

# Economic impact of IAG in Spain

Report

May 2023



# Foreword

IAG asked PwC to independently assess the impact of their operations on the economies of Spain, the United Kingdom, Ireland, and the European Union as a whole. Specifically, PwC were asked to assess the contribution IAG makes through its supply chain, the domestic and global connectivity enabled by its airlines' operations, and the economic contribution generated by this connectivity.

At PwC our purpose is to build trust in society and solve important problems. To this end, economic impact assessments such as these are important, in that they provide a more holistic view of the value created by firms than financial reporting does alone. Total impact modelling considers not only the value created directly by a firm, but the wider value to the economy generated by its entire supply chain. These metrics therefore help leaders and policymakers make decisions that benefit society as a whole.

We are delighted to present this Spain economic impact assessment, focusing on the domestic contribution of IAG's activities to the Spanish economy. IAG's operations contributed €6.5bn to the Spanish economy in 2019, and supported 71,000 jobs. The catalytic impact of the tourism and business travel its airlines facilitate additionally contributed €15bn, and a further 300,000 jobs.

Additionally, IAG's cargo operations carried approximately 429,000 metric tonnes of cargo in 2019, reaching 136 countries; this represented 20% of Spain airfreight and is typically made up of the transport of high value goods.

Looking to the future, IAG's focus on sustainability and innovation means it is well positioned to continue growing its contribution to the Spanish economy, whilst taking steps to minimise the environmental impact of its activities. IAG was the first airline group to commit to net zero carbon emissions by 2050, and has also committed to net zero Scope 3 emissions by 2030. Its investment in new technologies such as sustainable aviation fuel and hydrogen-powered flight contribute to its strategy to achieve these objectives.

It has been a pleasure to work with IAG and its operating companies, visiting their sites, meeting their staff, and learning about their logistical operations and innovations. We trust you will enjoy exploring our findings in this report.



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# Executive Summary



Figure 1: Key findings on IAG's contribution to the Spanish economy

IAG's activities contributed

**€6.5bn** to Spain economy in 2019

**€3bn**

Direct

**€1.8bn**

Indirect

**€1.8bn**

Induced

For every €1 spent by IAG in Spain, €1.50 of gross value added is generated throughout the Spanish's wider economy

IAG supported approximately

**71,000** Spanish jobs in 2019

**18,800**

Direct employment FTE

**28,700**

Indirect employment FTE

**23,600**

Induced employment FTE

The tourist and business activities catalysed by IAG's flights contributed

**€15bn** to the Spanish economy in 2019

**€8bn**

Direct

**€4.3bn**

Indirect

**€2.6bn**

Induced

These activities additionally supported 300,000 Spanish jobs

**c.191,000**

Direct employment FTE

**c.69,000**

Indirect employment FTE

**c.40,000**

Induced employment FTE



### Purpose of this report

IAG has commissioned PwC to conduct this economic impact assessment of IAG's activities in Spain. In it we analyse the contribution IAG makes to the Spanish economy, both in terms of traditional economic measures such as its contribution to GVA (gross value added) and jobs, and the catalytic economic benefits resulting from the connectivity enabled by its airlines, supporting trade, business activities, and tourism spending. In addition, we assess how IAG is supporting the decarbonisation of the aviation industry and driving innovation within the sector.

We have also completed companion reports on the impact of IAG's activities in the economies of the UK, Republic of Ireland and across the whole of the European Union which address these same topics in these geographies.

We used data provided by IAG to identify how the business activities of IAG and its airlines provide economic value, and we quantify this impact using recognised techniques. The data used in this report is from 2019 due to the large impact of the Covid-19 pandemic on air travel globally between 2020-2022. Whilst air travel is recovering strongly to the pre-pandemic level (with passenger numbers in the industry as a whole expected in 2023 to reach 86% of the 2019 peak) there is not a full year of data available from IAG at the time of writing. Therefore, we consider 2019 to be the most representative year of data to indicate the economic value which IAG creates.

### Key findings

IAG supports approximately 71,000 jobs in Spain and contributes €6.5bn to Spain GVA. IAG supports a significant supply chain across the aviation sector and beyond, consisting of businesses in Spain and abroad, including thousands of small and medium sized companies. The tourism and business travel to Spain facilitated by IAG's airlines drives a further catalytic impact on the economy supporting an additional 300,000 jobs and €15bn of GVA in Spain.

As an airline group IAG provides economic and social benefits to Spain by enabling global connectivity in the movement of people and goods. Vueling (VY) is the most flown IAG airline in Spain. Iberia (IB) has been flying customers and goods from and around Spain for over 90 years and is the second most flown IAG airline, mainly for international destinations. IB's Madrid - Barajas hub facilitates the movement of goods and people from Spain around the world efficiently, even when direct routes would not be feasible, thereby increasing the connectedness of Spain. Other IAG airlines operating in Spain are Iberia Express and LEVEL. IAG's other airlines, British Airways and Aer Lingus add to its global reach.

Flying 566 routes and directly connecting Spain to 56 countries, IAG's airlines play a critical role in connecting Spain with the world. This connectivity supports business activities and inbound tourist spending which bring value to the Spanish economy. IAG's airlines also facilitate trade, particularly of high value goods by using large bellyhold capacity on long-haul passenger flights. IAG has a strong domestic presence, flying 143 routes within Spain which supports connectivity and economic growth across the Spanish regions.



This report also identifies some of the broader contributions that IAG makes which will support the future of the Spanish economy. Firstly, the future of aviation will need to be more sustainable. IAG has been an industry leader in the decarbonisation of aviation, committing to net zero emissions by 2050 and investing in new technologies and sustainable aviation fuel as part of its transition to meet these targets.

We hope that you enjoy exploring the findings of this report and learning about the many ways in which IAG benefits the Spanish economy.

We have found that:

- IAG contributes €6.5bn gross value-added to Spain GDP, made up of €3bn direct, €1.8bn indirect and €1.8bn induced contribution. This means that for every €1 spent by IAG in the Spanish economy, €1.50 GVA is supported elsewhere across the economy.
- Through facilitating tourism and business travel, IAG's airlines support an additional €15bn of catalytic GVA and c.300,000 FTE jobs across the Spanish economy. This catalytic effect is particularly strong in hospitality, cultural and leisure activities, shopping, and real estate operations. This means that for each passenger who flies with IAG to Spain, there is a catalytic impact of €636 contributed to Spain GVA.
- IAG supports c.71,000 FTE jobs across the Spanish economy made up of c.19,000 direct (industry operations), c.29,000 indirect (supply chain) and c.25,000 induced (resulting from spending by direct and indirect employees) employment. For every direct IAG employee, a further 2.8 FTE jobs are supported in the Spanish economy.
- Additionally, for every 1,000 passengers flying with IAG to Spain, 14.7 FTE jobs are supported through the catalytic spending of IAG passengers.

- IAG plays a major role in connecting Spain, both domestically and internationally. In 2019 IAG's airlines flew 143 domestic routes between 28 cities, transporting almost 22 million domestic passengers, and connected Spain to 56 countries with 423 international routes. Over 58 million of the total 275 million passengers using Spanish airports<sup>1</sup> in 2019 travelled using an IAG airline.
- The 'hub and spoke' model operated by Iberia is unique in Spain and the South of Europe, and plays a major role in connecting regions across Spain to the rest of the world, particularly to Latin America, in a way that would not otherwise be economically viable.
- Vueling, with its point-to-point operating model, has an extensive network within Spain, particularly to the Balearic Islands and across the EU with passengers departing mainly from the Barcelona - El Prat airport
- IAG's airlines, including IAG Cargo, transported 428,520 metric tonnes of freight reaching 136 countries in 2019. Air cargo is disproportionately used for high value-added goods contributing to a positive air transport balance of payments.
- IAG is an industry leader in sustainability, setting industry leading targets for decarbonisation, prioritising a sustainability strategy, and investing in the technology needed to fulfil its transition plan and enable it to reach net zero emissions by 2050.
- IAG supports innovation as a means to respond to challenges the aviation industry is facing, with its core innovation platform Hangar 51 helping to support and scale emerging technologies across travel.

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<sup>1</sup>The data in this document may differ from the data provided by AENA or the Ministry of Transport, Mobility and Urban Agenda since they count number of passengers based on the number of times they use the airport (twice per route), while IAG counts one passenger per route.

# Introduction





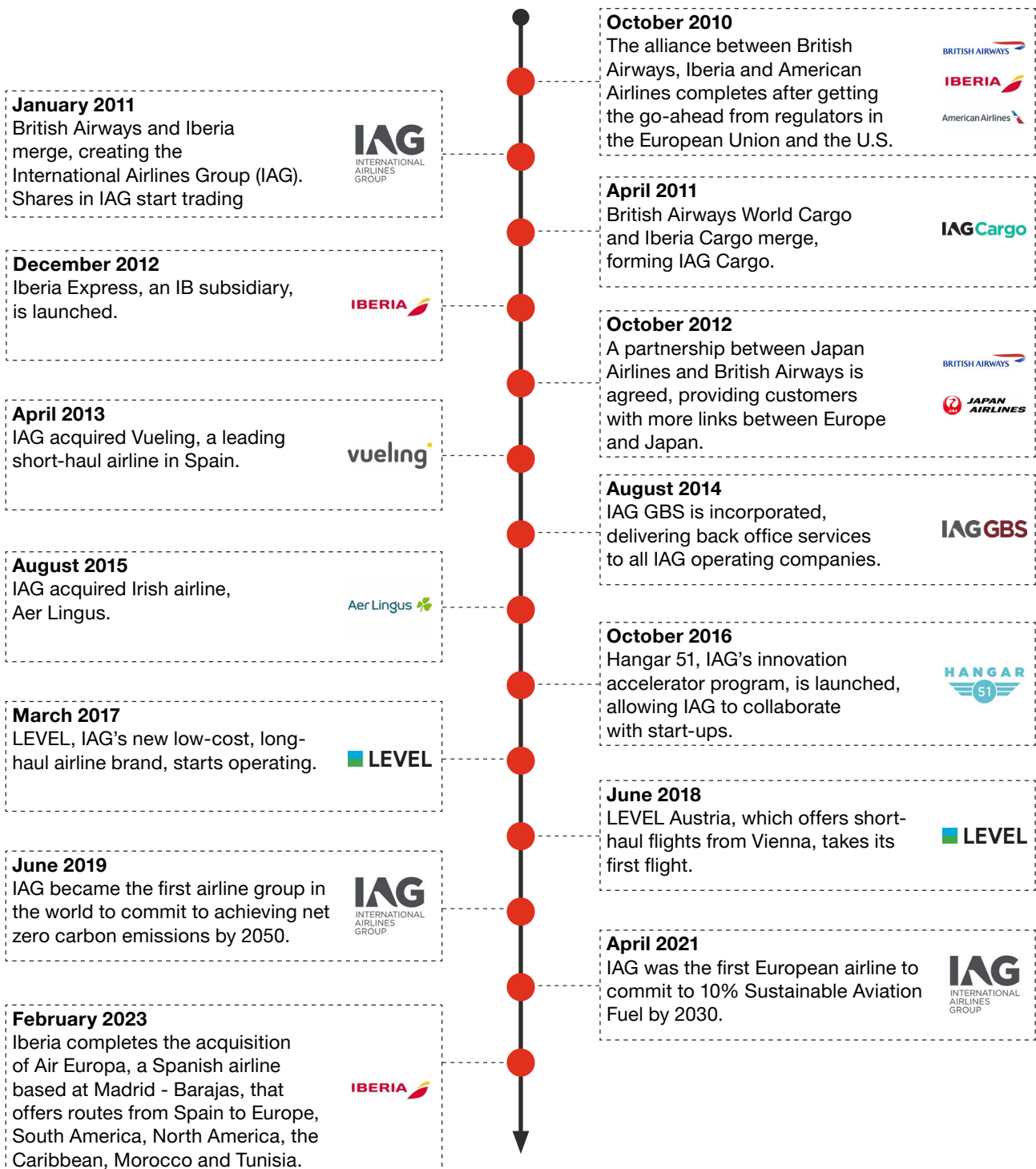
## International Airlines Group

### Overview

IAG is a global airline group which carried 118.7 million passengers to 279 destinations internationally in 2019. The group includes major airlines in Spain, the UK, and Republic of Ireland: Iberia (including Iberia Express), Vueling, Aer Lingus, LEVEL and British Airways (including BA CityFlyer). IAG is the group's parent company, and is dual registered on both the Spanish and London Stock Exchanges. Within the group, IAG's airlines maintain their distinctive brands and focus on their customers, the competitive environment and people, while IAG, at the corporate centre, works to drive synergies, and maximise group performance.

### History

Launched in 2011, IAG has been increasing its global presence and capabilities over the last 12 years.



## Group Structure

IAG, as the corporate entity at the centre of the group, oversees coordination across the group, manages and executes central functions, creates synergies, and fosters collaborative working and the sharing of best practices.

IAG has three overall strategic priorities: strengthening a portfolio of world-class brands; growing global leadership positions; and enhancing IAG's common integrated platform. IAG has five airline brands: two "full service" carriers British Airways and Iberia, two "value" carriers Aer Lingus and Iberia Express and finally two "low cost" carriers, LEVEL and Vueling.

