



# Services superpower

How the aviation industry supports fast growing export sectors

May 2024

A WPI Economics report for Manchester Airports Group



## About Manchester Airports Group (MAG)

Manchester Airports Group (MAG) is the owner and operator of Manchester, London Stansted, and East Midlands airports. We are the second largest airport operator in the UK and the largest group of airports in the country.

MAG directly employs around 6,200 people, rising to 42,000 when including those employed by third parties at our airport sites. Our airports support a GVA of over £8 billion. They also play a crucial role in facilitating air freight. The UK's largest airports for dedicated air freighters are East Midlands and London Stansted, handling around 26% of the UK's total air freight volumes.

We have extensive research demonstrating the role our airports play as key economic infrastructure for the UK economy, with our route networks into overseas markets supplying the international connectivity that helps businesses trade and secure investment.

 [magairports.com](https://magairports.com)

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We focus on important social, environmental, and economic policy debates, such as the future of the green economy, productivity and growth, levelling up, and mental health. We are driven by a desire to make a difference, both through the work we do and by taking our responsibilities as a business seriously. We are a Living Wage Employer, and recently certified B Corporation.



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# Foreword

Creating a robust growth strategy for the UK economy cannot - and should not - be divorced from its existing strengths. The country faces many economic challenges, but as an island trading nation, it has the building blocks in place to become a services superpower. This forms part of the argument in the recent “Ending Stagnation” work from the Resolution Foundation - that to turbo-charge productivity, it is vital to look at what the nation is already good at and how that can be improved.



Today, the UK is the world's second largest exporter of services, second only to the US and the fourth largest exporter full stop. In addition to its long services-trading history, the UK is making significant strides in newer areas such as fintech and life sciences. The UK outperforms internationally on connectivity and services exports, with the second highest IATA air connectivity score in 2019 and business travel spend growth that was outpacing countries such as the US, France, Spain, and Australia in 2023. This last point is important because of the connection to innovation: the UK ranks fourth globally in the “Global Outgoing Knowledge Index”, which estimates that global GDP would have been 0.98% lower (equivalent to c. \$1 trillion in 2024) without the UK's strong history of sending business travellers abroad. As an island nation dependent on international connectivity for trade, the UK is disproportionately reliant on aviation to support growth versus peer economies.

It is in this context that Manchester Airports Group (MAG) commissioned this report from WPI Economics to explore the links between international connectivity, growth, and future economic prosperity. We wanted to look at the potential for the UK to double down on its strengths to grow, in line with recent recommendations such as those from the Resolution Foundation. This will only be possible if connectivity can be improved, facilitating services and goods exports and growth in newer sectors across the UK.

WPI Economics has explored existing and emerging sectors of the economy most dependent on international connectivity and found that - on average - they are projected to grow two percentage points faster than the rest of the economy (46% compared to 44%). This is not a small difference, as it represents £10.6 billion more added to the economy over the next 10 years if that rate can be maintained, compared to the average level of growth. With this in mind, it is essential that aviation is able to grow sustainably and in line with net zero requirements. This will mean companies can reap the benefits of new, better, and more direct international connectivity through their local airports, as it puts them into closer proximity with export markets. A contraction in connectivity would have serious consequences for growth, constraining those key sectors that have the potential to propel the country forward in a more geographically balanced way.

There is, of course, a regional element to achieving enhanced growth. The Social Market Foundation has suggested that for the UK to become a services sector superpower, we must tap the potential and grow service companies in the North too, putting a particular focus on the Greater Manchester economy. Success here will depend on developing the domestic and international connectivity these businesses need to thrive.

As part of this research, WPI Economics interviewed business representatives and leaders from across these high-growth sectors, confirming that beneath the headline economic findings are companies reliant on international connections for investment, sales conversion, due diligence in the supply chain, international students, talent, and best practice. Any reduction in connectivity would have serious implications for these businesses and many thousands of others. In short, we need to recognise the inextricable link between our growth prospects, exposure to trade in services, and reliance on international connectivity. We should lean into our existing strengths.

**Ken O'Toole, Group CEO at Manchester Airports Group**

# Executive summary

Aviation is a significant economic contributor to the UK. Prior to the pandemic, it created 1.6 million jobs and contributed £120 billion in GVA to the UK economy.<sup>1</sup> However, that pales in comparison to the role of the sector as a strategic enabler for the wider economy. The UK is an exporting island trading nation. The country's reliance on services is well-documented, with service exports currently twice the OECD average.<sup>2</sup> As the world's second largest services exporter after only the US, a significant proportion of investment naturally flows to services. There is a clear case that rather than trying to change this, doubling down on the country's existing strengths is likely to be the most direct route to higher productivity.<sup>3</sup>

We explored that idea through the lens of sectors - traditional and emerging - that rely on international connectivity for their success. We looked at 10 traditional sectors, mostly at two-digit SIC code level, and four newer, emerging sectors. We found that traditional sectors reliant on air connectivity are, taken together, projected to grow faster than the economy as a whole. In the 10 years to 2033, these sectors are projected to see nominal-terms GVA growth of 46%, compared to GVA growth of 44% for the economy as a whole. This is an important difference: it represents **£10.6 billion** more added to the economy in that timeframe than if those sectors grew in line with the rest of the economy. We also explored four emerging sectors - advanced manufacturing, fintech, life sciences, and advanced digital sectors - where the UK has existing strengths, and which depend on international connectivity. Between them, they had combined turnovers of £110 billion in 2023 and have **five-year growth rates of 51%**.<sup>4</sup>

## The UK as a services superpower:

- The UK is the second largest exporter of services, second only to the US. Its service exports are currently twice the OECD average.
- The UK's business travel spend growth was outpacing countries such as the US, France, Spain and Australia in 2023.
- The UK ranks fourth globally in the "Global Outgoing Knowledge Index", which estimates that global GDP would have been 0.98% lower without the UK's strong history of sending business travellers abroad.
- 10 focus sectors with a high reliance on international connectivity are projected to grow faster (46%) than the economy as a whole (44%) over the next 10 years.
- This faster growth represents **£10.6 billion** more added to the economy in that timeframe than if those sectors grew in line with the rest of the economy.

This is important in the context of the discussion of how to boost productivity in the UK and how to ensure these critical sectors dependent on international connectivity can achieve and - hopefully - exceed these forecast growth rates. This follows the thread from the Resolution Foundation's work on ending stagnation - how can we cement an advantage in those areas where we have a natural strength? To underline this, annual growth in business travel spend in the UK is outpacing countries such as the US, France, Spain, and Australia (2023 data), with many businesses relying on international connectivity to cement relationships, create new partnerships, and conduct supply chain due diligence. We found that while the way businesses use connectivity has adjusted post-pandemic, there are many moments where a digital connection has not replaced a physical one.

## Key conclusions:

- The UK has huge built-in advantages as a services exporter on a global scale and as a location where existing and rapidly scaling sectors benefit from its international connections.
- Businesses continue to rely on international connectivity to cement relationships, enter new markets, conduct supply chain due diligence and share knowledge.
- Our status as an island trading nation, harnessing growth in key sectors and creating a successful future for international connectivity are all interlinked.
- The UK must harness the opportunity to become a services superpower and capture the economic value available from going further and faster in the decarbonisation of aviation.



