

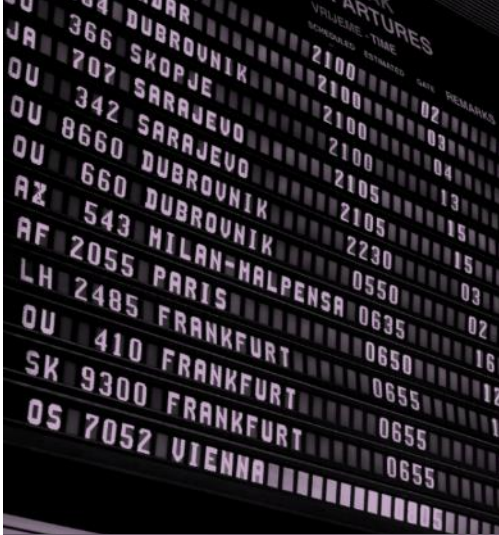


2. Socio-Economic



Development of Bristol Airport to Accommodate
12 Million Passengers Per Annum: Economic
Impact Assessment

[Response to Comments Received](#)



Bristol Airport Limited

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1. Introduction

- 1.1. The purpose of this paper is to respond to comments¹ by North Somerset Council's (NSC) advisors, Jacobs, and third parties in relation to the Economic Impact Assessment² undertaken and submitted in support of Bristol Airport Limited (BAL's) planning application for the development of Bristol Airport to accommodate 12 million passengers per annum (mppa) (Application No. 18/P/5118/OUT).
- 1.2. Within its commentary, Jacobs has helpfully highlighted a number of specific questions or points for further clarification. We have focussed our attention within this document on responding to these points, although we have also responded to some other points in the commentary.
- 1.3. This document essentially follows the structure of Jacobs' comments, responding to them by chapter of the Economic Impact Assessment (Sections 2 to 5). We then consider the third party consultation responses (Section 7).

¹ Dated February 2019.

² York Aviation (2018) Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum: Economic Impact Assessment: Final Report - November 2018.

2. Comments on Current Economic Impact – Chapter 4

Introduction

- 2.1. In this section, we respond to the main comments made by Jacobs in relation to Chapter 4 of the Economic Impact Assessment. Each of Jacobs' comments are summarised (in **bold**) with our response subsequently provided.

The report does not provide detail on how direct Gross Value Added (GVA) is calculated (in particular, it is not the earnings of airport operations, as these include the “indirect” effects of the airport’s supply chain), the scale of the multiplier, the granularity at which it is applied, and whether a separate multiplier has been applied to direct GVA to calculate indirect GVA.

- 2.2. Direct GVA has been calculated using GVA per job estimates derived either from individual company report and accounts, or where these are not available, based on GVA per job data for individual economic sectors derived from the Office for National Statistics (ONS) Annual Business Survey and the Business Register and Employment Survey (BRES). Where estimates of GVA per job have been derived from a company's accounts, GVA is defined as the operating surplus, wages and salaries payments and depreciation. It does not include expenditure on goods and services (as described in the question).
- 2.3. Combined indirect and induced multipliers for different economic sectors have been derived from the UK Input Output tables and these have been applied for each on-site company based on its primary function.

Clarification questions relating to Table 4.1 of the York Aviation report: why is the ratio of indirect & induced vs direct jobs different from indirect & induced vs direct FTE's for the study areas?

- 2.4. The balance between full time and part time jobs for different study areas is different, which will result in differences in the ratios observed.

Similarly, can clarification be provided on the relative scale of the 'direct' GVA and jobs in Table 4.1, e.g. West of England is responsible for only 30% more GVA than North Somerset but >100% more FTEs. It would be helpful if the steps undergone in arriving at the GVA and employment estimates in Table 4.1 can be elaborated on in further detail, possibly within an Appendix.

- 2.5. This relates to how GVA and employment effects are allocated within the model used in the Economic Impact Assessment. The GVA associated with the operating surplus of companies based at the airport is reported in all study areas as the airport site is within all study areas. However, GVA associated with the wages and salaries paid to employees is assumed to follow the residency patterns of employees. Hence, within North Somerset only a relatively small proportion of the reported GVA relates to wages and salaries payments to the employees living within the area. Within West of England, the proportion is larger as the increase in GVA entirely reflects increased wages and salaries payments and hence a relatively large increase in the number of FTEs.
- 2.6. The steps undertaken in determining the GVA and employment estimates are as follows:
- Estimate total direct GVA and employment generated at the airport site;
 - Split direct GVA into operating surplus and wages and salaries elements based on information from the Annual Business Survey;
 - Retain operating surplus element at the airport site (and hence within each study area);
 - Allocate direct employment to the different study areas based on the 2017 Bristol Airport Staff Travel Plan Survey;

- Allocate the wages and salaries element of direct GVA to the study areas based on the distribution of employment;
- Apply indirect and induced multipliers.

The selection of δ (theta) is crucial as an inappropriate value can lead to unreliable results. What method has been adopted for calculation of this parameter?

- 2.7. Theta (δ) is a constant used within the calculation of multipliers using the Flegg Location Quotient (FLQ) method that reflects the extent of intraregional trade within an area. In the absence of detailed information on interregional trade in the UK, the assessment has adopted a typical value of 0.25 for δ . We accept that the lack of information in this area could result in some element of variance in the multipliers; however, we examined the effect of a range of different δ values on the multipliers and the effects were in reality relatively limited in the context of the analysis being undertaken. We also considered the size of the multipliers generated compared to those reported for other airports (as Jacobs have done themselves) and concluded that the results were reasonable and appropriate.

Also, a key assumption in the EIA is that the results... “are then further adjusted to reflect the greater need for external trading relationships within areas at a sub-national level and in smaller economies (stated in 4.11)”. Is this consistent with the statement in the academic paper (note 17) that the FLQ should only be applied for national input-output tables excluding imports from abroad.

- 2.8. The sentence refers to the process of defining Lambda within the FLQ methodology and is therefore consistent with point made at note 17. It is not a further adjustment beyond the FLQ methodology.

A key consideration for wider economic impacts is whether there are market failures in the non-transport markets - has this been considered?

- 2.9. We have not considered specifically the nature of market failure in non-transport markets in the Economic Impact Assessment. In our experience, this is not an issue that is generally considered explicitly within airport economic impact assessments. We note, for instance, that these issues are not considered explicitly within the recent Stansted Airport planning application.³ However, we would note that all markets suffer with a degree of market failure and we would certainly suggest that international trade, tourism and FDI markets suffer from asymmetric information that could be assisted by more efficient transport connections.

What assumptions have been made around land use changes?

