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## **The economic impact of London Luton Airport**

**A report for London Luton Airport Operations Limited  
and London Luton Airport Limited**

**November 2015**



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## Foreword:

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**Nick Barton – CEO London Luton Airport**  
**Councillor Andrew Malcolm – Acting Chairman LLAL**

This is the first aviation focussed report published in the post-2015 election environment and one that has been conducted on a wholly independent basis by Oxford Economics. London Luton Airport Operations Limited, the airport operator, and London Luton Airport Limited, the airport owner, commissioned this report to highlight the current and future economic benefit of London Luton Airport to both the local and national economies.

We believe that this report will make a significant contribution to the development of an integrated transport policy for the United Kingdom; one in particular that reconciles the rebalancing of the UK economy with the need for sustainable development. The Oxford Economics report sits alongside the vital strategic work undertaken by Sir Howard Davies and provides our new Government with additional corroboration of the importance of aviation to the UK economy.

In commissioning the report we were mindful of the depth of the Davies Commission's review of macro runway capacity requirements, but also of how broadening the analytical scope to micro or regional considerations could complete the roadmap of UK aviation needs.

Through this report, Oxford Economics has demonstrated how the presence of a strong regional airport can boost UK economic growth and deliver greater choice, value and service to aviation passengers.

Regional airports play a vital role in supporting aviation capacity growth in the UK. They will sustain the supply of slots for airlines and destinations for passengers throughout the period of new runway construction in London and enhance the reputation of the UK as a place to visit, invest or reside in. For its part, London Luton Airport has proven its role in meeting the aviation demands of the 21<sup>st</sup> century and this is demonstrated by the economic benefits that are created by its presence in Southern England.

It is imperative that London Luton Airport fulfils its potential to serve more passengers, deliver greater competition between carriers and achieves all of this on an environmentally sustainable basis. That is why we are proud of our airport and the contribution that it will make to the lives of business and leisure passengers alike in coming decades.

We urge all stakeholders with an interest in the future of UK aviation to take note of this report's conclusions and the potential that exists for London Luton to serve ever greater numbers of passengers and draw overseas investors into our economy.



**Nick Barton**



**Andrew Malcolm**



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## Executive Summary

In February 2015 London Luton Airport Operations Limited (LLAOL) and London Luton Airport Limited (LLAL) commissioned Oxford Economics to undertake an analysis of the nature and scale of the economic impact of London Luton Airport on the UK as a whole, and on the surrounding sub-regional and local economies.

The report sets out the results of that analysis, measuring the economic contribution of the airport in terms of jobs created, contribution to GDP and government tax receipts. We present results for the value of this impact in 2013 and forecast it out to 2030 under two scenarios for the future of the airport.<sup>1,2</sup> The report goes on to explore the value that London Luton Airport creates for its passengers by offering them low-cost and local air transport, and by relieving pressure on the air transport system elsewhere in the south east of England.

### Measuring the impact of London Luton Airport

To quantify the contribution of London Luton Airport to the UK and local economy, we consider a range of potential impacts in turn, following a standard analytical technique known as an economic impact assessment. This approach considers three channels of economic impact arising from the airport's operations: direct, indirect and induced impacts.

- The direct impact is generated by the immediate activities of the airport itself.
- The indirect impact encapsulates the economic activity supported in the airport's UK supply chain as a result of its procurement of goods and services.
- The induced impact comprises the benefits arising as the workforce (including that in the supply chain) spends its wages generating further rounds of economic activity.

The impact through each channel is quantified using three metrics: Gross Value Added (GVA) contribution to GDP; employment, in terms of jobs sustained; and the exchequer impact, in terms of additional tax receipts accruing to the Treasury or local authorities.

Quantifying the wider 'catalytic' economic benefits that the airport offers to those who use its services involves other metrics. The benefits that proximity and low-cost air travel offer for millions of Luton passengers are quantified in terms of the equivalent cash value to those passengers each year.

<sup>1</sup> This report updates a previous exercise relating to 2011, undertaken by Halcrow. However, methodological differences mean the two reports are not directly comparable.

<sup>2</sup> We use the term 'London Luton Airport' to refer to all activities and businesses which are inherent to the operation of the airport, and including both direct onsite employment and direct offsite employment within firms located in close proximity to the airport whose activities form an integral part of the activities of the airport.

## London Luton Airport's impact in 2013

In 2013, the economic activity created by London Luton Airport contributed some £1.3 billion to UK GDP.<sup>3</sup> For every pound London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. In 2013 this impact comprised:

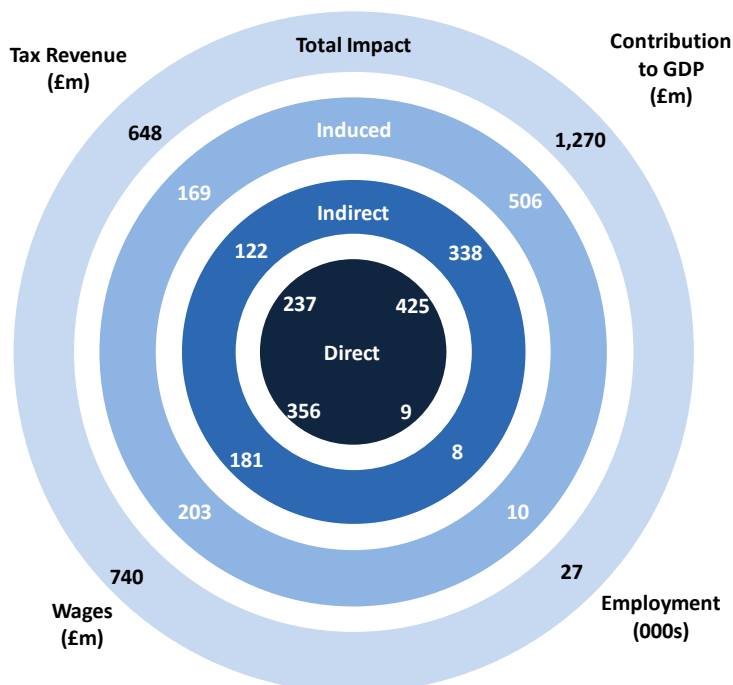
- £425 million in direct impact (which is equivalent to 10 per cent of the local Luton Borough economy);
- £338 million in indirect impact within the supply chain of the airport; and
- £506 million in induced impact as employees of the airport and its supply chain spent their wages.

The airport is estimated to have sustained 27,000 jobs in 2013, comprising:

- 9,400 direct jobs (10 per cent of all employment in Luton Borough);
- 7,700 indirect jobs within the supply chain of the airport;
- 10,000 induced jobs as employees of the airport and its supply chain spent their wages.

For every direct job the airport supports, another 1.9 are supported elsewhere in the UK economy. By sustaining this level of employment, London Luton Airport contributed £740 million in gross wages in 2013, and also produced tax receipts of £648 million for the Treasury, primarily in the form of employee and employer taxes, air passenger duty and corporation tax.

### Total UK economic impact of London Luton Airport, 2013



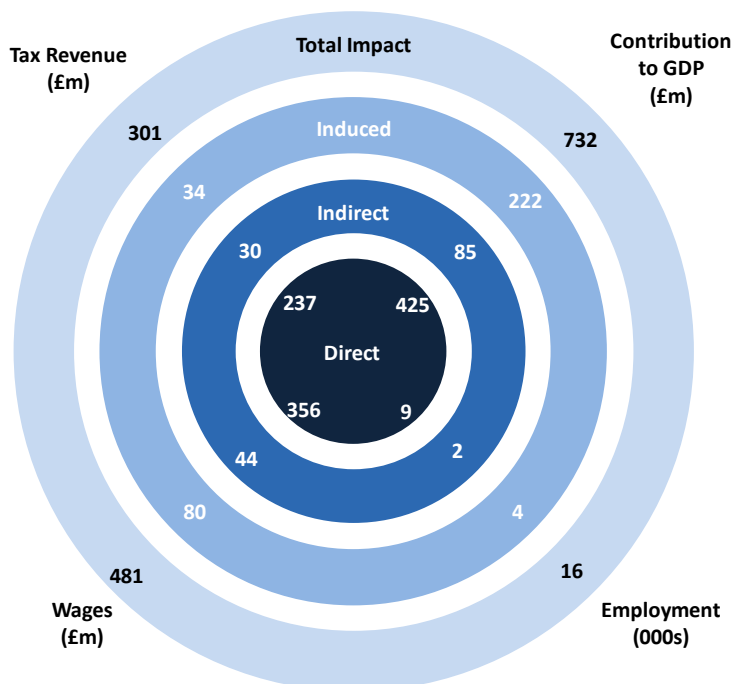
<sup>3</sup> Hereafter referred to as 'contribution to GDP'. Prices are constant 2013 throughout the document unless otherwise stated.



## The sub-regional and local economic impact of London Luton Airport in 2013

London Luton Airport plays a pivotal role in economy of the local area and surrounding sub-regions. Within the Three Counties area, which includes Bedfordshire, Buckinghamshire and Hertfordshire, the airport supported a £732 million contribution to GDP and sustained 16,000 jobs in 2013. As would be expected, the greatest impact was felt in the immediate vicinity of the airport. The largest sub-regional impact therefore occurs within Bedfordshire, where the airport delivered a GDP contribution of £600 million. This reflects the direct economic impact of having the airport located within its boundaries, the corresponding strength of the airport's supply chain linkages within the local area, and the fact that 50 per cent of the direct workforce (and therefore much of the associated consumer spending) resides in Bedfordshire. Within the Borough of Luton alone, the airport supported a £533 million contribution to GDP and sustained almost 12,000 jobs.

### Total economic impact of London Luton Airport within the Three Counties sub-region, 2013



## The future economic impact of London Luton Airport under alternative scenarios

With substantial changes to the capacity of London Luton Airport planned, we are able to forecast how its economic impact is likely to evolve in the years to 2030. Our baseline scenario assumes no significant infrastructure development. Yet the airport's total GDP contribution, including multiplier impacts, is forecast to grow to £1.7 billion<sup>4</sup> by 2030. Productivity growth, however, means that the total number of jobs supported by London Luton Airport (including multiplier impacts) is likely to be 500 lower in 2030 than in 2013 under this scenario.

Under our development scenario - in which a range of infrastructure developments, including improvements to roads, parking and terminal enhancements, are implemented – the economic impact of Luton would be substantially higher.

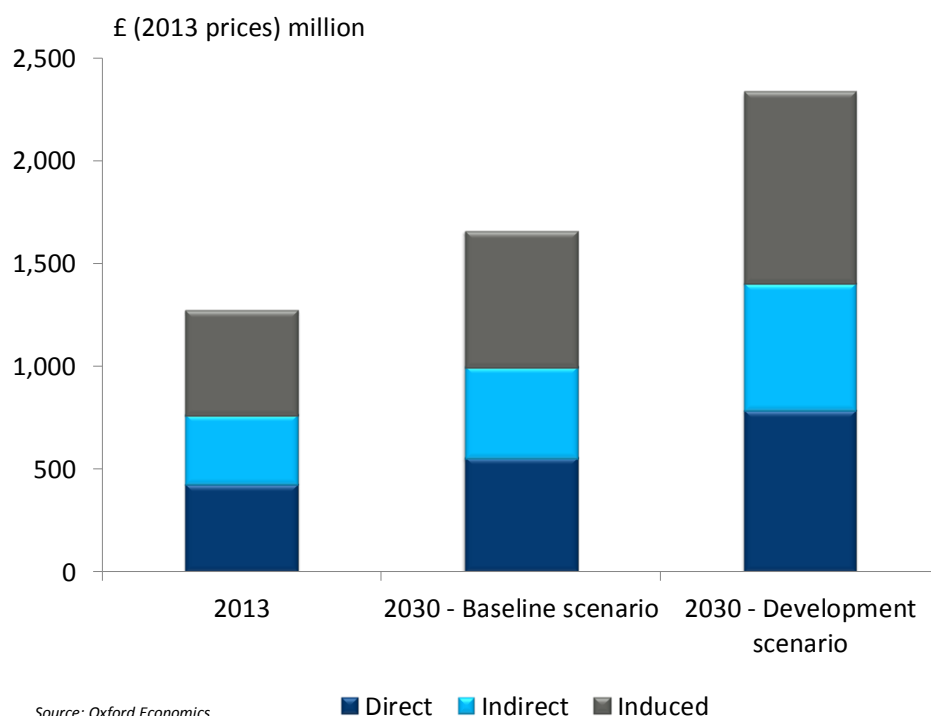
In the development scenario, we assume that infrastructure enhancement results in passenger numbers increasing from around 9.7 million in 2013 to 18 million in 2020, at which point the airport will have reached its new level of capacity. Under this scenario, the total GDP contribution of the airport would reach £2.3 billion in 2030, 41 per cent higher than under the baseline option. The airport and its associated activities would support 37,700 jobs in total.

### Key indicators under the baseline and development scenarios, 2013 and 2030

		2013	2030 – Baseline scenario	2030 – Development scenario
<b>Passengers</b>		9.7m	12.6m	18.0m
<b>GDP</b>	Direct	£425m	£554m	£781m
	Total	£1.3bn	£1.7bn	£2.3bn
<b>Employment</b>	Direct	9,400	9,300	13,100
	Total	27,200	26,700	37,700
<b>Wages</b>	Direct	£356m	Not calculated for future years	
	Total	£740m		
<b>Tax revenue</b>	Direct	£237m		
	Total	£648m		

<sup>4</sup> In 2013 prices

### Forecast total GDP contribution of London Luton Airport to the UK economy, 2013 to 2030



Within the Three Countries sub-region, the total GDP contribution of London Luton Airport is estimated to reach £1 billion in 2030 under the baseline scenario. This increases to £1.4 billion under the development scenario. Under the baseline scenario the total number of jobs supported by London Luton Airport in the Three Counties sub-regional economy in 2030 increases from 15,900 in 2013 to 16,000 in 2030. Under the development scenario employment increases to 22,600.

Under the development scenario, London Luton Airport may need over 1,100 additional workers in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. At the same time, over 2,500 additional workers will be needed for lower-skilled roles such as customer advisors, baggage handlers and storage workers.

We analyse the extent to which the airport's future demand for labour could be met by workers from Luton Borough. Our analysis suggests that while there is likely to be sufficient labour within Luton Borough to fill lower-skilled jobs, the airport will need to look further afield to recruit the people needed to fill the more specialised high-skill roles.

## London Luton Airport's value to passengers

Ultimately London Luton Airport exists to serve its passengers, of whom there were 10.5 million in 2014 alone. For around 43 per cent, or 4.5 million, of these passengers Luton was the closest airport to their origin or destination in the UK. For these passengers, flying from an alternative airport would add between 20 and 68 minutes in travel time, and further associated travel costs, for each leg of their journey. Luton also offers among the cheapest available fares for the destinations it serves, with 75 percent of comparable fares cheaper than average among the seven major airports considered.

Taking account of the value of passengers' time, the surface transport costs they face, and the competitive fares offered by airlines at Luton, we estimate that the airport provided additional value for passengers of approximately £120 million in 2014 alone – an average of just over £37 per return trip.

As a result of the extra value offered by Luton more people were encouraged to take a trip than otherwise would have done. We estimate that last year over 900,000 Luton passengers took a flight who would not have flown at all had Luton not existed.

## London area airport capacity

London Luton Airport will play an increasingly important role in providing much-needed capacity to the London airports system over the next 10 to 15 years, particularly if expansion plans are implemented.

In 2011 Luton accounted for 7 per cent of passengers at London airports. But based on official DfT forecasts it is expected to contribute 17 per cent of London passenger growth between 2011 and 2030. This demonstrates the degree to which the airport is set to become an even more crucial part of the air transport network of the UK.

# 1 Introduction

## 1.1 Purpose of the study

This report has been prepared for London Luton Airport Operations Limited (LLAOL) and London Luton Airport Limited (LLAL). It provides a detailed assessment of the current economic impact of London Luton Airport to its local area, surrounding sub-regions and the national economy. This impact has been estimated for 2013 and forecast for the period to 2030 under two scenarios. We also estimate the consumer value that London Luton Airport creates for its passengers by offering them cheap and local air transport, and by relieving pressure on the air transport system elsewhere in the south east of England.

*This report provides a detailed assessment of the economic impact of London Luton Airport*

## 1.2 Introducing economic impact analysis

The economic impact of London Luton Airport is measured using a standard means of analysis called an economic impact assessment. The three 'core' channels of impact that comprise the airport's 'economic footprint' are:

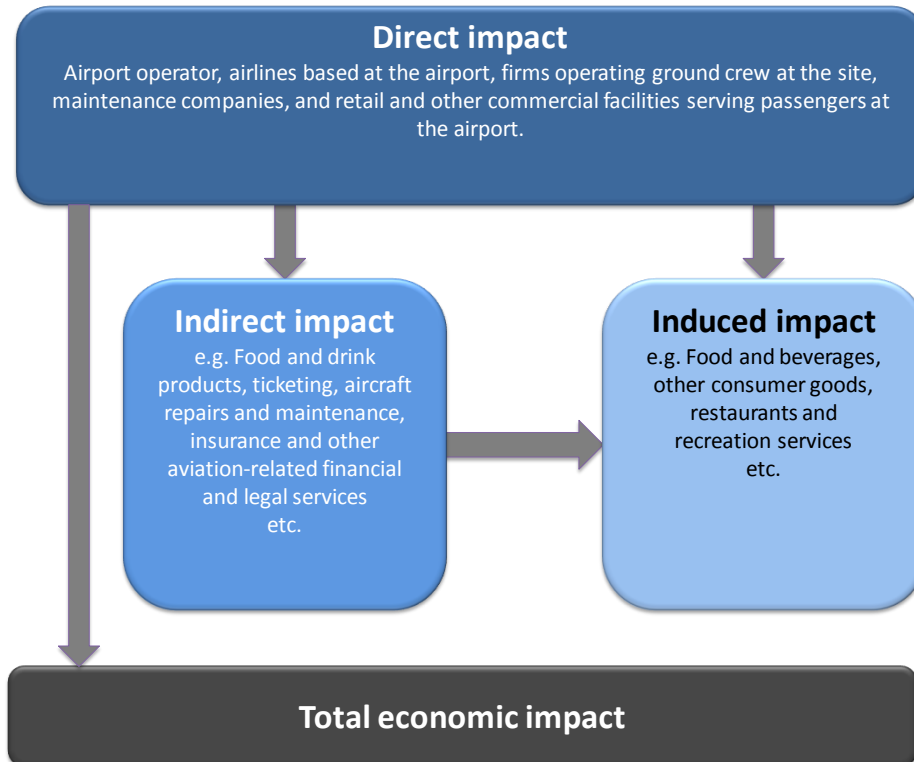
- **direct impact**, which relates to the economic activity generated by the airport itself;
- **indirect impact**, which encapsulates the activity and employment supported in London Luton Airport's UK supply chain as a result of its procurement of goods and services. Economic activity in this category could include, for example, food and drink products, ticketing, aircraft repairs and maintenance, insurance and other aviation-related financial and legal services; and
- **induced impact**, comprising economic benefits that arise when London Luton Airport employees and those in its supply chain spend their earnings, for example in retail establishments.

Using these pathways, a picture of London Luton Airport's economic footprint is presented using four metrics:

- **employment**, as the number of people employed, measured on a headcount basis;
- **GDP**, or more specifically, London Luton Airport's *gross value added (GVA) contribution to GDP*;
- **gross wages** paid to workers; and
- **tax revenue** flowing to the UK government.

Adding together the direct, indirect and induced impacts across the metrics above provides an estimate of the total economic impact of London Luton Airport, as shown in Figure 1.1, below.

Figure 1.1: Channels of economic impact



The main principles of the economic impact methodology are outlined in the respective sections of this report, and there is a full technical description at Appendix A.

In addition to the three core economic impacts identified above, the study considers wider **catalytic impacts** – benefits that accrue to passengers who use the airport's services. This part of the assessment focuses on the cash-equivalent value of the airport's location and low costs to passengers, and goes on to examine Luton's role in providing much-needed capacity to support passenger growth in the London airport system over the coming 10 to 15 years.

### 1.3 Geographical coverage

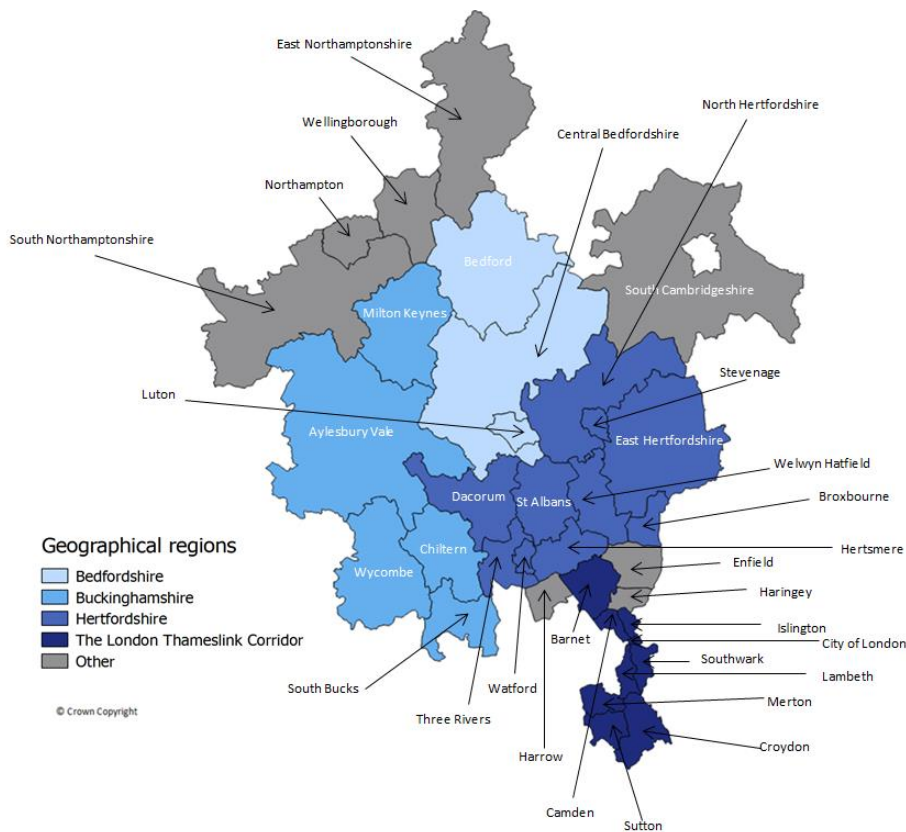
The study assesses the economic impact of London Luton Airport on the economy of the UK as a whole; in the nearby sub-regions that have strong linkages to the airport in terms of workers, supply chains and passengers; and in Luton and surrounding local authority areas (primarily those that fall within the sub-regions identified).