CHAPTER 1

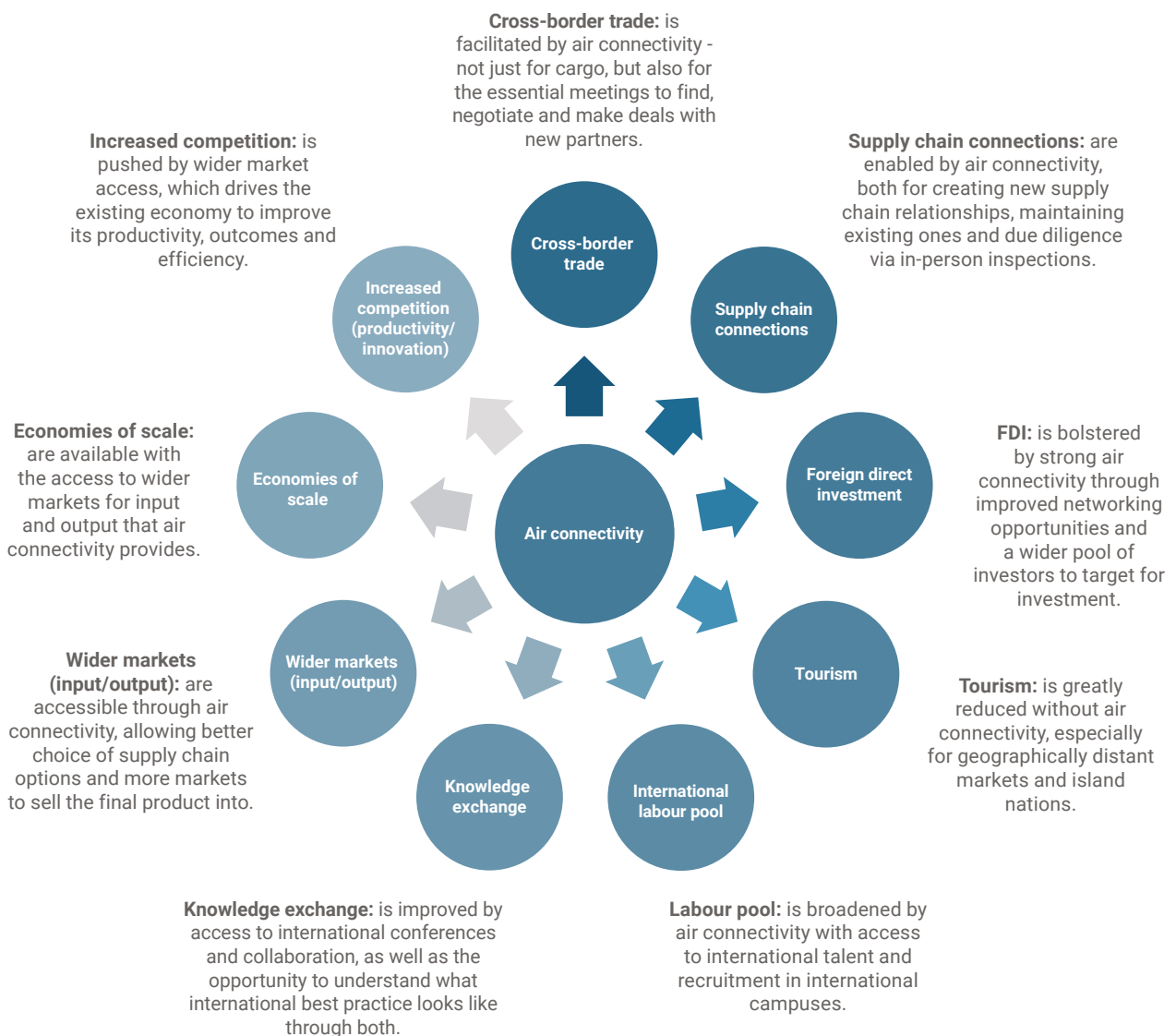
# Introduction - air connectivity in a service economy

As has been well documented, aviation is an essential driver of economic growth in the UK. Prior to the pandemic, it created 1.6 million jobs and contributed £120 billion in GVA to the UK economy.<sup>5</sup> However, these statistics alone do not capture the facilitating role air services play for the wider economy or in bolstering the UK's services superpower potential.

There is compelling evidence that business connectivity increases productivity across the whole UK economy, which is vital given the UK's enhanced productivity aspirations.<sup>6</sup> Connectivity also boosts innovation, a significant aspect of improving productivity. Research has found that a 10% increase in the number of non-stop flights between two locations led to a 1.4% increase in the production of collaborative patents, an indicator of collaborative innovation.<sup>7</sup>

The diagram below summarises the different ways that air connectivity supports the economy:

Figure 1: Economic impacts of air connectivity



To ensure these economic benefits can be harnessed, it is essential that these connections can flow unimpeded.<sup>8</sup> Greater connectivity also offers the potential for future dividends of additional connectivity to accrue to the UK's regions to support progress on raising productivity and rebalancing the UK's economic geography. As the only option for moving high volumes of people globally at speed, economic growth reliant on global business, tourism, international collaboration or service exports is highly dependent on the continued smooth functioning and easy connectivity provided by the aviation sector.<sup>9</sup> This is particularly important when geographical factors come into play: the International Air Transport Association's (IATA's) air connectivity scores show that the top 20 most connected countries in the world weighted by GDP are mostly islands.

Whilst the aviation industry plays an important role in services exports, tourism, and many other forms of activity for all economies, the role it plays in the UK as an island trading nation is particularly significant. As an economy heavily reliant on its services sector, and in particular on exporting those services, the UK is dependent on strong air connectivity. Office for National Statistics (ONS) trade data shows that services export volumes exceeded goods exports volumes by £62 billion in 2023. According to an analysis undertaken by the British Chambers of Commerce, taking inflation into account, UK services exports are 4.7% higher than pre-2020 lockdown levels.<sup>10</sup> As the second largest exporter of services in the world after only the US, a significant proportion of investment naturally goes to services over manufacturing. As such, there is a strong argument for recognising existing strengths and investment patterns and investing further to bolster them.<sup>11</sup>

## A new normal?

Aviation experienced the biggest ever shock to sector demand in recent years: the Covid-19 pandemic shut down all flights for a period of time in 2020, and travel did not begin to normalise until the beginning of 2022. Patterns of travel have changed but air travel as a whole has seen steady recovery since.

The most significant strategic challenge the sector faces today is decarbonisation. The UK aviation industry has committed to reaching net zero by 2050, and Sustainable Aviation has published a detailed roadmap for achieving that target.<sup>12</sup> The UK Government agrees there is a need to support the international connectivity for growth of service exports,<sup>13</sup> but has choices to make regarding the approach to sustainable aviation fuels (SAF) in particular and the extent to which the UK invests in its own SAF sector or imports SAF, which will in turn shape the extent to which the UK can lead the way here. The transition to net zero is essential: the challenge is to make the shift without disrupting the significant potential enhanced international connectivity brings for future growth.

