.

We would also like to thank the following organisations who were kind enough to contribute their time to talk about business aviation and their views on its economic impacts:

ABSJets

Airport Operators Association

AmirAir

CAE

DARTA Private Jets

Economic Development Office Geneva

ExecuJet Aviation Group

Geneva-Cointrin Airport

Gestair

JetAlliance

NetJets Europe

Paris Region Economic Development Agency

Paris-Le Bourget Airport

PrivatAir

RabbitAir

Rushmoor Borough Council

Stockholm Business Region Development

TAG Farnborough Airport

TAG Geneva

TAG Spain

Tyrolean Jet Services

VibroAir

Photo courtesy of *NetJets Europe*

Photo courtesy of Cessna Aircraft Company

Oxford
Abbey House, 121 St Aldates
Oxford, OX1 1HB, UK
Tel: +44 1865 268900

London
Broadwall House, 21 Broadwall
London, SE1 9PL, UK
Tel: +44 207 803 1400

Belfast
Lagan House, Sackville Street
Lisburn, BT27 4AB, UK
Tel: +44 28 9266 0669

New York
817 Broadway, 10th Floor
New York, NY 10003, USA
Tel: +1 646 786 1863

Philadelphia
303 Lancaster Avenue, Suite 1b
Wayne PA 19087, USA
Tel: +1 610 995 9600

Singapore
No.1 North Bridge Road
High Street Centre #22-07
Singapore 179094
Tel: +65 6338 1235

PARIS
9 rue Huysmans
75006 Paris, France
Tel: + 33 6 79 900 846

E-mail: mailbox@oxfordeconomics.com
www.oxfordeconomics.com

OXFORD ECONOMICS