Based on consultation with LLAL and LLAOL, the following sub-regions have been identified for analysis:

- Bedfordshire (comprising Bedford, Central Bedfordshire and Luton)
- Buckinghamshire (comprising Aylesbury Vale, Chiltern, Milton Keynes, South Buckinghamshire and Wycombe)
- Hertfordshire (comprising Broxbourne, Dacorum, East Hertfordshire, Hertsmere, North Hertfordshire, St Albans, Stevenage, Three Rivers, Watford and Welwyn Hatfield)
- The 'Three Counties' area (Bedfordshire, Buckinghamshire and Hertfordshire combined)
- The London Thameslink Corridor, which comprises London boroughs with a direct rail route to London Luton Airport Parkway (Barnet, Camden, Islington, City of London, Southwark, Lambeth, Merton, Sutton, and Croydon).

The study also considers the individual local authority areas that fall within the sub-regions above, plus a small number of other nearby local authorities within which economic impacts were expected to accrue. The latter were, once again, identified through discussion with LLAL and LLAOL.

**Figure 1.2: Geographical coverage of the study**



## 1.4 Defining London Luton Airport

Within this study the term 'London Luton Airport' is used to refer to all activities and businesses which are inherent to the operation of the airport, and which are therefore included within the direct impact of the airport. Following the approach taken in the 2012 study by Halcrow,<sup>5</sup> the direct impact of the airport includes both *direct onsite* employment, which is located within the airport boundary, and *direct offsite* employment within firms located in close proximity to the airport whose activities form an integral part of the activities of the airport.

Activities included within the definition of London Luton Airport include the airport operator, airlines based at the airport, firms operating ground crew at the site, maintenance companies, and retail and other commercial facilities serving passengers at the airport.

## 1.5 Report Structure

The remainder of this report is structured as follows:

- **Chapter 2** presents a detailed analysis of the direct contribution of London Luton Airport;
- **Chapter 3** examines the indirect and induced contributions of London Luton Airport, and adds these to the direct impact to estimate the total economic impact of the airport on the national, sub-regional and local economies;
- **Chapter 4** assesses the potential future economic impact of London Luton Airport under two alternative scenarios; and
- **Chapter 5** considers the catalytic impacts generated by London Luton Airport.

The technical appendices at the end of the report provide a detailed explanation of the methodologies used in the various parts of the analysis, and tables of detailed findings to supplement the results presented throughout the report.

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<sup>5</sup> [http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1\\_01\\_A.PDF](http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF)



## 2 The direct impact of London Luton Airport

### **Key points**

- It is estimated that London Luton Airport directly employed 9,400 people in 2013, which is 10 per cent of all employment in Luton Borough.
- It is estimated that 29 per cent of London Luton Airport employees live in the borough of Luton. A further 31 per cent live in the nearby local authority areas of Central Bedfordshire, North Hertfordshire, Bedford and St Albans. In total, 77 per cent of employees live within the Three Counties area, which comprises Bedfordshire, Buckinghamshire and Hertfordshire.
- The direct GDP contribution of London Luton Airport in 2013 was £425 million. This is equivalent to 10 per cent of the local economy.
- London Luton Airport also directly supported £356 million in gross wages for its workers and generated £237 million in tax revenues for the UK Exchequer.

### 2.1 Approach to estimating direct impacts

To estimate London Luton Airport's direct impact it is necessary to collect data that correspond as closely as possible to the definition of the airport and its associated businesses outlined in Section 1.4. To do this, the study draws on information provided by LLAL and LLAOL, businesses operating at the airport, and the 2012 employment and economic assessment of London Luton Airport by Halcrow.<sup>6</sup> Where data are not available from these sources results have been estimated using official government statistics and Oxford Economics' UK macroeconomic, regional and input-output models.

We are grateful for the contributions of the following businesses that provided data to inform the analysis:

- The Restaurant Group plc
- Lagardère Services Travel Retail UK & Ireland
- Easyjet
- SSP
- Landmark Aviation.

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<sup>6</sup> [http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1\\_01\\_A.PDF](http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF)

## 2.2 Direct contribution to employment

The most detailed previous work to estimate the direct impact of London Luton Airport was undertaken for the 2012 Halcrow study. This presented a central employment estimate for 2011 based on data from the Business Register and Employment Survey and Experian.<sup>7</sup> More recent estimates of employment at London Luton Airport are presented in the 2013 London Luton Airport Annual Monitoring Report.<sup>8</sup>

*It is estimated that London Luton Airport directly employed 9,400 people in 2013*

Following discussion with stakeholders it was decided to estimate employment in 2013 by growing forward the Halcrow estimate using the growth rates reported in the Annual Monitoring Report. This approach ensures that the direct employment estimate presented in this study is broadly comparable with the Halcrow study, but also incorporates the latest evidence on how employment at the airport has changed since 2011.

On this basis, it is estimated that London Luton Airport directly employed 9,400 people in 2013, which is an increase of 337 from the figure reported in the Halcrow study. This equivalent to ten per cent of all employment in Luton Borough.<sup>9</sup>

### **Box 2.1: Comparing the direct employment contribution to the 2013 Annual Monitoring Report**

The 2013 London Luton Airport Annual Monitoring Report (AMR) suggests that direct employment at the airport was 8,400 in 2013, 1,000 less than the estimate produced for this study.

While this study has taken growth rates from the 2013 AMR, the estimated level of employment was obtained by growing forward the employment estimate from the Halcrow report. That study estimated that there were 7,400 full time and 1,700 part time workers in 2011.

The AMR and Halcrow estimates are based on different ONS datasets. The AMR figure is primarily based on the Inter Departmental Business Register, while the Halcrow study is based on the Business Register and Employment Survey. There is further discussion of the alternative approaches to estimating direct employment in Chapter 6 of the Halcrow report, available at:

[http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1\\_01\\_A.PDF](http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF)

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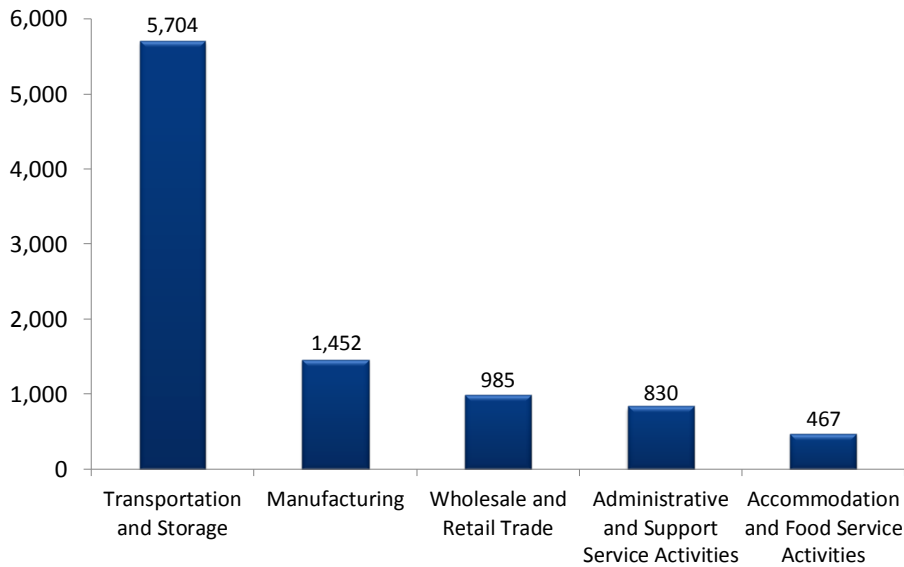
<sup>7</sup> Further details of the methodology used to develop the employment estimate are presented in Chapter 6 of the Halcrow report: [http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1\\_01\\_A.PDF](http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF)

<sup>8</sup> <http://www.london-luton.co.uk/en/content/8/243/annual-monitoring-report.html>

<sup>9</sup> Based on Oxford Economics' regional model, total employment in Luton Borough in 2013 was 94,000

Figure 2.1, below, shows the breakdown of London Luton Airport workers by sector. This suggests that 60 per cent of workers are employed in the transportation and storage sector; 15 per cent are involved in manufacturing; 10 per cent are employed in the retail trade and 9 per cent in administrative and supportive roles. The remaining 5 per cent work in accommodation and food service activities.<sup>10</sup>

**Figure 2.1: London Luton Airport direct employment by broad sector, 2013**



Source: Oxford Economics

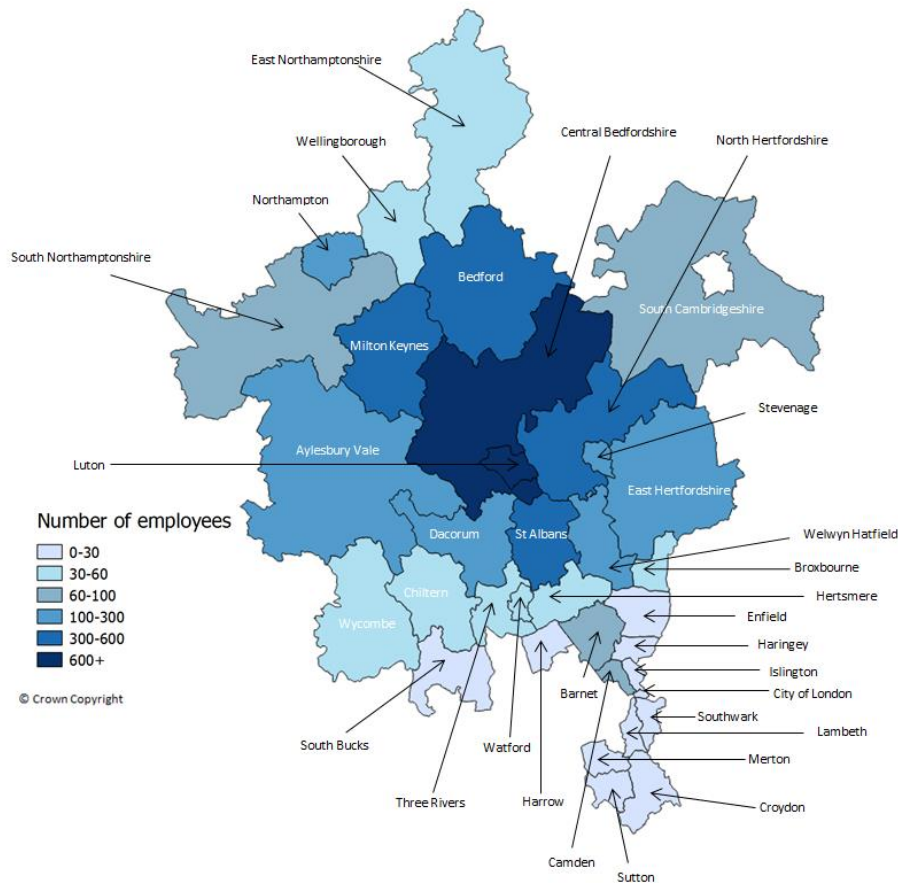
To assess commuting patterns amongst those working at London Luton Airport, information on employees' post code of residence was obtained from LLAOL and a sample of airport employers. Using these data, which cover approximately 29 per cent of London Luton Airport employees, it is possible to estimate the number of employees that live in Luton and each of the surrounding local authorities.

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<sup>10</sup> The sectoral split for employment was derived from the London Luton Airport employment sector breakdown presented in the Halcrow report. It was assumed that all sectors grew at the same rate between 2011 and 2013.

It is estimated that 29 per cent of London Luton Airport employees live in the borough of Luton (Figure 2.2). A further 31 per cent live in the nearby local authority areas of Central Bedfordshire, North Hertfordshire, Bedford and St Albans. In total, 77 per cent of employees live within the Three Counties sub-region, which comprises Bedfordshire, Buckinghamshire and Hertfordshire.

**Figure 2.2: Estimated place of residence of London Luton Airport employees, 2013**

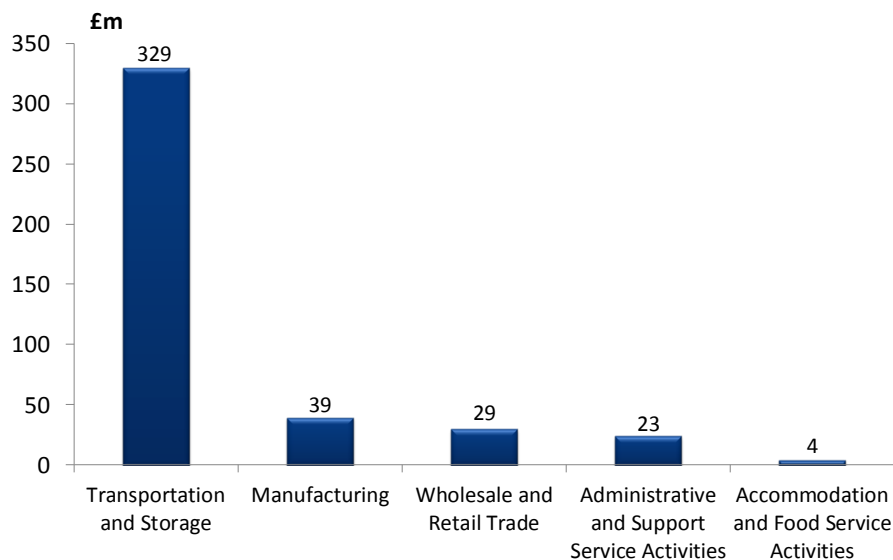


## 2.3 Direct contribution to GDP

The direct GDP impact of London Luton Airport comprises the total amount of income generated by the airport, either as wages for those employed at the airport, or as profits that accrue to firms at the airport. On this basis it is estimated that the direct GDP contribution of London Luton Airport in 2013 was £425 million. Just over three-quarters of this total came from the transport and storage sector (Figure 2.3). Further details of the methodology used to derive this estimate are set out at Appendix A.

*The total direct GDP contribution of London Luton Airport in 2013 was £425 million*

**Figure 2.3: Direct GDP contribution of London Luton Airport by broad sector, 2013**



Source: Oxford Economics

## Box 2.2: Comparing the direct GDP contribution to the Halcrow estimates

The direct GDP contribution estimated for this study is not directly comparable to the “direct income injection” estimated in the 2012 Halcrow study. The Oxford Economics approach estimates the total amount of income (GDP) generated by the operation of the airport. In contrast, the Halcrow study focuses on the amount of income that flows from the airport to the local economy. The table below compares the components of the Halcrow and Oxford Economics estimates.

**Table 2.1: Comparison between the Halcrow direct income injection and Oxford Economics direct contribution to GDP estimates**

Halcrow direct income injection	Oxford Economics direct contribution to GDP
Wages and salaries of workers (excluding tax and NI)	Gross wages and salaries of workers
Direct profits accountable to local economy	All profits generated by firms at the airport are included
Direct business expenditure	Supply chain spending is accounted for within the estimates of indirect GDP impacts
Composite multiplier effect	Multiplier effects are accounted for within the estimates of indirect and induced GDP impacts

## 2.4 Direct contribution to gross wages

The gross wage bill of London Luton Airport workers was estimated by updating the previous results from the Halcrow study by growing the average wage per worker in line with wage growth from 2011 to 2013 for the Eastern region and then multiplying these wages by the new number of workers in each sector.<sup>11</sup> On this basis it is estimated that those employed at London Luton Airport received £356 million in gross wages in 2013.

This suggests that the average gross wage at London Luton Airport is £38,000, compared to the national average of £27,000.

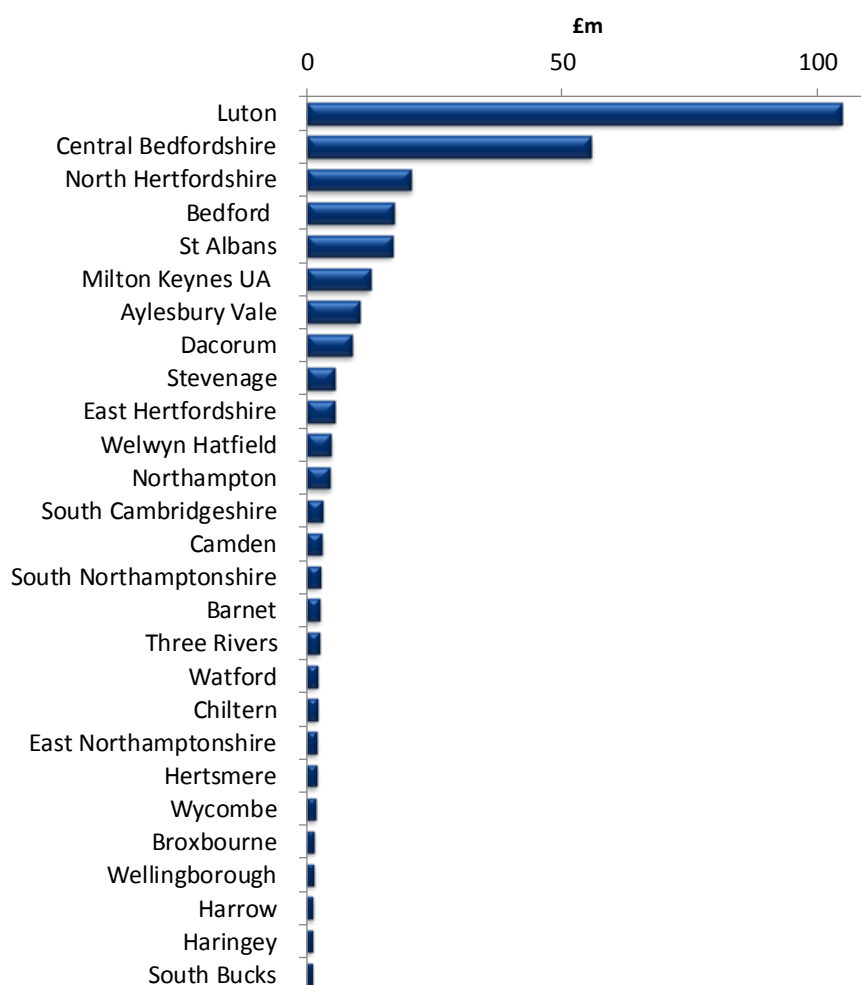
To robustly estimate the value of wages that accrue to workers residing in each of the surrounding local authority areas it would be necessary to gather information on average wage levels by district of residence for airport employees. However, information with this level of granularity was not available to the study team, and so it is not possible to assess any tendencies for higher or lower paid workers to live in particular areas.

*It is estimated that the gross wage bill for London Luton Airport in 2013 was £356 million*

<sup>11</sup> Wage growth data for the Eastern region was source from the ONS Annual Survey of Hours and Earnings.

Nonetheless, it is possible to obtain a broad indication of the value of wages that accrue to workers living in each local authority area by splitting the total wage bill using estimates for employees' place of residence. On this basis, employees who reside in Luton account for £105 million (or 29 per cent) of the gross wages supported by London Luton Airport. Central Bedfordshire residents account for a further 16 per cent, North Hertfordshire 6 per cent, and Bedford and St Albans account for 5 per cent each (Figure 2.4).

**Figure 2.4: Indicative distribution of gross wages by employees' place of residence, 2013**



Source: Oxford Economics

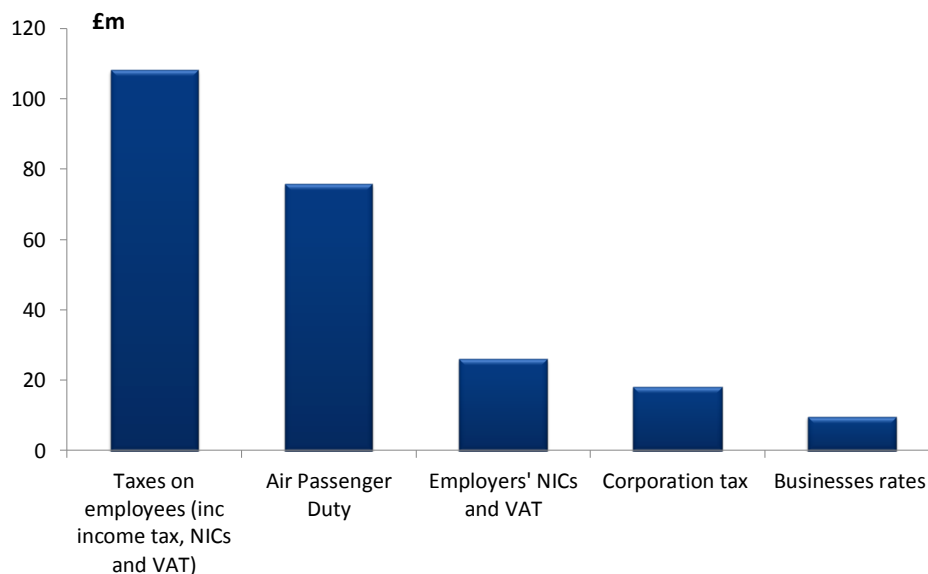
## 2.5 Direct contribution to tax revenue

This sub-section presents estimates of the value of tax revenues generated by businesses at London Luton Airport for the UK government in the form of employee and employer social security contributions; income tax levied on the earnings of the workforce; VAT paid by employees; employers' VAT and corporation tax; business rates; and Air Passenger Duty. Details of the techniques used to estimate the value of these revenues are described in Appendix A.

Overall, it is estimated that London Luton Airport directly generated £237 million in tax revenue in 2013. Taxes on employees account for £108 million, or 46 per cent, of this total. Air Passenger Duty accounts for £76 million, or just under one third.