Against this backdrop of significant change, the purpose of air travel has been shifting, too. As part of this research, we spoke to businesses and sector member organisations across the economic spectrum which rely on air connectivity for growth. We asked them about a new normal for air travel, and there is no firm consensus on what that might look like. Their insights shone a light on not only the continued importance of air travel, but also on the diversity of opinion and need across different segments of the economy, and therefore differing expectations of what is to come next for business travel.

Stakeholders highlighted the new balances that must be weighed up when deciding on business air travel and how travel patterns have changed as a result. Most stakeholders we spoke to reflected on the degree of change that has happened already and acknowledged that how they make use of international business connectivity has changed since 2020. Across the group, it was stated that the pandemic and the rise of online meetings have reduced the need for some international travel but not in areas that are critical for establishing new partners, vetting the supply chain or cementing client relationships. It was strongly emphasised that the travel that has been prioritised is more valuable and productive and tends to involve more strategic and complex decisions or actions. Remote meetings have not been able to fully replace face-to-face interactions, so air travel was felt to remain critical for building trust and credibility. As Gareth Vest, Aviation Director at AtkinsRéalis, told us: *“Overall, people like to work with people. To create new relationships and get great things done, the most effective route is often getting round a table in person - and aviation is a key facilitator of this for a global business like ours.”*<sup>14</sup> Attitudes have shifted towards making deliberate choices about what time together can deliver, and which activities are worth investing into business travel for. As one interviewee in the financial services sector put it: *“The moments of in-person interactions become more important because they happen less often.”*<sup>15</sup>



## International performance as an island nation

The UK is particularly reliant on air connectivity for a variety of reasons, including its geography and history. As an island nation, the UK historically cultivated a seafaring economy based on trade and specialisation in the goods and services the UK was best suited to provide. With the advent of aviation, this translated naturally into a strength in air connectivity. A 2019 analysis from IATA shows that, when adjusting for population size, the UK had the second highest air connectivity score in Europe, second only to Spain with its tourism-based economy.<sup>16</sup> As mentioned earlier, the most connected countries tracked by the IATA rankings tend to be islands as these geographies are both more reliant on and see greater benefits from air connectivity, partly due to a heavier reliance on trade to provide the goods and services demanded by the economy.<sup>17</sup>

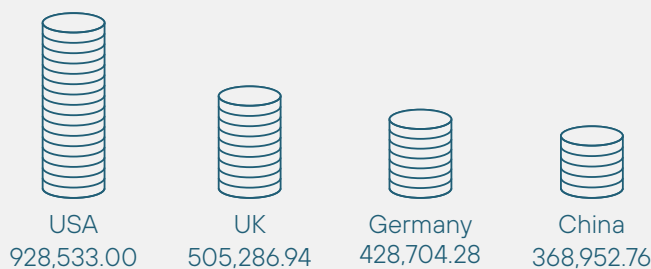
This outperformance in air connectivity and international travel is confirmed across a variety of studies and indices. For example, according to the Global Business Travel Association, annual growth in business travel spend in the UK outpaced countries such as the US, France, Spain, and Australia in 2023. One of the few countries significantly outperforming the UK on this metric is Japan - another island nation with a historical seafaring and trading culture. These numbers also suggest ongoing recovery in business travel, with significant upticks across the board and an average of 34% growth in business travel spend across the top 15 markets tracked by the index.<sup>18</sup>

The UK also ranks fourth globally in the "Global Outgoing Knowledge Index". This tool, created by Harvard University Growth Lab, shows the global impact of a country's business travel flows, estimating the contribution of a country's outgoing business travel to every other country's economy over time. With its high ranking in the table, global GDP would have been 0.98% lower without the UK's strong history of sending business travellers abroad.<sup>19</sup>



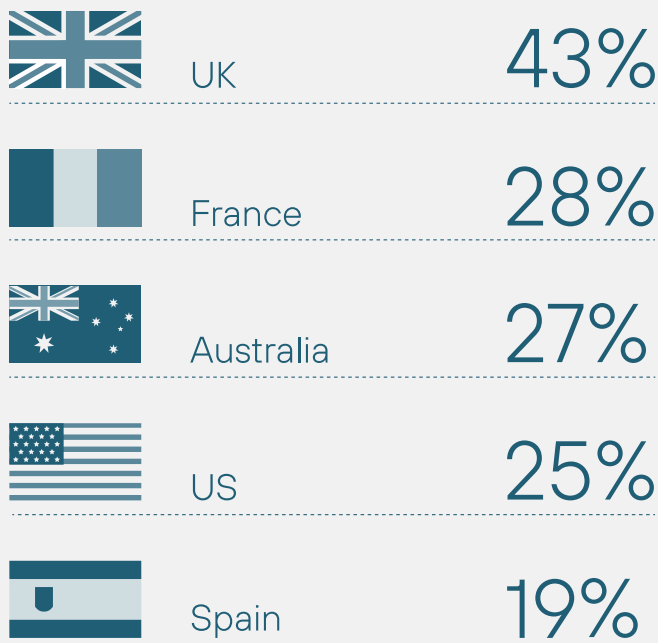
# As an island trading nation, sustain critical to the UK's future growth a

The UK is the second largest services exporter in the world, second only to the US.



Service exports (Balance of Payments BoP USD)

UK business travel growth spend outpaced countries such as the US, France, Spain, and Australia in 2023.



Annual growth in business travel spending (BTS) 2023



# enable international connectivity is as a services superpower

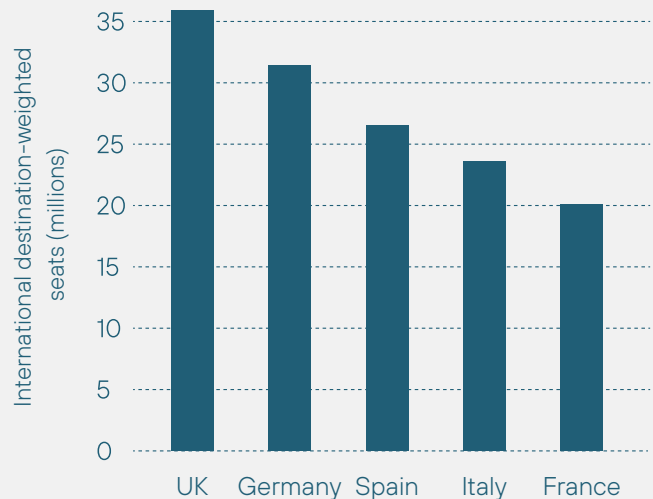


The UK ranks 4th in the "Global Outgoing Knowledge Index", which estimates that global GDP would have been 0.98% lower without the UK's strong history of sending business travellers abroad.



0.98%

Prior to Covid, IATA confirmed the UK was the most internationally connected country in Europe.