In addition, IAG has central platforms which run cross-airline services: IAG Cargo which is the group's cargo division operating a global freight network; IAG Loyalty which manages loyalty products and services including running the Avios loyalty currency; IAG Global Business Services (GBS) which delivers centralised services across procurement, finance and airport operations; and IAG Tech which supports digital and IT across the group. Across IAG businesses there are cross-cutting coordination activities and central functions which are carried out at the group level. The key areas of intra-group coordination are across: fleet, maintenance, repair & overhaul, fuel, network, commercial, customer. The common central functions at the group level: investor relations, finance, people, sustainability, corporate affairs, communications, legal, strategy, and merger & acquisitions.

Figure 2: IAG's group structure



IAG's purpose is "to connect people, businesses and countries", which supports its vision to be the world's leading airline group. IAG is Europe's fourth largest airline group by passenger numbers (after Ryanair group, Lufthansa group, and Air France KLM).<sup>2</sup> As of 2019 IAG's airlines flew from 30 airports in Spain, operating a total of 566 routes. IAG's airlines connect the Spain to 56 countries, providing 423 routes which carry over 36 million international passengers annually. In 2019 21% of the total 275 million passengers using Spain airports travelled using an IAG airline.. Additional connectivity is provided because IAG and two of its airlines (BA and IB) are part of the oneworld alliance which enables additional connectivity for its passengers.

### Report scope

IAG brands in scope of this report are: Iberia, Iberia Express, Vueling, LEVEL, British Airways, Aer Lingus, and IAG Cargo. For our purposes Iberia Express and LEVEL data is included within Iberia analysis, and BA CityFlyer data is included in the British Airways analysis. The format of data received from IAG is such that disaggregation of economic impacts by airline is possible in some but not all parts of our analysis. IAG Loyalty is not included in the scope of this project which concentrates on IAG's contribution from airline operations and associated impacts.

The modelling in this report is based on 2019 data, as this was the last complete year of representative data prior to the pandemic. 2020 and 2021 were abnormal years for the global travel industry due to the Covid-19 pandemic and associated travel restrictions, and a full year of 2022 data was not available at the time of preparing this report. The International Air Transport

Association (IATA), the global airline trade association, expects numbers travelling in 2023 to be 86% of the 2019 peak<sup>4</sup>. The most recent data shows that the number of passengers using Spanish airports in December 2022 was 87% of December 2019 levels<sup>5</sup>.

### Report structure

In this report we analyse the contribution IAG makes to the Spanish economy, both in terms of traditional economic measures, and its broader role, such as in enabling connectivity and facilitating innovation. The report structure is as follows:

- Economic impact methodology
- Spain Economic Impact
- Connectivity Impact
- Sustainability
- Innovation
- Appendix 1: Technical approach and detailed methodology
- Appendix 2: Additional Data

<sup>2</sup>Cebtre for Aviation <https://centreforaviation.com/analysis/reports/ryanair-heads-europes-top-20-airline-groups-by-pax-2019-510111>

<sup>3</sup>MITMA, <https://www.mitma.gob.es/aviacion-civil/estudios-y-publicaciones>

<sup>4</sup>IATA, <https://www.iata.org/en/pressroom/2022-releases/2022-12-06-01/>

<sup>5</sup>MITMA, <https://www.mitma.gob.es/aviacion-civil/estudios-y-publicaciones>



# Calculating economic impact



## Economic Impact Modelling

### Direct, Indirect, and Induced impacts of IAG's Spain operations

We present IAG's contribution to the Spanish economy in terms of two key economic indicators:

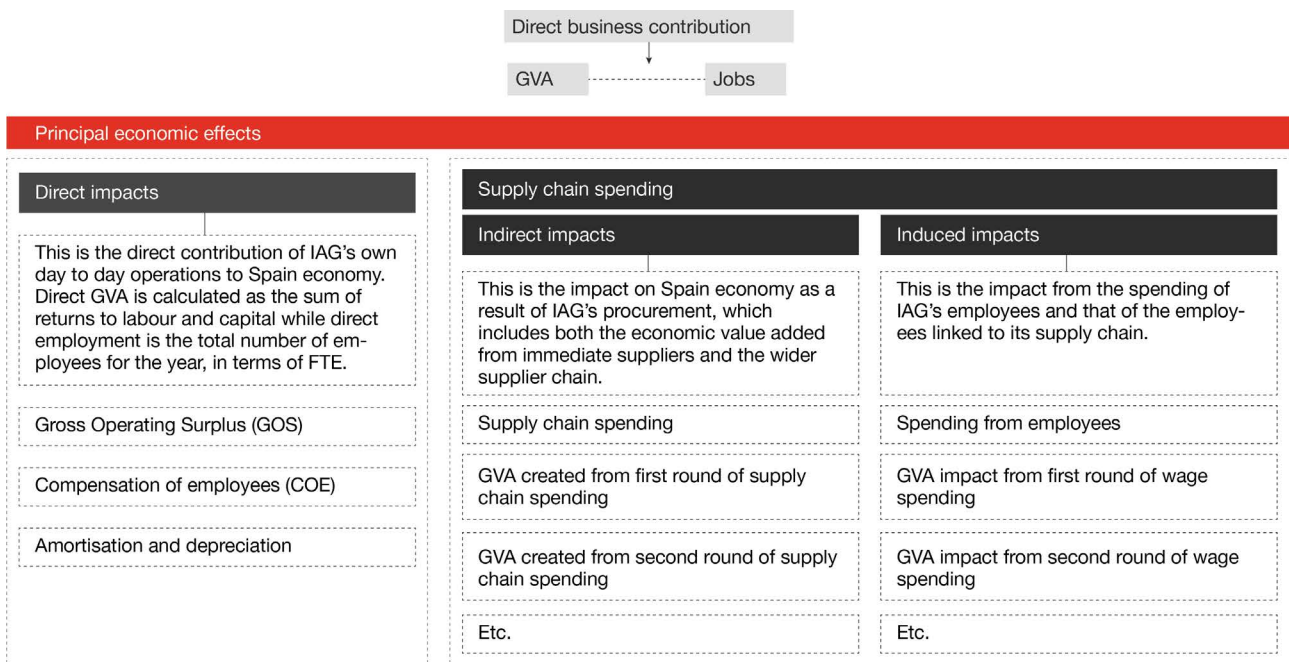
- **Gross Value Added (GVA)**
  - GVA is the value added produced by an organisation. This is a standard concept used by national statistical authorities, including the Spanish National Institute of Statistics (Instituto Nacional de Estadística, INE), and is the equivalent of contribution to GDP, but with an adjustment to prices so that they don't include final taxes - that is, GDP but at 'basic prices'.
  - GVA encompasses the core, measurable, ways in which organisations such as IAG add value to the economy, including: operating profits; compensation of employees, taxes on production and measurement of depreciation and amortisation (these two account for the capital used by an organisation during the production process).<sup>a</sup>
  - This is equivalent to an industry's output less the value of the intermediate inputs used in the production process<sup>b</sup>.

- **Employment** – Annual full-time equivalent (FTE) jobs supported.

We set out IAG's economic impact across three key components:

- **Direct impact:** This is the contribution of IAG's own day-to-day operations to the Spanish economy. Direct GVA is calculated as the sum of returns to labour and capital, while direct employment is the total number of employees for the year, in terms of FTE.
- **Indirect impact:** This is the impact on the Spanish economy as a result of IAG's procurement, which includes both the economic value added from immediate suppliers and the wider supplier chain (for instance, the supplier of the supplier).
- **Induced impact:** This is the impact from the spending of IAG's employees and that of the employees linked to its supply chain.

**Figure 3: Explaining the direct business contribution made by IAG to the Spanish economy**



We refer to the combination of direct, indirect and induced impacts as the “economic contribution” throughout the report.

<sup>a</sup>GVA includes the consumption of fixed capital, as opposed to net value added (NVA) which excludes the consumption of fixed capital.

We have used GVA rather than NVA in this assessment, so that our results can be considered in terms of GDP contribution.

<sup>b</sup>GVA quantifies the same set of economic activities as Gross Domestic Product (GDP) but in terms of factor cost.

## Geographies

IAG's airlines operate globally, but the scope of this report is capturing its economic contribution to the Spanish economy. We have produced companion reports which capture the economic contribution of IAG to the economies of Spain, Republic of Ireland, and the European Union.

## Industries

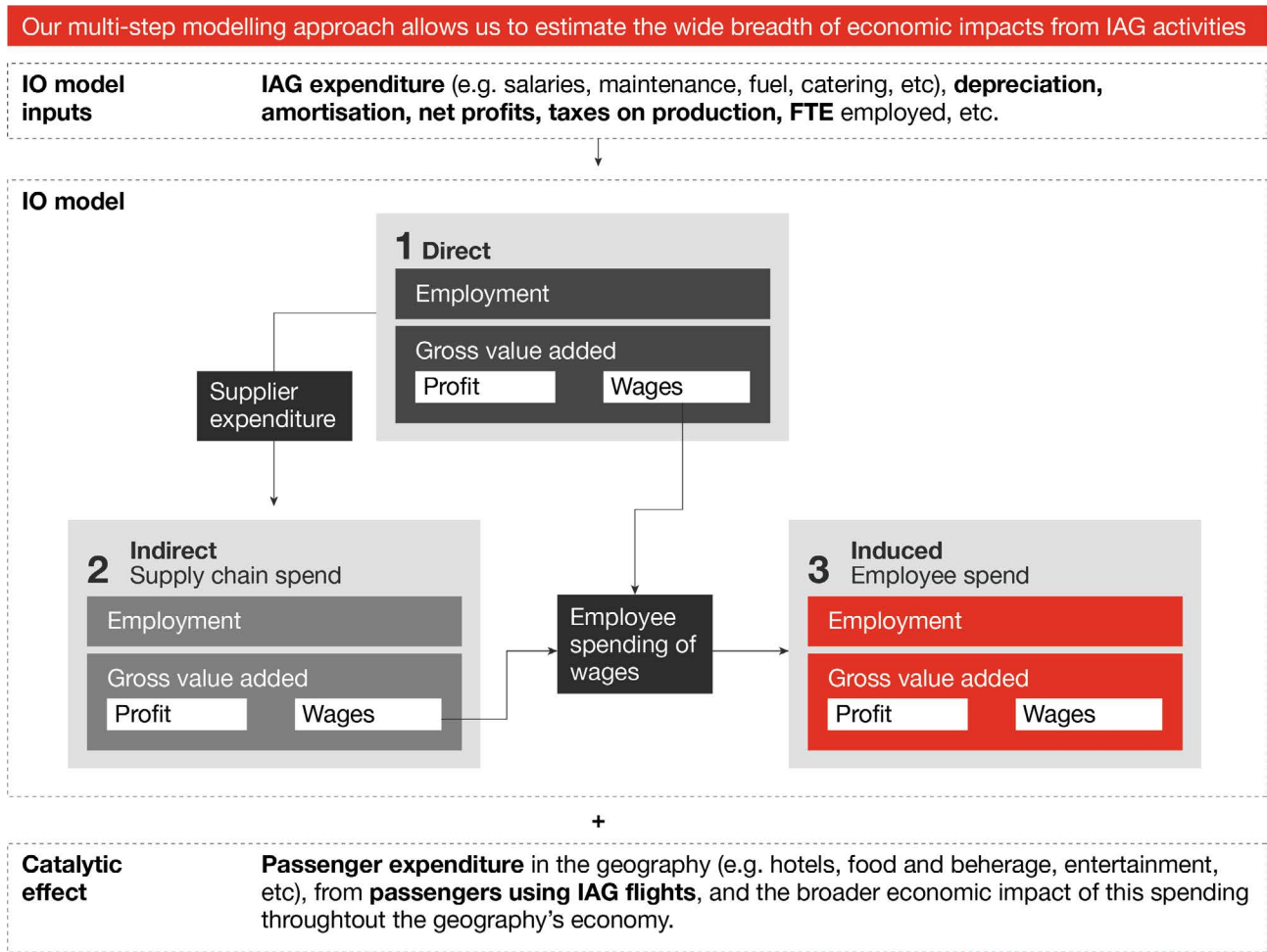
Our analysis segments the Spanish economy across 63 industry sectors for each country, chosen to best reflect IAG's supply chain spending. We used the methodology contained in the European System of Economic Accounts (ESA-2010) to define these sectors, which range from manufacturing to accommodation and food. A full list of which can be found in Appendix.

## Modelling approach

Figure 4 illustrates a simplified breakdown of our modelling approach, for IAG operations and catalytic spend. For a more detailed breakdown of our modelling methodology, please see Appendix 1.