- 2.10. We have not considered potential land use changes and their influence within the scope of the Economic Impact Assessment. This is not commonly considered within airport economic assessments of this scale and, further, given the nature, potential geographic spread and range of potential sector users, it would be difficult to undertake an effective analysis of this type.
- 2.11. The proposed development will be predominantly located within the existing airport site whilst in the immediate vicinity of the airport, there will be only minimal impact on existing land uses (the proposed development would involve some minor loss of agricultural land to accommodate car parking to the south of the airport site as well as land including small sections of property curtilages necessarily to accommodate associated highways improvements).

Based on the Oxford Economics report, the aforementioned model was used for a new hub airport in the South East. The model used data from UK industries and service sectors and refers to the long-term productivity performance of the UK national economy. Can York

³ Transforming London Stansted Airport, 35+ Planning Application, Environmental Statement, Volume 1 (February 2018).

Aviation comment on the validity of applying this statistical relationship at a sub-national level?

2.12. Jacobs is correct that the original Oxford Economics research did indeed consider impacts on long term productivity at a UK level. However, we believe that the methodology approach and relationships derived can be applied to a sub-national area if an appropriate method can be adopted to analyse the change in the level of business travel associated with an airport. Equally, and as we note at paragraph 4.5 of the Economic Impact Assessment, the approaches to considering the wider impacts of air transport are still evolving and the level of precision associated with the results is probably not at the same level as those for economic footprint effects. In this context, we do believe that this approach and the estimates it provides offer a useful and appropriate assessment of the role of an airport in the wider economy. For reference, and as previously stated within the assessment, the quantification of wider benefits remains a new area for airport economic impact assessment and hence, there is limited previous precedent. This approach was, however, used within the need case for the successful London City Airport Development Programme planning application⁴ and subsequent public inquiry in 2016.

It would be helpful if more detail can be provided on the model and analytical approach taken to develop the analysis and result discussed in 4.23 and 4.24. It would also be useful to have greater detail on an explicit link between this approach and the numbers contained in Table 4.2. For example, can York Aviation show in an Appendix the generalised cost figures, the incremental business traffic attributable for the airport, the elasticity values applied, and how the incremental GVA and employment estimates have been developed?

2.13. Below, we have described the steps within the model used in the Economic Impact Assessment that considers Bristol Airport's impact on business productivity.

- Step 1: CAA Passenger Survey data is used to identify the journeys taken by business travellers via Bristol Airport. This tracks each journey from its surface origin (by district) to the final destination airport. It includes examining whether passengers have flown directly to their end destination or via a hub airport. The generalised cost for each journey is then estimated in terms of surface access time and cost, wait times, estimated air fare and air journey time;
- Step 2: CAA Passenger Survey is then used to identify the next most popular option compared to Bristol Airport for travel to the end destination from that district. Where there are no other records for that journey, a similar alternate destination is used as a proxy;
- Step 3: The generalised cost associated with the alternative routing is identified and the difference compared to the original routing is then calculated;
- Step 4: Elasticities based on the fare elasticities identified within the Department for Transport's UK Aviation Forecasts 2017 are then applied to the change in generalised cost identified. These elasticities are summarised below:
 - UK Business International: -0.2;
 - Foreign Business International: -0.2;
 - Business Domestic: -0.3.
- Step 5: The corresponding reduction in business related demand is then calculated for each journey;
- Step 6: CAA Passenger Survey data is then used to calculate the total business passenger demand for each study area regardless of the airport used for travel. This is divided by the GVA of the relevant area taken from the latest available ONS estimates to provide the baseline 'business connectivity' position that feeds the relationship derived by Oxford Economics;
- Step 7: The number of business passengers 'lost' as a result of not being able to use Bristol Airport is then removed from the estimate of total business passenger demand in Step 6 and the business connectivity position is then recalculated;

⁴ Application reference APP/G5750/W/15/3035673 Updated Need Statement (September 2015).

- Step 8: The percentage change in the business connectivity position is then calculated and the Oxford Economics elasticity to productivity of 0.05 is applied to calculate the effect on total GVA within the study area;
- Step 9: Employment associated with this change is then estimated. It should be noted that this is ultimately a difficult area. A productivity boost could be argued to simply be an effect on GVA. However, equally over the long term it would also be reasonable to assume that a more productive economy will be more efficient at generating jobs and that ultimately the boost provided by the airport's connectivity must have some relationship to job creation. We have therefore assumed that the GVA effect created is essentially a mixture of a boost in productivity for direct beneficiaries but that jobs will be supported via indirect and induced effects. The GVA effect is therefore divided up using an average indirect and induced multiplier for the relevant study area. The employment effect is then calculated by dividing the indirect and induced element by the average GVA per job in the economy for the study area.

The report makes the point that inbound passengers would cease to visit the region if Bristol Airport did not exist (as discussed above), whereas outbound passengers are far more likely to travel anyway from an alternative airport, and hence the loss of local expenditure is not attributable to Bristol Airport for this market. This assertion is contentious and really does need to be supported by evidence. It would be helpful if York Aviation supply evidence to support the statement and indeed provide more detail to relate their outlined approach to the numbers appearing in Table 4.4 more explicitly. Also, the recent weakness of sterling is mentioned here as a strong contributor to influx of visitors – are they implicitly or explicitly assuming this will continue at current levels?

- 2.14. We remain of the view that simple logic would suggest that outbound passengers would be prepared to travel further to access alternative services if Bristol Airport were not to exist. Partly this is an issue of choice, in that if passengers wish to travel, outbound passengers would have no other option than to travel to a different airport. This is in contrast to inbound visitors who could simply choose to visit a different area/region that is more accessible by air. Essentially, this is the rationale for intervention in the air transport market by public sector tourism support agencies. Such agencies believe that new routes will bring new visitors who would not otherwise visit an area.
- 2.15. It could also reasonably be said that there is an issue of asymmetric information. Outbound passengers know the options available to them in terms of travel to / from an area far better than those who are travelling from elsewhere. Inbound travellers will very often not consider less obvious alternative options to reach a location they are interested in visiting. This issue is at the heart of why some major low cost airlines market airports that are actually located some distance from the city visitors are mainly travelling to using the primary city name. For instance, Hahn Airport was marketed as Frankfurt Hahn so people recognised that it was an option for visiting Frankfurt, just as Torp Airport became Oslo Torp.
- 2.16. Providing quantitative evidence to support this point is difficult because ultimately a major airport no longer existing and the consequent impacts on patterns of passenger behaviour is not something that can actually be observed. However, perhaps the best indication is to look at the relative density of catchment areas for inbound and outbound travel. If outbound travellers are prepared to travel further than inbound passengers to access air services then the relative catchment areas for outbound passengers at each airport should be larger than that for inbound. This is borne out by an analysis of the average distance travelled by international short haul travellers to reach a number of major UK regional airports taken from CAA Passenger Survey data and set out in Table 2.1 below.