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# The economic contribution of sectors reliant on air connectivity

## Chapter two summary:

- We analysed 10 traditional sectors with a dependency on international connectivity and found they contribute £643 billion to GVA and 4.2 million jobs to the UK economy.
- These sectors are projected to see nominal-terms GVA growth of 46%, which compares to GVA growth of 44% for the economy as a whole.
- This is an important difference: it represents **£10.6 billion more added to the economy** over the next 10 years if that rate can be maintained, compared to the average level of growth.
- We also analysed four fast-growing emerging sectors reliant on international connectivity, which represent almost £110 billion of revenue.
- These newer sectors have five-year average growth rates of 51%.

To look more closely at the interdependence between the future of the UK's economic growth and international connectivity, we conducted an analysis to create a deeper understanding of the sectors that rely most on air connectivity.

For those sectors, we wanted to explore the current gross added value (GVA) contribution and future projected growth. We created a shortlist of sectors by:

- **Analysing existing literature**, including government publications, such as a report produced for the Department for Transport (DfT) that investigates the existence of wider economic impacts of air connectivity and comments on the importance of proximity to airports for service sectors such as hospitality, finance and insurance, energy, real estate, and transport and warehousing.<sup>20</sup>
- **Tapping into the knowledge held within MAG** to ensure that this emerging picture was consistent with their on-the-ground understanding of the sectors most dependent on aviation.
- **Sense-checking these categorisations with stakeholders** and exploring those sectors highlighted by the Resolution Foundation's "Ending Stagnation" report as the most likely to play a significant part in lifting the UK economy out of its productivity stagnation.

We homed in on those sectors where the UK is already focused on expanding its potential, in keeping with the theme of bolstering existing strengths rather than reinventing the nature of its economy.

We selected a combination of 10 SIC codes (predominantly two-digit) to capture these sectors:

1. Real estate activities (SIC code 68)
2. Financial service activities, except insurance and pension funding (SIC code 64)
3. Activities auxiliary to financial services and insurance activities (SIC code 66)
4. Food and beverage service activities (SIC code 56)
5. Insurance, reinsurance, and pension funding, except compulsory social security (SIC code 65)

6. Warehousing and support activities for transportation (SIC code 52)
7. Electric power generation, transmission and distribution (SIC code 35.1)
8. Accommodation (SIC code 55)
9. Motion picture, video and TV programme production, sound recording and music publishing activities (SIC code 59)
10. Creative, arts and entertainment activities (SIC code 90)

Some of these sectors are representative of services-based sectors of the UK economy, particularly hospitality (captured in (4) and (8)) and financial services (captured in (2), (3) and (5)). Others are broader activities that underpin both the services and export strengths of the UK economy (6) and reflect significant exports in terms of knowledge and consulting as well as goods (7). Real estate was included because of the extent of its reliance on international investment, which is underpinned by connectivity. Finally, the expanding creative sector was captured through (9) and (10). In addition to the non-services high-growth traditional sectors identified above, we also included advanced manufacturing in our emerging sectors (see section below) due to the strength of the sector and the UK's successes so far in specialising into specific segments of advanced supply chains such as aerospace.

We then looked at the current GVA and employment figures for these sectors before exploring future growth projections and benchmarking these against the overall economy. We split this analysis into those sectors that can be defined by traditional SIC codes at UK and regional levels and those which are newer and faster growing and so require analysis that can effectively capture smaller, high-growth sectors.



## Traditional sectors reliant on air connectivity contribute £643 billion to GVA and 4.2 million jobs

To assess the direct GVA and employment of the sectors reliant on air connectivity, we developed a model which draws on sectoral GVA estimates for the UK and its regions obtained from the ONS for 2023. Employment data has been sourced from the ONS Business Register and Employment Survey and Northern Ireland Statistics and Research Agency for 2022 and has been converted into Full-Time Equivalent (FTE) terms. The model also considers the secondary economic reach of the sectors by computing indirect and induced effects.

It is estimated that sectors most reliant on air connectivity contribute **£643 billion** directly to the UK economy and are responsible for **4,189,000 jobs**. **Table 1** below shows how the different sectors contribute to these totals. *Real estate activities* contribute the highest amount of GVA at £283 billion, whilst the *creative, arts and entertainment activities* have the lowest GVA in the subset of sectors reliant on air travel - but have been included due to their strategic potential for the UK economy. The sector which accounts for the largest amount of employment is *food and beverage service activities*.

Table 1: Sector contributions to GVA in 2023 and FTE employment in 2022

Sector	2023 GVA (£m)	% total GVA	2022 FTE employment	% total employment
Real estate activities	283,503	44.1%	502,145	12.0%
Financial service activities, except insurance and pension funding	97,902	15.2%	445,649	10.6%
Activities auxiliary to financial services and insurance activities	65,892	10.2%	435,521	10.4%
Food and beverage service activities	52,405	8.1%	1,437,310	34.3%
Insurance, reinsurance and pension funding, except compulsory social security	45,336	7.0%	93,065	2.2%
Warehousing and support activities for transportation	27,485	4.3%	629,897	15.0%
Electric power generation, transmission and distribution	23,666	3.7%	89,572	2.1%
Accommodation	21,358	3.3%	354,702	8.5%
Motion picture, video and TV programme production, sound recording and music publishing activities	14,851	2.3%	117,861	2.8%
Creative, arts and entertainment activities	11,122	1.7%	83,431	2.0%
<b>Total</b>	<b>643,520</b>		<b>4,189,151</b>	

The distribution of the GVA and employment represented by the 10 shortlisted sectors can also be attributed across UK regions. **Table 2** demonstrates that, as you might expect, London accounts for the largest share of UK GVA in these sectors, followed by the South East and North West regions, with the same being true for FTE employment in 2022. Meanwhile, Northern Ireland and the North East currently have the lowest contributions to the latest GVA and employment figures in the selected sectors.

Table 2: Regional attribution of 2023 GVA and 2022 FTE employment for the 10 shortlisted sectors

Sector	2023 GVA (£m)	% total GVA	2022 FTE employment	% total employment
London	247,511	38.5%	1,042,501	24.9%
South East	76,071	11.8%	515,736	12.3%
North West	50,282	7.8%	402,964	9.6%
East	44,147	6.9%	349,163	8.3%
South West	42,831	6.7%	342,395	8.2%
Scotland	41,238	6.4%	322,245	7.7%
West Midlands	37,364	5.8%	326,523	7.8%
Yorkshire and the Humber	36,292	5.6%	290,406	6.9%
East Midlands	26,721	4.2%	247,827	5.9%
Wales	16,300	2.5%	153,431	3.7%
North East	14,651	2.3%	123,382	2.9%
Northern Ireland	10,110	1.6%	72,580	1.7%
<b>Total</b>	<b>643,520</b>		<b>4,189,151</b>	

Although not presented here, these sectors' economic reach goes even further than the direct GVA and employment figures when considering the supply chain and induced effects of their activity. The total value of the induced, direct and indirect GVA of these sectors is around £1.5 trillion.

## Growth in traditional sectors reliant on air connectivity

To consider how this picture might change over time, we then produced future GVA projections for each sector based on the Office for Budget Responsibility (OBR)'s March 2023 long-term economic determinants and March 2024 Economic and Fiscal Outlook. Our methodology applies the OBR's anticipated GDP growth rates to the historical ONS GVA data described above.