**Figure 4: Summary of economic impact methodology**



# Spain economic impact





## Direct Business Contribution

### GVA Contribution

In 2019 IAG contributed €6.5bn to Spain Gross Value Added (GVA). This contribution is composed of:

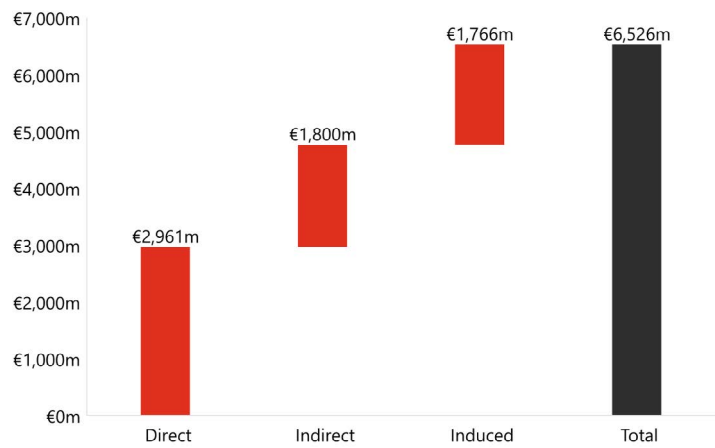
- **€3bn** direct contribution - from profits and wages and relevant taxes<sup>7</sup>, all generated by IAG in Spain;
- **€1.8bn** indirect impact - through the supply chain purchases made by IAG in Spain;
- **€1.8bn** induced impact - as IAG enables wage spending in the economy, via its own employees, and employees throughout its supply chain.

### Direct GVA contribution

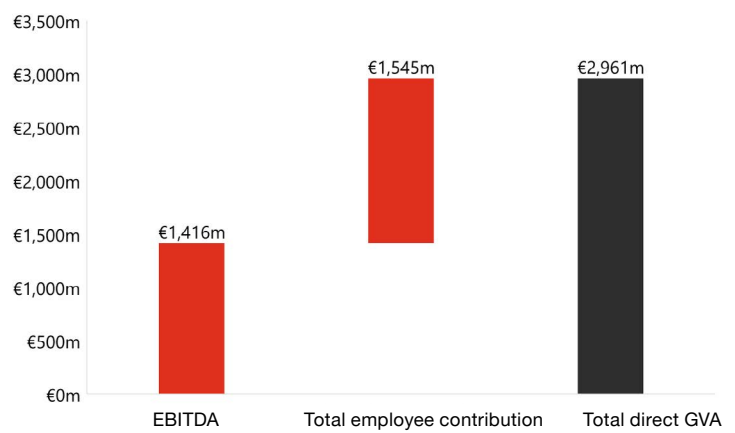
IAG's direct contribution comprises €1.5bn of employee compensation and €1.4bn of earnings before interest, tax, depreciation and amortisation (EBITDA), all associated with Spain.

<sup>7</sup>Relevant taxes are any taxes on the production of goods and services, and not taxes on final goods or services sold, or taxes related to employment.

**Figure 5: IAG contributed c.€6.5bn GVA in the Spanish economy through a combination of its direct, indirect and induced impacts in 2019**



**Figure 6: IAG's direct economic impact was driven by its profitability (€1.4bn EBITDA) and compensation of employees (€1.5bn) in 2019**



The Direct GVA contribution of a company to national GDP is made up of gross operating surplus (GOS), taxes on production and compensation of employees (COE). Below, we provide a short explanation of GOS and COE, showing IAG's direct impact through these channels to the Spanish economy:

1. **Gross Operating Surplus (GOS):** this concept is broadly equivalent to EBITDA, in a company's financial accounts. For a company that operates across borders, such as IAG, the value of EBITDA associated with the Spanish economy is equivalent to IAG's taxable income in Spain. In this case, it relates to the income of Iberia and Vueling, which reported an EBITDAR of €1.4bn in 2019<sup>9</sup>. We include further information related to this in our methodology.

2. **Compensation of employees (COE):** with respect to IAG, these have two main components: wages and salaries (including benefits in kind and pension contributions) and national insurance contributions from IAG to the Spanish Government. For 2019, IAG's total employment compensation to employees based in Spain was €1,545m.

Overall, the direct GVA of IAG in Spain amounted to €6.5bn in 2019. When compared to the number of IAG employees in the Spain, this is a comparatively high value add per worker. For example, Figure 7 displays the GVA per worker for the sectors in our analysis and the Spain as a whole. The IAG average GVA of €158,000 per full time equivalent worker is significantly higher than that of the Spain average (€63,000); indeed its GVA per worker is second only to the Real Estate. This stems from the relatively high profitability of IAG, and wage levels of its employees, compared to the average of the other Spain sectors we have analysed.

**Figure 7: IAG has a significantly higher GVA per full time equivalent worker (€ '000s) than the average for Spain.**

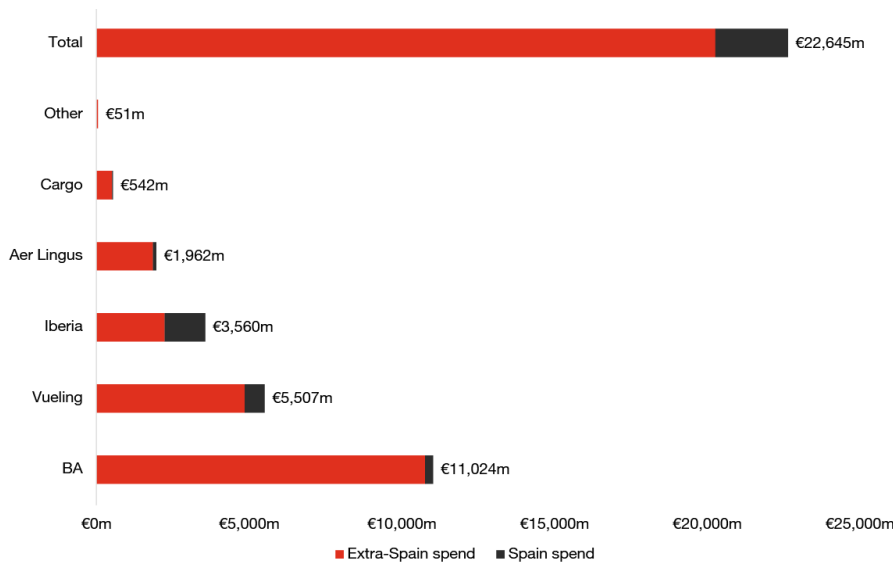


<sup>9</sup>EBITDAR is equivalent to EBITDA, but is also before any deduction for 'rentals'. In the case of IAG, it is most appropriate to use EBITDAR, as rental payments are conceptually associated with amortisation under the 'right to lease' arrangements.

### Indirect and Induced GVA contribution

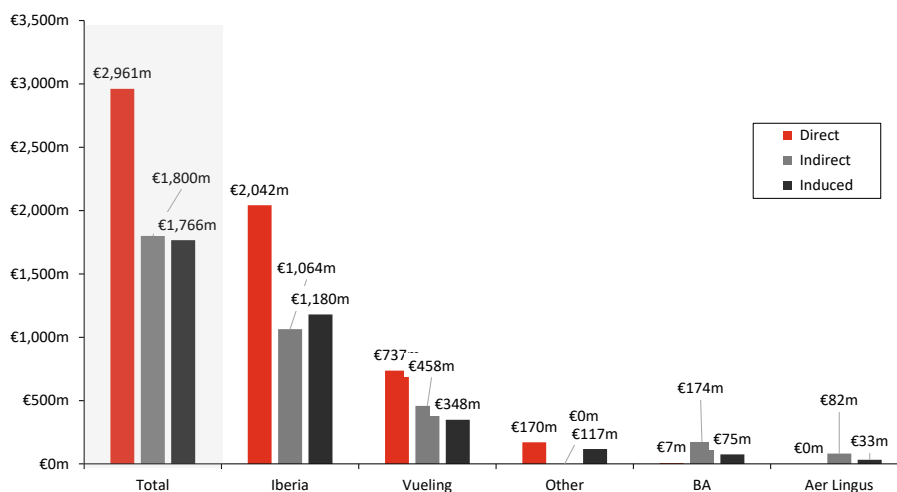
The indirect and induced contributions occur through supply chain and wage spending of IAG. In 2019, IAG's operational and capital expenditure amounted to an equivalent of €23bn. This operational and capital expenditure was through the channels of the different IAG operating companies, as displayed in Figure 8, below.<sup>10</sup>

**Figure 8: Almost €2.4bn of IAG's total operational and capital expenditure was directed to Spanish suppliers, with a total expenditure of €23bn.**



This operational expenditure and capital expenditure has knock-on effects on the GVA of IAG's supply chain, as employees spend their wages and suppliers purchase goods from other Spanish - based suppliers. Overall, IAG's supply chain (indirect impact) was €1.8bn, as IAG's suppliers contribute towards Spain GVA, and the effect reverberates further throughout the supply chain. Moreover, IAG has an overall wage-spend (induced) impact of €1.8bn, as its relatively high proportion of wage spend creates further economic value throughout the Spanish economy.

**Figure 9: IAG's operational, capital and employment expenditure creates further €1.8bn and €1.8bn of value in Spain economy, through its supply chain and wage-spend impacts, each of them**



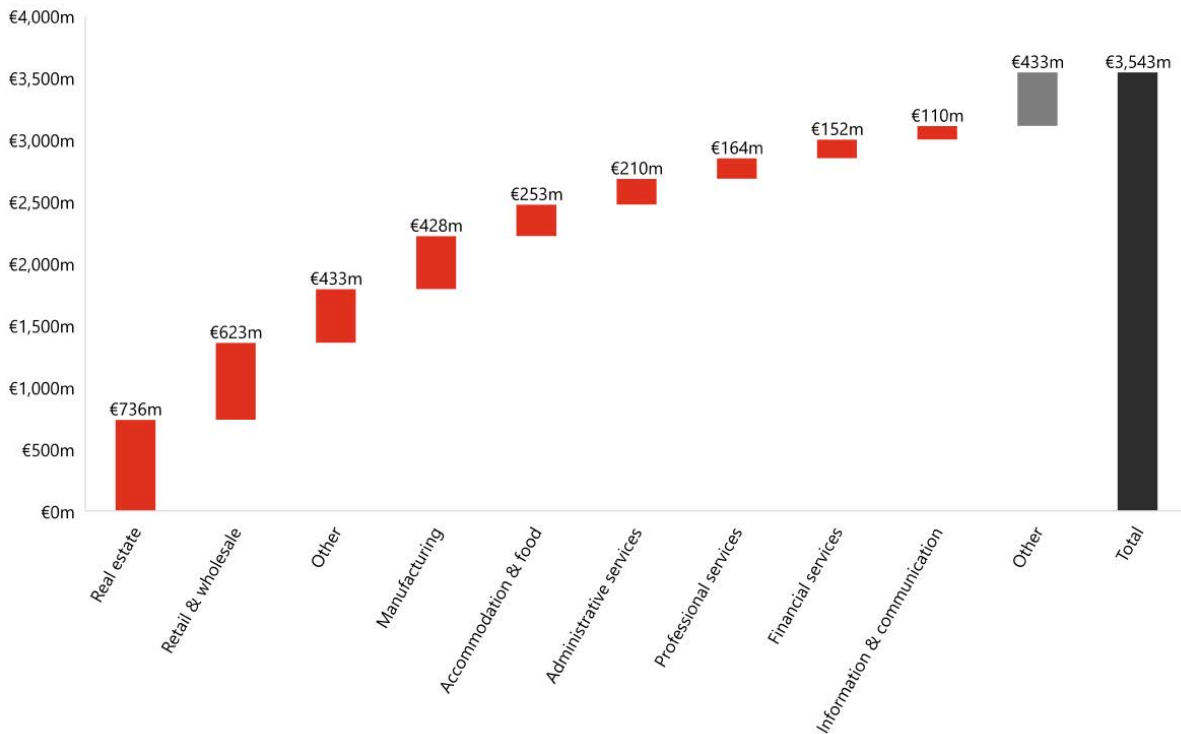
Through its operations, IAG generates a total GVA of €6.526bn in Spain's economy. This can be disaggregated into direct, indirect and induced GVA impacts of €2.961bn, €1.800bn and €1.766bn respectively.

GVA can additionally be disaggregated by airline. Iberia generates 56% of overall IAG GVA<sup>a</sup> in Spain, while Vueling generates 27%. British Airways, AerLingus and other generated 17%. It is expected that Iberia and Vueling would have the largest impact as the majority of operational expenditure from IAG is incurred by them, whilst the wage spending of Iberia and Vueling in Spain is considerably higher than other IAG airlines.

<sup>10</sup> It should be noted that the definitions of operational expenditure and capital expenditure may not align with that in any given financial account, as operational expenditure so defined above does not include compensation of employees (COE), which typically would be included in Financial reporting. COE is accounted for by our model, though we do not display it above.

<sup>a</sup> The present impact study has been estimated using operational and capital expenditure provided by IAG following international accounting standards. Therefore, the results are not directly comparable to those obtained previously at the domestic level.

**Figure 10: IAG generated value across a wide range of sectors in Spain economy, as GVA impacts by sector were largest in the real estate sector (c.€736m) and retail and wholesale sector (c.€623m)**



**Indirect and Induced GVA impacts by IAG by sectors in Spain economy**

Based on our sectoral classifications, IAG generates the greatest GVA in the real estate sector and the wholesale and retail sector, as a result of the supply chain and wage spending impacts.