***London Luton  
Airport directly  
generated £237  
million in tax  
revenue in 2013***

**Figure 2.5: Direct tax contribution of London Luton Airport, 2013**



Source: Oxford Economics



### 3 Multiplier impacts and the total economic impact of London Luton Airport

#### **Key points**

##### *UK impacts*

- The indirect, or supply chain, contribution to UK GDP of London Luton Airport in 2013 was £338 million. This is estimated to have supported 7,700 jobs.
- The spending of London Luton Airport workers, and those in the airport's direct supply chain, is estimated to have supported a further £506 million contribution to UK GDP and 10,000 jobs.
- Adding these multiplier effects to the direct economic impact estimated in Section 2 suggests that the total UK economic impact of London Luton Airport in 2013 was a £1.3 billion contribution to GDP and 27,000 jobs.
- For every £1 London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. The airport therefore has a GDP multiplier of 3.
- For every direct job the airport creates another 1.9 are created elsewhere in the UK economy. This means the airport's employment multiplier is 2.9.

##### *Sub-regional impacts*

- Within the Three Counties area, which includes Bedfordshire, Buckinghamshire and Hertfordshire, London Luton Airport supported a £732 million contribution to GDP and more than 16,000 jobs, including multiplier impacts.

##### *Local impacts*

- London Luton Airport supported a £533 million contribution to GDP and 12,000 jobs within the Borough of Luton in 2013, either directly, or through the impact of supply chain spending or the spending of workers. This is equivalent to 12 per cent of the local economy in terms of GDP and 13 per cent in terms of jobs.

#### 3.1 Indirect and induced multiplier impacts

##### 3.1.1 Multiplier impacts on the UK economy

The indirect, or supply chain, impacts of London Luton Airport are estimated using 'input-output' models which map the inputs required by firms at the airport to produce a unit of output. To illustrate this concept consider the following simple example: to provide aviation services that sell for £5 million, an aviation firm may need to purchase fuel for £1 million, airport services for £1 million and

***The supply chain multiplier impact of London Luton Airport in 2013 is estimated to have been £338 million. This is estimated to have supported 7,700 jobs***

professional and technical services for £0.5 million. In this example the aviation firm has generated a £2.5 million gross value added contribution to GDP (the value of its output less the cost of inputs), and £2.5 million in turnover for other firms in the supply chain. Input-output tables then enable us to estimate the size of the GDP contribution associated with the £2.5 million of supply chain expenditure.

Based on this approach, it is estimated that the indirect GDP contribution of London Luton Airport in 2013 was £338 million.

Induced impacts result from the spending of workers employed at London Luton Airport and in the airport's direct supply chain. Such impacts are mainly felt in sectors serving households such as hotels, restaurants and shops. The induced impact is again estimated using the input-output model, which provides ratios to estimate the value of wages generated by a given level of economic activity. From there it is possible to estimate consumer expenditure, and the induced contribution to GDP associated with that expenditure. Following this approach, it is estimated that the total induced contribution to UK GDP of London Luton Airport was £506 million in 2013.

Applying productivity estimates to the indirect and induced GDP impacts enables the estimation of the number of jobs supported in the supply chain and in sectors where direct and indirect employees spend their wages. This suggests that London Luton Airport indirectly supported 7,700 jobs in 2013, while the spending of London Luton Airport workers and those in the supply chain supported a further 10,000 jobs.

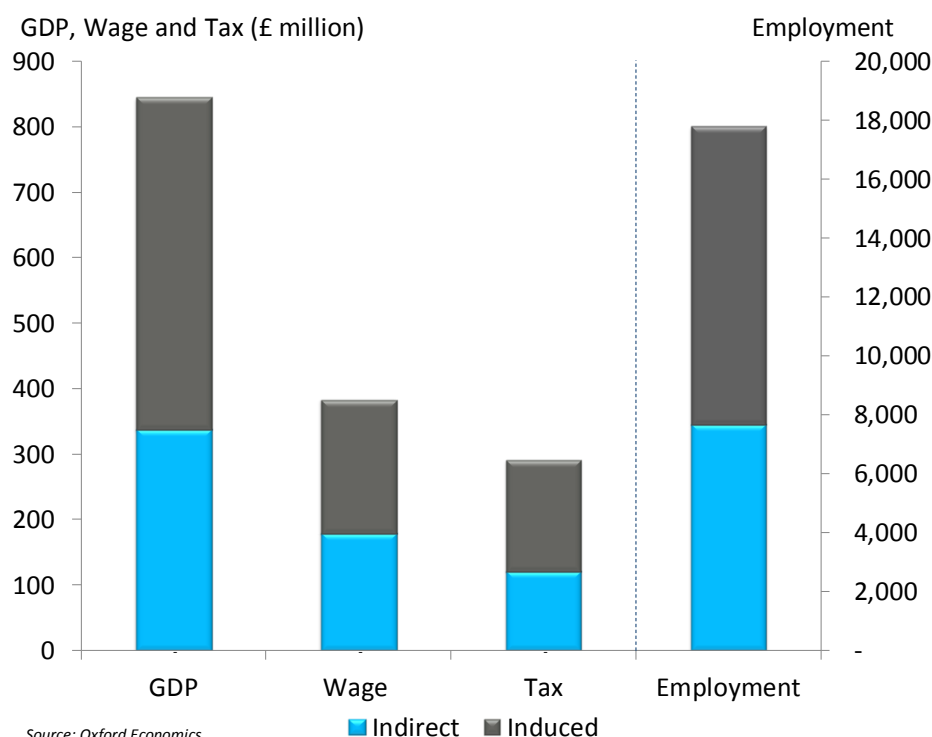
These indirect and induced impacts are estimated to have supported gross wage payments of £181 million and £203 million, respectively, across the UK.

Finally, the indirect and induced activities generate further rounds of tax revenue for the UK government. The indirect and induced analysis has estimated revenues generated in the form of employee and employer social security contributions, income tax, employee VAT, and corporation tax. In 2013, the tax contributions from the indirect and induced impacts of London Luton Airport were £122 million and £169 million, respectively.

***The 'induced' impact of wage-financed spending by those working at the airport or in its supply chain was £506 million in 2013***

The indirect and induced impacts of London Luton Airport are summarised in Figure 3.1, below.

**Figure 3.1: Indirect and induced impacts of London Luton Airport, 2013**



**Box 3.1: Comparing the Oxford Economic approach to multiplier impacts to that used in the 2012 Halcrow study**

The 2012 Halcrow study estimated the multiplier impacts of London Luton Airport using a single value of 1.33, taken from Department for Business Innovation and Skills (Oct 2009) '*Occasional Paper No 1 – Research to improve the assessment of additionality*'. That figure is primarily intended for use in the assessment physical infrastructure regeneration projects.

In contrast, the input-output modelling approach applied by Oxford Economics enables economic linkages to be traced between specific sectors of the economy and provides an analysis of multiplier effects that is tailored to reflect the specific circumstances of London Luton Airport and its supply chain. This approach also makes it possible to make a richer set of inferences about how multiplier impacts from the airport affect surrounding areas and sub-regions.

The Oxford Economics approach is based on the very latest 2010 ONS input-output tables, published in February 2014 (see Appendix A for more details).

### 3.1.2 Approach to estimating sub-regional and local multiplier impacts

The analysis above presented the indirect and induced impacts at the UK level. An important element of this study, though, is to consider the geographical distribution of these multiplier effects to understand how London Luton Airport affects levels of economic activity in surrounding sub-regions and local areas.

Information on the geographical distribution of supply chain expenditure has been gathered from major firms based at London Luton Airport. In total, this information covers around eight per cent of London Luton Airport's estimated supply chain purchases and for this portion of spending it is possible to develop a very accurate picture of the distribution of supply chain impacts. Oxford Economics has estimated the remaining 92 per cent of supply chain spending using inter-regional input-output models developed by Oxford Economics based on established academic techniques.<sup>12</sup> Further details of this approach are set out at Appendix A.

In the case of induced effects, no 'real' data are available to identify where London Luton Airport workers actually spend their wages. Nonetheless, it seems reasonable to assume that most spending is likely to take place close to workers' place of residence, and will therefore support GDP and employment in those areas. This is the starting point for our analysis of induced impacts, but in cases where this results in an unrealistically large injection to the local economy (given the economic structure and average spending per head in that local area), induced impacts are assumed to spill over into neighbouring areas. Again, further details of the methodology are presented in Appendix A.

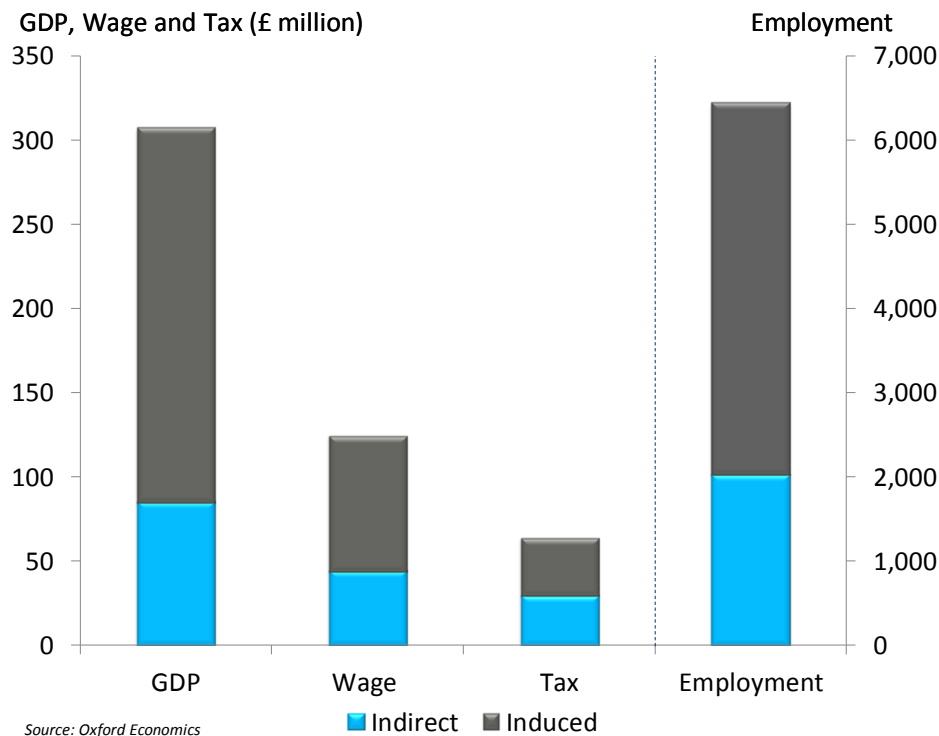
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<sup>12</sup> Flegg A. T. and Webber C. D. (1997) On the appropriate use of location quotients in generating regional input-output tables: reply, Reg. Studies 31, 795–805.

### 3.1.3 Sub-regional multiplier impacts

Across the Three Counties (which comprises Bedfordshire, Buckinghamshire and Hertfordshire) we estimate that the supply chain and induced wage spending impacts of London Luton Airport support a £308 million contribution to GDP and almost 6,000 jobs. Gross wage payments to workers supported by this indirect and induced activity are estimated to total £125 million, and £64 million of tax is generated for the UK Exchequer (Figure 3.2).

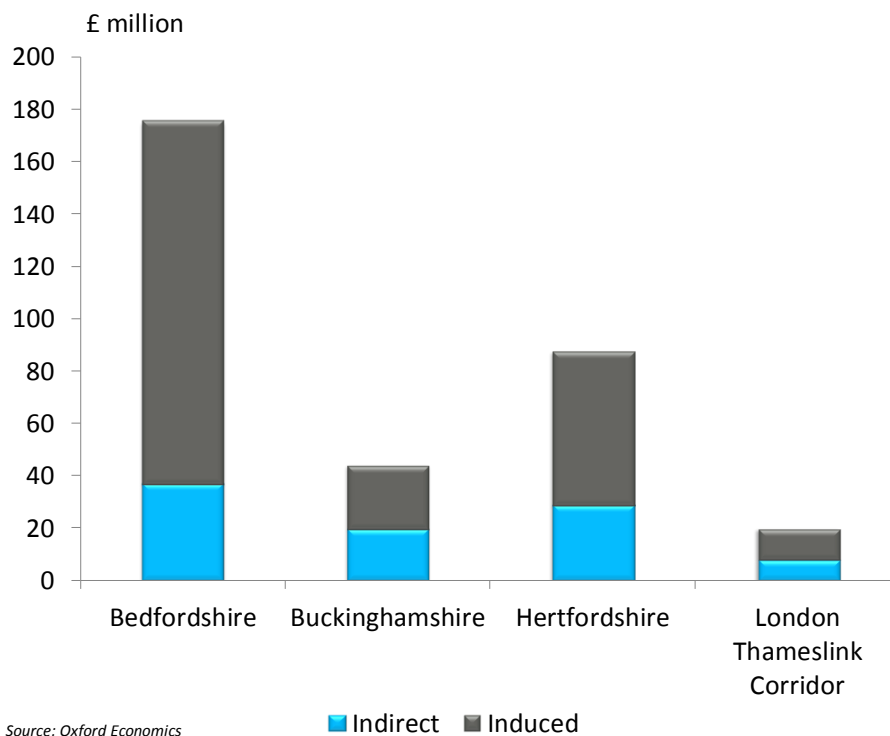
**Figure 3.2: Indirect and induced impacts of London Luton Airport in the Three Counties sub-region**



It is also possible to view these results for the individual counties within the Three Counties area, and for the London Thameslink Corridor (Figure 3.3, below). This reveals that the largest multiplier impacts occur within Bedfordshire, where the airport supports an indirect GDP contribution of £37 million and an induced GDP contribution of £138 million. The concentration of multiplier impacts within Bedfordshire reflects the strength of the airport's supply chain linkages with the immediately surrounding area, and the fact that 50 per cent of direct workers (and therefore much of their spending) reside in Bedfordshire.

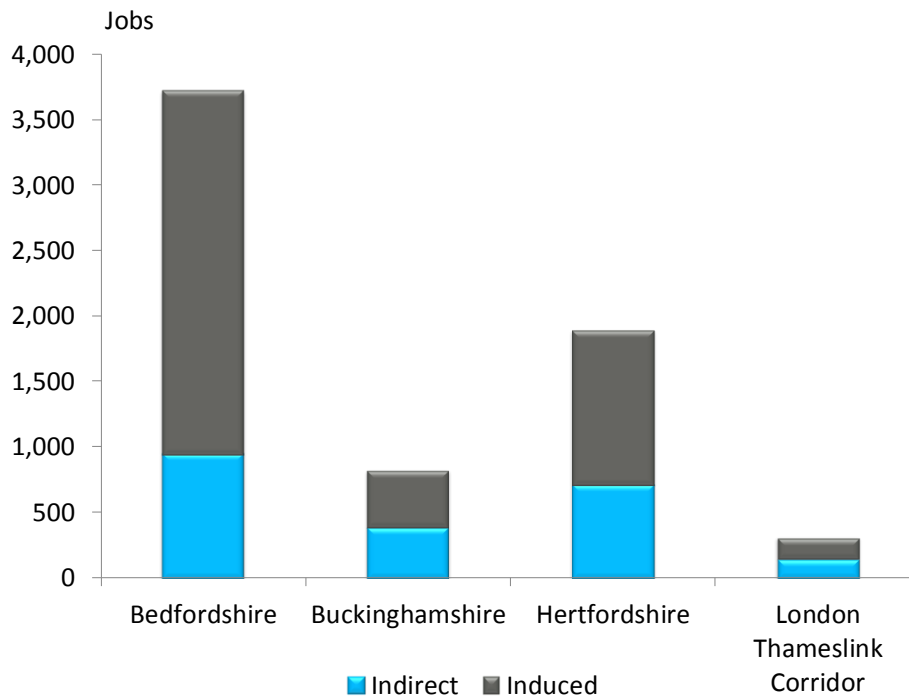
In contrast, relatively fewer workers live in the boroughs of the London Thameslink corridor and so the induced GDP impact of London Luton Airport is smaller in that sub-region. When supply-chain impacts are also taken into account, it is estimated that London Luton Airport supports a £20 million contribution to GDP in the Thameslink Corridor.

**Figure 3.3: Indirect and induced GDP impact of London Luton Airport within surrounding counties and the Thameslink Corridor, 2013**



Using productivity data in conjunction with the GDP estimates above provides an estimate of the number of jobs supported by the multiplier impacts of London Luton Airport. This suggests that the indirect and induced impacts of London Luton Airport support around 3,700 jobs in Bedfordshire, 1,900 in Hertfordshire, 800 in Buckinghamshire, and 300 in the Thameslink Corridor (Figure 3.4).

**Figure 3.4: Indirect and induced employment impacts of London Luton Airport within surrounding counties and the Thameslink Corridor, 2013**



### 3.1.4 Local multiplier impacts

At a local level, and consistent with the findings above for Bedfordshire, the greatest multiplier impacts are estimated to occur in the immediate vicinity of the airport. Our analysis suggests that the indirect and induced impact of London Luton Airport generated an £108 million contribution to the GDP of Luton Borough in 2013. This activity supported £44 million in gross wages, 2,300 jobs, and £35 million in taxes for the UK Exchequer.

**Figure 3.5: Indirect and induced impacts of London Luton Airport in Luton Borough, 2013**

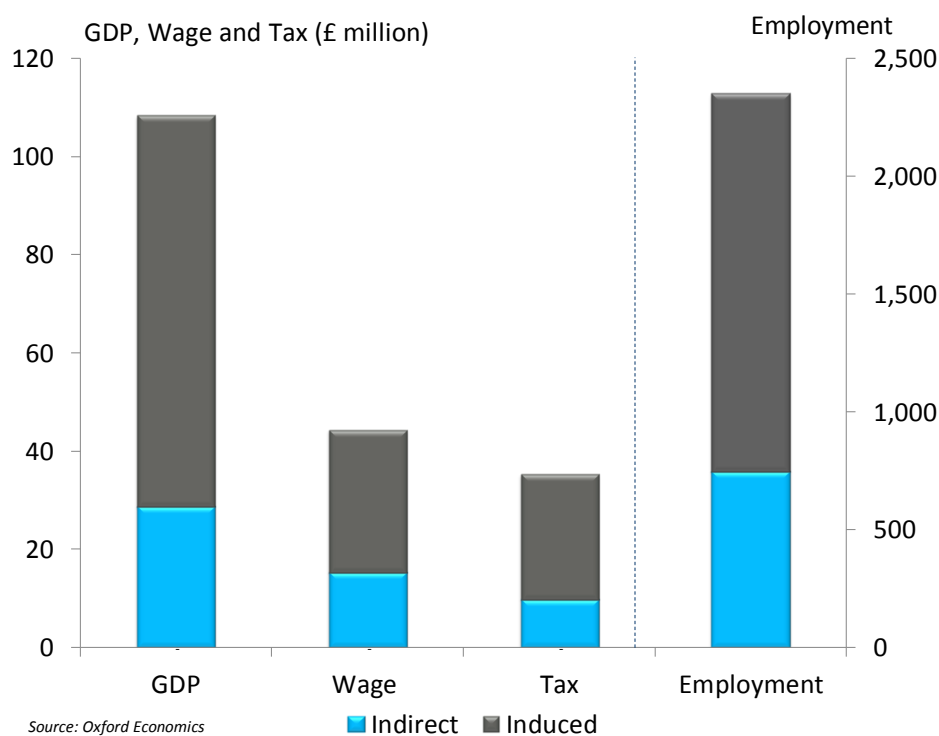
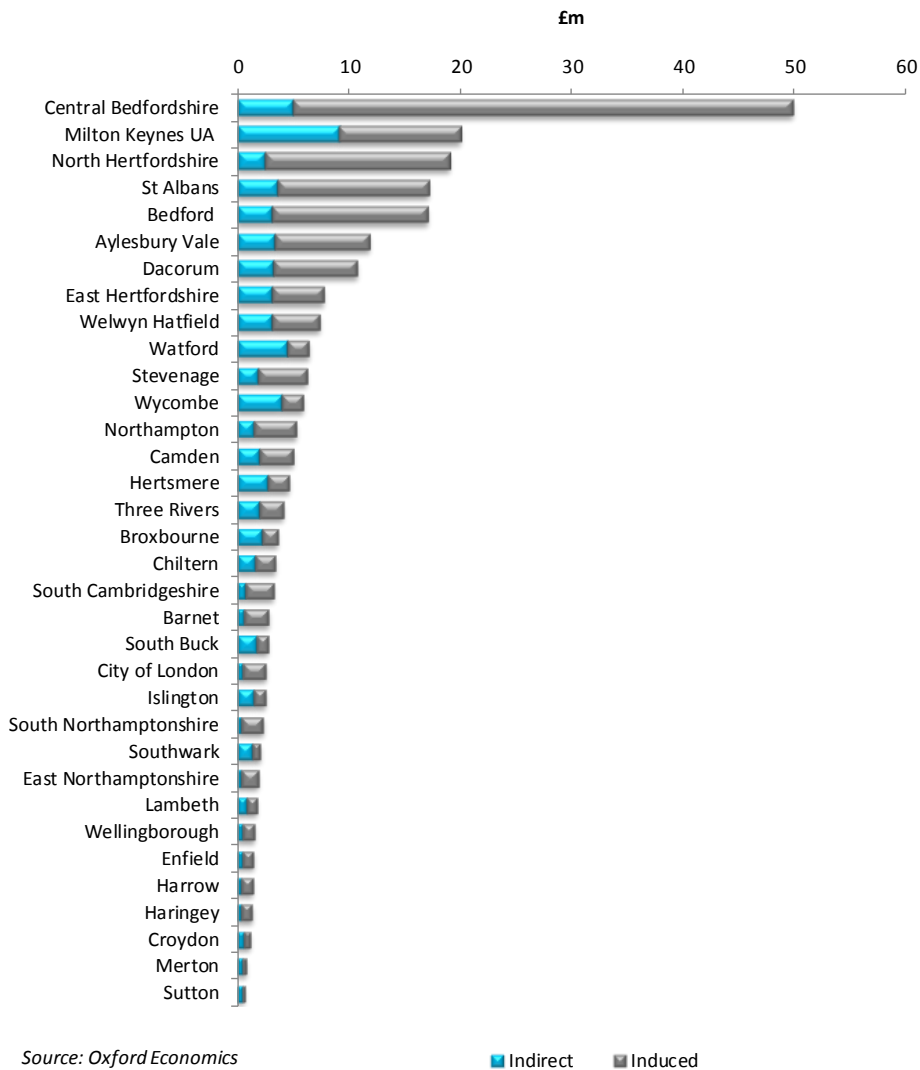




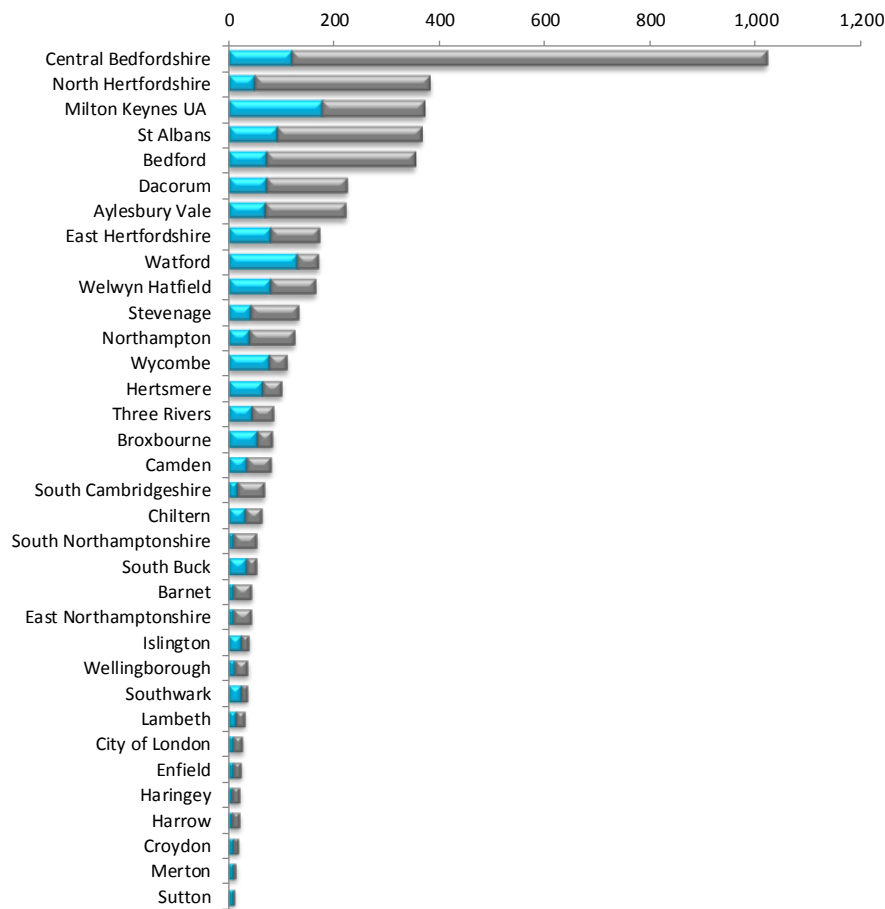
Figure 3.6, below, extends the analysis to other local authority areas considered in the study. Of particular note is the large induced GDP impact in Central Bedfordshire, where 16 per cent of London Luton Airport workers are estimated to reside.