Table 2.1: Average Distance Travelled by Short Haul International Passengers at Major UK Regional Airports (miles)

Airport	UK Outbound	Foreign Inbound
Birmingham	38	27
Bristol	54	47
Edinburgh	36	22
East Midlands	40	35
Glasgow	39	27
Leeds Bradford	27	22
Liverpool	38	25
Manchester	46	36
Newcastle	33	21
Weighted Average	42	31

Source: York Aviation analysis of CAA Passenger Survey data.

2.17. There is obviously some variability within this analysis and it does not represent the extreme situation of an airport not being available but it does demonstrate the point that outbound travellers are prepared to travel further than inbound travellers. On average across the airports, the distance travelled by foreign inbound visitors is 26% shorter.

2.18. It should be noted that this is not the only factor in our view that the impact of outbound expenditure would be relatively small. In the Economic Impact Assessment, we have outlined a number of other factors that also contribute to this view and our position is based on a consideration of all these points rather than any particular one, namely:

- outbound travel supports economic activity in the UK economy as well vis pre-trip expenditure and this would need to be accounted for;
- outbound expenditure would not necessarily be retained within the region if trips were not made;
- outbound travel has positive economic benefits, which would need to be accounted for as well.

2.19. We would also highlight three further points in relation to our consideration of the impacts of outbound tourism:

- the recent successful planning application by Manchester Airport Group (MAG)⁵ to increase Stansted Airport's passenger cap to 43 mppa⁶ also did not seek to quantify the effect of outbound tourism given the complexities around the issue and the lack of clarity around the true direction of effect. The socio-economic evidence to support this application cited very similar issues to those detailed in our own report but also added other factors that should be considered, notably the potential for passengers to switch to sea or rail transport for trips to Europe (the significant decline of the UK to European passenger ferry market following liberalisation of the air transport market in Europe and the growth of low cost airlines is an example of this phenomena in reverse) and the potential for people to take fewer, longer holidays with associated greater expenditure;
- since the time of writing, the Government has published Aviation 2050: The Future of UK Aviation⁷ consultation. The Green Paper repeatedly cites the importance of aviation in supporting inbound tourism as an economic benefit for the UK and recognises the importance of outbound leisure travel to quality of life and for maintaining cultural links. It does not recognise or identify negative effects associated with outbound leisure travel. In this context, we would also highlight the High Court's ruling in relation to the previous Stansted G1 expansion application. Stop Stansted Expansion (SSE) proposed in the High Court in February 2009 that the 'tourism deficit' had not been properly taken account of at the public inquiry to increase passenger throughput at Stansted to 35mppa (G1). This challenge was dismissed by the Judge who stated that "by trying to bring the 'tourism deficit' into account against a particular air transport scheme (i.e. the G1

⁵ Planning Application Reference UTT/18/0460/FUL.

⁶ This is the most recent major planning application in relation to a passenger cap at a UK airport.

⁷ Aviation 2050: The future of UK aviation, A Consultation – UK Government (December 2018).

proposal), SSE were calling into question the Government's judgement of national economic policy which had already taken that phenomenon into account"⁸;

- we note that the North Somerset Economic Plan clearly recognises the role that the airport plays in adding value to the local economy by bringing visitors to the area. Conversely, it does not identify any concerns in relation to outbound travel.⁹

2.20. As requested, the main steps taken in our calculations in Table 4.4 of the Economic Impact Assessment are as follows:

- Step 1: The number of inbound overseas and domestic visitors to the study areas are estimated based on data from the CAA Passenger Survey;
- Step 2: The expenditure injection into the economy associated with these inbound visits is estimated based on data from VisitBritain on average spend per trip;
- Step 3: This expenditure injection is converted to a direct impact on GVA in the tourism sector using data on the ratio between Turnover and GVA taken for tourism related sectors based on the ONS Annual Business Survey;
- Step 4: This direct GVA contribution is divided by the average GVA per job for tourism related sectors taken from ONS;
- Step 5: Indirect and induced multipliers for tourism related sectors are identified for the study areas using the same methodology as for the calculation of economic footprint impacts of the airport and these are then applied to the direct GVA to identify a total effect.

2.21. The comment regarding the exchange rate impact of BREXIT and the consequent effect on visitor numbers was made to us by a tourism organisation consulted as part of our work. The economic impact estimates are, however, based on the latest available information on the structure of traffic at Bristol Airport, which is the CAA Passenger Survey for 2015 (Bristol is not surveyed every year unlike, for instance, the major London airports). Hence, any influx of visitors due to the weakness of sterling will not be reflected in the base data available to us and is, therefore, not a factor in future estimates. This would suggest that the current impact estimates are likely to be conservative. In the medium term, it is very hard to predict how BREXIT will impact on exchange rates and, in turn, visitor/passenger numbers but we would ultimately expect some convergence towards long run averages. Therefore, in our view, the current estimates are a reasonable, if potentially conservative basis, for projecting forward.

⁸ Stansted Airport Environmental Statement – Volume 1 (February 2018), Page 11-33.

⁹ North Somerset's Economic Plan 2017-2036 - North Somerset Council (2017). Page 7.

3. Comments on Economic Impact of Increasing Capacity to 12 mppa – Chapter 5

Introduction

3.1. In this section, we respond to the main comments made by Jacobs in relation to Chapter 5 of our report.

Section 5.3: it would be helpful if Section 4 can be referenced here to show how the approach relates to employment levels mentioned in that section. What elasticities have been assumed? Are they sound in the context of aviation economic impact?

3.2. The future estimates of the economic activity supported by Bristol Airport have been based on:

- the baseline estimates of on-site employment set out in Section 4 of the Economic Impact Assessment;
- the passenger traffic forecasts for the airport articulating growth through to 12 mppa;
- the future air transport movements associated with the increase in traffic;
- the floorspace of the terminal as it grows to meet demand.

3.3. Different elements of activity at the airport are linked to different potential drivers of growth. For instance, airlines are, unsurprisingly, heavily linked to passenger growth, while retail is more closely linked to the floorspace available for the activity. Using historic data regarding employment in different functions at Bristol Airport, we have examined how different segments of activity at Bristol Airport have reacted to changes in the drivers of activity in the past and used the derived elasticities for our analysis of future activity. The detailed breakdown of employment at the airport goes back to 2014 and hence offers a relatively limited time-series. We have therefore also validated the elasticities identified against patterns observed at other airports for which we have similar data. As a further check, we have additionally examined the overall effect on on-site productivity from our assumptions to ensure that it is consistent with productivity growth rates observed elsewhere.

3.4. Indirect and induced multipliers remain constant. Business productivity effects and inbound tourism impacts are assumed to grow with passenger numbers.

Some discussion around the robustness of additionality effects would be helpful.

3.5. Our assessment has considered a number of potential additionality issues in relation to the estimates of economic impact derived in relation to the growth of Bristol Airport from 10 mppa to 12 mppa. Leakage has been considered in terms of the residence of on-site employment, the application of different multipliers for the relevant study areas and in terms of the surface origins and destinations of passengers. Product displacement effects have been considered and are felt to be very limited within the study areas. Deadweight has been considered via the choice of an appropriate baseline.