IAG’s impact across these sectors shows a fairly even spread across important sectors in the economy. This is explained by IAG’s supply chain activities, which stretch into other sectors such as real estate, manufacturing and food and accommodation & food, e.g. from the spending impact of catering at airports. This in turn generates significant value across a wide variety of sectors, generating positive supply chain impacts. There is a marked impact in manufacturing (generally). This is unsurprising, given the nature of IAG’s business.

**Contribution to employment**

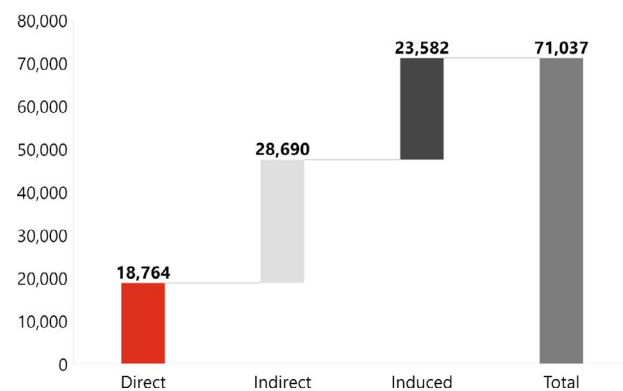
In 2019 IAG contributed 71,037 full time equivalent (FTE) jobs to the Spanish economy. This contribution is comprised of:

- **18,764** direct contribution - IAG’s FTE employees within Spain;
- **28,690** indirect impact - jobs created through the supply chain purchases made by IAG in Spain;
- **23,582** induced impact - jobs created throughout the supply chain as IAG enables wage spending in the economy, via its own employees, and employees throughout its supply chain.

This results in a high employment multiplier of 3.8, so

that for every one job supported by IAG in Spain, a further 2.8 jobs are supported in the wider Spain economy. This high direct and indirect impact reflects the relatively high levels of operational and capital expenditure within Spain necessitated by IAG’s operations, as well as the high relative pay of IAG employees. As with GVA, Iberia and Vueling are the IAG airlines that contribute the most to direct employment in Spain, accounting for 95% of IAG’s total employees in Spain.

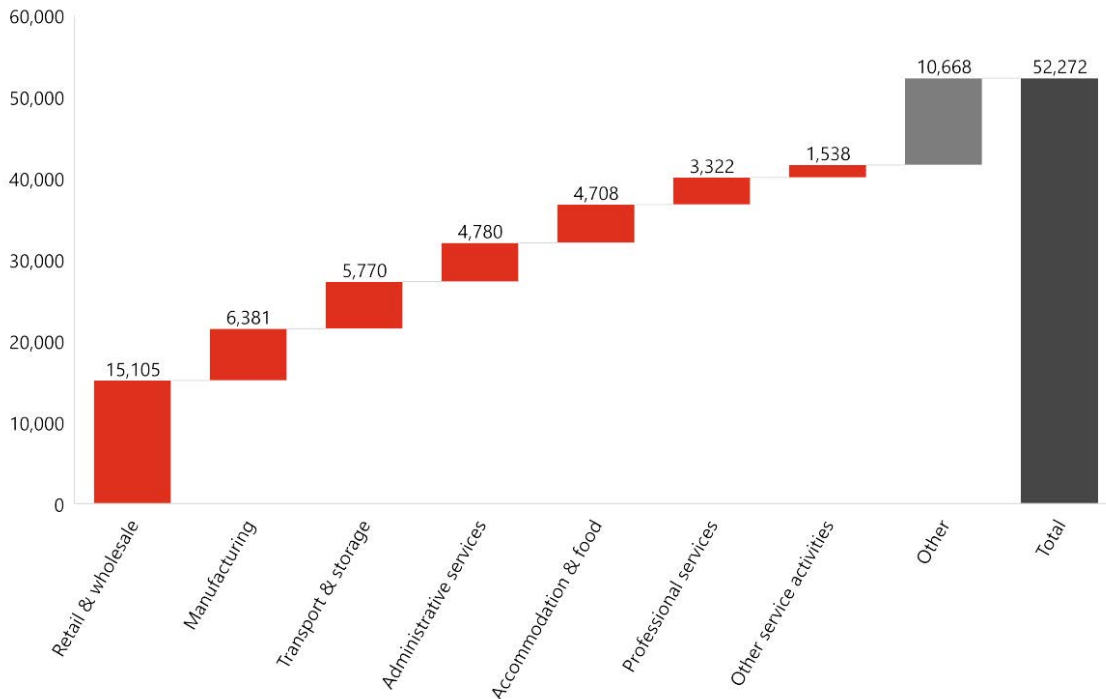
**Figure 11: IAG supported c.71,000 full time equivalent jobs in the Spanish economy in 2019**



<sup>11</sup>It should be noted that IAG employed approximately 40,000 people in the Spain in 2019, but not all of these were full time. <https://www.iairgroup.com/-/media/Files/I/IAG/documents/IAG%2520Annual%2520report%2520and%2520accounts%25202019.pdf>



**Figure 12: IAG supported c.52,000 indirect and induced jobs across a wide range of sectors in Spain economy**



The sectoral split of jobs supported by IAG in Spain differs from the sectoral split of GVA as a result of the relatively different employment intensities of each sector. The real estate sector, the biggest sector according to GVA contribution, is relatively less significant for employment given its low employment intensity.

On the other hand, over 15,000 jobs are supported in the retail and wholesale sector, with a further 6,000 supported in the manufacturing sector. Accordingly, IAG’s activities in Spain support a wide variety of sectors, in different ways, with labour intensive industries benefiting from its supply chain impact.

# Connectivity



This section analyses the connectivity impacts derived from IAG airlines operations on:

- Passenger connectivity and hub effects
- Economic value of connectivity in terms of GVA, employment, and investment
- Catalytic impact derived from tourist expenditure
- Trade and cargo

IAG’s airlines provide connectivity globally, including within Spain; and between Spain and the world. In this section of the report we set out the global scale of IAG’s airlines operations, and specifically the connectivity it provides to Spain. We then identify the economic benefits which accrue to Spain as a result of this connectivity provided by IAG’s airlines, including trade, tourism and business impact.

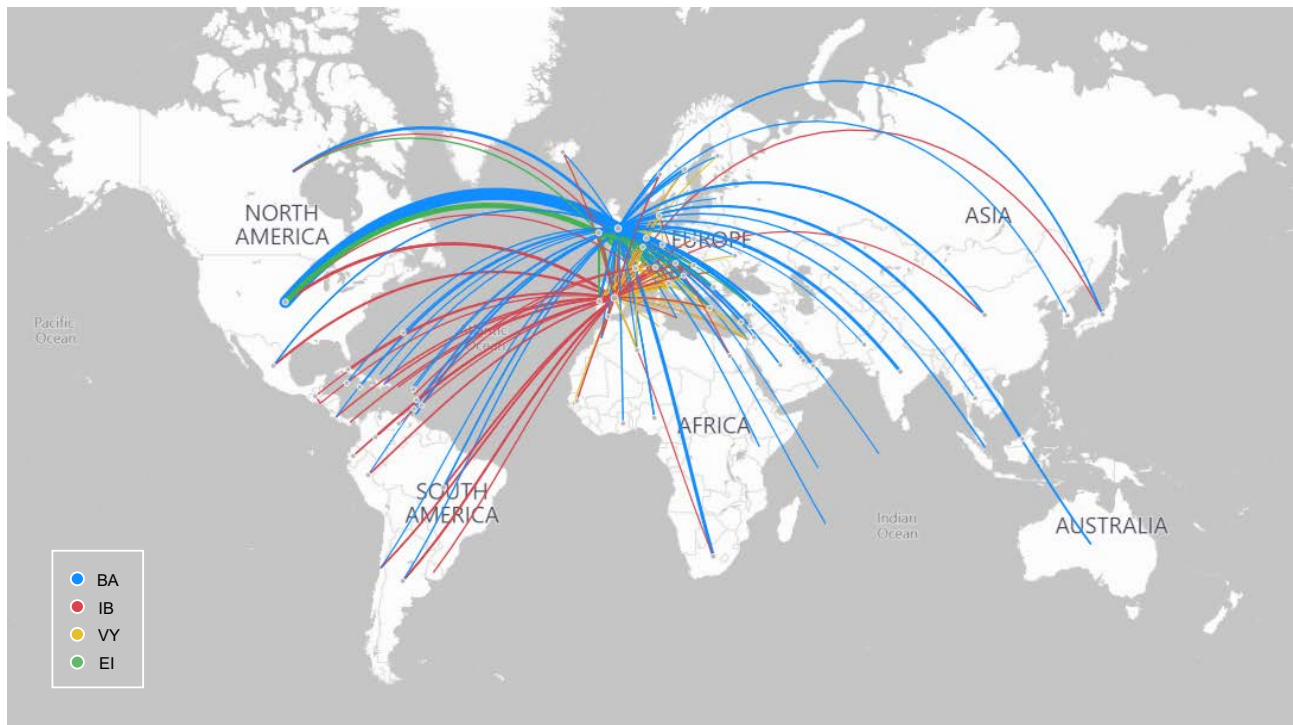
IAG provides a unique platform that enables the group airlines to efficiently fulfil its purpose: to connect people, businesses and countries around the world. The role of the group and its operating airlines is key in enabling social connectivity, including for families, and for social networks that are dispersed across the world. In addition, IAG airlines support business through enabling the freight of goods and making it easier for companies to establish business relationships from in-person meetings. Finally, the group contributes to the social and economic development of many regions around the world by offering frequent connecting flights from a great

number of countries as well as committing with social initiatives such as vaccines transportation during Covid-19.

The enabler to achieve IAG's purpose “to connect people, businesses and countries around the world” is the global network that the group has developed. The network allows people and business to move between different countries and continents with a large and adapted offer to all needs through its diversity of airlines, ranging from full service to low cost and the leadership positions of these companies in the markets in which they operate. Each of the airlines operates independently but has the support of the group to adapt best practices, capital and operational efficiency and therefore, be able to offer a better and more competitive service to its customers.

IAG airlines offer connections all around the world; Figure 13 depicts the routes offered by IAG in 2019, this being the last full year with representative data before the Covid-19 pandemic . IAG airlines connected 101 different countries, carrying 118.7 million passengers across the world in 2019. The airlines together offered 1,076 different routes, 891 of which were international, carrying 90.7 million passengers, and 185 were domestic, carrying almost 28 million passengers. Most of the routes have Spain, the United Kingdom, or the Republic of Ireland as either the origin or/and destination of the flight as these are geographic homes of IAG’s airlines.

**Figure 13: IAG airlines operated 1,076 routes in 2019, connecting 101 countries around the world with Spain, the United Kingdom, and the Republic of Ireland**



Source: IAG database<sup>15</sup> . Note: Flows are expressed in number of passengers (i.e. a thicker line shows a larger number of passengers)

<sup>13</sup> For the purpose of this report, the data shown will refer to year 2019, since it is the last year before the Covid-19 pandemic where data is representative and available

<sup>14</sup> We refer to domestic routes to all the routes that connect two cities or villages within a country (e.g. Madrid Barajas - Barcelona El Prat or London Heathrow - Manchester would be categorised as domestic routes whereas Madrid Barajas - London Heathrow would be categorised as an international route)

The graphics in this document exclude routes to Russia and Ukraine which were flown in 2019 but have since ceased due to the ongoing conflict.

## Description of each of IAG's key airline's operations globally



### **Iberia (registered in Spain, subsidiaries: Iberia Express, LEVEL)**

Iberia carried more than 24 million passengers in 2019, operating a total of 255 routes within Spain and around the world. The main domestic routes operated in were Madrid - Barcelona and Madrid - Tenerife, while the main international route was Madrid - London Heathrow. Iberia also has a hub-and-spoke operating model, with Madrid Barajas a hub airport that in 2019 connected 29 Spanish cities with 106 cities around the world, with 43% of Iberia's total passengers using this airport. In addition, Iberia is the main airline connecting Spain to the Americas with 54.7% of passengers travelling between Latin America and Spain using Iberia.



### **Vueling (registered in Spain)**

Vueling provides connectivity within Europe, flying between 137 European cities in 2019<sup>16</sup>, carrying 34.5 million passengers across 421 routes. Barcelona is the main route that Vueling flights operate from, involved in 31% of Vueling routes, and from which the most popular destinations were Palma de Mallorca, Paris Orly, and Ibiza. In addition to connecting major cities in Europe, Vueling also flies to 40 European countries, 9 Africa including Morocco, Algeria, Egypt, Cape Verde, Gambia, Ghana, Senegal, and Tunisia, and Lebanon, Israel & Jordan in the Middle East.



### **British Airways (registered in the UK, subsidiaries: BA City Flyer)**

British Airways is the largest airline within IAG, carrying more than 48 million passengers in 2019 and operating 298 routes<sup>17</sup>, connecting the UK internally and to the world. British Airways has a hub at London Heathrow, the airport which most of its routes fly to or from, and where British Airways has a 46.5% share of total passengers using the airport. Through its hub-and-spoke model, British Airways connects 9 cities in the UK with 81 countries, with its most popular destinations being New York, Edinburgh, and Glasgow.