**Figure 3.6: Indirect and induced GDP impacts of London Luton Airport by local authority area, 2013**



As with the sub-regional analysis, productivity data can be used to estimate the number of jobs supported by the airport's multiplier impacts in each local authority area. Once again, the largest impact outside of Luton Borough is estimated to occur in Central Bedfordshire, where just over 1,000 jobs are supported.

**Figure 3.7: Indirect and induced employment impact of London Luton Airport by local authority area, 2013**



Source: Oxford Economics

■ Indirect ■ Induced

## 3.2 Total economic impact

### 3.2.5 UK total economic impact

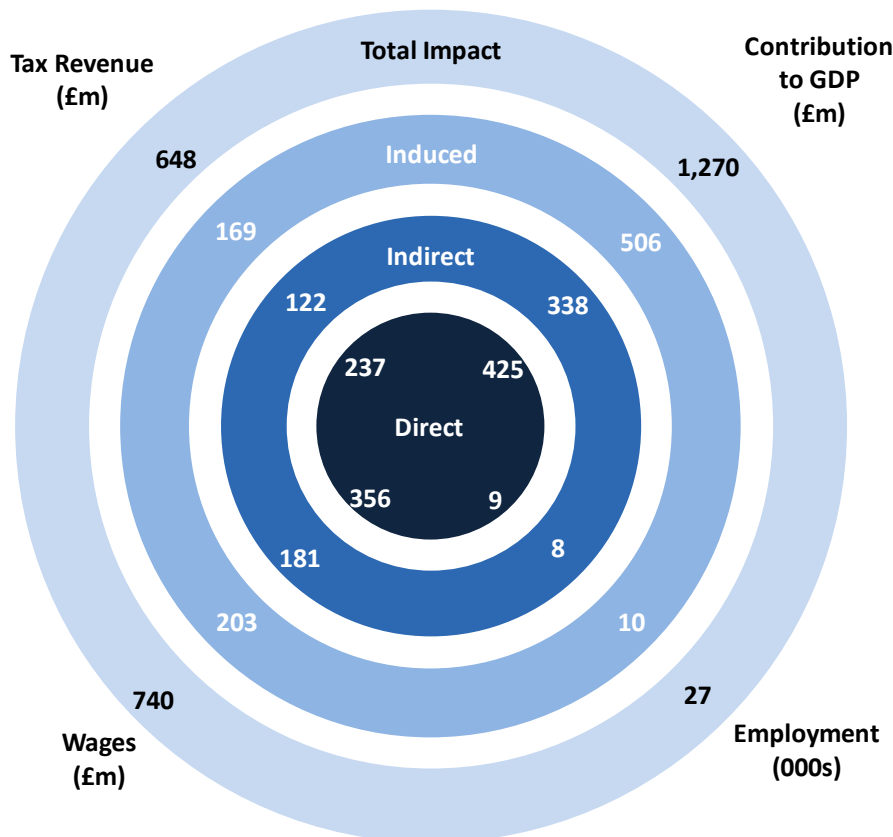
Adding the direct economic impact discussed in Section 2 to the multiplier effects above gives the total economic impact of London Luton Airport. On this basis the airport's total contribution to UK GDP is estimated to have been £1.3 billion in 2013. This means that for every £1 London Luton Airport contributes to GDP itself, it creates another £2 elsewhere in the UK economy. The airport therefore has a GDP multiplier of 3.<sup>13</sup>

London Luton Airport is estimated to have supported a total of over 27,000 jobs in 2013, either directly through the airport's own activities, through its supply-chain, or through the induced expenditure of employees. For every direct job the airport creates another 1.9 are created elsewhere in the UK economy. This means the airport's employment multiplier is 2.9.

London Luton Airport is also estimated to support a total of £740 million in gross wage payments and £648 million tax revenue.

***The total GDP contribution of London Luton Airport in 2013 is estimated to have been £1.3 billion***

**Figure 3.8: Total UK economic impact of London Luton Airport, 2013**

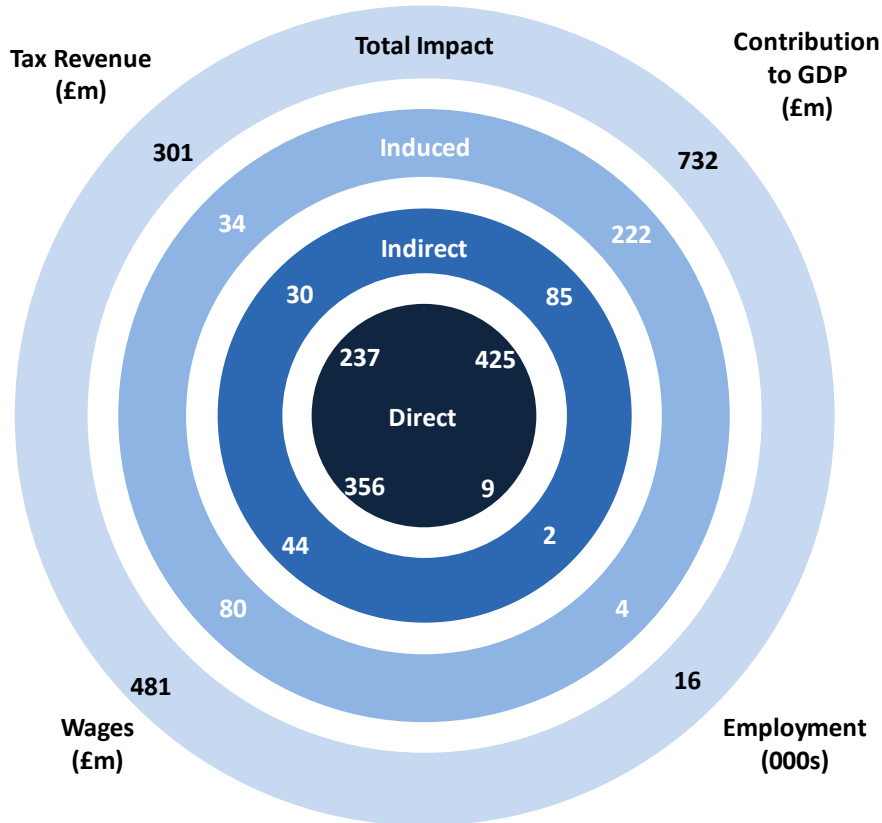


<sup>13</sup> The multiplier is calculated as: (Direct GDP + Indirect GDP + Induced GDP) / Direct GDP

### 3.2.6 Sub-regional total economic impact

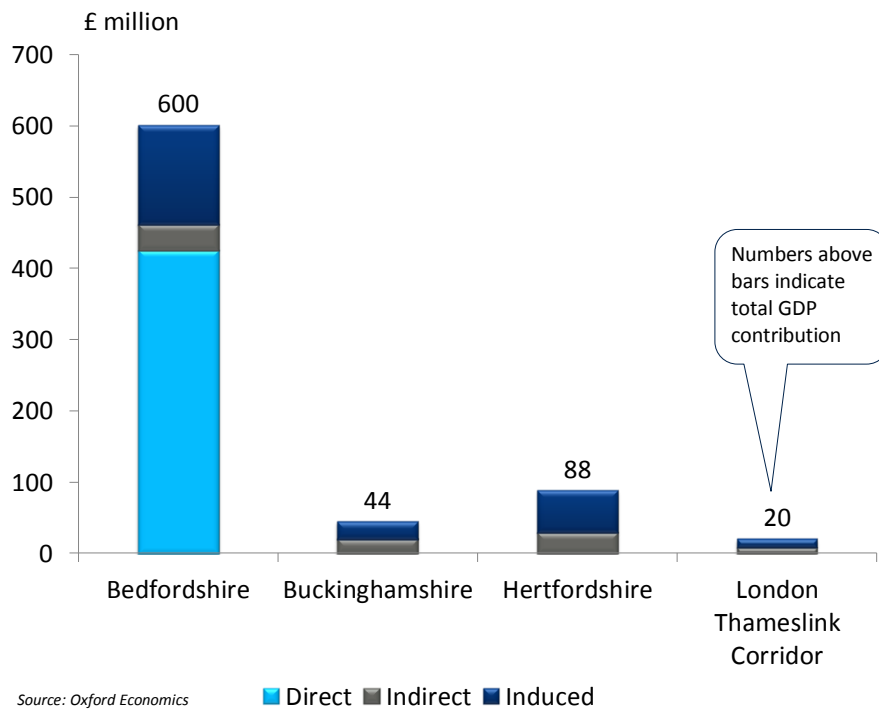
For the Three Counties sub-region the airport's activities supported a total GDP contribution of £732 million, 16,000 jobs, £481 million in gross wages and £301 million in tax revenue (Figure 3.9).

**Figure 3.9: Total economic impact of London Luton Airport within the Three Counties sub-region, 2013**



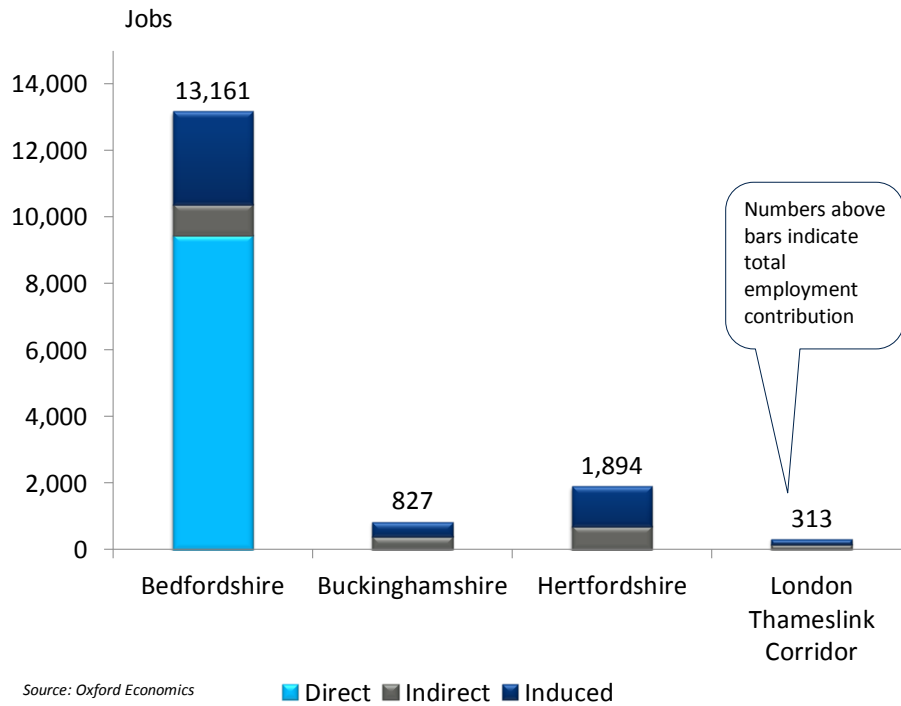
Within the Three Counties sub-region, by far the greatest impact of the airport accrues to Bedfordshire. This is because Bedfordshire receives the direct economic impact of having the airport located within its boundaries, as well as large multiplier effects from supply chain linkages between the airport and the immediately surrounding areas. It also benefits from the spending of the large number of airport workers that live and spend money in the county.

**Figure 3.10: Total GDP contribution of London Luton Airport in the surrounding counties and the Thameslink Corridor, 2013**



Along similar lines, the total employment impact is also concentrated in Bedfordshire, where London Luton Airport supports a total of over 13,000 jobs, including the 9,400 jobs at the airport itself, and a further 3,700 jobs as a result of indirect and induced multiplier effects.

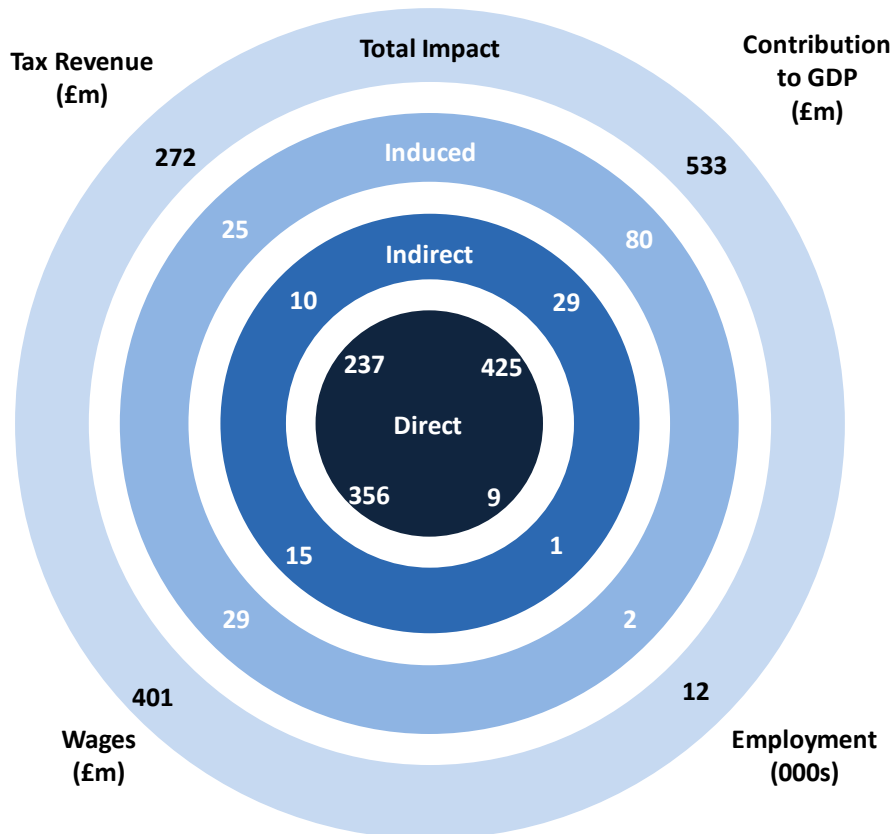
**Figure 3.11: Total employment contribution of London Luton Airport in the surrounding counties and the Thameslink Corridor, 2013**



### 3.2.7 The total economic impact of London Luton Airport at the local level

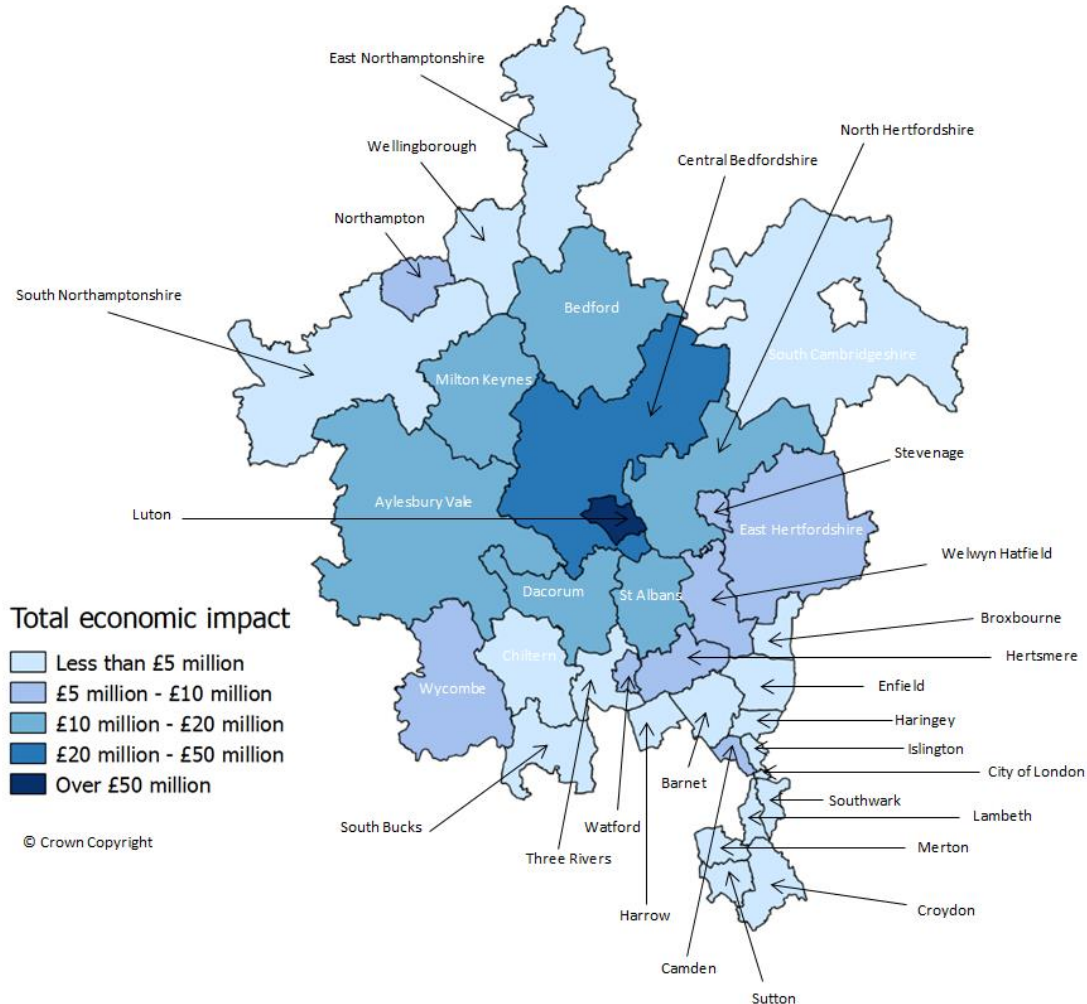
In 2013 the airport's activities supported a £533 million contribution to Luton Borough GDP, 12,000 local jobs, £401 million in gross wages and £272 million in tax revenue for the UK Exchequer.

**Figure 3.12: Total economic impact of London Luton Airport in Luton borough, 2013**



The total GDP impact of London Luton Airport across all of the local areas considered in the study is shown in Figure 3.13, below.

**Figure 3.13: Total GDP impact by local authority area**





## 4 The potential future economic impact of London Luton Airport under alternative scenarios

### **Key points**

#### *Direct impacts*

- Under the baseline scenario, which assumes no significant infrastructure development, the airport's direct GDP contribution is projected to increase from £425 million in 2013 to £554 million in 2030. Productivity growth means that London Luton Airport is expected to directly employ 178 fewer workers in 2030 than in 2013 in this scenario.
- The development scenario assumes that development occurs to permit passenger numbers to increase to a maximum of 18 million passengers by 2020. Under this scenario the direct GDP contribution of the airport is projected to reach £781 million in 2030, which is £228 million higher than in the baseline scenario. The airport is projected to directly support the creation of a total of more than 3,600 jobs between 2013 and 2030 under this scenario.

#### *Labour availability*

- Across the UK as a whole, those working in job roles closely associated with airports tend to be better paid than workers in other occupations that require similar levels of skills.
- The 3,600 jobs that London Luton Airport is expected to create by 2030 under the development scenario is forecast to include 1,100 posts in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. Around 2,500 unskilled posts are expected to be created in roles such as customer advisors, baggage handlers and storage workers.

#### *Total economic impact*

- Under the baseline scenario, the total GDP contribution of London Luton Airport, including multiplier effects is projected to be £1.7 billion in 2030, compared to £2.3 billion under the development scenario.
- The total number of jobs supported by London Luton Airport and its multiplier effects in the baseline scenario is projected to decrease from 27,200 in 2013 to 26,700 in 2030 due to productivity growth. However, under the development scenario the total number of jobs supported is expected to grow to 37,700 in 2030.
- Within the Three Countries sub-region, the total GDP contribution of London Luton Airport is estimated to reach £1 billion in 2030 under the baseline scenario, or £1.4 billion under the development scenario. Under the development scenario employment increases to 22,600 in 2030, compared to 16,000 in the baseline scenario.