3.6. Jacobs's comments appear to focus primarily around a further factor often referred to as 'factor displacement'. This refers to the extent to which resources used by the airport might switch to being used for alternative activities if they were not required to support growth. This is a valid point and, as Jacobs point out, is something that is normally considered when appraising a public sector investment. However, it is not something that has been factored into our estimates for two reasons:

- the investment being considered here is a private sector investment and, hence, while guidance such as WebTAG or Green Book is helpful, they are designed to consider public sector investments, and the situation under consideration is not exactly the same. There is a concern ultimately that public sector intervention should not result in the 'crowding out' of market led private investment and hence factor displacement is a genuine concern in relation to achieving value for public money and ensuring that an intervention is indeed addressing market failure. This is not the same for a private sector investment;

→ considering factor displacement has, to a significant degree, the effect of ‘hiding’ the value of such a private sector investment, as in a high employment economy, such as the UK or the South West, it can reasonably be assumed that whatever the investment the great majority of resources would ultimately reallocate to a different activity and hence the net impact on employment would be close to zero (the impact on GVA would be slightly higher as it would be reasonable to assume in a market economy that resources will tend to towards the highest productivity activity as a first choice). However, there is clearly a problem here in that this suggests that no single project has a significant net impact and should be supported. This then creates a problem that if nobody is investing then where will economic growth in the future come from and what will be providing employment? This is clearly perverse.

3.7. With this in mind, while we accept the concept of factor displacement and indeed the points that Jacobs make about how it might affect our estimates of future economic impacts in the different study areas, we do not actually believe that it is a helpful consideration in assessing a private sector infrastructure investment. We also note that it does not appear to be a factor considered in assessing the socio-economic impacts of the recent Stansted Airport planning application to increase its passenger cap¹⁰.

3.8. Furthermore, we note the comments in the November 2017 Joint Spatial Plan Publication Document¹¹, which identifies Bristol Airport as a key strategic infrastructure employment location (Policy 4). It recognises the employment growth potential of Bristol Airport and in this regard, the supporting text to Policy 4 states: “*Growth at Bristol Airport has the potential to create a range of new employment opportunities*”. This clearly indicates the value placed on the employment creation potential of the airport.

3.9. Nevertheless, we have set out below an equivalent table to Table 5.3 in the Economic Impact Assessment that applies assumptions around factor displacement to the results. We have taken the ready reckoner displacement rates from the HCA Additionality Guidance 2014¹² as a basis for making this adjustment. We have assumed the following:

- within North Somerset, given the scale of the airport as an employer, we have assumed factor displacement will be relatively low and hence net benefits are 25% lower than gross benefits;
- within the West of England we have assumed that a medium level of factor displacement would be likely and hence net benefits are 50% lower than gross benefits;
- within the South West and South Wales we have assumed a high level of factor displacement would be likely and hence net benefits are 75% lower than gross benefits.

3.10. For the avoidance of doubt, we would expect almost complete factor displacement across the UK as a whole.

¹⁰ Stansted Airport Environmental Statement Volume 1 – (2018), Chapter 11.

¹¹ West of England Partnership (2017). West of England Joint Spatial Plan Publication Document - West of England Partnership (2017).

¹² Additionality Guide Fourth Edition 2014 – Homes and Communities Agency (2014), Page 30.

Table 3.1: The Economic Impact of Bristol Airport in 2026: Impact of the 12 mppa Planning Consent - Factor Displacement Adjusted

	North Somerset			West of England			South West & South Wales		
	GVA (£m)	Jobs	FTEs	GVA (£m)	Jobs	FTEs	GVA (£m)	Jobs	FTEs
Direct	£40	200	200	£40	300	275	£20	200	175
Indirect & Induced	£20	200	150	£20	325	275	£20	325	275
<i>Economic Footprint</i>	£50	400	350	£60	600	525	£40	525	450
Productivity	£20	100	75	£40	275	200	£50	475	375
Tourism	£0	0	0	£20	175	150	£20	300	225
<i>Wider Impacts</i>	£20	100	75	£50	425	350	£60	750	600
Grand Total	£70	500	425	£110	1,025	875	£100	1,300	1,025

NB. Totals may not sum due to rounding.

It is noted that the report is silent on the impact of Bristol Airport as a driver or facilitator of Foreign Direct investment (FDI). It could be expected to have a positive impact here and it would be helpful to get the York Aviation view on this.

- 3.11. We do not believe that the report is silent on the impact that Bristol Airport has on FDI. There is commentary around this in Section 4 and we would expect that role to grow as the airport grows. We would agree entirely that the expansion of the airport to 12 mppa will support increased FDI. The arguments and evidence base around how airport connectivity supports FDI are well known and well developed but we have summarised some of the key arguments below.
- 3.12. Previous research from a wide range of commentators helps to explain how air services influence FDI decisions and why, in this context, connectivity is important. Essentially, this research establishes a logic chain around the need for travel between corporate head offices and branch locations. This travel by air facilitates effective management and operation of central administrative functions, allows the transfer of knowledge and technology, enables specialists within the organisation to operate across the full range of locations and allows the local or central delivery of training and development activities. At a most basic level, this establishes the requirement for connectivity between the head office and the branch location.
- 3.13. However, increasingly relationships are more complex than that. Major multinational companies now often organise themselves in a form of hub and spoke model. For instance, a US based multinational may have its headquarters in New York; however, its operations around the world may well then be divided in to world regions, such as Europe, Asia or Latin America. Operations in these individual regions may then be run from a regional headquarters, which in turn require not only the key long haul connection but a wide range of connections across Europe. This helps to explain the need for breadth in connectivity and also the need for a balance between long and short haul services. Ultimately, it should also be recognised that the availability of connectivity may also influence the location of an organisation's global headquarters. If the connectivity from the 'home' city is not sufficient to enable effective management of the business, the headquarters itself may well need to move so it can better serve the needs of the organisation over the long term.