### **Aer Lingus (registered in the Republic of Ireland)**

Aer Lingus carried 11.6 million passengers in 2019 and operated a total of 102 routes. More than 83% of the routes connected countries within Europe, with 97% having either the origin or destination in the Republic of Ireland. The most common route by number of passengers was Dublin - London Heathrow, which carried 1.1 million passengers, followed by Dublin - London Gatwick and Dublin - Paris. In 2021 Aer Lingus reinforced its international connectivity network by starting operations from a new hub in Manchester airport, enabling it to offer direct transatlantic connectivity from Manchester to the US and Caribbean.

The number of passengers IAG carries<sup>18</sup> has grown on average 10.9% per annum between 2011 and 2019, with an aggregate growth rate of 130% between 2011 and 2019 due to a combination of organic growth and acquisition. Since the group creation in 2011 resulting from the British Airways and Iberia merger, IAG has acquired other companies and has created new brands to provide more adapted services to their customers. Moreover, the group's structure allows the different brands to focus their efforts on their addressable markets, customer proposition, cultural identities, commercial strategy and industrial relations.

Passenger numbers during the 2020 and 2021 were significantly negatively impacted by travel restrictions associated with the Covid-19 pandemic; however there has been strong growth in passenger numbers during the first three quarters of 2022, reflecting a return to normality in the industry. From 2021 to 2022 IAG's passenger growth was 144%, outperforming the global airline industry.<sup>19</sup>

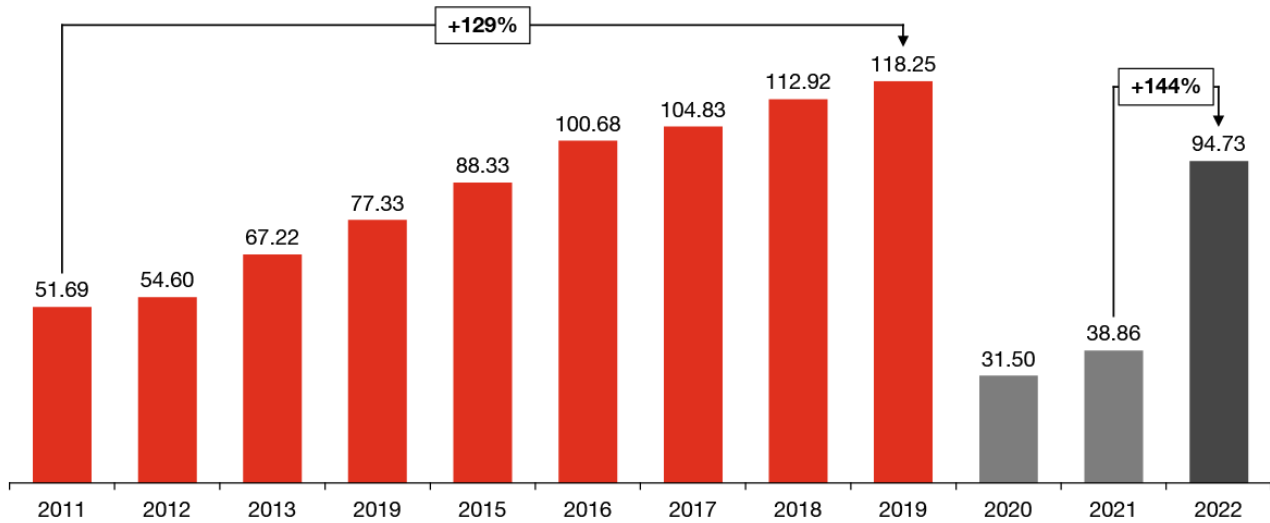
<sup>17</sup> Source, IAG database

<sup>18</sup> In order to be consistent with the technical literature in this field we note that a passenger is a seat on a plane. Therefore typically a traveller will be a passenger twice - once on their outbound and once on their inbound journey. A traveller is someone who moves between different geographic locations, for any purpose and any duration. A visitor is a traveller who is taking a temporary trip for the purpose of business or leisure. A tourist is a visitor if their trip includes an overnight stay. As we are reporting around air travel, almost all visitors will be staying overnight and therefore are tourists too. For simplicity we will use 'passenger' unless otherwise noted.

<sup>19</sup> IATA. Passenger Demand Recovery Continued in December 2022 & for the Full Year. Press Release No: 4. Date: 6 February 2023, <https://www.iata.org/en/pressroom/2023-releases/2023-02-06-02/#:~:text=International%20traffic%20in%202022%20climbed,compared%20to%20the%20prior%20year>



**Figure 14: IAG airlines carried 118.7 million passengers in 2019, with an aggregate growth of 129% since 2011 and a fast recovery in 2022 from the Covid-19 pandemic**

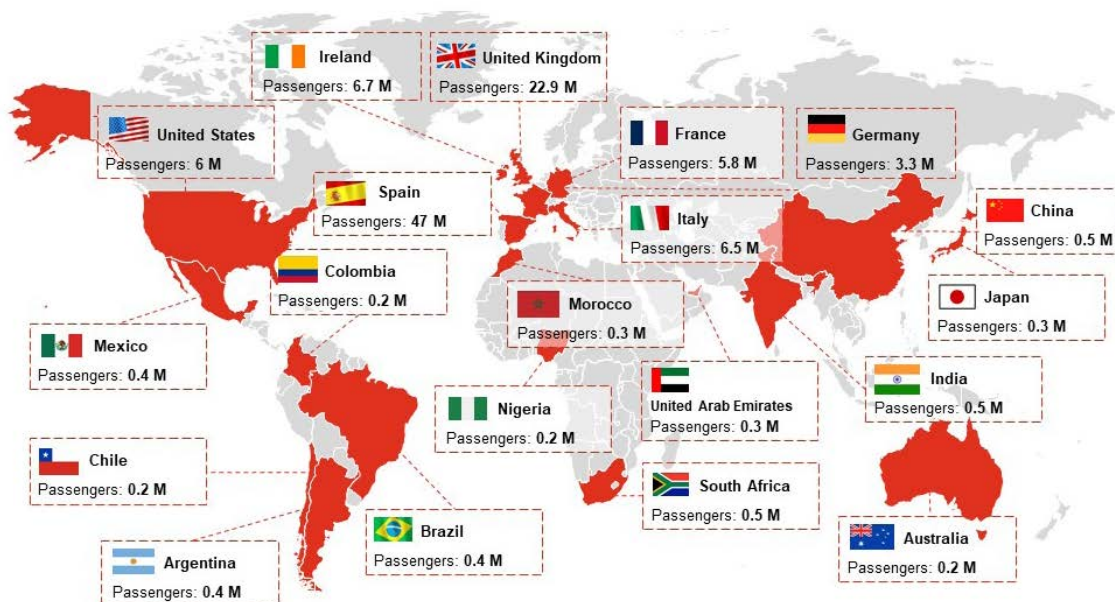


Source: IAG Group (Traffic statistics report)

Besides carrying passengers, IAG contributes to international trade growth through the freight of high value goods mainly using the large bellyhold capacity existing in its long-haul passenger flights operated by Iberia, British Airways, and Aer Lingus. IAG Cargo is the goods transport division of IAG Group operating an air freight network, reaching 136 countries and carrying more than 428,520 metric tonnes<sup>21</sup> of freight across the world in 2019<sup>22</sup>. IAG Cargo can operate in every destination reached by IAG operating airlines' network and is used by over 10,000 businesses (clients) to move goods around the world. IAG freights over 21% of total air cargo into and out of Spain.

As shown in Figure 15, Spain is the country that received the most IAG's passengers<sup>23</sup> in 2019, reaching 47 million passengers thanks to the connectivity provided by IAG airlines. Most of those passengers were domestic passengers using the domestic network, followed by British and French passengers.

**Figure 15: Spain is the main destination country for IAG passengers, facilitating the arrival of 47 million passengers**



Source: IAG, National Statistics Institutes (ONS, INE, CSO)

This leading position of Spain by number of passengers received is not surprising considering that Spain is one of the top tourist destinations in the world. Moreover two out of the three main airlines by number of passengers of IAG group have their headquarters in Spain, Iberia and Vueling.

<sup>20</sup>IAG Cargo uses subcontractors to reach countries where IAG airlines do not have routes

<sup>21</sup>IAG Cargo has provided data on cargo weight but not regarding cargo value

<sup>22</sup>Bellyhold space refers to the vacant space in the bellyhold of passenger aircrafts that are operated by IAG airlines after the travellers' luggage has been loaded.

<sup>23</sup>million passengers or 23.5 million tourists as each tourist uses arrives and departs from Spain

### IAG passengers connectivity in the Spain

The International Air Transport Association (IATA) regularly publishes a global connectivity index measuring the level of connectivity by country. In 2019, Spain ranked as the third best internationally connected country in Europe, after the United Kingdom and Germany, countries with two of the largest international hubs, London Heathrow and Frankfurt Airport. Worldwide, Spain ranks fifth in a list headed by the United States and China. This ranking can be attributed to the extensive air network in Spain and the development of its airports, as well as the significant contribution of Spanish airlines, specifically Iberia and Vueling, in connecting the country to the rest of the world.

Spanish airports received a total of 275.4 million passengers in 2019, both flying on international and domestic flights, with Madrid - Barajas and Barcelona El Prat being the two main airports in terms of number of passengers, operations and routes offered. By airline, Vueling and Iberia were the second and third airlines, respectively, by number of passengers carried.

While Vueling stands out as the airline with the largest number of passengers transported domestically, Iberia stands out as the airline that connected the largest number of passengers to destinations outside the European Union.

The connectivity offered by these two airlines, with complementary business models, has allowed Spain to position itself as a leader in Europe in terms of connectivity that plays a vital role in enhancing trade, connecting people and places, facilitating economic growth and development.

### IAG presence in Spain

International Airlines Group (IAG) is made up of four major airlines, including Iberia and Vueling, two of the most important airlines in Spain. Iberia, headquartered in Madrid and based at Madrid - Barajas airport, merged in 2011 with British Airways, creating the IAG Group. Iberia currently has two subsidiaries, Iberia Express and Level, and it has a commercial partnership with the Spanish airline Air Nostrum. Vueling is a low-cost airline based in Barcelona that was founded in 2004, and became part of the IAG group in 2013. Vueling's current Spanish bases are: Barcelona, Alicante, Bilbao, Gran Canaria, Ibiza (seasonal), Málaga, Palma, Santiago de Compostela, Seville, Tenerife North, and Valencia.

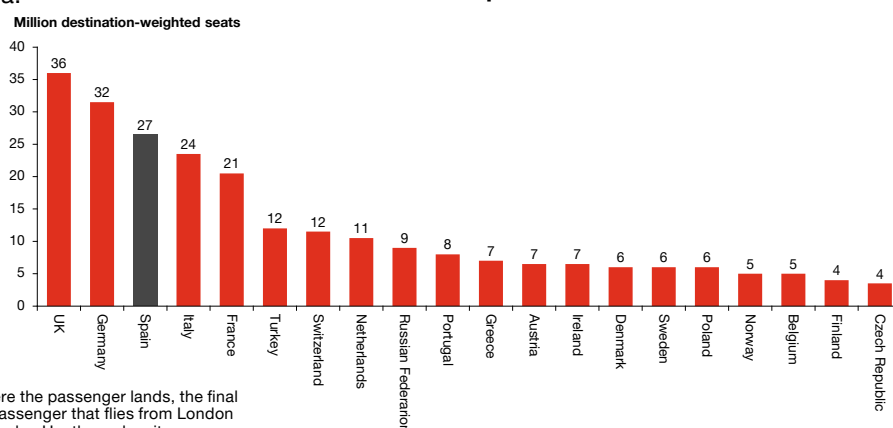
Iberia and Vueling have highly differentiated business models, offering complementary connectivity models in the Spanish territory. While Iberia offers from its base in Madrid a wide range of destinations internationally, mainly outside the European Union, Vueling provides short and medium-haul services from several cities in Spain. In terms of airports, Madrid-Barajas airport plays a crucial role in connecting Spain to the rest of the world, while Barcelona-El Prat contributes to Spain's domestic connectivity and global reach. Iberia operates a hub-and-spoke model in Spain, while Vueling operates as a point-to-point airline. This enables strong connectivity between regions across Spain and many global destinations via Madrid-Barajas and Barcelona-El Prat, which is beneficial for both passengers and cargo as it provides a global network and easy access to Spain.

IAG airlines in Spain have two different operational models: hub-and-spoke for the case of Iberia, and point-to-point for the case of Vueling. The main advantage of the hub system is that it allows multiplying the offer of destinations without having to multiply the number of planes, since from each city it is possible to fly, through a stopover, to all the others served from the hub. In addition, it allows offering more frequencies as there are more passengers to each destination. The main advantage of the point-to-point is that it offers more destination options, as they can fly to regional airports, providing access to destinations that are not served by other airlines, and offer more flexibility in terms of route planning.