We found that sectors reliant on air connectivity are, in the aggregate, projected to grow faster than the UK economy as a whole. In the 10 years to 2033, "traditional" sectors reliant on air connectivity are projected to see nominal-terms GVA growth of 46%, which compares to GVA growth of 44% for the economy as a whole. This is an important difference: it represents **£10.6 billion more added to the economy** over the next 10 years if that rate can be maintained, compared to the average level of growth. This underlines the earlier point about the importance of ensuring that international connectivity can continue to support these sectors to grow at this rate - and ideally to exceed it.

It is worth noting that within this headline picture there is variation between sectors. The sector with the fastest projected growth is *electric power generation, transmission and distribution*, with nominal growth of 57% in the 10 years to 2033. *Financial service activities, excluding insurance and pension funding, real estate activities*, and *motion picture, video and TV programme production, sound recording, and music publishing activities* all see nominal growth of 50% or above, which underlines the point the Resolution Foundation made about the UK investing in and playing to its strengths as part of a strategy to overcome economic stagnation. At the other end of the scale, *activities auxiliary to financial services and insurance activities* and *creative, arts and entertainment activities* are projected to grow more slowly than the economy as a whole (20 and 25% respectively).



## Fast-growing emerging sectors reliant on international connectivity represent almost £110 billion of revenue

Although SIC codes form the basis of sectoral estimates within ONS and other national datasets, the classifications do not always effectively capture smaller, high-growth sectors. As such, we have leveraged a proprietary cutting-edge machine learning approach to create "Real Time Industrial Classifications" (RTICs). The Data City product we use has been built using the proprietary natural language processing (NLP) technology hosted in The Data Explorer (The Data City's platform). The Data City's NLP analyses the website text of companies and groups them according to similar descriptions of their activities, products and/or services.

This section explores the current and historic turnover for four emerging sectors that are dependent on international connectivity: advanced manufacturing, fintech, life sciences, and advanced digital sectors. For this analysis, we have excluded companies with annual turnover in excess of £100 million. This enables us to focus on all but the very largest to avoid distorting the data.<sup>21</sup> This analysis shows that companies in these four sectors had combined turnovers of nearly **£110 billion in 2023**. Between them, they also employed over three-quarters of a million people. The largest of these emerging sectors is life sciences, with around 320,000 employees.

Table 3: Projected sector-wide turnover (£ million) and employment (headcount) for identified emerging sectors with a high degree of reliance on air connectivity, 2023<sup>22</sup>

Industry name	2023	
	Turnover (£ million)	Employment
Life sciences	36,412	320,141
Advanced digital	36,410	242,589
Advanced manufacturing	26,099	168,083
Fintech	17,915	114,233
<b>Total</b>	<b>108,471</b>	<b>782,104</b>

Source: The Data City, data hosted in The Data Explorer (The Data City's platform)

These companies are well-spread across the UK. The Data City "location quotient"<sup>23</sup> shows that London is less specialised than the UK as a whole in the emerging sectors considered here, while Northern Ireland, the North East and West Midlands all exhibit a high degree of specialisation in these sectors. Specialisation in these emerging sectors is also relatively high in Wales, the East Midlands, and the South East.

Table 4: Regional location quotients (by employment, headcount) for identified emerging sectors with a high degree of reliance on air connectivity, 2023

Region	All emerging sectors (2023) Location quotient, headcount
Northern Ireland	1.42
North East	1.34
West Midlands	1.25
East Midlands	1.15
Wales	1.12
South East	1.11
Yorkshire and The Humber	1.09
East	1.02
Scotland	1.02
South West	1.00
North West	0.87
London	0.85

Source: The Data City, data hosted in The Data Explorer (The Data City's platform)

## Growth in rapidly expanding sectors

These emerging sectors with a reliance on air connectivity - where GVA data is not readily available - have exhibited strong growth. Data on company turnover shows significant growth across the advanced manufacturing, fintech, life sciences, and advanced digital sectors.<sup>24</sup> The four sectors combined saw turnover growth of 32% in the five years to 2022, which accelerated to **51% in the five years to 2024**. The greatest growth, albeit from the smallest base, has been seen in the fintech sector, with turnover increasing by 101% in the five years to 2024. Life sciences has seen the next greatest increase, with a 60% increase in sector-wide company turnover. When you compare these growth rates to the wider UK economy average, it is clear that supporting continued success in such rapidly growing sectors will be important for future economic growth.



Table 5: Projected five-year turnover growth rate, 2019-2024, nominal terms, for identified emerging sectors with a high degree of reliance on air connectivity

Industry name	Combined company turnover - Five-year growth rate (%)		
	2022	2023	2024
Life sciences	45%	45%	60%
Advanced digital	32%	18%	53%
Advanced manufacturing	16%	18%	25%
Fintech	47%	61%	101%
<b>Total</b>	<b>32%</b>	<b>29%</b>	<b>51%</b>

Source: The Data City, data hosted in The Data Explorer (The Data City's platform)

As would be expected, there have been commensurate increases in employment in these emerging sectors, with combined company headcounts increasing by 56% across all four sectors in the five years to 2024. Of the four sectors, the greatest increase in employment has been for the fintech sector.

Table 6: Projected five-year employment growth rate, 2019-2024, nominal terms, for identified emerging sectors with a high degree of reliance on air connectivity.

Industry name	Combined company headcount - Five-year growth rate (%)		
	2022	2023	2024
Life sciences	41%	48%	63%
Advanced digital	36%	42%	63%
Advanced manufacturing	7%	7%	16%
Fintech	75%	93%	135%
<b>Total</b>	<b>32%</b>	<b>38%</b>	<b>56%</b>

Source: The Data City, data hosted in The Data Explorer (The Data City's platform)

Ensuring that these emerging sectors, which depend on international connectivity, can continue to grow at these rates is critical for harnessing newer areas of strength for the UK. As chapter three explores in more detail, these types of scaling businesses are often dependent on international connectivity to gain a foothold in new markets to establish themselves with clients and suppliers and to gain access to international talent. Even where these rates are lower, for example, in the case of advanced manufacturing, it is important not to cut off a growing area, particularly one that has strong potential regional benefits.

# Businesses rely on air connectivity for growth

## Chapter three summary:

- To better understand the links between international connectivity and growth, we interviewed business leaders, tertiary education providers, trade, and representative bodies.
- They told us that international connectivity is most important to their businesses for:
  - **Doing business:** transporting goods, meeting suppliers, managing complexity and building trust.
  - **Growth:** finding new markets, converting new business, and cementing relationships.
  - **Education and knowledge sharing:** university competitiveness, global collaboration and learning from others.
  - **New opportunities:** entering emerging markets, new supply chain locations and driving innovation.
- The stakeholders we interviewed spoke about business air connectivity as critical for meeting customers to create, cement and maintain relationships, as these are the elements of the process that cannot be replicated digitally.

Having established the enhanced growth potential of these traditional and emerging sectors dependent on international connectivity, we spoke to a range of stakeholders across sectors to hear their experiences and perspectives on why air connectivity is important to businesses in the UK.