- 3.14. The influence of air services on location of the branch site in terms of external functions also needs to be considered. This relates to the function that the site plays. Branch locations that are, for instance, regional sales offices, providing customer service or support may in themselves require air service connectivity for them to reach regional markets for which they are responsible. Again, this suggests the need for breadth in connectivity from a given location to support this type of function.
- 3.15. It is in the context of FDI decisions that the concept of potential connectivity is perhaps most important. In making location or investment decisions, organisations must consider not just the present but also the future. What will they need to be able to operate effectively from a given location over the coming years? In terms of connectivity, this means having knowledge of what their network of locations will look like in the future, where their markets will be and where key partners and suppliers will be. These are clearly subject to uncertainty, especially in the longer term. Location decisions often mean significant investment both in cost and time. Therefore, good general connectivity now and the potential for competitive connectivity in the future are important in providing comfort that their needs can and will be met. This also highlights the importance of flexibility to adapt to changing connectivity requirements over time.
- 3.16. The importance of air services in relation to outward FDI and the potential economic benefits associated with this investment is sometimes forgotten. This perhaps reflects the perception that capital outflow from the UK must be negative. However, just as inward investment is only beneficial in certain circumstances, outward investment is only negative in certain circumstances. If investing outside of the UK represents a more efficient use of an organisation's capital, either by allowing it to access cheaper labour, more advanced technologies or more productive approaches, the impact on the host country or region's long run productivity will be beneficial.
- 3.17. Equally, in relation to air connectivity and outward FDI, the importance of connectivity remains. It is simply the direction of flow that is reversed. Outward investors need to be able to manage their investments effectively and air travel can be an important part of this process. If they cannot, the investments will not be made and associated productivity gains not achieved. It should also be remembered that an 'outward' investor could also be globally mobile and become an inward investor elsewhere. Therefore, outward investors require locations for their 'home' bases that enable this travel and, again, potential connectivity is a key factor. Investors will not have perfect knowledge of where they are going to have interests in the future. A strong and developing connectivity offer is therefore important in giving comfort that their needs can and will be met.
- 3.18. Some key pieces of evidence around the role of air connectivity and the influence on FDI are set out below:
- Cushman & Wakefield European Cities Monitor (2011) – this was an annually recurring survey between 1990 and 2011 of 500 European corporate decision makers which provided significant evidence of the importance of international connectivity in influencing company location decisions. It is still one of the most commonly cited pieces of survey evidence in this area. The survey consistently identified factors such as transport links with other cities and the ease of access to markets, clients and customers amongst the most important factors in company location decisions. There were clear linkages to the availability of air service connectivity as the cities served by Europe's major hub airports commonly featured towards the top of the list in terms of the best places to locate in Europe. In 2011, the last year the survey was published, London was ranked first, followed by Paris, Frankfurt and Amsterdam in order.
 - Oxford Economics The Economic Contribution of the Aviation Industry to the UK Economy (2006) – research by Oxford Economics sought to assess the contribution of the air transport industry to the UK economy. It was found that a quarter of companies surveyed as part of the research reported that access to air services was important in determining where they locate their operations in the UK. Further research, also by Oxford Economics in 2006, attempted to quantify the link between air connectivity and business investment. The results of the study suggested a 10% increase in connectivity is associated with a 3.5% increase in the level of fixed investment in the long run.
 - Deloitte The Heathrow Phenomenon (2007) – this research focussed on the economic impact of Heathrow Airport on the economy of London, with a particular focus on West London and the M4 Corridor. Research by Think London is cited, which identified around 50% of foreign owned companies located to London due to

its status as an entry point to the UK and to Europe. The report concluded that connectivity offered by Heathrow is critical to this effect. Furthermore, the success of the economy in the study area is built upon access to a global gateway such as Heathrow.

- York Aviation The Social and Economic Impact of Airports in Europe (2004) for ACI Europe – this report analysed research by Ernst & Young on location decisions in Europe, research by VNO-NCW on the influence of Amsterdam Schiphol Airport on location decisions and the University of Cologne on the significance of airports for firms. The analysis identified the importance of access to major airports in terms of investment decisions across a range of industry sectors.
- Bel & Fageda Getting There Fast: Globalisation, Intercontinental Flights and Location of Headquarters – Journal of Economic Geography (2008) – this research paper considered the influence of intercontinental flights on head office location. It was found that the supply of direct intercontinental flights is effectively a major determinant in the location choices of large firms’ headquarters. A 10% increase in the supply of such flights involved a 4% increase in the number of headquarters of large firms located in the corresponding urban area. Similarly, a discussion paper by Strauss-Kahn, Vanessa and Xavier Vives, Why and where do headquarters move? (2008), identified that headquarters relocate to metropolitan areas with good airport facilities, low corporate taxes, low average wages, high levels of business services and an agglomeration of headquarters in the same sector of activity.
- A London Chamber of Commerce and Industry Survey of London Business Leaders (2008) found that 94% of respondents believed that Heathrow Airport was very important or important for attracting FDI and tourism to London.
- Institute of Directors (IoD) Flying into the Future (2012) identified that almost six in ten (59%) members agreed that a lack of spare capacity at Heathrow had a damaging effect on inward investment to the UK, compared to just 17% who disagreed. In all regions of the UK, more IoD members agreed than disagreed with this statement.
- Price Waterhouse Coopers Econometric Analysis to Develop Evidence on the Links Between Aviation and the Economy on behalf of the Airports Commission (2013) – this comprehensive study identified that a 1% increase in international seat capacity was associated with a 0.47% increase in FDI inflows and a 0.19% increase in FDI outflows. It should be noted, however, that this finding was not ultimately used in the Airports Commission analysis due to concerns over potential double counting with trade effects. Furthermore, it was recognised that this may have resulted in wider benefits being underestimated.
- Frontier Economics Competition & Choice (2017) A Report Prepared for Heathrow – this report attempted to establish a comparative estimate of the connectivity and catalytic benefits (trade and FDI) of expanding Heathrow or Gatwick. The report draws upon evidence put forward by a large number of studies seeking to draw a relationship between connectivity, FDI and the benefits of face-to-face business meetings. It is discussed that face-to-face business meetings play a role in overcoming barriers between economies such as product market regulations; tariffs, quotas and local content requirements; exchange rates; and cultural differences; and as a consequence, FDI and trade is enhanced when connectivity exists to provide the opportunity for face-to-face meetings. The paper compared the evidence published by a variety of academic and industry sources regarding the additional trade facilitated as a result of a 1% increase in business travel. Values ranged from 0.13% to 0.7%, and based upon this, Frontier Economics selected 0.3 as the elasticity of business travel to FDI.

3.19. We also note the emphasis placed on the airport’s role in supporting the attraction of inward investment within North Somerset’s Economic Plan.¹³

¹³ North Somerset’s Economic Plan 2017-2036 - North Somerset Council (2017). Pages 17 and 19.

What might be the impact of BREXIT on the values contained in Tables 5.1 – 5.3?

- 3.20. The economic impacts of BREXIT remain a considerable unknown at the time of writing; however, it is possible to comment in broad terms. Overall, we do not anticipate that the values shown in Tables 5.1 to 5.3 would change significantly. This reflects a number of factors including the Government’s commitments within the Aviation 2050 Green Paper to maintain and enhance the UK’s connectivity to safeguard future economic prosperity¹⁴.
- 3.21. There are perhaps a couple of additional points that are worth making that might influence the level of impacts on the margin as well:
- The potential impact of BREXIT on exchange rates has been mentioned above. At present, the structure of traffic within our assessment is based on survey work undertaken before the BREXIT vote. If the current weakness of sterling compared to other currencies were to continue it would likely increase inbound tourism effects;
 - A slowing in the economy could lead to weaker employment growth generally and hence the extent of any factor displacement would potentially be reduced as there would likely be increased available labour within the study areas.