## 4.1 Introduction

This section considers the future economic contribution of London Luton Airport under two scenarios reflecting alternative levels of infrastructure development and, therefore, passenger growth. The passenger forecasts associated with each scenario have been provided by LLAOL and are shown in Figure 4.1. The two scenarios are described below.

### *Baseline scenario*

There are no significant infrastructure developments. Passenger numbers continue to grow to 12.6 million passengers per annum (mppa) by 2017, at which point the airport will be operating at full capacity and cannot accommodate any further passenger growth. The airport will maintain 12.6 mmpa until 2030.

### *Development scenario*

This scenario assumes that infrastructure developments outlined in London Luton Airport's 2012 Master Plan are implemented. The key components of the Master Plan proposals include:

- Dualling of the road from the Holiday Inn roundabout to the Central Terminal Area
- Improvements to the public transport area adjacent to the terminal
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works
- Construction of a new pier
- Provision of a new taxiway parallel to Taxiway Delta
- Taxiway extensions and rationalisation of aircraft parking areas with new stands replacing and improving existing stands
- Construction of a multi-storey car park on part of the existing short-term car park (STCP), to provide additional parking capacity if passenger demand arises in the future.<sup>14</sup>

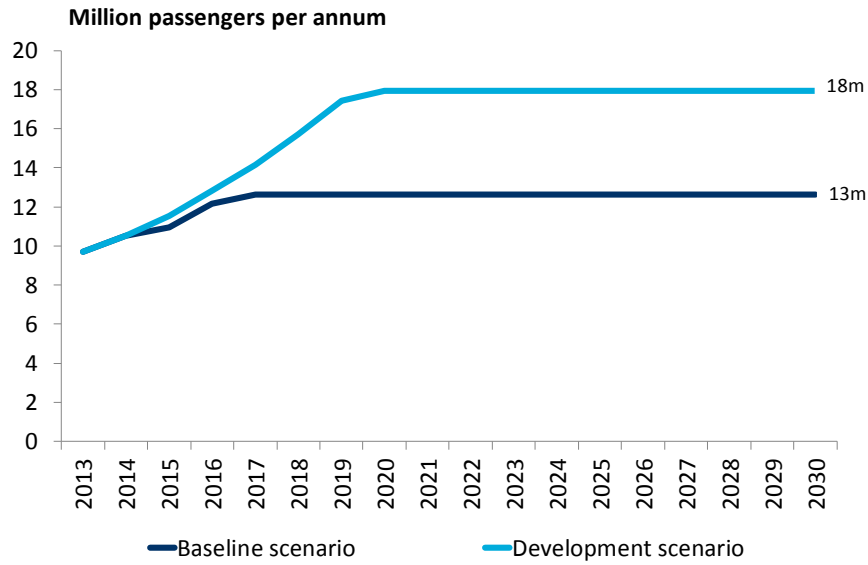
These improvements allow the airport to grow to 17.8 mppa by 2020, at which point it will have reached its new level of capacity.

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<sup>14</sup> The master plan can be located here: <http://www.london-luton.co.uk/en/content/8/1171/revised-masterplan.html>

Projected passenger numbers under each scenario are shown in Figure 4.1, below.

**Figure 4.1: Passenger forecasts under the two scenarios**



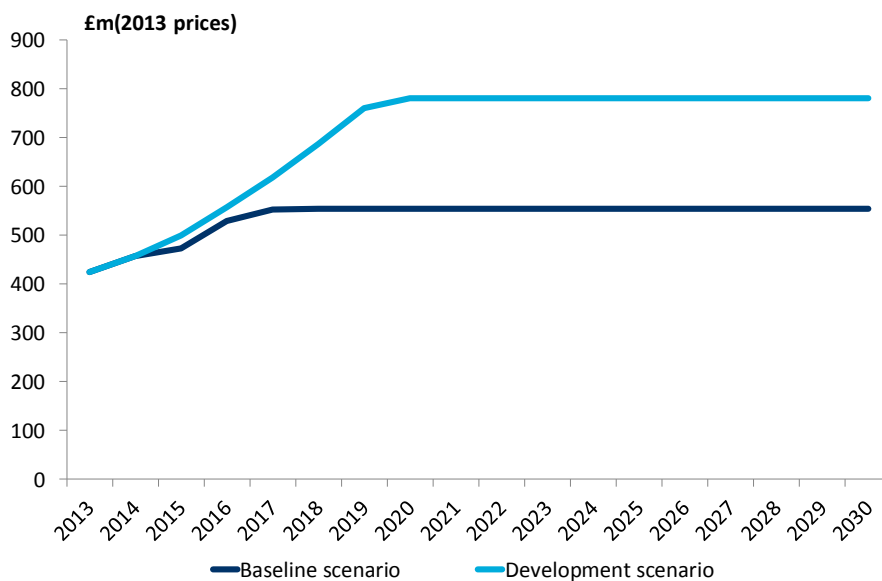
Source: LLAOL & Oxford Economics

## 4.2 The direct impact of London Luton Airport under alternative scenarios

The analysis assumes that the nominal GDP supported by the airport increases in line with passenger numbers and the consumer price index. So in real terms, the GDP growth rate of the airport reflects the growth rate of airport passengers.

Figure 4.2, below, compares the real (2013 prices) direct GDP contribution of London Luton Airport to 2030 under the two scenarios. Under the baseline scenario, the airport's direct GDP contribution increases from £425 million in 2013 to £554 million by 2030 - an increase of £129 million over the forecast period. Under the development scenario (18 mppa), stronger passenger growth means that the GDP contribution of the airport reaches £781 million in 2030. This is £228 million higher than under the baseline scenario.

**Figure 4.2: Forecast direct Gross Value Added contribution to GDP of London Luton Airport, 2013 to 2030**



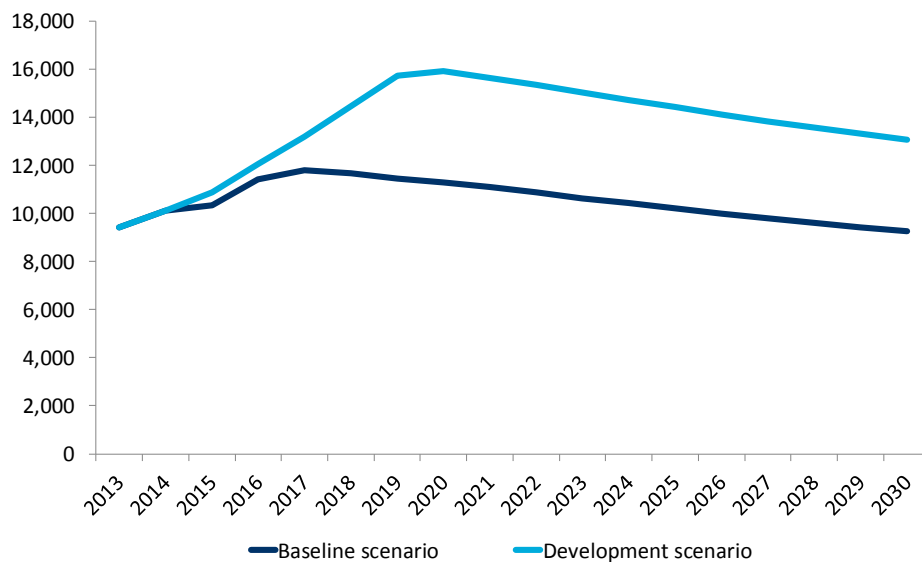
Source: Oxford Economics

As passenger numbers and the airport's GDP contribution increase, employment levels will also increase. Our analysis assumes that productivity in the aviation industry increases in future years so that, over time, the number of jobs created per additional mppa declines.

Under the baseline scenario, our calculations suggest that London Luton Airport will need 178 fewer jobs in 2030 than in 2013 due to improvements in labour productivity. In contrast, under the development scenario, London Luton Airport is projected to support the creation of more than 3,600 jobs between 2013 and 2030 since the airport's need for additional workers to service passenger growth far outweighs the impact of productivity growth.

*The airport could generate up to 3,600 jobs between 2013 and 2030*

**Figure 4.3: Forecast direct employment at London Luton Airport, 2013 to 2030**



#### Box 4.1: Comparing the Oxford Economics employment forecast with the Halcrow study

Our analysis suggests that London Luton Airport could directly create 3,600 jobs between 2013 and 2030 under the development scenario. This result is lower than Halcrow finding that employment could increase by 5,100 between 2011 and 2028 under the development scenario.

The two results relate to slightly different time periods. Moreover, the Halcrow estimate relates to full time equivalent posts, whereas the Oxford Economics figure relates to total jobs (full time plus part time).

However, the main reason for the difference is a different assumption concerning future productivity growth. The Halcrow study assumes that productivity remains fixed once airport capacity has been reached, and notes that this is a “*conservative estimation as in practice some degree of productivity gains in airport employment is likely to continue despite traffic level reaching capacity*”. In contrast, Oxford Economics assume that productivity in the aviation sector continues to increase in future years so that the number of jobs created per additional mppa declines.

While the Halcrow approach is conservative in terms of productivity, the Oxford Economics approach produces a more conservative estimate of employment growth (since stronger productivity growth means that fewer workers would be needed to deliver a given level of GDP growth).

The forecasts in this section relate to London Luton *Airport* and are therefore conceptually different to the forecasts of Luton *Borough* included in the East of England Forecasting Model used by SEMLEP and other stakeholders.<sup>15</sup>

Nonetheless, comparing the projections for London Luton Airport with Oxford Economics' very latest Luton Borough projections<sup>16</sup> provides an indication of the extent to which the airport's share of the local economy might change under each scenario. The results from this exercise are shown in Table 4.1, below.

**Table 4.1: The importance of London Luton Airport to the Luton Borough economy under alternative scenarios**

Scenarios	London Luton Airport as % of Luton borough	
	GDP	Employment
Baseline	8%	9%
Development scenario	11%	12%

<sup>15</sup> <http://www.cambridgeshireinsight.org.uk/EEFM>

<sup>16</sup> The very latest Local Model forecasts were used in this analysis instead of the forecasts from East of England Forecasting Model. The Local Model forecasts are effectively an updated version of the numbers in the East of England Forecasting Model, and incorporate the latest National Accounts data.

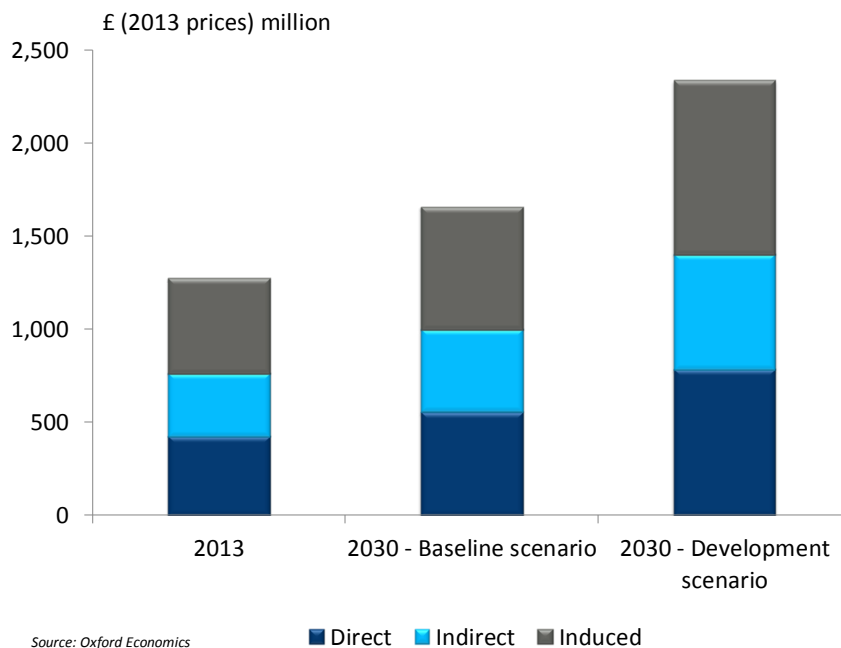
### 4.3 The total economic impact of London Luton Airport under alternative scenarios

This section presents estimates of the total economic impact, including multiplier effects, of London Luton Airport under the alternative scenarios.

#### 4.3.1 The total UK economic impact

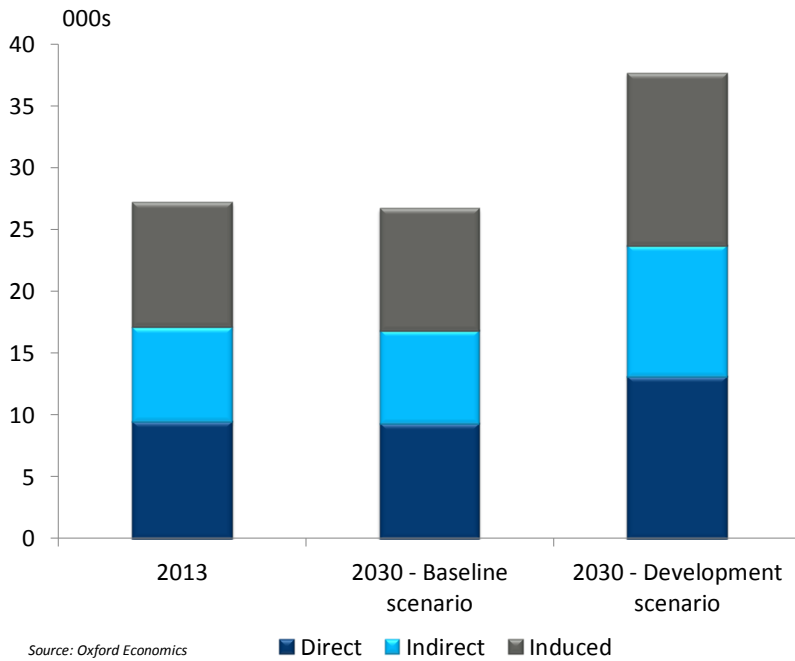
Under the baseline scenario, the total GDP contribution of London Luton Airport to the UK economy is estimated to reach £1.7 billion in 2030. This increases to £2.3 billion under the development scenario. In other words, the total GDP contribution of London Luton Airport could be 41 per cent greater if capacity is increased.

**Figure 4.4: Forecast total GDP contribution of London Luton Airport to the UK economy, 2013 to 2030**



In the baseline scenario, the total number of UK jobs supported by London Luton Airport is projected to decrease from 27,200 in 2013 to 26,700 in 2030 due to productivity improvements across the economy. However, under the development scenario, the total number of jobs supported by London Luton Airport is projected to grow to 37,700 in 2030.

**Figure 4.5: Forecast total UK employment contribution of London Luton Airport, 2013 to 2030**

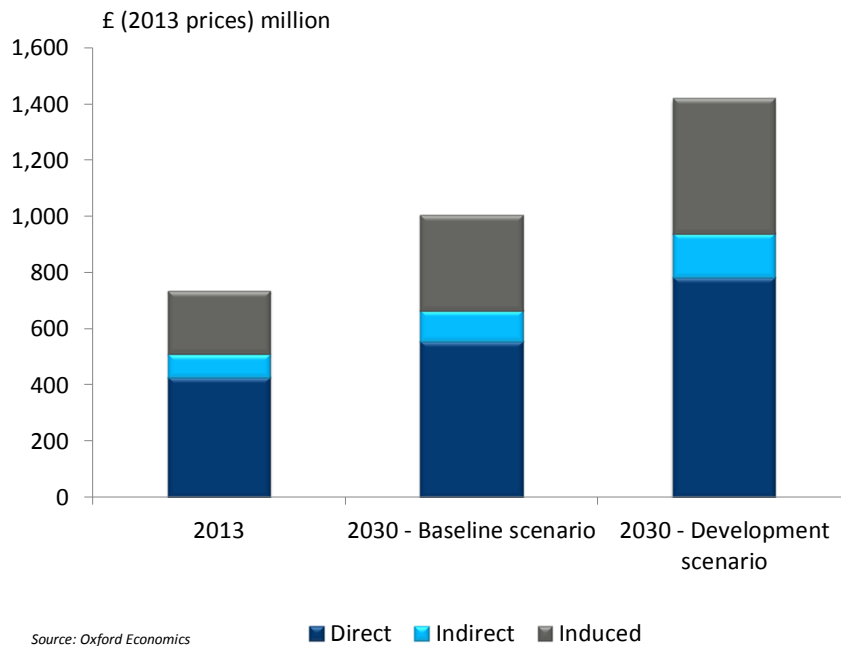




#### 4.3.2 Sub-regional total economic impact

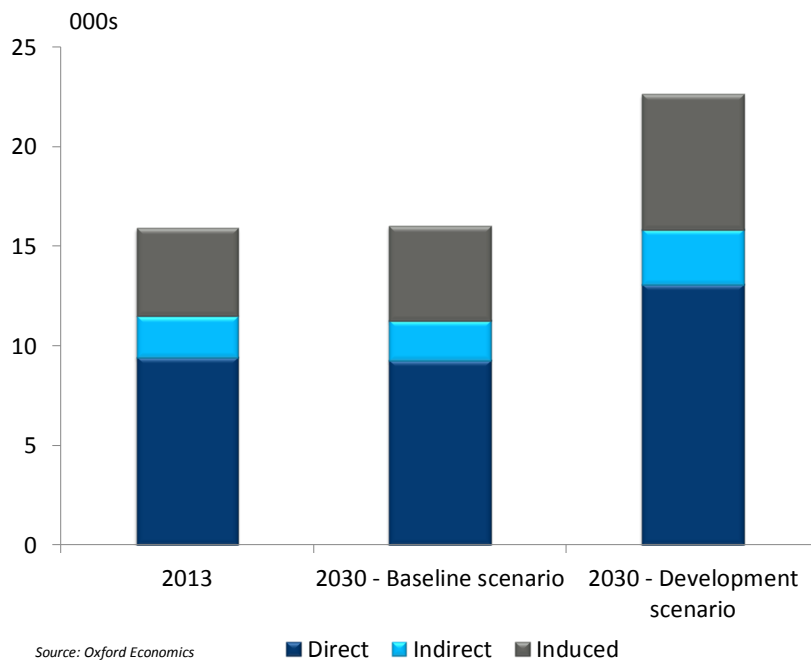
Under the baseline scenario, the total GDP contribution of London Luton Airport to the Three Counties sub-regional economy is estimated to reach £1 billion in 2030. This increases to £1.4 billion under the development scenario.

**Figure 4.6: Forecast total GDP contribution of London Luton Airport to the Three Counties sub-regional economy, 2013 to 2030**



In contrast to the UK results, at the Three Counties level the total employment contribution of London Luton Airport is projected to increase very slightly from 15,900 in 2013 to 16,000 in 2030 in the baseline scenario. This reflects an increase in the induced contribution over this period as developments in the sub-regional economy lead to less 'leakage' of the wage spending impact to other parts of the UK. Under the development scenario employment is projected to increase much more markedly to 23,000 in 2030.

**Figure 4.7: Forecast total Three Counties sub-regional employment contribution of London Luton Airport, 2013 to 2030**



## 4.4 Occupational analysis

### 4.4.1 Introduction to occupational analysis

The analysis above identified the number of workers the airport is likely to need under the baseline and development scenarios. This final sub-section considers the types of workers employed at the airport, and how these needs may change as the airport grows.

It is important to note at the outset that very little detail is available on the occupations and skills levels of workers employed at London Luton Airport. It is therefore necessary to use information from a number of official datasets to make inferences about the likely characteristics of the airport's workers. The analysis is split into two parts. The first part considers typical occupations of workers employed in airport-related sectors, and the wages of those workers. The second part of the analysis provides an indicative occupational breakdown for workers at London Luton Airport, and suggests how the numbers of workers in each occupational group may change as the airport expands.

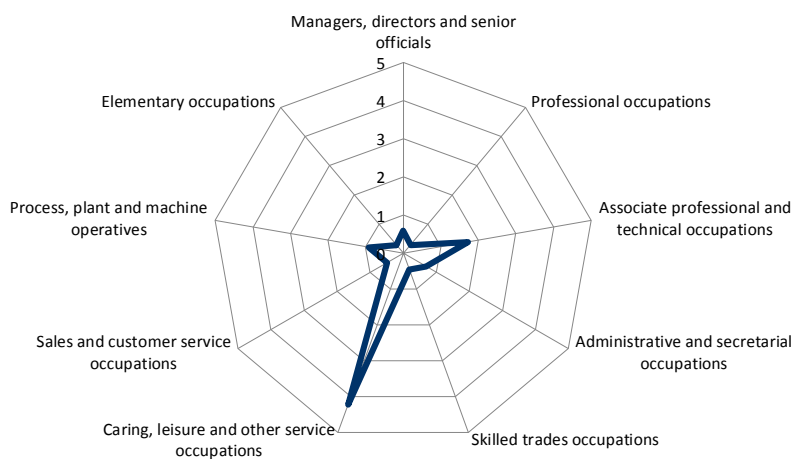
### 4.4.2 Typical occupations of airport workers in the UK

Using data from the 2011 Census, it is possible to identify the occupations of workers employed in certain sectors that are closely related to economic activity at airports. This is possible for two sectors: air transport and aerospace manufacturing, which together account for 76 per cent of jobs at London Luton Airport. For other sectors with a concentration of jobs at London Luton Airport, such as retail and hospitality published data do not permit aviation-related activity to be distinguished from broader, economy-wide trends. As such, these activities are not considered here.

### Air transport (SIC category 51)

Across the UK as a whole, the 2011 Census suggests that 82,000 people are employed in the air transport sector. The same dataset provides information on the occupations of those employed in the air transport sector, denoted by the ONS Standard Occupational Classification. Figure 4.8 summarises the concentration of workers in each broad occupational group in the air transport sector compared to that for the economy as a whole (a value of 1 in the diagram indicates that the concentration of workers in a particular occupational group is in line with the average for all sectors).<sup>17</sup> This reveals that air transport has above-average shares of workers in higher-skill professional and technical roles and lower-skill roles in caring and leisure service occupations.

**Figure 4.8: Occupational quotient of workers in the air transport sector relative to the economy as a whole**



Note: 1=average for all sectors  
Source: Census 2011

<sup>17</sup> Location Quotient = (Specific Occupation Employment Air Transport Sector)/(All Occupation Employment Air Transport Sector)/ (Specific Occupation Employment All Sectors/ All Occupation Employment All Sectors)/

Given the study's interest in understanding the economic impact of London Luton Airport, it is useful to consider the wage levels of workers in air transport-related occupations. To do this we focus on nine detailed occupations which together account for 70 per cent of all UK workers in the air transport sector. These are shown in Table 4.2, ranked from highest skilled to lowest skilled.