We spoke to a range of businesses, universities and representative groups spanning regions, sizes and sectors to ensure we heard from a cross-section of start-ups, SMEs, larger businesses, international organisations, tertiary education providers, trade and representative bodies. We conducted semi-structured interviews with 15 senior representatives and informally engaged many more. Those we interviewed told us how important good air connectivity remains to their business models despite experiencing some changes in their approach to business travel since the pandemic. Many highlighted critical activities which would not be feasible without air travel and also identified sectors - such as universities - for which whole markets would be lost without good air connectivity.

According to our stakeholders, air travel is most important for:

- **Doing business:** transporting goods, meeting suppliers, managing complexity, and building trust.
- **Growth:** finding new markets, converting new business, and cementing relationships.
- **Education and knowledge sharing:** university competitiveness, global collaboration and learning from others.
- **New opportunities:** entering emerging markets, new supply chain locations and driving innovation.

Overall, the message from our stakeholders was one of an evolution of demand for business air travel, which supports the earlier statistic in the growth of business travel in the UK compared to other countries. We heard that while some activities which previously may have been considered to require air travel had moved online, every stakeholder we talked to stressed at least one if not more key business activities that have continued - and will continue - to require the face-to-face contact that business air connectivity provides. As Gareth Vest, Aviation Director at AtkinsRéalis, put it: *“There are moments when you need to put people in the same room together so that relationships can work and ideas can flow.”* We consider these key activities in turn, as well as highlighting some cross-cutting messages that came through from the stakeholder insights.

The key themes covered by our conversations with stakeholders included:



### Supply chain governance and management

While there was an expectation that we would hear examples of sales and investment opportunities when considering the importance of international business air connectivity, we found that top of mind for many of those we spoke to was supply chain governance. Whether from a manufacturer that uses air travel to visit its suppliers across the globe or from member organisations representing all sorts of procurers and supply chains, we heard that air travel for due diligence was an essential component of supplier relations.

The stakeholders we spoke to acknowledged that the pandemic had changed many things when it came to air travel but that it had made the use of air travel for supply chain governance more prominent, not less. As supply chains collapsed during the pandemic, many sought to shore up those supply chains and make them more resilient for the future. While our stakeholders did not mention any reshoring of supply chains as a consequence of the pandemic, we know the disruption drove nearshoring efforts, with businesses across the country looking to bring supply chains geographically closer. This process relied on, and will continue to rely on, air travel.

Business air connectivity as a source of trust and reassurance was reiterated over several of our conversations. Businesses stressed that being able to physically inspect supply chains, which in many cases have seen extreme disruption over the past five years, was essential to ensuring the reliability and quality of their supply partners. It was also highlighted that some complex technical inputs need to be understood and evaluated more fully, so face-to-face communication is required to make a decision based on full understanding and information. This applied both to upstream and downstream supply chains. Distributor relations were flagged as an essential area which relied on air travel to manage properly.

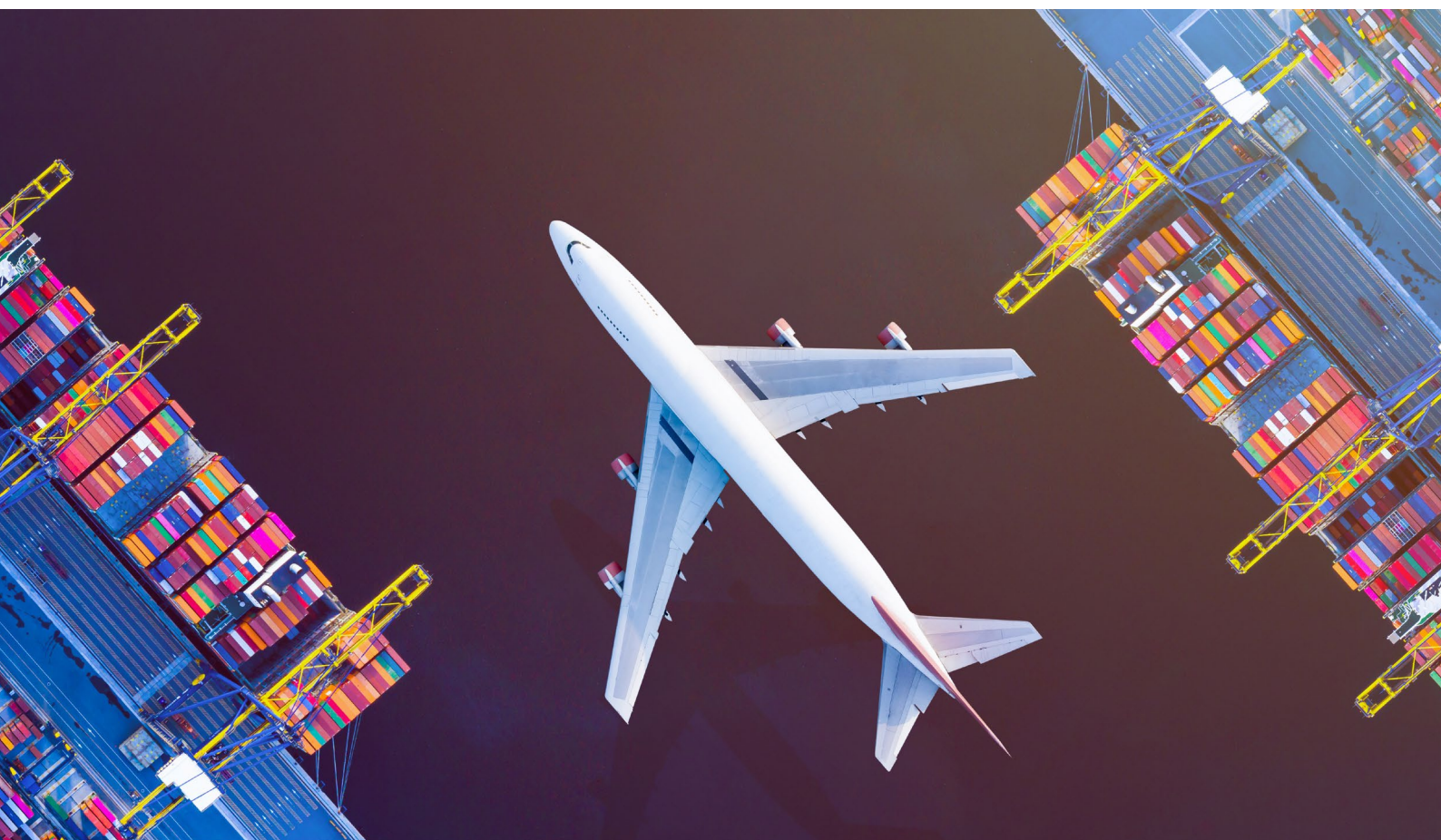
## Sales and customer relationship management

Winning business and maintaining customer relationships was expected to be one of the main drivers of air travel demand amongst the businesses we spoke to, and it was highlighted in various forms consistently across our conversations. As one interviewee said: *"Future growth is 100% dependent on connectivity. Relationships are key - they must be personal and usually in person."* This was echoed by James North from Primera, which is the UK's largest manager of Business Improvement Districts. He told us that as it expands its international work: *"For our outreach, air connectivity is key. We identify key markets, key individuals, and then take our offer to them."*<sup>25</sup>