Construction. It is difficult to know where construction-related employment will be sourced from but, as stated in the report, it seems reasonable to assume that compared to larger scale construction projects, a higher proportion will be from the local region. However, there may well be constraints that dictate where labour will come from at varying stages of the build and fitout. The underlying principles need further examination/evidence.

- 3.22. The capital expenditure programme is phased over the period to 2026. Even in the peak construction year, 2025, the level of employment created is small compared to overall employment in the construction sector in each of the study areas. It would therefore seem unlikely that there will be significant pressures on the construction labour supply and hence the pattern of labour supply (see Table 3.2).

Table 3.2: Direct Construction Employment Relative to Total Construction Sector Employment in 2017

	Peak Direct Construction Jobs	Total Construction Employment in 2017	% of Total
North Somerset	35	4,500	0.8%
West of England	150	31,000	0.5%
South West	205	140,000	0.1%

Source: NOMIS and York Aviation.

¹⁴ Aviation 2050: The Future of UK Aviation, A Consultation – HM Government (2018), Page 6.

4. Comments Socio-Economic Cost Benefit Analysis – Chapter 6

Introduction

- 4.1. In this section, we respond to the main comments made by Jacobs in relation to Chapter 6 of the Economic Impact Assessment.

Please confirm whether the NPVs are in real or nominal terms and the discount rate applied.

- 4.2. The NPVs are in real terms and are subject to a discount rate of 3.5%.

Have environmental impacts been considered here?

- 4.3. The impacts of the proposed development on noise, air quality and other environmental factors are assessed elsewhere in the application documentation, principally the Environmental Statement. Given the scale of the impacts identified and the potential for mitigation to minimise adverse effects, they have not been considered further in the Economic Impact Assessment. While methodologies do exist to consider such effects in monetary terms, the process would not be proportionate in these circumstances. Furthermore, we note that environmental impacts were not considered within the socio-economic impact assessment of the recent Stansted Airport planning application.

In following WebTAG guidance it is not clear whether the ‘rule of a half’ approach has been taken in outlining these socio-economic benefits, i.e. the benefits for the additional demand (in going from 10mppa – 12mppa) should be accrued at a lower rate than for the trips that were already being made (i.e. the 10mppa). This is discussed in TAG Unit 1.3. It would be helpful if York Aviation could address this question.

- 4.4. The ‘rule of a half’ has been applied to stimulated traffic.

In the York Aviation report, over half of the socio-economic benefit from the expansion is down to air fare savings, with £832m savings in air fare costs versus using an alternative airport, though stating that this is an order of magnitude estimate. The approach to this estimate appears to be questionable, in that it assumes that those passengers switching from the Bristol Airport substitute would automatically face higher fares, the evidence being a table of average fares for domestic and short haul routes from competing airports. These average fares are likely to reflect the different proportions of business passenger usage (and business fares available) at competing airports, and the different basket of destinations served (which may on average be more expensive to fly to than those served from Bristol) and failure to adjust for these factors would lead to a substantial overestimate of this component. If fares are higher elsewhere than at Bristol and this reflects operator profits, then this lost surplus should be logged as a cost in the cost-benefit analysis.

- 4.5. As we acknowledge in our report, estimating the effect of the change on air fares is difficult. How airlines and passengers will react in the broader market is difficult to predict and the evidence base even on existing fares is limited. We have based our estimates on fares data taken from the CAA Passenger Survey. This provides some view on fares by purpose of travel but the sample sizes do become quite small once destination or flight distance is considered as well. It should also be noted that it is only Heathrow that is significantly different in terms of proportion of business travel on domestic and short haul routes. The proportion of business travel at key airports is as follows:

- Birmingham – 19%;
- Bristol – 16%;
- Cardiff – 12%;
- Gatwick – 16%;
- Heathrow – 40%.

- 4.6. Ultimately, we have not sought to adjust air fares for business travel proportions as the data available to us in terms of fares by purpose of travel within the CAA Passenger Survey is not strong enough to do so but we have sought to address issues around the differences in route networks based on analysis of the relationship between fares and flight sector length. We agree that this may produce some distortions in the analysis and, hence, our comment regarding the order of magnitude nature of the effect. Equally, it should be noted that we have not considered the effect on constraint on fares for passengers that continue to fly from Bristol. Recent research by SEO¹⁵ on air fare levels at constrained airports found that a 10% constraint results in a 1.4% increase in average air fares in liberalised markets. Restriction of Bristol Airport to 10 mppa would represent a significant and growing constraint on the airport that would impact on fare levels.
- 4.7. In relation to the transfer between passengers and airlines, Jacobs make an interesting point and probably fair point. Some of these additional air fare costs could likely be captured by airlines and this should be excluded from the analysis or registered as a countervailing cost. However, it is quite unclear as to how this would play through in terms of the size of the effect as different fares could be a function of a wide range of different factors, for instance airline operating costs, different airport charges, different levels of competition or relative catchment wealth.
- 4.8. Overall, as we have previously stated, the effect on air fares is a difficult area and the estimates should be treated with some caution. The available evidence that we have is that fares are likely to be higher at competitor airports and that this will impact negatively on passengers that are forced to use alternatives in the event of Bristol Airport being unable to expand. We would also suggest that the overall level of benefits and costs needs to be viewed in the round. Even without any air fare savings, the benefits of the scheme would very substantially outweigh the costs.

There are further complications associated with this analysis. There are benefits to existing passengers from higher frequency services at Bristol (because they will get a flight nearer to when they want to travel) but then losses at other airports if Bristol does grow (because c.70% of demand moves away from other airports, p 58).

- 4.9. We are slightly unclear as to the point being made here. However, what we think is being said is that reduced demand at other airports due to growth at Bristol would lead to reduced frequency elsewhere. If this is the case, we would suggest that this is not a significant issue.
- 4.10. Any passengers that might use other airports if they could not use Bristol will be spread across a wide range of different routes and indeed different airports. In consequence, we feel that it is unlikely that this will result in significant changes in frequency at other airports. Also, it should be pointed out that air transport demand across the UK is expected to grow significantly in the future, as set out in the Aviation 2050 Green Paper and indeed the Department for Transport's latest air traffic demand forecasts¹⁶. For example, the Aviation Forecasts 2017 suggests that total UK demand is expected to grow from around 267 mppa in 2016 to around 495 mppa in 2050¹⁷. In such circumstances, it would seem reasonable to suggest that any demand that does not leak to other airports as a result of the proposed development will likely be replaced by growth rapidly and that there is therefore likely to be little if any effect on frequency.