The other two companies in the group, BA in the UK and Aer Lingus in Ireland, have a lesser presence in Spain than Iberia and Vueling although they play an important role in the connectivity between Spanish cities and the United Kingdom and Ireland. In the case of Aer Lingus Málaga its key destination.

Overall, IAG's airlines carried more than 58 million passengers and operated a total of 566 routes from 30 different airports in Spain<sup>25</sup>, as shown in Figure 17. IAG's airlines connected Spain to 56 countries, offering 423 international routes that carried 36 million international passengers annually, and 143 domestic routes that carried almost 22 million passengers.

**Figure 16: Top 20 most internationally connected countries in Europe in 2019**

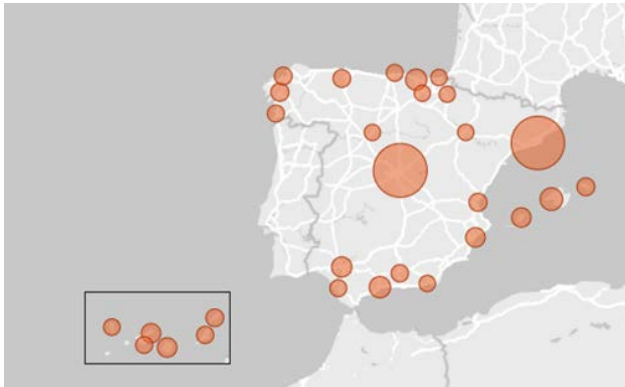


<sup>24</sup>The country of destination refers to the place where the passenger lands, the final destination country of its journey. For instance, a passenger that flies from London Heathrow to Madrid Barajas and comes back to London Heathrow, has its destination in Madrid Barajas.

<sup>25</sup>IAG has carried passengers in 30 airports in Spain. These airports are situated among the 35th busiest, in terms of passengers carried in Spain, according to AENA.

Source: IATA

**Figure 17: IAG has a presence throughout Spain, having transported passengers from 30 different airports in 2019**



### Iberia

Iberia, the flag carrier of Spain, was established in the late 1920s, with its first flight in 1927 from Madrid to Barcelona. The airline has evolved over time, expanding its portfolio of destinations as well as extending the reach of its services and diversifying its business to activities such as freight transport (cargo), ground operations or aircraft maintenance. In 1974, the first Air Shuttle<sup>26</sup> in Europe was established, connecting Madrid and Barcelona, an effective response to the high demand of citizens for this route, which was operated by Iberia, and has been since then the airline's busiest route.

Since its first flight, Iberia has focused on becoming a socially committed airline and faithful to its purpose. The airline has given another meaning to flying, demonstrating the importance of connectivity for society. Specifically, Iberia has made a significant social contribution by offering repatriation flights, collaborating with the national transplant organisation, providing services to minors travelling alone, transporting humanitarian material and vaccines, (historically and during the Covid-19 period), as well as offering services during historical cultural events, such as the Olympic Games in Barcelona or the Universal Exhibition in Seville.

Over time, Iberia has become the leading EU based airline between Europe and Latin America, facilitating the transport of passengers, and boosting economic activity, trade and investment between the two regions. Together with its subsidiaries, Iberia offers flights to a large number of countries around the world from the Madrid - Barajas airport, where it has its hub. Currently, the airline has designed the "Next Chapter" strategy focused on four pillars: customers, connectivity and the development of the Madrid hub, sustainability and employees.

### Madrid - Barajas Iberia's hub

The Madrid - Barajas airport began its operations nearly a hundred years ago, opening to civil aviation in 1933. The first regular airline to carry passengers was Iberia (at that time, operating under the name LAPE). At different stages the airport expanded the facilities until reaching

the current 4 terminals, with Terminal 4 being the last one to be developed. The facility has an area of 750,000 m<sup>2</sup> and a capacity for 35 million passengers per year, reinforcing its importance as a global hub. Iberia has actively contributed to the development of the airport, being the base of the company since its origins. Since 2006 it has moved all its operations to the new Madrid-Barajas Terminal 4.

Iberia has a very strong presence at Madrid-Barajas airport carrying 20.3 million passengers in 2022<sup>27</sup>, which represented 46% of the total airport's passengers.<sup>28</sup>

The hub has a strategic relevance in the territory, and in this case, in the city of Madrid and in the Spanish territory in general, through the domestic air connections offered from Madrid. The airport together with the operating companies has contributed to the national economy, through the generation of economic activity, employment, and trade, (in the form of imports, exports and the promotion of local trade), as well as boosting tourism in the city of Madrid and its surroundings. Iberia, which has operated the majority of flights at Madrid - Barajas, has played an active role in the airport's success by supporting connectivity and developing the extensive air network that exists today.

### Connecting Spain internationally

In 2019, Iberia airlines operated 127 international routes to 47 countries, flying a total of 15 million passengers. The key airport for international flights was Madrid - Barajas which operated 87% of the international routes operated by the airline in Spain, evidencing its hub-and-spoke model. The international destinations of the airline were focused on two continents, America and Europe.

As depicted in Figure 18, Iberia connected Spain to 20 countries in America, with the main route being Madrid Barajas - Ciudad de México, with 540.000 passengers, connecting Madrid with the capital of the second largest economy in Latin America, after Brazil. The air network offered by the company, connecting Spain and America, is extensive with connections to the most important cities in North America such as New York City - 443.000 passengers -, Miami - 356.000 passengers -, and South America, such as Buenos Aires - 451.000 passengers -, Santiago de Chile - 313.000 passengers - and Lima - 300.000 passengers -. The airline largely contributes to the connectivity between Spain and America, having a relevant market share in the number of passengers carried from all countries.

In Europe, Iberia connected Spain to 22 countries. The strong air connectivity between the UK and Spain offered by IAG airlines stands out since the group IAG has one of its main airlines, British Airlines, based at London Heathrow. Therefore, in 2019 the main route in terms of number of passengers was Madrid Barajas - London Heathrow, with 909.000 passengers, followed by the flights from Madrid Barajas to other big European cities such as Paris Orly, with 626.000 passengers and Rome Fiumicino, with 557.000 passengers.

<sup>26</sup> Known in Spain as "Puente Aéreo"

<sup>27</sup>AENA database

<sup>28</sup>AENA (data including passengers of Iberia, Iberia Express and Air Nostrum)

**Figure 18: Iberia has a hub-and-spoke operational model offering connections from Madrid Barajas to 20 countries in America and 22 countries in Europe**



Source: IAG database. Note: Flows are expressed in number of passengers

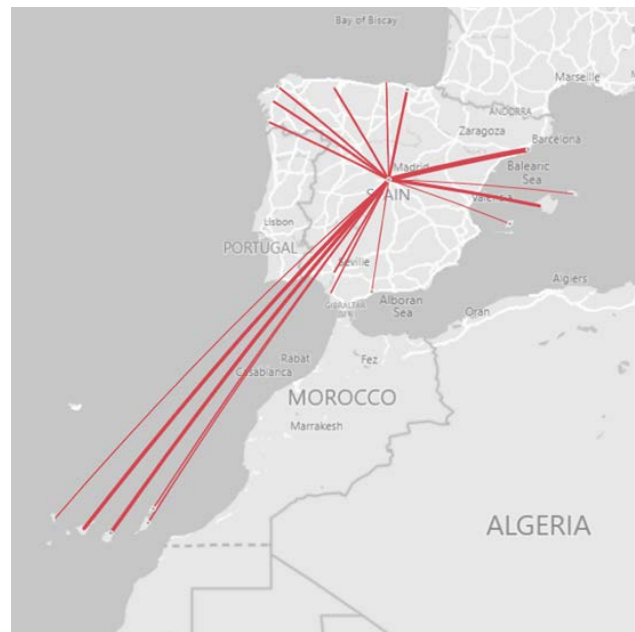
Iberia connects Spain internationally with a broad portfolio of destinations focused in America and Europe from its hub in Madrid - Barajas that supports the development of the Spanish economy.

**Connecting Spain domestically**

Iberia does not only offer international connectivity, but also has an extensive domestic connectivity network, connecting its hub in Madrid with the largest Spanish cities. In 2019, Iberia offered 33 domestic routes to 23 cities, carrying more than 7.5 million passengers. The main route was Madrid Barajas - Barcelona El Prat, which is considered an Air Shuttle, and carried more than 1.3 million passengers. The airline offers also a strong network with the Canary Islands, being Madrid - Tenerife and Madrid - Las Palmas, the second and third busiest routes, with 880.000 passengers and 789.000 passengers, respectively, and with the Balearic islands, with Madrid - Palma de Mallorca carrying 728.000 passengers in 2019.

Even if the evolution in the number of passengers of domestic flights has been decreasing due to the competition of the high-speed train connecting Madrid to the main Spanish cities, there is still a great number of passengers for whom the plane is the main means of transport, especially for those connecting with long-haul routes.

**Figure 19: Iberia connected the airport of Madrid Barajas with the main Spanish cities and the Canary and Balearic Islands, with the route Madrid Barajas - Barcelona El Prat being the busiest with more than 1.3 million passengers**



Source: IAG database. Note: Flows are expressed in number of passengers

As shown in the map above, Iberia offers domestic connectivity from its hub in Madrid - Barajas to 22 Spanish cities and to the Canary and Balearic Islands. This network greatly contributes to a direct regional connectivity from remote areas to the capital, and therefore, fostering trade and tourism, enriching the economic development of both Madrid and the regional cities.

### **Vueling**

Vueling was founded in Barcelona in 2004, with a fleet made up of only two aircraft and four routes. In the nineteen years since its foundation, the company has expanded its network of airports and destinations in Spain, as well as in other European countries, mainly France and Italy, North Africa and the Middle East, offering more than 320 routes.

The company has its main base at the Barcelona El Prat Airport being the airline that carries the most passengers, as well as the one that operates the largest number of flights from this airport. In 2022, Vueling carried 42% of the total passengers who took off from or landed at Barcelona El Prat airport. In addition, the airline has its main operations centre in the same airport and since 2022, it has its headquarters in Viladecans, a city located on the outskirts of Barcelona and very close to the airport facilities.

IAG is the main airline group in Spain, in terms of market share, with Vueling being the leading company by number of passengers. It is also worth mentioning that the airline is the leader in domestic traffic, transporting 32% of domestic passengers in Spain, with daily operations in 27 airports within the AENA network, with 15 of them being bases: Barcelona, Bilbao, Alicante, Valencia, Seville, Malaga, Granada, Mallorca, Ibiza, A Coruña, Santiago de Compostela, Asturias, Madrid, Tenerife (North), and Gran Canaria.

Vueling has an operational model based on a point-to-point network, which allows users to have direct flights from a wide network of airports in Spain and other European cities, without the need to connect to a hub, thus reducing the travel time. Although the company has a strong presence in Spain's domestic connectivity, it is also very well positioned on the European scene, with large bases in France and Italy. In 2014, Vueling installed its second base at the Rome-Fiumicino airport where in 2019 it operated a fleet of eight aircraft and 40 routes. In France, Vueling also has currently a significant presence in twelve cities and an operational base at the Paris-Orly, where Vueling has nine based aircraft. As a result, Vueling is the leading company by number of passengers between Spain and France, and the second between Spain and Italy.

Vueling's mission is to connect people and places, creating value for its shareholders, employees, customers and society whilst shaping its future in a sustainable way. Vueling contributes socially through the leadership of various social initiatives, with an emphasis on supporting vulnerable children, promote woman empowerment and movement for humanitarian causes. Since 2014, the company has had a fundraising mechanism for charitable causes, which has been dedicated to the Sant Joan de Deu Hospital (Barcelona), the Bambino Gesù Hospital (Rome) and Save the Children for its program to support children refugees in Europe.

Vueling began its operations in 2004 with a base at Barcelona El Prat airport, operating its first flight from this airport to Ibiza in the Balearic Islands. Over the years, the airline has gained importance at the airport, going from carrying 24.7% of total passengers in 2010 to carrying around 42% of airport passengers in 2022. Although the company operates a model more similar to the point-to-point network than the hub-and-spoke operating model, it does operate a large number of its flights at this airport.