**Table 4.2: Most common occupations for workers in the air transport sector<sup>18</sup>**

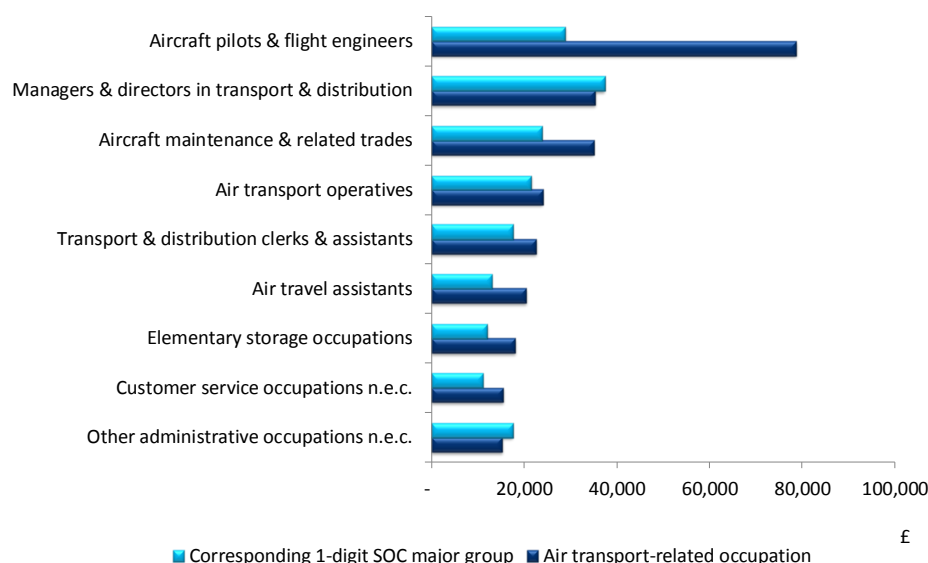
Occupation  (SOC code shown in brackets)	Job roles included in occupation	Corresponding major occupational group	Number of workers in 2011
Aircraft pilots and flight engineers (3512)	Airline pilot, first officer (airlines), flight engineer, flying instructor and helicopter pilot	Associate professional and technical occupations	11,000
Managers and directors in transport and distribution (1161)	Fleet manager and transport manager	Managers, directors and senior officials	3,000
Aircraft maintenance and related trades (5235)	Aeronautical engineer, aircraft electrician aircraft engineer, aircraft fitter, aircraft mechanic and maintenance engineer (aircraft).	Skilled trades occupations	3,000
Air travel assistants (6214)	Air hostess, cabin crew, customer service agent (travel), flight attendant and passenger service agent	Caring, leisure and other service occupations	30,000
Air transport operatives (8233)	Aircraft dispatcher, baggage handler, cargo handler (airport), ramp agent and refueller (airport)	Process, plant and machine operatives	4,000
Transport and distribution clerks and assistants (4134)	Export clerk, logistics controller, shipping clerk, transport administrator, transport clerk and transport coordinator.	Administrative and secretarial occupations	2,000
Customer service occupations n.e.c (7219).	Customer adviser, customer service administrator, customer service adviser, customer service assistant and customer services representative.	Sales and customer service occupations	2,000
Other administrative occupations n.e.c. (4159)	Administrative assistant, clerical assistant, clerical officer, clerk and office administrator.	Administrative and secretarial occupations	1,000
Elementary storage occupations (9260)	Labourer (haulage contractor), warehouse assistant, warehouse operator, warehouse supervisor and warehouseman	Elementary occupations	1,000

Source: 2011 Census

<sup>18</sup> Job role descriptions included in the box above are based on ONS Standard Occupational Classification (SOC) Hierarchy, which can be found at the following link:  
[http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dev3/ONS\\_SOC\\_hierarchy\\_view.html](http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dev3/ONS_SOC_hierarchy_view.html)

The ONS Annual Survey of Hours and Earnings provides information on average wages in each of these occupations.<sup>19</sup> Figure 4.9 below compares these wage levels to those in the respective broader occupational group comprising all workers in roles that require similar levels of skills.

**Figure 4.9: Gross median annual wage for full-time workers in air transport-related occupations and the corresponding 1-digit SOC major group, 2013**



Taking a weighted average of the data above suggests that the average wage in the main air transport occupations in 2013 was just under £33,000. This compares to an average of £18,500 for workers in the broader groups that fulfil roles at similar skills levels.<sup>20</sup>

If we exclude wages for aircraft pilots and flight engineers from the analysis, the average wage for air transport occupations reduces to £18,000 and the average wage for workers in the broader groups reduces to £13,000.

From this we can conclude that workers in occupations closely associated with the air transport sector are substantially better paid than those in other roles that require similar skills levels.

### Aerospace manufacturing (SIC category 30.3)

It is estimated that 15 per cent of employees at London Luton Airport are employed in the manufacturing sector, and it seems reasonable to assume that most manufacturing activity at the airport relates to aerospace. It is therefore

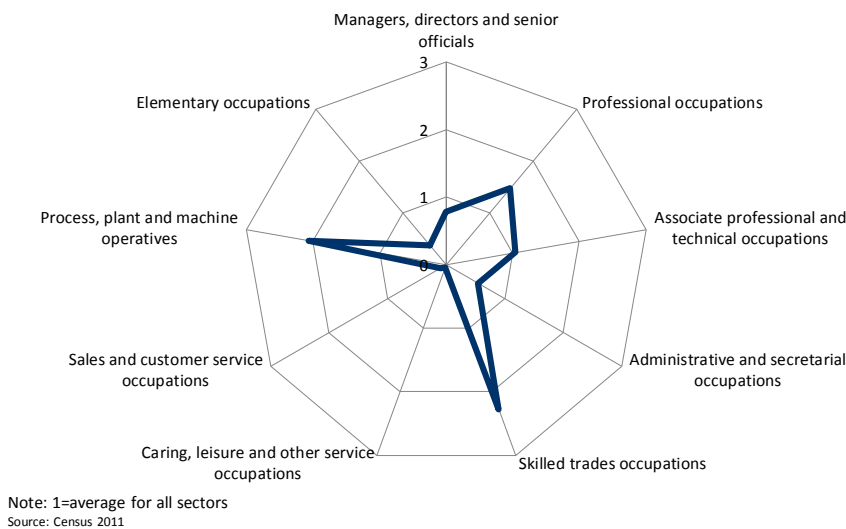
<sup>19</sup> The ASHE data relate to those working in these occupations across the economy as a whole, and not in the air transport sector specifically. Nonetheless, given that many of the roles identified are closely linked to air transport we believe this limitation in the data should not result in a significant bias in the results.

<sup>20</sup> Weights for both averages were based on the number of air transport workers in each group.

informative to consider the occupational breakdown and wage levels of workers in the aerospace manufacturing sector.

The 2011 Census suggests that 100,000 people are employed in aerospace manufacturing across the UK as a whole. Following the same approach as above, the concentration of workers in the sector within each broad occupational group is shown in Figure 4.10, below. This suggests that air manufacturing has above-average shares of workers in higher-skill professional roles, medium-skill skilled trade roles and lower-skill roles in process, plant and machine operations.

**Figure 4.10: Occupational profile of workers in the aerospace manufacturing sector compared to the economy as a whole**



Workers in aerospace manufacturing are distributed across a larger number of occupational groups than those in the air transport sector. The Census data suggest that it is necessary to look at 28 occupations to obtain coverage of 70 per cent of workers in the sector. As above, these are shown in Table 4.3, again ranked from highest skilled to lowest skilled.

**Table 4.3: Most common occupations for workers in the aerospace manufacturing sector<sup>21</sup>**

Occupation (SOC code shown in brackets)	Corresponding major occupational group	Number of workers in 2011
Mechanical engineers (2122)	Professional occupations	7,000
Engineering professionals n.e.c. (2129)	Professional occupations	4,000
Design and development engineers (2126)	Professional occupations	3,000
Quality control and planning engineers (2461)	Professional occupations	2,000
IT business analysts, architects and systems designers (2135)	Professional occupations	2,000
Programmers and software development professionals (2136)	Professional occupations	1,000
Electronics engineers (2124)	Professional occupations	1,000
Production and process engineers (2127)	Professional occupations	1,000
Chartered and certified accountants (2421)	Professional occupations	900
Engineering technicians (3113)	Associate professional and technical occupations	3,000
Production managers and directors in manufacturing (1121)	Managers, directors and senior officials	5,000
Purchasing managers and directors (1133)	Managers, directors and senior officials	900
Sales accounts and business development managers (3545)	Associate professional and technical occupations	1,000
Buyers and procurement officers (3541)	Associate professional and technical occupations	1,000
Aircraft maintenance and related trades (5235)	Skilled trades occupations	10,000
Metal working production and maintenance fitters (5223)	Skilled trades occupations	4,000
Metal machining setters and setter-operators (5221)	Skilled trades occupations	3,000
Skilled metal, electrical and electronic trades supervisors (5250)	Skilled trades occupations	2,000
Sheet metal workers (5213)	Skilled trades occupations	1,000
Electricians and electrical fitters (5241)	Skilled trades occupations	900
Metal working machine operatives (8125)	Process, plant and machine operatives	6,000
Routine inspectors and testers (8133)	Process, plant and machine operatives	3,000
Assemblers (vehicles and metal goods) (8132)	Process, plant and machine operatives	1,000
Other administrative occupations n.e.c. (4159)	Administrative and secretarial occupations	1,000
Personal assistants and other secretaries (4215)	Administrative and secretarial occupations	900
Stock control clerks and assistants (4133)	Administrative and secretarial occupations	900
Elementary storage occupations (9260)	Elementary occupations	1,000
Elementary process plant occupations n.e.c. (9139)	Elementary occupations	1,000

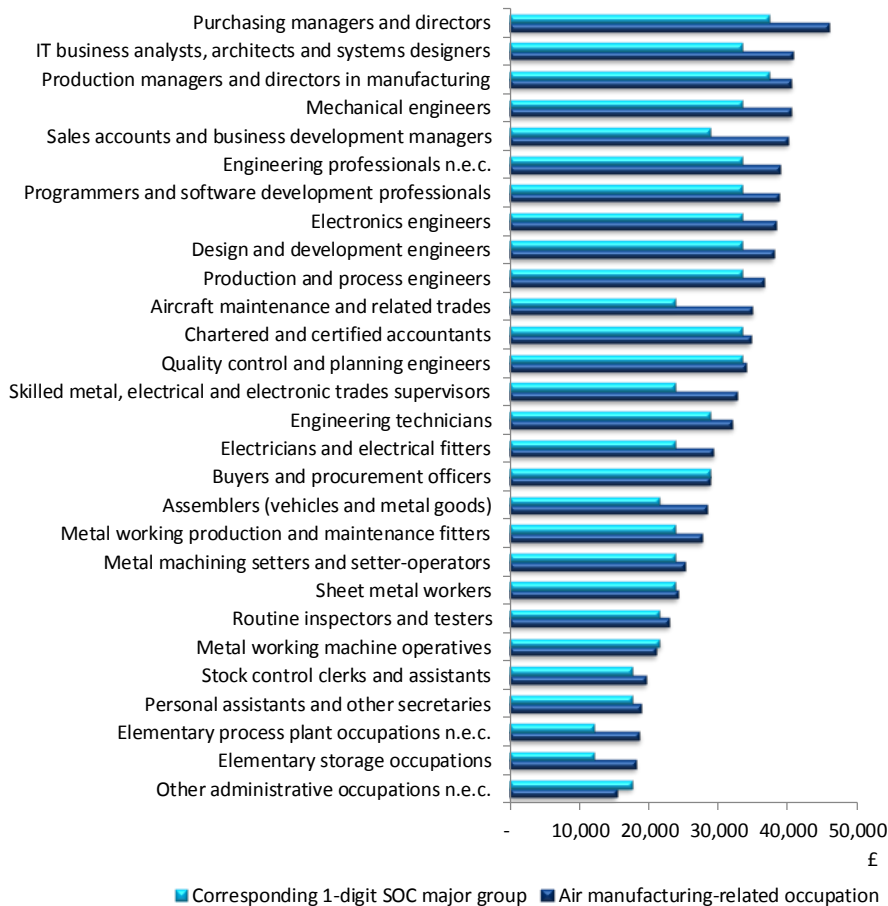
Source: 2011 Census

<sup>21</sup> Most common occupations equates to the occupations that comprise 70 per cent of the total workforce.



Figure 4.11 below compares wage levels for the occupations shown above to those in the corresponding broader occupational group.

**Figure 4.11: Gross median annual wage for full-time workers in aerospace manufacturing-related occupations and the corresponding 1-digit SOC major group, 2013**



Taking a weighted average of the data above suggests that the average wage in the aerospace manufacturing-related occupations in 2013 was just under £32,000. This compares to an average of £27,000 for workers in the broader groups comprising occupations with similar skills requirements.

Once again, this suggests that workers in occupations closely associated with the aerospace manufacturing sector are substantially better paid than those in other roles that require similar skills levels.

#### 4.4.3 Indicative occupational breakdown of workers at London Luton Airport

By combining data on the sectoral structure of employment at London Luton Airport with data from the 2011 Census on the occupations of workers in the Luton 014 'Mid Layer Super Output Area' (which incorporates the airport site) it is possible to estimate the occupational structure of employment at London

Luton Airport.<sup>22</sup> Table 4.4 shows the estimated number of workers in each occupational group in 2013, and the projected number in 2030 under each scenario. The 2030 projections assumes that the occupational structure of employment at the airport remains unchanged as the airport expands. A more detailed breakdown of current occupations is set out at Annex D.

**Table 4.4: Current and future employment by occupation at London Luton Airport**

Occupation group	Examples of job roles included in occupation group	Estimated employment		
		2013	2030 (Baseline scenario)	2030 (Development scenario)
1 Managers, directors and senior officials	Managers and directors in transport, distribution and production	680	667	942
2 Professional occupations	Mechanical engineer and design and development engineers	701	688	971
3 Associate professional and technical occupations	Aircraft pilots and flight engineers	1,595	1,565	2,208
4 Administrative and secretarial occupations	Transport and distribution clerks and assistants	886	870	1,228
5 Skilled trades occupations	Aircraft maintenance, metal machining setters and setter-operators and hospitality workers	873	857	1,209
6 Caring, leisure and other service occupations	Air travel assistants and travel agents	2,116	2,076	2,930
7 Sales and customer service occupations	Customer service occupations	875	859	1,212
8 Process, plant and machine operatives	Routine inspectors and testers and machine operatives	850	834	1,177
9 Elementary occupations	Air transport operatives and storage workers	861	845	1,192

Source: Oxford Economics

<sup>22</sup> Middle Layer Super Output Areas are a geography for the collection and publication of small area statistics. They have a minimum size of 5,000 residents and 2,000 households with an average population size of 7,500. They fit within local authority boundaries. This definition was sourced from the ONS Neighbourhood Statistics: <http://neighbourhood.statistics.gov.uk/HTMLDocs/nessgeography/superoutputareasexplained/output-areas-explained.htm>

Comparing the projected number of workers under each scenario in 2030 to the current situation indicates the number of workers the airport could need to recruit in each occupational group over the next 15 years.

It is also informative to consider the future supply of labour in Luton Borough, to understand the extent to which workers in the immediate vicinity of the airport might be available to take up the jobs that would be created were the airport to expand. Oxford Economics' regional model estimates that 2,000 people of working age will be unemployed and looking for work in Luton Borough in 2030. The occupational split of these workers has been estimated using data for the current occupational structure of the Luton Borough population. This has been adjusted using national-level data to take into account that occupational structure of the unemployed is likely to vary to that for those in employment. Further details of the estimation methodology are presented in Annex D. As with the projections of the airport's recruitment needs, it is assumed that the occupational structure of the unemployed in 2030 is unchanged from today.

**Table 4.5: London Luton Airport recruitment needs by scenario and potential supply of workers in Luton Borough**

Occupation group	Examples of job roles included in occupation group	Additional workers needed by 2030		Estimated number of unemployed workers in Luton Borough, 2030
		Baseline scenario	Development scenario	
1 Managers, directors and senior officials	Managers and directors in transport, distribution and production	-13	262	56
2 Professional occupations	Mechanical engineer and design and development engineers	-13	270	123
3 Associate professional and technical occupations	Aircraft pilots and flight engineers	-30	614	137
4 Administrative and secretarial occupations	Transport and distribution clerks and assistants	-17	341	193
5 Skilled trades occupations	Aircraft maintenance, metal machining setters and setter-operators and hospitality workers	-16	336	200
6 Caring, leisure and other service occupations	Air travel assistants and travel agents	-40	814	183
7 Sales and customer service occupations	Customer service occupations	-16	337	263
8 Process, plant and machine operatives	Routine inspectors and testers and machine operatives	-16	327	241
9 Elementary occupations	Air transport operatives and storage workers	-16	331	686

Source: Oxford Economics

This analysis suggests that under the development scenario, London Luton Airport could need 1,145 workers in the three highest-skilled occupational groups, which include roles such as aeronautical engineers, aircraft pilots and flight engineers. At the bottom of the table, 2,487 additional workers will be needed for unskilled roles such as customer advisors, baggage handler and storage workers.

Comparing these skills needs to the potential supply of unemployed workers in Luton Borough suggests that workers may be available in the immediate vicinity of the airport to fill the lowest skilled roles. For the remaining roles, the pool of unemployed could potentially support 48 per cent of the Airport's worker

requirements under the development scenario. The airport will need to look further afield to fill the remaining roles.

The analysis above is a purely numerical exercise. In reality, airport employers are unlikely to prioritise Luton residents when seeking to fill new positions. They will select the strongest candidates irrespective of where they reside. Nonetheless, it does illustrate the extent to which the airport's future demand for labour could, at least in theory, be met by workers from Luton Borough.

## 5 Catalytic Impacts

### Key points

The catalytic impact of London Luton Airport can be thought of as the benefits the airport offers to those who use its services. Two types of catalytic impact for passengers are explored.

#### *Value to passengers*

- Luton is the closest airport for around 43 per cent, or 4.5 million, of the passengers who used it in 2014. For these passengers, flying from an alternative airport would add between 20 and 68 minutes in travel time, and associated travel costs, for each leg of their journey.
- Luton also offers among the cheapest available fares for the destinations it serves, with 75 percent of comparable fares cheaper than average among the seven major airports considered.
- Taking account of the value of passengers' time, the surface transport costs they face, and the competitive fares on offer it is estimated that London Luton Airport provided additional value for passengers approximately £120 million in 2014 alone. Last year 900,000 Luton passengers would not have flown from an alternative airport had Luton not been available.

#### *London area airport capacity*

- London Luton Airport, particularly after it expands capacity to accommodate 18 million passengers per annum, will play an increasingly important role in providing much needed capacity to the London airports system over the next 10 to 15 years.
- In 2011 Luton accounted for 7 per cent of passengers at London airports, but based on official Department for Transport forecasts it is expected to contribute 17 per cent of London passenger growth between 2011 and 2030.

## 5.1 Introduction

Over and above the direct, indirect and induced impacts reported in the sections above, London Luton Airport generates a number of wider 'catalytic' benefits. These can be thought of as the benefits the airport offers to those who use its services. The analysis in this section assesses the value of the airport's location and low cost flight options to passengers, before going on to consider the airport's role in complementing London's hub airports, Gatwick and Heathrow, and contributing transport capacity to the wider London airport system.

That is not to say that these are the only wider benefits generated by London Luton Airport. In particular, it contributes to the overall attractiveness of the surrounding region as a location for businesses to locate and invest. This is not formally analysed in this chapter of the report, but previous research has shown that the availability of international transport is one of the most important factors that firms consider when deciding where to locate.<sup>23</sup>

## 5.2 Quantifying the value of London Luton Airport to passengers

### 5.2.1 Travel cost savings

This part of the analysis provides an indicative quantification of the travel time and direct cost savings that passengers enjoy as a result of living close to London Luton Airport.

The analysis is based on 2013 Civil Aviation Authority data provided by LLAOL, with results scaled up to 2014 passenger totals. These data indicate the origin of Luton's UK passengers on the UK side of their journey by local authority. To estimate the potential travel time savings, it was necessary to assign each passenger to a more precise location within each local authority. As such, passengers were assigned to wards within each local authority based on the distribution of the population within that local authority. A second round of estimation was used to assign passengers to a specific postcode area within each ward, based on the main population centre within the ward.

The postcode level data were then used in conjunction with software developed by Oxford Economics to estimate travel times using Google maps. This enabled the estimation of each passenger's travel time to London Luton Airport, under the simplifying assumption that all passengers travel to the airport by car. The exercise was then repeated to estimate the travel time to each alternative international airport that a Luton passenger could have chosen.

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<sup>23</sup> For example, the Cushman and Wakefield European Cities Monitor 2011 (<http://www.cushmanwakefield.com/~media/reports/uk/Brochures/European%20Cities%20Monitor%20October%202011.pdf>) finds that the most important factors a company considers when deciding where to locate their business are easy access to markets and customers, followed by the availability of qualified staff, and telecommunications. Transport links with other cities and internationally was found to be the fourth most important factor, with 42 per cent of companies suggesting these were an absolutely essential consideration when deciding where to locate their business.

The analysis showed that for 43 per cent of Luton passengers – around 4.5 million passengers in 2014 - the airport was the closest option to their ultimate UK origin or destination. The majority of these passengers came from 13 local authorities: Aylesbury Vale, Bedford, Central Bedfordshire, Dacorum, East Northamptonshire, Hertsmere, Luton, Milton Keynes, North Hertfordshire, South Northamptonshire, St Albans, Three Rivers and Welwyn Hatfield. On average it took passengers 30 minutes to get to London Luton Airport from these locations, assuming no traffic delays.

The next stage of analysis considers how much longer would be involved in travelling to an alternative airport if London Luton Airport did not exist. Around 94 per cent of Luton's UK passengers come from the South East, Eastern, East Midlands, West Midlands and London regions. Comparator airports that offer similar flights to Luton were identified from within these regions. The comparator airports selected were: Heathrow, Gatwick, Stansted, Birmingham, East Midlands and London City.