¹⁵ The impact of airport capacity constraints on air fares – SEO Amsterdam Economics (2017).

¹⁶ UK Aviation Forecasts 2017 – Department for Transport (2017).

¹⁷ UK Aviation Forecasts 2017 – Department for Transport (2017). Page 90.

If the airport does grow with c.1.4m passengers moving from other airports¹⁸, then some passengers will travel to Bristol Airport even though they live (relatively) near another airport.

- 4.11. The analysis has not assumed a change in the airport's underlying catchment area. It therefore assumes that growth will primarily be achieved by 'clawing back' traffic from within its catchment that would otherwise have travelled to other, more distant airports. Considering the significant presence of other airports in Bristol Airport's catchment area, this is a reasonable assumption.

How have York Aviation taken account of the mix of in / outbound passengers and journey purpose in this analysis? Has the market been segmented when applying VoT to convert to a generalised cost?

- 4.12. The market has been segmented using data from the CAA Passenger Survey, which provides information on inbound and outbound passenger numbers and on the purpose of travel. The appropriate value of time taken from the Airports Commission final report technical documents¹⁹ has then been applied to the relevant segment.

Can York Aviation provide examples of destinations where passengers have to travel via a hub airport to reach their destination as a result of no direct flights being available from alternative airports?

- 4.13. This primarily occurs where passengers switch to smaller airports such as Cardiff or Exeter, which have substantially smaller route networks than Bristol but offer hub connectivity. The end destinations involved are often secondary European city markets, which are sustainable from Bristol but not from the others. Examples of destinations that passengers switch to include Madrid, Barcelona, Geneva or Munich. It should be noted that in relation to leisure destinations, we have sought to control for destination switching to some degree by allowing passengers to switch to another similar destination if the same one is not available at the alternate airport. For instance, passengers can switch between Spanish Mediterranean sun destinations.

Airport Company Benefits - Is this the increase in BAL profits from increasing from 10mppa to 12mppa? Can you provide more detail on how this component is estimated?

- 4.14. This is indeed Bristol Airport's additional profits stemming from passengers that would not divert to other airports if the airport is able to grow from 10 mppa to 12 mppa. The calculation is based on the airport's existing operating profit per passenger along with a small increment for growth based on the relationship between passenger volumes and airport profit per passenger in the past. The analysis is based on the airport's published report and accounts. The increment in profit per passenger is also applied to existing passengers to reflect improved profitability with growth. However, this effect is a substantially smaller component.

Construction Costs - How have these been derived?

- 4.15. Construction costs have been provided to us by BAL. BAL has invested substantially in Bristol Airport's infrastructure over the last 10 years, particularly in bringing forward proposals under the extant consent for development of the airport to 10mppa (many of which are similar in nature/type to the components of the proposed development). In this context, BAL has gained significant expertise in estimating the construction costs associated with the infrastructure required to support the development of the airport to accommodate 12 mppa. BAL also works with a range of technical experts to provide assurance in relation to its capital expenditure plans.

¹⁸ This 1.4 million passengers is the portion of the extra 2 mppa facilitated by the increase in the planning cap that would travel via other airports if Bristol were not able to expand.

¹⁹ Economy: Transport Economic Efficiency Impacts – Airports Commission (2015), Page 16.

5. Comments on Regeneration and Social Impacts – Chapter 7

Introduction

- 5.1. In this section, we respond to the main comments made by Jacobs in relation to Chapter 7 of the Economic Impact Assessment.

Our understanding (section 7.3) is that the new job creation assumes the same distribution of residency as those currently employed at the airport. Can York Aviation confirm whether this is the case?

- 5.2. This is correct.

The report is silent on the types of jobs these will be – it will be helpful if York Aviation elaborate on this point. Has consideration been given to whether the requisite skill-sets in these areas will be sufficient to fill the newly created roles?

- 5.3. The types of job that might come forward has not been considered in detail. We would, however, expect a range of job types to be created, commensurate with the structure of employment on site at the airport presently. Given the scale of additional jobs required, the potential pools of labour in the areas around the airport, the work being done to improve surface access and to expand the labour supply through partnership working and other initiatives, we feel it is reasonable to assume that the requisite skills will be available.

Section 7.6 – this section could do with expanding to show what active steps BAL has taken to develop and retain talent, and to attract new employees. The section touches on these areas, but more concrete examples of initiatives would strengthen the section.

- 5.4. We have set out below some further examples of the airport's current and recent activities in this area:

- recent recruitment fairs hosted at Weston College 28/2/2019 & City of Bristol College – South Bristol 07/03/19;
- provision of work experience for pre-selected local schools;
- the airport has made 104 recent direct hires;
- the airport has appointed a Learning & Development Partner to implement its Learning & Development strategy;
- the airport has hosted 6 week management training courses (level 1 & 2) for supervisors and the management team;
- the airport has run business skills workshops for all staff;
- it has recent undertaken Equality, Diversity & Inclusion training for managers with e-learning to be rolled out to all staff;
- Cyber Security training for managers & e-learning for all staff;
- there is a range of employees undertaking professional qualifications;
- coaching sessions for the Executive team;
- the airport has also trained 15 mental health first aiders;
- it has developed an E-learning platform;
- it has provided first aid for all operational team members.

- 5.5. Through commitments contained in the proposed Section 106 Agreement Heads of Terms (see Appendix D of the Planning Statement), such as the preparation and implementation of a Skills and Employment Plan (where this is appropriate) and surface access improvements, BAL is seeking to maximise the opportunities associated with the growth of the airport for local communities.

6. Comments in Relation to Third Party Responses

Introduction

- 6.1. Based on a review of third party comments received on the planning application (at the time of writing), a number of key themes have been identified and are considered in this section. It should be noted that a number of the themes raised in these responses have already been discussed above and hence we have in places repeated or referred back to points already made.

The 'Tourism Deficit'

- 6.2. The potential impact or otherwise of outbound tourism is perhaps the central theme of the responses. The view has been expressed that increased outbound tourism expenditures will act as a significant drag on the economy should Bristol Airport grow to 12 mppa. We strongly refute these claims. We have discussed this issue in some detail above and indeed presented further evidence to support our position.
- 6.3. Attempting to estimate the effect of outbound tourism would be extremely complex. It is not simply a matter of calculating the spend relating to those travelling out of an airport. Changes to passenger behaviour and travel patterns must be considered, the 'in-country' effects of reduced demand are potentially significant, the benefits to individuals associated with outbound travel are considerable, and the potential for alternative expenditure on imports or simply saving is high. We have discussed these factors in some depth in the Economic Impact Assessment²⁰ and again in this document at Paragraph 2.14 and below.
- 6.4. In contrast, the benefits from inbound expenditure are clear (and indeed not disputed by respondents). Furthermore, we note the Government's position on air travel and tourism set out in the recent Aviation 2050 consultation, which clearly identifies support for the role air services play in bringing visitors to the UK and recognises the value of outbound leisure travel but does not identify the potential damage associated with the so called 'tourism deficit'.
- 6.5. As we have also described above in Section 2, we note the approach taken within the recent Stansted Airport Planning Application and indeed the comments cited therein in relation to the treatment of the 'tourism deficit'.