The stakeholders we interviewed spoke about business air connectivity as critical for meeting customers and engaging in social activities with future partners to cement and maintain relationships, as these are the elements of the process that cannot be replicated digitally. This was considered to be especially important in emerging markets, which are further from the UK either geographically, culturally, or both. Whilst there was an indication that bidding had largely moved online, the initiation and maintenance of client relationships was still considered a face-to-face activity by the stakeholders we spoke to, as were meetings at key moments. Another interviewee from a design firm told us that: *"key milestones meetings are still carried out in person, and we have a strong commitment to this going forward."*

Some sectors are particularly reliant on international markets for their business model such as the tertiary education sector in the UK. Universities UK told us that: *"air connectivity is a foundation for UK universities' competitiveness."*<sup>26</sup> Without good air connectivity, the international success of UK universities in attracting international students and the significant economic benefit and impact they have on universities and their regions would not be realisable. And the more direct the connectivity is, the more likely a university is to be considered. As Amanda Wolthuizen, Chief of Staff to the President & Director of Public Affairs at Imperial College London, told us: *"The free flow of international talent is absolutely fundamental. If we want to attract talent, it needs to be as easy as possible for globally sought-after researchers and students to travel in and out of the UK."*

Across stakeholders, there was an idea that was well encapsulated by one interviewee *"Facetime is still required for big moments, such as sales pitches, renegotiations or software integration"*.<sup>27</sup> This was particularly clear when it came to sales-related activities: none of our stakeholders suggested that the need to travel to manage this activity face-to-face had reduced due to the pandemic.



## Wider labour pool

Many of our stakeholders said they were struggling to get access to the people they need, both domestically and internationally. As one interviewee emphasised, this is their “*biggest challenge*”. Clearly, connectivity is only part of the picture impacting the labour market. Many talked to us about the challenges they faced post-Brexit, with employees facing some difficulties and tensions in travelling to Europe, which was compounded by varying degrees of familiarity with newer rules. In the face of this, some companies said they had leveraged their air connectivity to hire European passport holders, something they emphasised would not have been feasible without good, direct links to Europe. For others, global talent remains critical, as one large consultancy said: “*Global recruitment is still very important. Additionally, as a global business, there is an opportunity to move people around the world. Global mobility relies on reasonably reliable connectivity.*”

The importance of air connectivity for avoiding domestic skills shortages was also emphasised in several of our conversations - the universities sector specifically mentioned this as one of the benefits of international connectivity. Sectors that struggle to recruit domestically due to reputational issues (such as agriculture) have also outlined the importance of air travel to their business model, ensuring they have a wide enough pool to find the skills they need. This is also likely to be particularly relevant to the fast-growing emerging sectors we have identified, such as life sciences and advanced manufacturing, where existing domestic skill sets and training are not yet sufficient to forecast future demand.

International air connectivity was also considered to more generally expand the labour pool companies have access to by making the UK a more attractive place to live and invest in. Universities UK, for example, highlighted its importance for recruiting international teaching and research talent to help the sector compete.<sup>28</sup> One university told us that they are recruiting in such a small but highly competitive international pool that it can be very much about attracting an individual person to the UK. Lastly, some business models in the fast-growing service sectors we have explored require deploying teams with distinctive capabilities directly to deliver projects, which frequently also involves working with local labour. Construction companies, for example, sell into the Middle East, North America, and Australia using this model, supporting the global Britain brand. This would not be feasible without air travel access to these locations.

## Collaboration, innovation, and knowledge sharing

Connecting with others to learn and share the latest developments in the field was essential to many of the tech and manufacturing-oriented organisations we spoke to. Business leaders in SMEs we spoke to, such as Claydon Drills and FB Chain, highlighted how they use air travel to attend trade shows and educational conferences, learning from international best practice as well as contributing expertise to its further development.<sup>29</sup> Specialist employees are sent to these types of events, and the companies we spoke to very much valued the global perspectives they returned with and the new contacts. One university representative emphasised that international conferences remain an inherent part of the professional development path in academia, and while the number of people travelling might have reduced, the importance of the opportunity has not.

While it has been highlighted that the pandemic has reduced the frequency of travel for international events due to digital communication becoming a much more regular form of collaboration, this is not uniform across sectors. The universities sector, for example, relies on knowledge exchange and joint projects with partners across different sectors and regions, and international connectivity allows them to collaborate with the key emerging industries at the leading edge of tech and science no matter where they are. Interviewees told us this is absolutely critical for research, knowledge exchange and for harnessing alumni networks. International campuses and provision provide a further opportunity for collaboration and would not be possible without ease of access to air travel.

Matthew Fell, Director of Competitiveness at BusinessLDN, emphasised that exposure to international best practice is a key factor in improving UK productivity, and facilitating the opportunities for innovation and collaboration through air connectivity is essential for the UK’s most innovative sectors to continue to compete internationally.<sup>30</sup>

## Investment and competitiveness

The importance of air connectivity to regional attractiveness and development was repeatedly recognised across these conversations. Henri Murison, Chief Executive of the Northern Powerhouse, highlighted how having more direct flights from UK regions to international destinations can boost investment, trade, tourism and education opportunities, particularly for the North of England.<sup>31</sup> In the universities sector, air travel enhances the appeal of UK universities for research investment and for recruiting the top academic talent needed to compete at the highest levels in the global market for students.

For some start-ups and scale-ups, international connectivity is even more important for competitiveness as they have not reached the maturity to have legal entities in foreign markets but still need to operate in that market. For example, fintech companies working across the UK and EU need to be able to travel through the EU to engage with users and prospects post-Brexit. In some cases, this is even a regulatory requirement for governance procedures.<sup>32</sup> Critically, important and sensitive financial matters such as mergers and acquisitions are also better handled in person according to our stakeholders, with Turner & Townsend discussing how air travel is used for securing funding for schemes and getting to know acquisition/merger targets.<sup>33</sup>

Many businesses depend on accessing the right funding from the right investors around the world, particularly emerging sectors where investors are few and far between. Matthew Fell, Director of Competitiveness at BusinessLDN, outlined to us that the UK could lose out on investment and customers if it does not maintain its air connectivity, especially in comparison to other countries competing for the same opportunities.<sup>34</sup>



# Conclusions and a call to action

Overall, the picture painted by our research is one of an island trading nation with key sectors poised to grow at above-average rates, drawing on the significant benefits international connectivity brings.

This is in part due to the UK's outperformance in air connectivity and international travel. In 2023, annual growth in business travel spend in the UK outpaced countries such as the US, France, Spain, and Australia. The UK also ranks fourth globally in the "Global Outgoing Knowledge Index", which estimates that global GDP would have been 0.98% lower without the UK's strong history of sending business travellers abroad.

The 10 sectors we focused on, which all have a dependency on international connectivity, are currently forecast to grow at 46% over the next 10 years. This above-average growth represents an additional £10.6 billion over that period compared to average growth rates of 44% in the rest of the economy. We also explored four emerging sectors which similarly depend on international connectivity - advanced manufacturing, fintech, life sciences, and advanced digital sectors - which have high five-year average growth rates at 51%. Given the urgent need to boost productivity and turbo-charge the UK's services economy, this growth dividend matters.