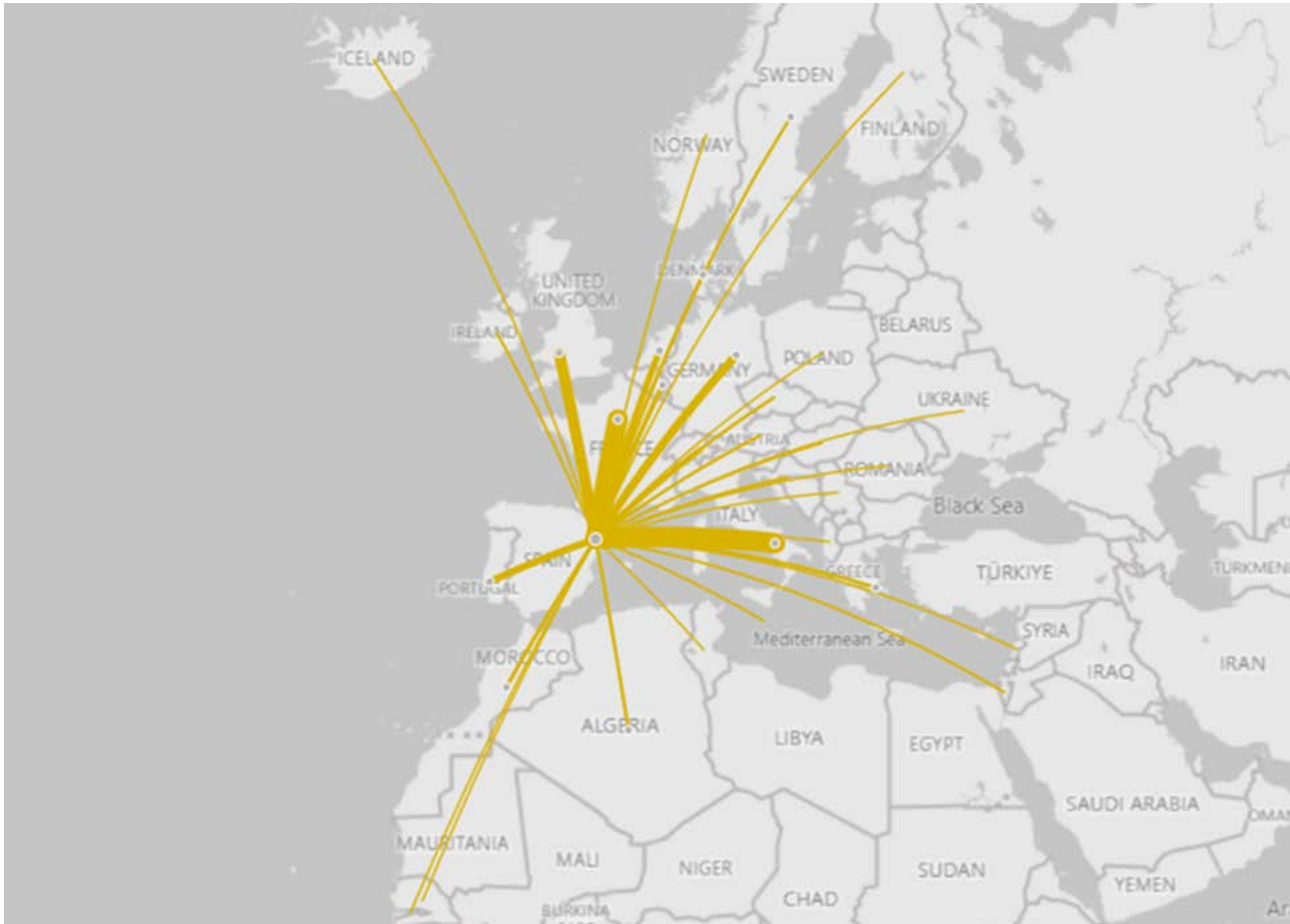
Over the last fifteen years, the evolution of Vueling and the Barcelona El Prat airport have gone hand in hand, with Vueling being the engine of growth and the catalyst for tourism in Barcelona. In the period 2010-2019, the airport grew by an average of 7% annually in number of passengers, while the number of Vueling passengers at this airport grew on average by 12.5% annually, contributing significantly to the development of the airport infrastructure and to the city of Barcelona.

### **Connecting Spain to other countries in Europe, Northern Africa and Middle East**

Through its point-to-point operational model, Vueling offered 224 international routes to 34 countries in 2019, 27 European countries and 7 in Northern Africa and Middle East countries. The company carried a sum of 16 million passengers from Spanish airports to international locations, or vice versa, offering connections to 102 cities outside the country. The key airport for international flights was Barcelona El Prat, which operated 47% of the international routes operated by the airline in Spain.

The main routes in terms of number of passengers carried by Vueling were Barcelona El Prat - Paris Orly, with more than 1 million passengers, followed by Barcelona El Prat - London Gatwick and Barcelona El Prat - Rome Fiumicino, with 783.000 passengers and 688.000 passengers, respectively. Vueling had a 57% passenger share in the routes connecting Barcelona to Paris in 2019. In the case of the routes between Rome and Barcelona, Vueling carried 49% of the passengers in 2019, whereas in the case of London, the share was 28%, competing with local and other low-cost airlines that are well established in different UK airports.

**Figure 20: Vueling operated 224 from Spain to 33<sup>29</sup> countries in Europe, Northern Africa and Middle East, with strong connections to France and Italy**



Source: IAG database. Note: Flows are expressed in number of passengers

In sum, Vueling has a large network in Europe focused on connecting Spain with 27 countries in Europe, with strong presence in France and Italy. Even if the company does not have a unique hub, it operates a large part of its flights from the airport of Barcelona - El Prat, but still maintains a point-to-point connection since it has more than 15 bases in Spain.

**Offering domestic connectivity from Barcelona and regional airports**

Vueling is the main airline in Spain in regards to domestic connectivity, operating the highest number of flights and carrying the largest number of passengers. In 2019, the airline operated 110 domestic routes from 27 different cities in Spain, carrying more than 14 million passengers. Even only 21% of the routes had the airport of Barcelona - El Prat as its origin or destination, these routes carried 59% of all Vueling passengers in domestic flights in 2019.

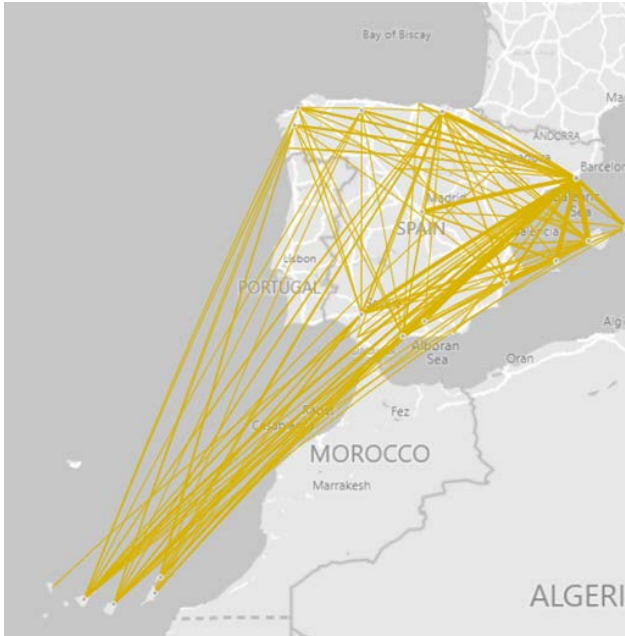
The busiest routes were Barcelona El Prat - Palma de Mallorca and Barcelona El Prat - Ibiza, with more than 2 million passengers. The route connecting Barcelona-El Prat to Menorca is the fourth busiest, showing the airline's extensive reach in the Balearic Islands and its significant contribution to the connectivity between the islands and mainland. In fact, Vueling was the primary airline for domestic passengers and domestic flights operated at all three Balearic island airports in 2019 and has maintained its leadership position in 2022.

Vueling contributes together with Iberia to the connectivity between the two biggest cities in Spain, Madrid and Barcelona, carrying more than 828.000 passengers in 2019, through the Air Shuttle service that is shared with Iberia. In this service passengers can buy a ticket for the route and can take any of the flights during the day, regardless if the operating company is Vueling or Iberia.

The regional contribution of Vueling in Spain is noticeable, offering point-to-point domestic flights from most of the airports in Spain. In particular, Vueling offered 18 domestic routes from the airport of Bilbao, 14 from Malaga and 11 from Valencia and Alicante. The airline offered domestic connectivity to smaller airports in more remote areas, such as the La Coruña airport with 9 domestic routes, Asturias with 8 and Granada with 6 routes.

<sup>29</sup>Including Spain, Vueling offered flights to 34 countries

**Figure 21: In Spain in regards to domestic connectivity, operating 110 routes from 27 different airports in 2019, greatly contributing to regional connectivity**



Source: IAG database. Note: Flows are expressed in number of passengers.

In summary, Vueling is the company with the largest domestic network in Spain, offering connectivity from 27 cities in Spain and connecting, through its point-to-point model, regions with the main airports in Spain. The role of the airline in connecting the Balearic Islands with the peninsula stands out, since Vueling is the company that has operated the largest number of domestic flights in 2019, providing critical transport services to the tourism industry of the islands.

**British Airways and Aer Lingus in Spain**

Besides Iberia and Vueling, other IAG airlines are also operating in Spain. British Airways and Aer Lingus, are connecting together more than 4.8 million passengers between Spain and the United Kingdom, and Spain and Ireland in 2019 respectively.

In 2019, British Airways operated 36 routes connecting 15 cities in Spain with London, Manchester and Edinburgh. The main routes in number of passengers were Barcelona El Prat - London Heathrow, with 756.000 passengers, followed by Madrid Barajas - London Heathrow and Málaga - London Gatwick, with 559.000 passengers and 322.000 passengers, respectively. Overall, the company carried 3.3 million passengers, offering direct connectivity through a large supply of flights between the main English and Scottish cities and Spain.

Aer Lingus' presence in Spain is noticeable as it operated a total of 22 routes between Spain and Ireland in 2019. The airline connected 12 Spanish cities with Dublin, Cork, Belfast and Shannon. The airline carried more than 1.5 million passengers in 2019, being the second largest company connecting the two countries.

**Economic value of connectivity**

The air connectivity which IAG's airlines bring provides many economic benefits to Spain's economy. Air transport enables key flows such as tourism, trade, investment, and knowledge. Air routes that connect cities contribute to economic growth by boosting the supply side of the economy and facilitate investment flows. Key economic variables which are affected by spillover benefits of air connectivity are:

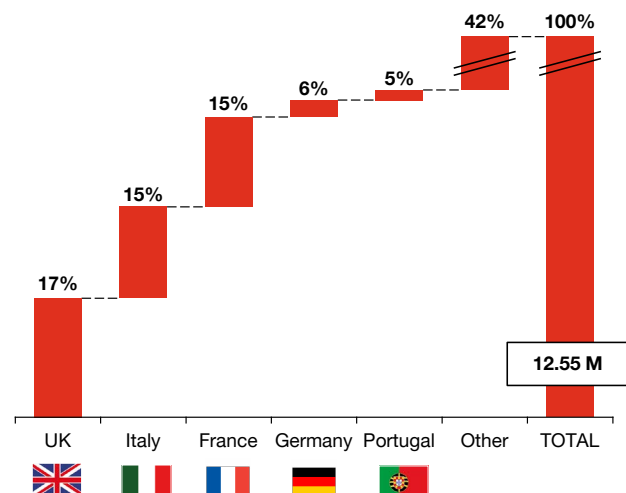
- GDP
- Employment
- Tourism, including education tourism
- International trade (goods and services)
- Foreign Direct Investment

Spain's economy is strongly oriented towards the service sector, with a large proportion of it focused on tourism, real estate services and professional and technical services sectors. Firms operating in these sectors are likely to benefit from the high connectivity provided by IAG transport services.

In this section of the report, we will firstly describe and quantify the catalytic benefit for the EU economy related to the economic activity that passengers brought by IAG to Spain, and then we will discuss the importance of IAG's cargo operations for Spain's trade.

In 2019 23.5 million passengers arrived at Spanish airports on IAG services. Almost 50% of these were international passengers (12.5 million), with the most common destination they travelled from were the UK (2.1m), Italy (1.9m) and France (1.9m) as shown in Figure 22.

**Figure 22: IAG international passengers to Spain by departing country**



Source: IAG & ONS

Out of the total UK passengers arriving to Spain, 12% travelled by IAG airlines; 32% for passengers arriving from Italy, 16% of the passengers from France, and 17% of the passengers arriving from Germany.

### Supporting tourism in Spain

IAG passengers make up to 21.3% of all airport passengers in Spain (both international and domestic). The arrival of both domestic and international tourists to a city or region has an impact on the local economy derived from the expenditure of visitors on accommodation, transport, restaurants, retail, or other activities. This catalytic impact can be measured in terms of GVA and FTE jobs creation. In the section below we calculate this catalytic impact in terms of the direct, indirect and induced impact of tourists brought to Spain by IAG's airlines.

### Catalytic impact

In addition to contributing to Spain's economy through its operational and capital expenditure, as explained in the sections above, IAG plays a key role in catalysing tourism in Spain. In this section we estimate the contribution of this effect to Spain's economy. In doing so, we calculate the gross value added and employment generated by tourism and business travel spending by IAG's international and domestic passengers.

Total catalytic impact is the result of:

- A direct impact: the contribution to the economy of the expenditure made by IAG passengers (in restaurants, hotels, etc.);
- An indirect impact: the onward supply chain impact of the business where IAG passengers spend money (e.g. providers of foods and drinks to the restaurants, utilities, etc.); and,
- An induced impact: the contribution to Spain's economy resulting from employment supported by IAG passenger expenditure (e.g. rent, transport, groceries, etc.).

To estimate the catalytic impact, we use the total number of passengers travelling to and within Spain, compute tourism expenditure per passenger, and the sectoral composition of this expenditure for domestic and international passengers using INE data. In 2019 the total expenditure for all international passengers (those flying with IAG airlines and those flying with other airlines) was €82.2bn, and for domestic passengers €4.8bn.