In a best-case scenario, a passenger unable to travel from Luton could take a similar flight from the next closest airport to their place of residence. If this were the case for all passengers whose origin was in the local authority areas identified above, the average travel time to the airport would increase by 20 minutes, absent any delays. This extra travel time would be associated with higher immediate transport costs as well as time costs for millions of passengers each year in Luton's absence.

In reality, equivalent flights may not be available at the second closest airport and a passenger unable to use Luton may have to travel considerably further to take a flight from an alternative airport. In 2014 the closest alternative international airport, Heathrow, only served 57 per cent of seat-weighted destinations reachable from London Luton Airport.<sup>24</sup> In the extreme case, all passengers whose UK origin or destination was in the local authority areas identified above might have to travel to the furthest comparator airport. In many cases this would be Gatwick, which serves some 80 per cent of the seat-weighted destinations served by Luton, but which is also the furthest alternative airport for many Luton passengers. Where passengers might have to travel to their furthest alternative airport, the journey would take an average of 68 minutes longer. Again, traffic delays could add to that journey time significantly depending on the timing of the flight, making this a conservative estimate.

The analysis above therefore provides a range from 20 to 68 minutes for the additional travel time that would be required if those Luton passengers for whom the airport is closest were to have to use another airport. For people making a return journey these time and associated travel costs would, of course, be double.

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<sup>24</sup> Estimated using SRS Analyser data on flight schedules from Luton and the other comparator airports. This figure assumes that there are no capacity constraints that might prevent passengers from flying from one of these alternative airports.



Table 6.1 provides details for each local authority for which Luton is the closest airport. It also compares the distance between the second closest and farthest away airports to give the range of possible increases in journey times.

**Table 5.1: Time saving by origin, minutes**

	Average time from London Luton Airport	Second closest airport	Average time from second closest airport	Time saved - low	Farthest away airport	Average time from farthest airport	Time saved - high
Central Bedfordshire	30	Heathrow	59	29	Gatwick	96	65
Luton	22	Heathrow	45	23	East Midlands	88	66
St Albans	20	Heathrow	39	19	East Midlands	98	79
Milton Keynes	36	Heathrow	65	30	Gatwick	101	65
North Hertfordshire	25	Stansted	45	19	East Midlands	99	73
Bedford	44	Stansted	67	22	Gatwick	101	57
Dacorum	29	Heathrow	35	6	East Midlands	99	70
Aylesbury Vale	46	Heathrow	55	9	East Midlands	96	50
Welwyn Hatfield	27	Stansted	43	17	East Midlands	108	82
Hertsmere	27	Heathrow	39	12	East Midlands	106	78
Three Rivers	27	Heathrow	30	3	East Midlands	105	79
South Northamptonshire	49	Birmingham	53	3	Gatwick	106	57
East Northamptonshire	63	Birmingham	70	7	Gatwick	129	66

### 5.2.2 Low-cost air travel

Luton's proximity for millions of people is not the only source of its value relative to alternative airports. This section assesses the extent to which passengers may enjoy lower fares for flights from Luton compared to other airports. The comparator airports are the same as those used in the previous section.

Comparing flight costs is a complex exercise, not least due to the yield management techniques employed by airlines. Prices for apparently similar flights can vary substantially for a wide range of reasons, such as time of day, date, and the number of passengers searching for or reserving seats on a particular flight. To compare flight costs between airports we undertook a structured search to identify flights that are as similar as possible to those offered by Luton. To be regarded as 'similar' for the purposes of this exercise, we selected flights that were identical in terms of the following criteria:

- Time of day: morning before 12:00, afternoon between 12:00 and 17:59, or evening from 18:00
- Departure date: three dates were chosen for the sample - 09/03/2015 (one week from the time of the analysis); 05/06/2015 (3 months away); and 08/08/2015 (a summer holiday travel day)
- Destination airport.

For each flight in the sample we compared the price of flying from Luton to the price of flying from all other airports offering the same flight. Flights were only

***London Luton Airport's competitive fees and charges mean that customers benefit from lower cost flights than are available at other comparable airports***

included if a minimum of three comparator airports offer a similar flight. Prices were obtained from the price comparison website *www.skyscanner.net*.

Table 6.2 below presents a summary of the results. In total, a sample of 44 flights were compared. For 33 flights, London Luton Airport offered a below average price when compared to the other airports. For 21 of the flights Luton was one of the two cheapest providers and for nine flights Luton was the cheapest provider. This demonstrates the degree to which a further benefit for many Luton passengers is the low airfares on offer.

**Table 5.2: Summary of airport price comparison**

Luton is below average	Luton is below average and one of two cheapest providers	Luton is absolute cheapest in sample	Luton is above average	Luton is most expensive	Total examined
33	21	9	11	5	44

### 5.2.3 Valuing the benefits to passengers

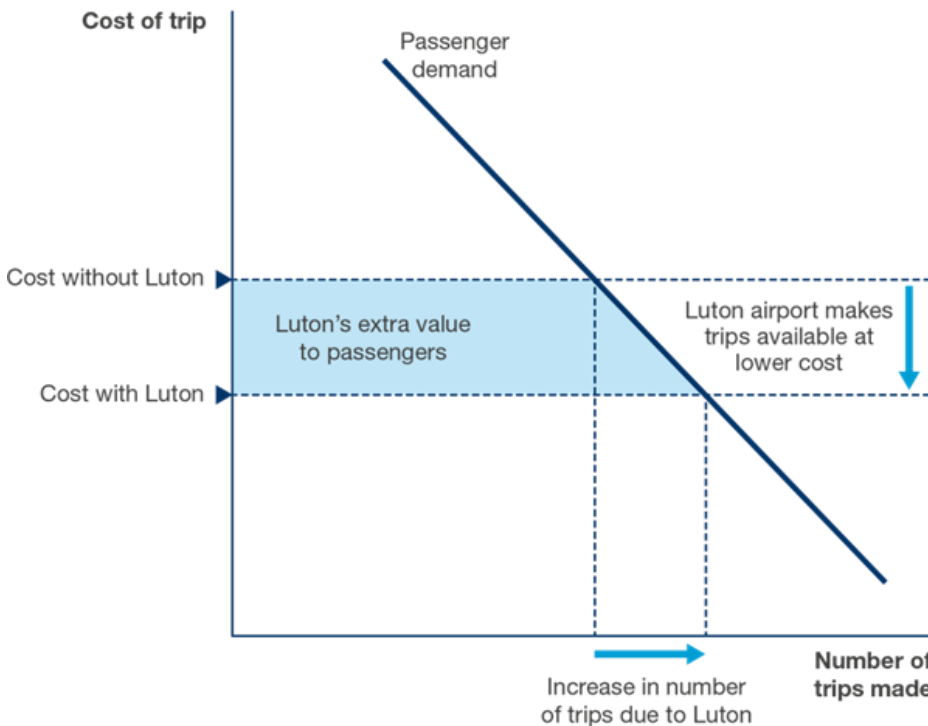
The main value from an airport accrues to airline passengers. To make a journey, those using the airport self-evidently value making their trip at least as highly as the cost of their surface transport and airfare, and the time taken to reach their destinations. In most cases, of course, people would still make the trip if those costs were higher. Economists call the value received, over and above the costs associated with travel, the 'consumer surplus'.<sup>25</sup> Consumer surplus represents the maximum cost people would be willing to pay to make their journey less the actual cost they face.

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<sup>25</sup> Source: IATA. OXFORD ECONOMICS, Economic Benefits from Air Transport in Mexico, 2007

The analysis in the previous two sub-sections suggests that, for millions of people each year, the value of consumer surplus that accrues to Luton passengers may be greater than if they instead had to use another airport, due to Luton's low fares and proximity to the origin or destination of many passengers. As Luton offers a cheaper option for millions of passengers, this boosts the number of people prepared to travel and benefits those who would have travelled anyway (see Figure 5.1)

**Figure 5.1: Quantifying the extra value Luton provides for passengers**



To explore this further, this sub-section builds on the analysis above to estimate how the value of consumer surplus enjoyed by Luton passengers might change if they instead had to use the next cheapest airport.

This analysis relies on another technical concept – the generalised cost of travel (GCT), which represents the overall cost of making a journey in terms of travel time and money. Direct travel costs take account of things like airfares and the full economic cost of private road transport. Time spent travelling is converted into monetary values based on accepted techniques for valuing people's time based on characteristics such as whether or not they are a business traveller.

For this study a GCT value is calculated for Luton passengers based on their origin and likely airfare. Equivalent values are then computed for those passengers in the hypothetical scenario where these Luton passengers instead use their next cheapest airport (a full description of the methodology is included at Annex F).<sup>26 27</sup>

<sup>26</sup> Only those passengers for whom Luton is the closest airport were included in the analysis. The remaining passengers were excluded on the basis that they are using London Luton Airport for reason that does not relate to total cost.

The analysis suggests that the average GCT for Luton is £174 per single journey, compared to £194 at the next cheapest airport (the second cheapest airport is specific to each passenger). On this basis we estimate that, on average, a typical passenger of the 6.3 million in 2014 for whom Luton was the cheapest airport enjoyed a consumer surplus that was £19 greater than if Luton did not exist. For someone making a return journey the benefit would amount to some £37.

The benefits for passengers also extend to people who otherwise might not have travelled at all. For many passengers, the overall costs of the Luton option are sufficiently low to encourage them to make a trip which they otherwise would not have taken. To account for this effect, we draw on available evidence about how passengers respond which the cost of travel changes, to measure the responsiveness of the demand for flights to changes in the GTC. We assume an elasticity of -1.27, which means that a 1 per cent fall in the overall (time and fare) cost of travel causes a 1.27 per cent rise in passenger numbers.<sup>28</sup> On these assumptions we can estimate that 900,000 passengers for whom Luton was the closest airport would not have travelled in 2014 had Luton not existed. Adding these benefits, we estimate that the total consumer surplus, or additional benefit to passengers for whom Luton is the closest airport amounted to approximately £120 million in 2014 alone.<sup>29</sup>

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<sup>27</sup> In order to be conservative, only those passengers for whom Luton is the closest airport are considered in this analysis. While those coming from further afield presumably choose Luton for a good reason, it is harder to quantify the scale of their consumer surplus, hence we conservatively assume that these people are indifferent between travelling from Luton or another airport.

<sup>28</sup> The elasticity of -1.27 is for the generalised cost elasticity for intra-European flights of 500-1000 miles. Source: 'Fleet Level Assessments & System-Wide Environmental Impacts' presentation by the University of Cambridge, UCL, City University London and University of Toronto: [http://old-www.arct.cam.ac.uk/Documents/AEvans\\_Lecture\\_UTIAS\\_March13.pdf](http://old-www.arct.cam.ac.uk/Documents/AEvans_Lecture_UTIAS_March13.pdf)

<sup>29</sup> In practice, this estimate is likely to be conservative both because it ignores the possibility that road traffic congestion may add to journey times, and because it conservatively assumes the benefits of London Luton Airport to passengers for whom it is not the closest are zero.

### 5.3 London area airport capacity

Major airports around London are approaching capacity. If no action is taken to develop new infrastructure there is a risk that airport bottlenecks will constrain the UK's ability to handle increasing numbers of business passengers and tourists, and ultimately harm economic growth prospects.

To address this, the Airports Commission, chaired by Howard Davies, was set up in 2012 to examine options to develop the UK's aviation infrastructure, so that it maintains its status as Europe's key aviation hub. In December 2013 the Commission published a report outlining three shortlisted options to increase the UK's aviation capacity in the long-term. Each of these options would provide at least one net additional runway at Gatwick or Heathrow by 2030. Following a period of consultation, the Airports Commission is set to announce its recommended option in the summer of 2015.

Given the stated aim of developing the chosen option by 2030, it is important to consider how the UK's airport capacity needs will be met in the interim. To explore Luton's role in this, we examine the 2013 Department for Transport passenger forecasts.<sup>30</sup> These come in two variants:

- i. *Unconstrained* forecasts, which provide estimates of the extent of passenger growth in the absence of airport capacity constraints
- ii. *Constrained* forecasts which factor in the impact of airport capacity constraints.

While the constrained forecasts assume that no new runways are built in the UK, they do allow for smaller-scale infrastructure enhancements. Of particular relevance to this study, it is assumed that "*Luton adds 35% to its runway capacity and 70% to its terminal capacity.*"<sup>31</sup> This is broadly consistent with the development scenario in our study.

***Luton Airport has a vital role to play in providing capacity for the London airport system over the next 10 to 15 years***

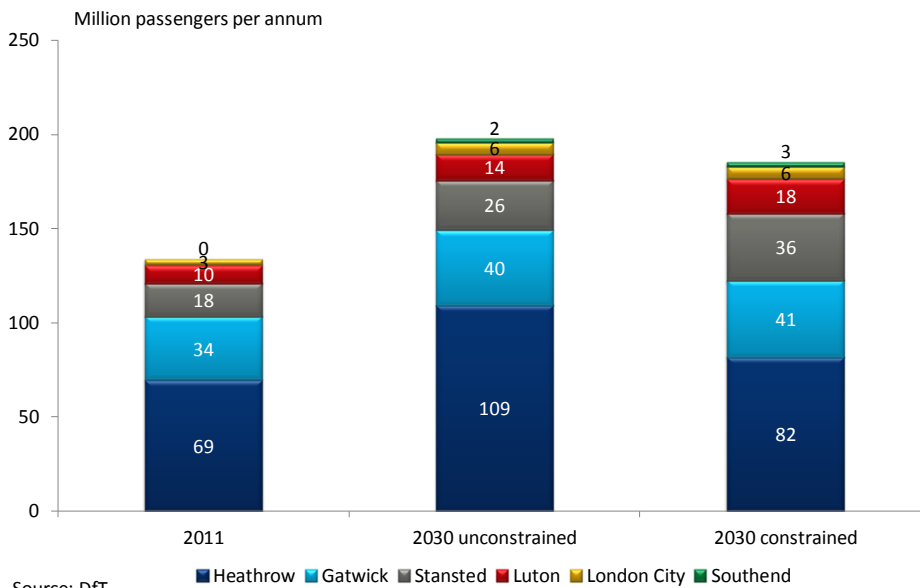
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<sup>30</sup> <https://www.gov.uk/government/publications/uk-aviation-forecasts-2013>

<sup>31</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/223839/aviation-forecasts.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223839/aviation-forecasts.pdf)

Figure 5.2 shows that there were 134 million terminal passengers at London airports in 2011. Under the DfT's unconstrained forecast this would increase to 198 million by 2030. However, once airport capacity constraints are considered, this falls to 185 million 2030 as passengers either switch to airports away from London, or choose not to travel.

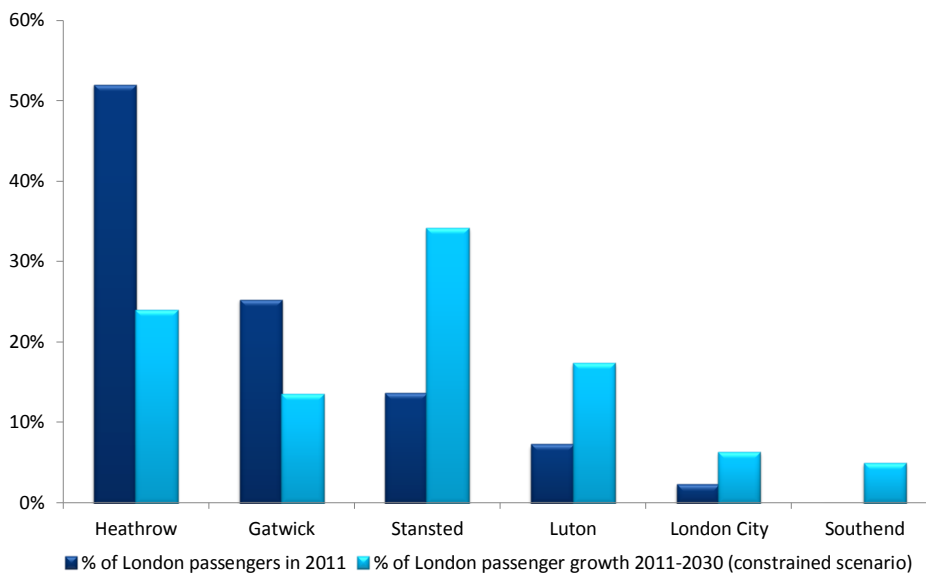
**Figure 5.2: Constrained and unconstrained passenger forecasts for London airports**



Closer examination of the data for individual airports highlights the important role to be played by smaller airports in supporting passenger growth to 2030. In the unconstrained forecast, passenger numbers at Heathrow are forecast to increase from 69 million in 2011 to 109 million in 2030. However, Heathrow is nearing its operational capacity and the constrained forecast suggests it will only be able to accommodate 82 million passengers in 2030. As a result, passengers are displaced to other London airports, particularly Luton and Stansted, where there is proportionately greater scope for growth. In the case of Luton, there are 4 million more passengers in the constrained scenario than in the unconstrained scenario, indicating that the airport is well placed to provide capacity to service passengers unable to use Heathrow. This means that passenger numbers at Luton are projected to almost double to 18 million between 2011 and 2030 in the constrained scenario.

To consider the contribution of Luton to overall passenger growth in London further, Figure 5.3 compares each airport's share of passengers in 2011 to its contribution to London passenger growth between 2011 and 2030. This shows that while Luton accounted for just 7 per cent of London airport passengers in 2011, it is expected to accommodate 17 per cent of passenger growth between 2011 and 2030. Were this capacity not available at Luton, the London airports system would be even more constrained and, all else equal, passengers who wished to use a London airport would be likely to face higher fares.

**Figure 5.3: Constrained and unconstrained passenger forecasts for London airports**



There is currently a large amount of uncertainty concerning what may happen beyond 2030. While the Airports Commission is set to make its *recommendation* in the summer of 2015, the *decision* on additional runway capacity will ultimately be taken by politicians and the timing of any such decision is unknown.

Nonetheless, the analysis in this chapter has highlighted that Luton has an important role to play in providing much-needed capacity for the wider London airports system. It has capacity to accommodate significant growth over the coming decade; provides convenient access to international flights for local residents; and it is able to offer flights at lower cost than many comparable airports.

## Appendix A: Economic impact methodology

### Direct employment contribution

The most detailed previous work to estimate the direct impact of London Luton Airport was undertaken for the 2012 Halcrow study. This presented a central employment estimate for 2011 based on data from the Business Register and Employment Survey and Experian.<sup>32</sup> More recent estimates of employment at London Luton Airport are presented in the 2013 London Luton Airport Annual Monitoring Report.<sup>33</sup>

Following discussion with stakeholders it was decided to estimate employment in 2013 by growing forward the Halcrow estimate using the growth rates reported in the Annual Monitoring Report. This approach ensures that the direct employment estimate presented in this study is broadly comparable with the Halcrow study, but also incorporates the latest evidence on how employment at the airport has changed since 2011.

### Direct GDP contribution

This is comprised of the wages paid to those directly employed at the airport, plus profits generated by firms at London Luton Airport.

To calculate London Luton Airport's total wage contribution, the 2013 employment estimates were multiplied by average gross wage estimates for the relevant sectors. These average wages were based on estimates from the Halcrow report, adjusted to account for wage growth between 2011 and 2013.

To estimate profits for 2013 we uplifted average turnover per employee estimates from the Halcrow study using productivity growth rates<sup>34</sup> for the Eastern region, and then multiplied by total employment to obtain an estimate of turnover. We then applied Halcrow's turnover/profit ratio to arrive at a pre-tax profit estimate. Since we are considering the direct impact of London Luton Airport on the whole of the UK, and in contrast to the Halcrow approach, we did not make a further adjustment to only count profits attributable to the local economy.

### Direct gross wage contribution

The gross wage bill of London Luton Airport workers was estimated by updating the previous results from the Halcrow study. While Halcrow reported net wages in their headline results, the detailed workings included average gross wage per worker estimates. Oxford Economics grew these estimates in line with wage growth from 2011 to 2013 for the Eastern region and then multiplied these wages by the new number of workers in each sector.

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<sup>32</sup> Further details of the methodology used to develop the employment estimate are presented in Chapter 6 of the Halcrow report: [http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1\\_01\\_A.PDF](http://www.eplan.luton.gov.uk/plannet/documentstore/DC19512388-269-1_01_A.PDF)

<sup>33</sup> <http://www.london-luton.co.uk/en/content/8/243/annual-monitoring-report.html>

<sup>34</sup> Productivity growth rates for individual sectors were used.



### Direct tax contribution

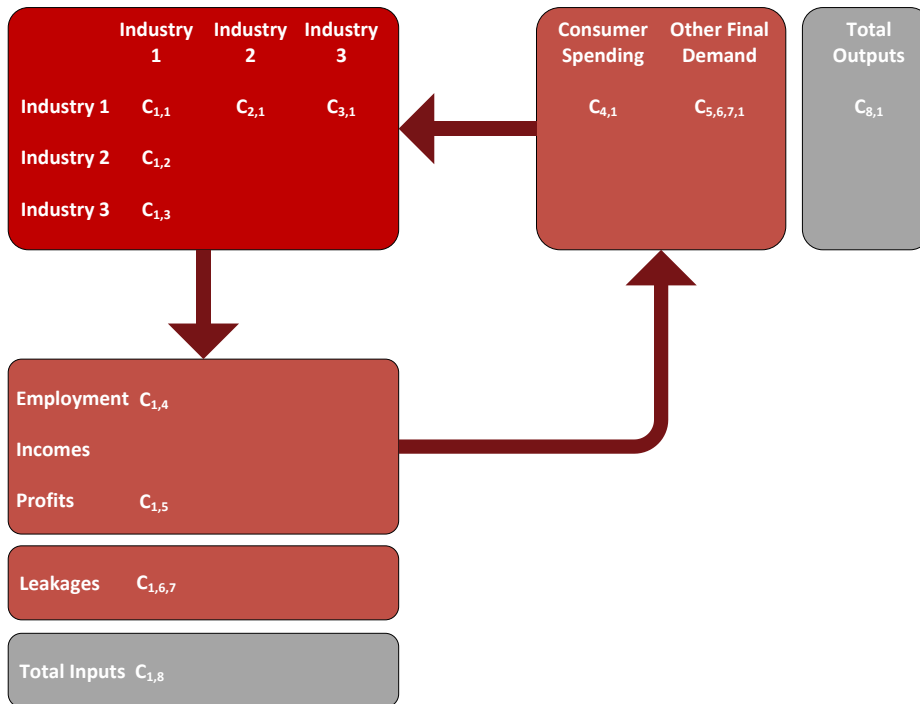
There are a number of large companies at London Luton Airport that operate from many sites across the UK, and sometimes internationally. In these cases the value of tax revenue attributable to London Luton Airport was estimated by updating the previous results from the Halcrow study by adjusting their assumptions on the various tax rates to reflect the latest data available. Specifically, Income tax and National Insurance Contributions were updated using the 2013 ONS 'The Effects of Taxes and Benefits on Household Income' release, located here: <http://www.ons.gov.uk/ons/rel/household-income/the-effects-of-taxes-and-benefits-on-household-income/2012-13/index.html>. APD was updated using information on APD rates and allowances for 2013 from HM Revenue and Customs, located here: <https://www.gov.uk/government/publications/rates-and-allowances-excise-duty-air-passenger-duty/rates-and-allowances-excise-duty-air-passenger-duty>

### Overview of input-output modelling approach for the UK

Input-output tables are designed to give a snapshot of an economy at a particular time, showing the major spending flows. These include "final demand" (i.e. consumer spending, government spending and exports to the rest of the world); intermediate spending patterns (i.e. what each sector buys from every other sector – the supply chain); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits). Input-output tables are therefore particularly useful when estimating indirect and induced economic impacts.