The UK must work hard and fast to cement these advantages and do everything possible to assist the sectors that can propel the economy to growth. Our status as an island trading nation, growth in key sectors, and a successful future for international connectivity are all interlinked. By extension, it makes sense to recognise that, from the UK's existing strengths in and disproportionate reliance on aviation comes an opportunity to capture the economic value available from the sector's decarbonisation.



## Call to action:

As this report sets out, the UK has huge built-in advantages as a services exporter on a global scale and as a location where newer, rapidly scaling sectors benefit from its international connections. Recognising the importance of the country's international connectivity is a vital part of designing an industrial strategy that can both capitalise on existing strengths and develop them in newer areas.

As an island trading nation, aviation plays an enabling role for our economy. Given our economy benefits significantly more from international connectivity than some of our competitors, we have an opportunity to go further and faster in decarbonising aviation to underpin wider economic growth. By contrast, any contraction in international connectivity would have significant implications for growth and for the diverse range of businesses we interviewed for this research.

At the heart of this is the decision for the UK Government on how significantly to invest in the domestic future of sustainable aviation fuels (SAF) and build resilience into the economy. We must not understate the challenge presented by net zero - nor can we look at that challenge in isolation. Businesses across the UK depend on international connectivity, so a rapid transition is critical to support them in reaping the benefits of international trade.

There is also potential for the future expansion of connectivity to bring specific benefits to the UK's regions and to support the further growth of emerging sectors in a wider range of locations. The case has been well made by others<sup>35</sup> that part of the route for the UK to become a services sector superpower is to support service sector growth across the North, particularly in its main cities, such as Greater Manchester. This will only be possible if the role of aviation as a strategic enabler for wider economic growth is fully represented in the UK's industrial strategy.

# Endnotes

- 1 IATA, 2018, The Importance of Air Transport to United Kingdom
- 2 Resolution Foundation, 2022, "UK needs to get serious about its future as a services economy, and the challenges that brings"
- 3 The Resolution Foundation sets this case out in its recent "Ending stagnation: A New Economic Strategy for Britain" report published in December 2023 and accessible here: <https://economy2030.resolutionfoundation.org/reports/ending-stagnation/>
- 4 Availability of robust historic data for the newer sectors is time-limited under Data City's methodology, so we have reported growth over a shorter time-horizon of five years
- 5 IATA, 2018, The Importance of Air Transport to the United Kingdom
- 6 Oxford Economics, 2013, Impacts on the UK Economy through the Provision of International Connectivity
- 7 Bahar et al, Working Paper 23-009, 2022, Innovation on Wings: Nonstop Flights and Firm Innovation in the Global Context, [https://www.hbs.edu/ris/Publication%20Files/23-009\\_5fb32cb1-aa3d-453f-b208-054e9a3d94da.pdf](https://www.hbs.edu/ris/Publication%20Files/23-009_5fb32cb1-aa3d-453f-b208-054e9a3d94da.pdf)
- 8 IATA, 2018, The Importance of Air Transport to the United Kingdom
- 9 Air Transport Action Group, 2004, The Economic and Social Benefits of Air Travel
- 10 British Chambers of Commerce, February 2024, Online Article: <https://www.britishchambers.org.uk/news/2024/02/strong-trade-in-services-boosts-uk-exports/>
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- 12 Sustainable Aviation, Climate Change Strategy, accessed May 2024: <https://www.sustainableaviation.co.uk/goals/climate-change/>
- 13 IATA, 2022, Global Outlook for Air Transport: Sustained Recovery Amidst Strong Headwinds
- 14 Gareth Vest, Aviation Director at AtkinsRéalis, interviewed by WPI Economics 01/05/2024
- 15 Structured interview with WPI Economics, April 2024
- 16 IATA, Europe Air Connectivity, 2020: <https://www.iata.org/en/iata-repository/publications/economic-reports/europe-air-connectivity/>
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- 18 GBTA, Business Travel Index Outlook, 2023: [https://www.gbta.org/wp-content/uploads/GBTA-BTI-2023\\_Executive-Summary-FINAL.pdf](https://www.gbta.org/wp-content/uploads/GBTA-BTI-2023_Executive-Summary-FINAL.pdf)
- 19 Harvard Growth Lab created a destination-specific Global Outgoing Knowledge Index. Each map shows for a country of origin how much smaller GDP in other countries would have been, had the country not sent any business travelers abroad. That is, it shows estimates of the contribution of a country's outgoing business travel to every other country's economy. See the map here <https://growthlab.hks.harvard.edu/file/3847385>
- 20 Peak Economics, 2018, Wider Economic Impacts of Regional Air Connectivity: <https://assets.publishing.service.gov.uk/media/5c1b8eb6e5274a465b7178c0/wider-economic-impacts-of-regional-connectivity.pdf>



- 21 The Data City methodology will include turnovers registered to company HQs and will therefore include some international incomes. Excluding companies above a certain size aims to control for this effect, but will exclude some large company revenues within the UK. This will be offset to a degree by the inclusion of some medium-sized firms pulling in revenues from outside the UK
- 22 Some companies will fall into several of these categories. Due to this double counting, the total will be less than the sum across sectors
- 23 A location quotient is a measure of how much a region specialises in a given industry, relative to the whole country. It is the ratio of the industry's share of total employment in the region to the industry's share of total employment in the country as a whole. Values over 1 indicate that the region is relatively more specialised in this sector than is the country
- 24 Note that company turnover should not be directly compared with GVA. Analysis of aggregate sectoral company turnover is only indicative
- 25 James North, Director of Public Affairs and International at Primera Corporation Limited, interviewed by WPI Economics 01/05/2024
- 26 Horia Teodorescu, Policy Officer and Greg Wade, Higher Education Policy Advisor at Universities UK, interviewed by WPI Economics 12/04/2024
- 27 Structured interview with WPI Economics, April 2024
- 28 Horia Teodorescu, Policy Officer and Greg Wade, Higher Education Policy Advisor at Universities UK, interviewed by WPI Economics 12/04/2024
- 29 Peter Church, Managing Director of FB Chain, interviewed by WPI Economics 08/04/2024 and Simon Revell, Export Sales Manager at Claydon Drills, interviewed by WPI Economics 18/04/2024
- 30 Matthew Fell, Director of Competitiveness at BusinessLDN, interviewed by WPI Economics 03/04/2024
- 31 Henri Murison, Chief Executive of the Northern Powerhouse Partnership, interviewed by WPI Economics 09/04/2024
- 32 Structured interview with WPI Economics, April 2024
- 33 Murray Rowden, Global Head of Infrastructure at Turner & Townsend, interviewed by WPI Economics 26/04/2024
- 34 Matthew Fell, Director of Competitiveness at BusinessLDN, interviewed by WPI Economics 03/04/2024
- 35 Noting the work of the Resolution Foundation and Social Market Foundation, including the latter's recently published paper on Labour Economics: <https://www.smf.co.uk/publications/labour-economic-agenda-essays/> in particular



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