Causation

- 6.6. Consultation responses have suggested that there is no evidence of causation of the link between air service growth and economic growth in relation to trade and related effects. We would again refute this position. The literature and research around this issue is wide ranging, well-known and well recognised. The logic chains via which air services support trade flows (in their broadest sense) are clearly set out. We would also point out that economic theory around trade would strongly support the benefits of increased trade. Since the time of writing of the Economic Impact Assessment, the Aviation 2050 Green Paper has also been published, which once again clearly sets out the Government's policy view in relation to the importance of aviation connectivity in supporting future economic prosperity by enabling trade and investment flows.

Extent of Business Travel

- 6.7. Respondents make a number of points around the extent of business travel at Bristol Airport, suggesting that because numbers are relatively small (compared to leisure travellers) there is unlikely to be significant impact from this group from expansion. This seems to be trying to link back to the tourism deficit point, which we have addressed above, but we make some additional points here.

²⁰ Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum: Economic Impact Assessment- York Aviation (2018), pages 44-45.

- 6.8. One respondent argues that as business travel is relatively price inelastic then constraining the airport will not actually affect numbers of travellers as they simply travel via other airports. This misses the point of our analysis and modelling work. We agree business travel is price inelastic and that the majority of business travellers may well still travel via other airports, but the point made in the Economic Impact Assessment is that some journeys will be lost and for those business passengers that still travel, they will not be as productive. Our analysis seeks to identify the extent of 'connectedness' for business travel, of which passenger numbers is an indicator, and the link to productivity; it is not actually about the numbers still travelling per se.
- 6.9. Similarly, respondents have repeatedly focussed on the fact that growth will not bring about a change in the structure of traffic at the airport and that hence there will be little benefit from increased business travel associated with growth. Firstly, it should be pointed out that our analysis does not assume a substantial change in the structure of traffic at the airport. Secondly, it should be recognised that a substantial change in structure is not required for there to be more business travel. The airport does not need to change its character for more business passengers to use it. Business markets will grow just as leisure markets will and more passengers will use the airport. These passengers will support economic activity in the wider economy.
- 6.10. Comparisons are also made in relation to Heathrow's role as a gateway for business passengers in the UK and its resilience in terms of shocks and their effect on the business market. This does not change the fact that Bristol Airport is used by a significant number of passengers travelling for business and hence that it supports the economy of its catchment areas.
- 6.11. Similarly, the analysis of service patterns that are helpful and preferred by business passengers provided by one respondent is again reasonably accurate but it does not change the fact business users use Bristol because it is the best option for them and that that number will grow in the future. Business passengers do prefer higher frequencies because it offers flexibility but it does not mean that they will not use other flights if it is still a better option for them than alternates. In fact, growth at the airport is likely to make it more useful for business users in the future as increased frequency on existing routes comes forward.
- 6.12. Again, the analysis put forward of potential routes that could support daily services is not helpful and is flawed. CAA Statistics are not a helpful measure of demand for a service within a catchment area as they provide no view on passengers travelling via other airports or via hubs to reach their destinations. Similarly, assuming a single pattern of potential service is clearly unrealistic and such an analysis takes no account of the generally higher yields offered by business passengers.

Comments on Government Policy around Maximum Use

- 6.13. We note one respondent's comment around the advisability of the Government's stated policy to encourage the maximum use of existing runways. The respondent appears to be arguing that in a market economy, airports should be allowed to expand at points in the system where demand is strongest as opposed to seeking to expand all airports to maximum capacity. Notwithstanding that the latter part of this statement seems to be a rather odd interpretation of the Government's position, we would agree with this statement. However, the respondent's statement does seem to be rather contrary to their opposition to expansion at Bristol Airport. Demand forecasts suggest that the airport will shortly reach its current passenger planning cap and hence that the level of demand justifies expansion. By the respondent's own logic, it should therefore be allowed to expand as it is one of the points in the system where demand is strongest.

General Approach to Economic Impact Modelling

- 6.14. A number of comments are made regarding our approach to calculating GVA and job numbers. We do not agree with these comments and continue to believe that our approach is fundamentally sound. We would, however, comment briefly in two areas:
- the use of multipliers – some respondents suggest that the use of indirect and induced multipliers in our analysis is unjustified and that some are overstated. We would point out that their use is common practice

and that we believe the scale of multipliers to be reasonable and that the Jacobs assessment (as well as our own experience) supports this point of view;

- double counting between catalytic and user benefits – there is some suggestion that our estimates of catalytic impacts represent double counting with the user benefits presented in the socio-economic cost benefit analysis. This is not the case. The two analyses are separate ways of examining the potential impact of expansion of Bristol Airport and are reported as such. The impacts associated with the two analyses are not summed at any point and the analyses are not presented as cumulative in any way.

BREXIT and Other Demand Risks

- 6.15. The potential impact of BREXIT has been discussed above and our comments remain the same. Similarly, issues around other demand risks such as oil price changes, increased regulatory burdens or slowing GDP growth are hard to accurately predict. However, ultimately, what we have examined is the potential impact of a 2 mppa increase in passenger traffic. This is not likely to change significantly with changes in the economic environment as described above.

Comments on the Socio-economic Assessment

- 6.16. A number of comments are made around the fact that local environmental impacts are not quantified within the Economic Impact Assessment. In our view issues around, for example, noise, air quality and congestion are considered in other parts of the application. It is not therefore proportional to include them within the analysis given the likely level of impact.
- 6.17. Comments have been made around the length of the appraisal period. 60 years is a standard appraisal period for an airport expansion project.
- 6.18. Comparisons have also been made here between the benefits cited and the so-called ‘tourism deficit’ discussed above. These are not relevant. This analysis is essentially an analysis of efficiency, i.e. whether actors in the market are able to function better with the growth of the airport. Figures relating to total spend are not a measure of efficiency and have no meaning here.

Discrepancy Between Onsite Job Numbers

- 6.19. We note that some respondents have identified a difference between the on-site employment numbers quoted in the 2017 Travel Plan and those identified in the Economic Impact Assessment. This difference is not surprising as the assessments were undertaken at different points in time. The work on the 2017 Travel Plan was largely undertaken in 2016, while BAL’s work to identify the number of employees on-site at the airport to inform the Economic Impact Assessment was later in 2017 and through into 2018. Also, the Travel Plan was based on a sample of responses from employees whereas the numbers provided for the Economic Impact Assessment were collected via contact with all companies on-site and represents a more comprehensive exercise.

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