The idea behind the input-output table is that the economy can be divided into a number of producing industries, and that the output of each industry is either used as an input into another industry, or in final consumption. For example, grain produced by the farm sector becomes an input into flour milling; flour produced by the milling sector becomes an input into the baking sector, and so on. In essence an input-output model is a table that shows who buys what from whom in the economy.

Figure AA.1: A simplified input-output model



Source: Oxford Economics

Reading across horizontally illustrates the distribution of each industry's output, split between intermediate demand from other industries (used as an input to production) and final demand (consumer spending, exports and other government consumption). Therefore, Industry 2 in Figure AA.1 purchases an amount,  $C_{2,1}$  from Industry 1 as an input to their production process. Thus, reading down vertically indicates what each industry purchases from other industries in the national economy by way of inputs which, when combined with imports from abroad (leakages), employment costs, operating surplus and any additional taxes or subsidies to production, give total inputs, which will equal total outputs. In the simple model illustrated in Figure AA.1,  $C_{8,1}$  will equal  $C_{1,8}$ .

A primary application of domestic use input-output tables is to create multipliers that are used to illustrate how an increase in demand in one sector affects the whole economy:<sup>35</sup>

- **Type I multiplier** – estimates the impact on the whole economy of £1 spent in a given industry, through its supply chain.
- **Type II multiplier** – includes the Type I multiplier, but also includes the effect of spending by households as a results of the additional employment generated by the additional £1 spend. The multipliers reported in this report are Type II multipliers.

<sup>35</sup> In a domestic IO table intermediate demand has been adjusted to remove the effects of imports. Imports are itemised in a different part of the IO table.

To calculate the indirect and induced impacts for London Luton Airport, domestic-use input-output tables, available for the UK economy from the ONS, were used to build a bespoke input-output model. The ONS tables can be downloaded here: <http://www.ons.gov.uk/ons/rel/input-output/input-output-analytical-tables/2010/index.html>

### **Regional input-output modelling approach**

The above approach is used to quantify the indirect and induced impacts at the UK level. An important element of this study, though, is to consider the geographical distribution of these multiplier effects to understand how London Luton Airport affects levels of economic activity in surrounding sub-regions and local areas.

Information on the geographical distribution of supply chain expenditure has been gathered from major firms based at London Luton Airport. In total, this information covers around 8 per cent of London Luton Airport's estimated supply chain purchases and for this portion of spending it is possible to develop a very accurate picture of the distribution of supply chain impacts. Oxford Economics has estimated the remaining 92 per cent of supply chain spending using inter-regional input-output models developed by Oxford Economics based on established academic techniques initially developed by Flegg and Webber.<sup>36</sup> This approach involves constructing regional input-output models by applying Location Quotients (LQs) and regional size adjustments to the standard UK input-output tables. Oxford Economics' regional model was used to provide data on LQ's and regional employment.

For this study, regional input-output tables were developed for Luton Borough, the Three County area and the regions surrounding Luton Borough (Eastern, South East, London and East Midlands).

Employment shares were used to divide the impact of the Three County area to the various local authorities within the area. The supply chain impact that remained (i.e. the four regions supply chain impact minus the Three Counties supply impact) was split out according to the sectoral employment share amongst all the local authorities within that area.

In the case of induced effects, no 'real' data are available to identify where London Luton Airport workers actually spend their wages. Nonetheless, it seems reasonable to assume that most spending is likely to take place close to workers' place of residence, and will therefore support GDP and employment in those areas. This is the starting point for our analysis of induced impacts, but in cases where this results in an unrealistically large injection to the local economy (given the economic structure and average spending per head in that local area) induced impacts are assumed to spill over into neighbouring areas. The

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<sup>36</sup> Flegg and Webber, (2000), 'Regional Size, Regional Specialization and the FLQ Formula'. Regional Studies, Vol. 34.6, pages 563–569.

spending adjustment and a quantum that is absorbed by neighbouring areas is calculated using regional IO tables.

#### **Indirect and Induced GDP contribution**

To calculate the indirect and induced gross value added contribution to GDP (i.e. GVA), the total expenditure effect (derived from the input-output models) is multiplied by industry sector-level GVA to gross output ratios, again calculated from the ONS input-output tables.

#### **Indirect and Induced employment**

To calculate the impact on employment, labour productivity in each industry sector in the supply chain is applied to the respective component of the GVA figures.

## Appendix B: Economic impact results by geographical area

**Table AB.1 Total GVA contribution to GDP impact of London Luton Airport, 2013**

Total GVA contribution to GDP 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	425	338	506	1270
Three Counties sub-region	425	85	222	732
Bedfordshire	425	37	138	600
Buckinghamshire		20	25	44
Hertfordshire		29	59	88
London Thameslink Corridor		8	12	20
Luton	425	29	80	533
Central Bedfordshire		5	45	50
Bedford		3	14	17
Aylesbury Vale		3	9	12
Chiltern		2	2	4
Milton Keynes UA		9	11	20
South Buck		2	1	3
Wycombe		4	2	6
Broxbourne		2	2	4
Dacorum		3	8	11
East Hertfordshire		3	5	8
Hertsmere		3	2	5
North Hertfordshire		2	17	19
St Albans		4	14	17
Stevenage		2	4	6
Three Rivers		2	2	4
Watford		4	2	7
Welwyn Hatfield		3	4	7
Barnet		1	2	3
Camden		2	3	5
Islington		1	1	3
City of London		0	2	3
Southwark		1	1	2
Lambeth		1	1	2
Merton		1	0	1
Sutton		0	0	1
Croydon		1	1	1
South Cambridgeshire		1	3	3
Enfield		1	1	2
Haringey		0	1	1
Harrow		0	1	1
East Northamptonshire		0	2	2
Northampton		2	4	5
South Northamptonshire		0	2	2
Wellingborough		0	1	2

**Table AB.2 Total employment impact of London Luton Airport, 2013**

Employment 2013				
Locations	Direct	Indirect	Induced	Total
UK	9437	7682	10088	27207
Three Counties sub-region	9437	2038	4408	15883
Bedfordshire	9437	943	2781	13161
Buckinghamshire		386	441	827
Hertfordshire		708	1186	1894
London Thameslink Corridor		150	163	313
Luton	9437	751	1598	11786
Central Bedfordshire		120	901	1021
Bedford		73	282	354
Aylesbury Vale		69	154	224
Chiltern		31	33	64
Milton Keynes UA		176	197	372
South Buck		35	20	54
Wycombe		76	37	112
Broxbourne		56	30	86
Dacorum		73	152	225
East Hertfordshire		79	94	173
Hertsmere		63	38	102
North Hertfordshire		51	333	384
St Albans		91	276	367
Stevenage		42	91	133
Three Rivers		45	42	87
Watford		130	42	172
Welwyn Hatfield		78	87	166
Barnet		11	34	45
Camden		35	47	82
Islington		25	15	40
City of London		9	20	28
Southwark		25	12	37
Lambeth		16	16	31
Merton		10	6	16
Sutton		9	4	13
Croydon		11	9	20
South Cambridgeshire		18	52	69
Enfield		10	15	26
Haringey		8	15	23
Harrow		7	16	23
East Northamptonshire		9	35	44
Northampton		41	85	126
South Northamptonshire		10	45	55
Wellingborough		13	25	38

**Table AB.3 Total wage impact of London Luton Airport, 2013**

Wage 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	356	181	203	740
Three Counties sub-region	356	44	80	481
Luton	356	15	29	401

**Table AB.4 Total tax impact of London Luton Airport, 2013**

Tax 2013 (£ million, Nominal)				
Locations	Direct	Indirect	Induced	Total
UK	237	122	169	648
Three Counties sub-region	237	30	34	301
Luton	237	10	25	272

## Appendix C: The total future economic contribution of London Luton Airport

**Table AC.1 Forecast direct Gross Value Added contribution to GDP of London Luton Airport, 2013 to 2030**

Direct GVA (£2013 prices)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline scenario	425	457	474	529	552	554	554	554	554	554	554	554	554	554	554	554	554	554
Development scenario	425	457	500	558	619	687	760	781	781	781	781	781	781	781	781	781	781	781

**Table AC.2 Forecast direct employment at London Luton Airport, 2013 to 2030**

Employment	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline scenario	9437	10113	10327	11420	11791	11659	11468	11282	11092	10869	10642	10433	10220	10009	9805	9614	9429	9259
Development scenario	9437	10113	10896	12044	13208	14460	15746	15924	15656	15342	15022	14726	14426	14128	13841	13570	13310	13070

**Table AC.3 Forecast total GDP contribution of London Luton Airport to the UK economy, 2030**

GVA (£2013 prices) 2030	Direct	Indirect	Induced	Total
Baseline scenario	554	441	660	1,654
Development scenario	781	622	931	2,335

**Table AC.4 Forecast total UK employment contribution of London Luton Airport, 2030**

Employment 2030	Direct	Indirect	Induced	Total
Baseline scenario	9,259	7,537	9,898	26,694
Development scenario	13,070	10,639	13,971	37,680



**Table AC.5 Forecast total GDP contribution of London Luton Airport to the sub-regional economy, 2030**

GVA (£2013 prices)		Direct	Indirect	Induced	Total
Three Counties sub region	2013	425	85	222	732
	Baseline Scenario 2030	554	111	339	1,004
	Development Scenario 2030	781	157	479	1,418
Bedfordshire	2013	425	37	138	600
	Baseline Scenario 2030	554	48	230	832
	Development Scenario 2030	781	68	325	1,175
Buckinghamshire	2013	0	20	25	44
	Baseline Scenario 2030	0	26	32	58
	Development Scenario 2030	0	37	45	82
Hertfordshire	2013	0	29	59	88
	Baseline Scenario 2030	0	37	77	114
	Development Scenario 2030	0	52	108	161

**Table AC.6 Forecast total employment contribution of London Luton Airport to the sub-regional economy, 2030**

Employment		Direct	Indirect	Induced	Total
Three Counties sub region	2013	9,437	2,038	4,408	15,883
	Baseline Scenario 2030	9,259	1,985	4,778	16,022
	Development Scenario 2030	13,070	2,801	6,745	22,616
Bedfordshire	2013	9,437	943	2,781	13,161
	Baseline Scenario 2030	9,259	931	3,015	13,205
	Development Scenario 2030	13,070	1,314	4,256	18,640
Buckinghamshire	2013	0	386	441	827
	Baseline Scenario 2030	0	380	478	858
	Development Scenario 2030	0	536	674	1,211
Hertfordshire	2013	0	708	1,186	1,894
	Baseline Scenario 2030	0	674	1,286	1,959
	Development Scenario 2030	0	951	1,815	2,765

## Appendix D: Occupational analysis

### Estimated split of London Luton Airport employees by sector and occupation

The estimated split of employment by sector comes from the 2012 Halcrow study. For each sector, the occupational breakdown has been estimated using data from the 2011 Census on the occupational structure of employment within the respective sector.

The specific steps involved include:

- 1) Estimate London Luton Airport employment by sector in 2013, drawing on the 2012 Halcrow study
- 2) Use the Luton 014 SOA (the Super Output Area where London Luton Airport is based) SIC-SOC matrix from the 2011 Census to estimate broad occupation breakdown by sector for the Airport
- 3) Split out broad occupational groups from step 2 using more detailed 3-digit SOC breakdown for the SOA from the 2011 Census.

**Table AD.1 Indicative occupational (SOC 3) structure of London Luton Airport employment**

Occupations	London Luton Airport estimated employment		
	2013	2030 (Baseline scenario)	2030 (Development scenario)
111 Chief Executives and Senior Officials	6	5	8
112 Production Managers and Directors	95	93	132
113 Functional Managers and Directors	133	130	184
115 Financial Institution Managers and Directors	7	7	9
116 Managers and Directors in Transport and Logistics	156	154	217
117 Senior Officers in Protective Services	11	10	15
118 Health and Social Services Managers and Directors	6	5	8
119 Managers and Directors in Retail and Wholesale	65	63	89
121 Managers and Proprietors in Agriculture Related Services	0	0	0
122 Managers and Proprietors in Hospitality and Leisure Services	97	96	135
124 Managers and Proprietors in Health and Care Services	4	4	6
125 Managers and Proprietors in Other Services	101	99	139
211 Natural and Social Science Professionals	6	6	8
212 Engineering Professionals	148	145	205
213 Information Technology and Telecommunications Professionals	174	171	241
214 Conservation and Environment Professionals	3	3	4
215 Research and Development Managers	6	6	8
221 Health Professionals	18	18	25
222 Therapy Professionals	3	3	4
223 Nursing and Midwifery Professionals	13	13	18
231 Teaching and Educational Professionals	37	37	52
241 Legal Professionals	16	15	22
242 Business, Research and Administrative Professionals	188	184	260
243 Architects, Town Planners and Surveyors	14	14	20
244 Welfare Professionals	5	5	7

245 Librarians and Related Professionals	6	6	8
246 Quality and Regulatory Professionals	44	43	61
247 Media Professionals	20	20	28
311 Science, Engineering and Production Technicians	136	134	188
312 Draughtspersons and Related Architectural Technicians	8	8	11
313 Information Technology Technicians	56	55	77
321 Health Associate Professionals	6	6	8
323 Welfare and Housing Associate Professionals	14	14	19
331 Protective Service Occupations	108	106	150
341 Artistic, Literary and Media Occupations	35	35	49
342 Design Occupations	21	20	29
344 Sports and Fitness Occupations	21	20	29
351 Transport Associate Professionals	641	629	888
352 Legal Associate Professionals	18	17	24
353 Business, Finance and Related Associate Professionals	118	115	163
354 Sales, Marketing and Related Associate Professionals	262	257	363
355 Conservation and Environmental associate professionals	1	1	1
356 Public Services and Other Associate Professionals	151	148	209
411 Administrative Occupations: Government and Related Organisations	33	32	46
412 Administrative Occupations: Finance	243	238	336
413 Administrative Occupations: Records	236	231	326
415 Other Administrative Occupations	212	208	293
416 Administrative Occupations: Office Managers and Supervisors	32	31	44
421 Secretarial and Related Occupations	132	130	183
511 Agricultural and Related Trades	14	14	20
521 Metal Forming, Welding and Related Trades	14	13	19
522 Metal Machining, Fitting and Instrument Making Trades	61	60	85
523 Vehicle Trades	402	395	557
524 Electrical and Electronic Trades	105	103	145
525 Skilled Metal, Electrical and Electronic Trades Supervisors	19	18	26
531 Construction and Building Trades	123	120	170
532 Building Finishing Trades	39	39	55
533 Construction and Building Trades Supervisors	6	6	8
541 Textiles and Garments Trades	14	13	19
542 Printing Trades	6	6	9
543 Food Preparation and Hospitality Trades	59	58	82
544 Other Skilled Trades	11	11	16
612 Childcare and Related Personal Services	108	106	149
613 Animal Care and Control Services	5	5	7
614 Caring Personal Services	84	82	116
621 Leisure and Travel Services	1828	1794	2532
622 Hairdressers and Related Services	45	44	62
623 Housekeeping and Related Services	24	23	33
624 Cleaning and Housekeeping Managers and Supervisors	23	22	31
711 Sales Assistants and Retail Cashiers	440	431	609
712 Sales Related Occupations	43	42	59
713 Sales Supervisors	49	48	68
721 Customer Service Occupations	297	291	411
722 Customer Service Managers and Supervisors	47	46	65

811 Process Operatives	53	52	73
812 Plant and Machine Operatives	77	76	107
813 Assemblers and Routine Operatives	134	132	186
814 Construction Operatives	32	32	45
821 Road Transport Drivers	209	206	290
822 Mobile Machine Drivers and Operatives	18	18	25
823 Other Drivers and Transport Operatives	326	320	451
911 Elementary Agricultural Occupations	3	3	4
912 Elementary Construction Occupations	13	12	17
913 Elementary Process Plant Occupations	43	42	60
921 Elementary Administration Occupations	39	38	54
923 Elementary Cleaning Occupations	176	172	243
924 Elementary Security Occupations	279	274	387
925 Elementary Sales Occupations	19	19	27
926 Elementary Storage Occupations	142	140	197
927 Other Elementary Services Occupations	147	144	203

#### **Approach to estimating the occupational split of unemployed workers in Luton Borough**

Oxford Economics' regional model was used to estimate the number of unemployed individuals in Luton Borough in 2030.

The occupational split of these workers was estimated using 2011 Census data for the occupational structure of the Luton Borough resident employment. However, the occupational structure of the unemployed is likely to differ from that of the employed. Annual Population Survey data was therefore used to estimate the proportional difference between the employed and the unemployed occupational structure at the UK level. This difference was then applied to the estimated occupational breakdown for Luton Borough unemployed.

## Appendix E: Detailed results from analysis of flight prices

Table AE.1 Analysis of flights prices

Destination	Luton Price	Average lowest price amongst Airports compared	Luton price rank out of airports compared	Number of airports compared
<b>Monday 09/03/2015</b>				
Morning (00.00 - 11.59)				
Alicante	137	140	3	5
Amsterdam	67	89	3	6
Barcelona	112	124	3	6
Dublin	23	42	2	7
Edinburgh	38	53	3	7
Geneva	117	111	4	6
Glasgow	34	64	2	7
Malaga	213	179	5	6
Afternoon (12.00- 17.59)				
Amsterdam	63	79	2	7
Dublin	39	44	2	6
Murcia	178	181	3	5
Evening (18.00 - 23.59)				
Aberdeen	43	70	1	5
Amsterdam	51	67	1	5
Dublin	33	34	4	6
Edinburgh	33	39	3	7
Glasgow	34	44	2	7
<b>Friday - 05/06/2015</b>				
Morning (00.00 - 11.59)				
Alicante	141	139	4	5
Amsterdam	46	60	1	6
Barcelona	119	99	6	6
Dublin	46	55	2	7
Edinburgh	40	48	2	7
Geneva	35	55	1	4
Glasgow	35	42	2	6
Malaga	137	133	4	6
Afternoon (12.00- 17.59)				
Amsterdam	44	52	2	6
Dublin	65	54	7	7
Murcia	65	75	1	4
Evening (18.00 - 23.59)				
Aberdeen	37	49	1	5

Amsterdam	42	62	1	5
Dublin	55	50	5	7
Edinburgh	37	45	2	7
Glasgow	35	44	2	7
<b>Saturday - 08/08/2015</b>				
<b>Morning (00.00 - 11.59)</b>				
Alicante	193	166	5	5
Amsterdam	52	54	5	7
Barcelona	133	141	4	6
Dublin	28	35	3	7
Edinburgh	73	54	6	6
Geneva	74	72	3	4
Glasgow	40	53	3	6
Malaga	171	156	4	5
<b>Afternoon (12.00- 17.59)</b>				
Amsterdam	43	57	1	5
Dublin	33	36	4	5
Murcia	131	136	1	4
<b>Evening (18.00 - 23.59)</b>				
Dublin	24	34	2	5

## Appendix F: Methodology to estimate gain in consumer surplus for Luton passengers

The overall approach was to estimate the generalised cost of travel from Luton and all comparator airports for each Luton passenger based on their ward of residence. The following comparator airports were used: Gatwick, Stansted, Birmingham, East Midlands (Other comparator airports were excluded from the analysis, as the analysis suggested that they were not the second cheapest to Luton for any passengers.)

The generalised cost of travel (GCT) was defined as follows:

Generalised cost of travel = Direct travel costs + Cost of time + Cost of air ticket

Where:

- Direct travel cost = Distance to each airport \* 45p per mile (based on HMRC mileage rates, which were sourced here:  
[www.gov.uk/government/publications/rates-and-allowances-travel-mileage-and-fuel-allowances/travel-mileage-and-fuel-rates-and-allowances#approved-mileage-rates-from-2011](http://www.gov.uk/government/publications/rates-and-allowances-travel-mileage-and-fuel-allowances/travel-mileage-and-fuel-rates-and-allowances#approved-mileage-rates-from-2011))
- Cost of time = Travel time to airport and average time of flight\* £14 per hour (this value is a weighted average of business and leisure travellers values of time. The business value is based on the Airports Commission - Economy: Transport Economic Efficiency Impacts report:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/372769/AC07\\_bookmarked.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/372769/AC07_bookmarked.pdf) and the leisure value is based on the Airports Commission - Economy: Delay Impacts Assessment Methodology Paper  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/372606/AC08a\\_tagged.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/372606/AC08a_tagged.pdf) )
- Cost of air ticket = Average fare of flights from each airport, based on the panel of comparable flights used in the fares analysis
- The average GCT for all Luton passengers was then calculated by adding the GCT for all passengers and dividing by the total number of passengers.
- The previous step was then repeated, but using the GCT to each passenger's second cheapest airport.

### Sample size and scaling

This analysis was based on a sample of 5.1 million passengers. Aggregate results for the consumer surplus have been scaled to reflect London Luton Airport's total passenger numbers (10.5 million passengers) in 2014.











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