### Passenger expenditure

Our modelling suggests total expenditure by IAG passengers in the Spanish economy was c.€15.1bn in 2019. This figure is made up of international passenger expenditure of €14.5bn and domestic passenger expenditure of €0.6bn. Of the total spending by international passengers in Spain, IAG passengers contribute approximately 21%<sup>30</sup>.

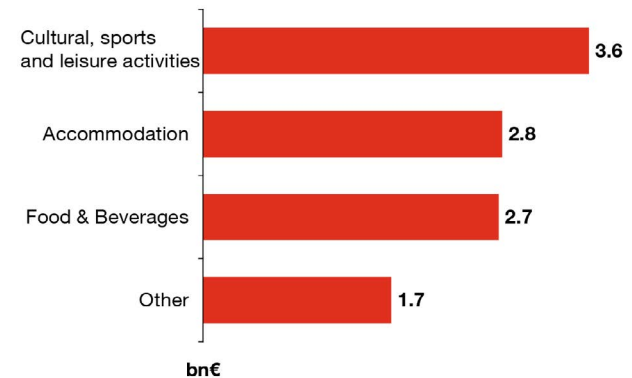
Figure 23: Total expenditure in Spain by IAG passengers (domestic and international)



Source: IAG and INE (Satellite Account TSA)

The expenditure of IAG passengers in 2019 was distributed as shown in Figure 24. Cultural, sports and leisure activities were the main component of expenditure €3.6bn, followed by accommodation expenditure €2.8bn. Food and beverages represented €2.7bn.

Figure 24: Distribution of IAG passengers' main expenditures in Spain, 2019 (€bn)



Source: IAG and INE (Satellite Account TSA)

<sup>30</sup>Domestic passenger expenditure has not been included as it is computed only the net spending of the domestic passenger per day (compared to the daily consumption per person in Spain)



## GVA impact

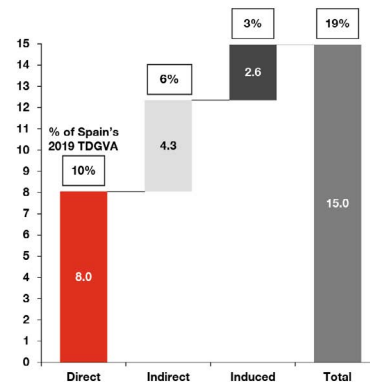
Figure 25 shows the direct, indirect and induced impact on Spanish GVA that the expenditure of IAG airlines passengers has. While direct refers to the impact on the business where the passenger spent the money, indirect refers to the impacts on the value chain of the business, and induced refers to the impact resulting from the employees (of both the main business and the value chain business) expenditures.

Total IAG catalytic effect in Spain was at €15bn, equivalent to 19% of Spain's Tourism Direct GVA (€78bn) in 2019.<sup>31</sup> This is comprised of:

- **A direct impact of €8bn**
  - This is the impact that results from the IAG passengers' total expenditure in the economy.
  - Equivalent to 10% of Spain's Tourism direct GVA.
- **An indirect impact of €4.3bn**
  - This is the impact that results from the industry value chain in the recipient sectors of passenger expenditure.
  - Equivalent to 6% of Spain's Tourism direct GVA.
- **An induced impact of €2.6bn**
  - This is the impact of the spending by the households that have been impacted directly and indirectly, eg. hotel employees' expenditures.
  - Tourism Direct GVA.

<sup>31</sup>Spain Tourism Satellite Account (TSA), Aportación del turismo al PIB de la economía española por valor absoluto <https://www.ine.es/dynt3/inebase/index.htm?padre=6196&capsel=6196>

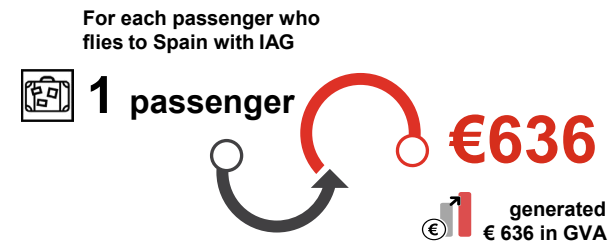
Figure 25: IAG catalytic impact in Spain, GVA 2019 (€bn)



Source: IAG and INE

Figure 26: IAG's GVA multiplier in Spain, 2019

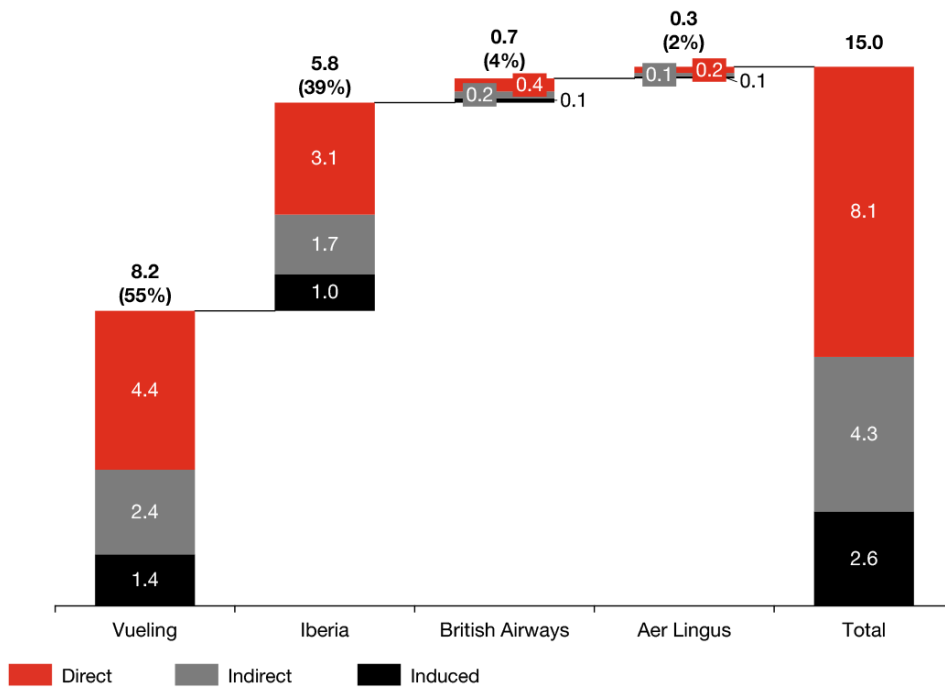
For each passenger who flies with IAG to Spain, there is a catalytic impact of €636 to Spain's GVA.



Vueling is responsible for 55% of the total IAG catalytic impact with Vueling passengers contributing with €8.2bn out of the €15bn that IAG's passengers contribute to the national GVA. Iberia contributes to 39% of the catalytic impact, and the remaining 6% comes from British Airways and Aer Lingus' passengers.



**Figure 27: Distribution of catalytic impact by airline in Spain, 2019**

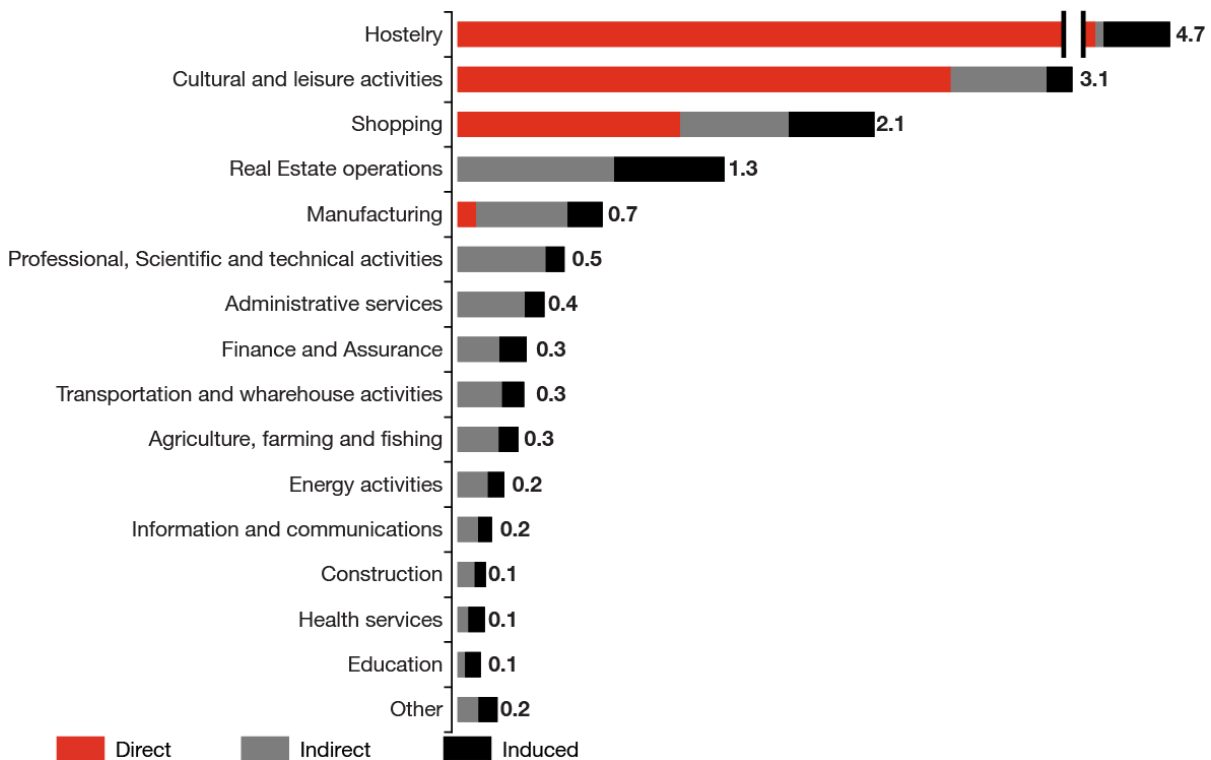


Source: IAG and INE

The catalytic impact benefits a range of sectors across Spain's economy. The largest single catalytic contribution is to hostelry at €4.7bn, followed by cultural activities at €3.1bn, and shopping at €2.1bn. The majority of these impacts are direct, i.e., they are directly resultant of IAG passenger spending.

Other smaller sectoral impacts, such as the impact on real estate operations (€1.3bn), have a more substantial indirect and induced impact, which means that these impacts are a result of other industries' supply chains or the expenditure by employees in industries directly impacted by IAG passenger spending. The "Other" category captures the economic benefits provided to a range of economic sectors, with the largest in the category being water and residual management, public administration, and energy

**Figure 28: Total IAG catalytic impact by sector in Spain, 2019 (€bn)**



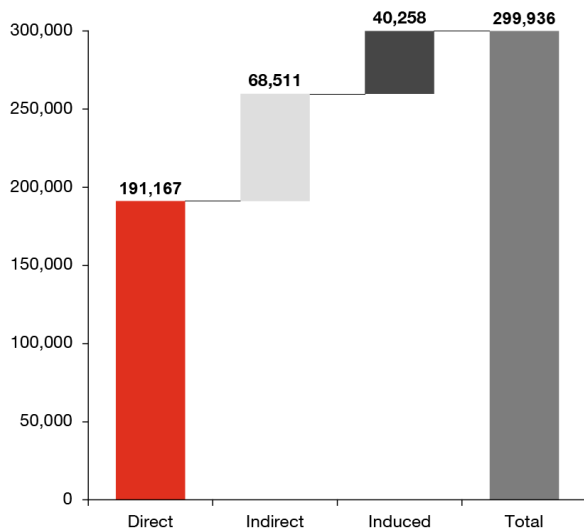
Source: IAG and INE

### Jobs impact

IAG's catalytic effect supported approximately 300,000 full-time equivalent (FTE) jobs in Spain in 2019. These FTE jobs are the result of the total expenditure made by passengers in Spain in the sectors described in Figure 29. This is comprised of:

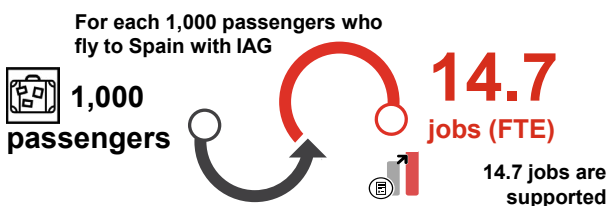
- **c.191,000 FTE jobs directly supported**
  - These are jobs supported by the expenditure of IAG passengers in Spain, i.e., jobs that are created in hotels, restaurants, and transport to provide services.
- **c.69,000 FTE jobs indirectly supported**
  - These are jobs supported by supply value chains of the sectors where the passengers spent money, e.g. jobs created in the supply chains of hotels and restaurants. Equivalent to 3% of Spain's Tourism direct GVA.
- **c.40,000 FTE jobs that are induced**
  - These are jobs that are supported by the spending of employees who are employed directly and indirectly, i.e. jobs created by the expenditure of employees who work in retail or hospitality in their day-to-day lives.

**Figure 29: Catalytic effect of IAG on employment (FTE) in Spain**

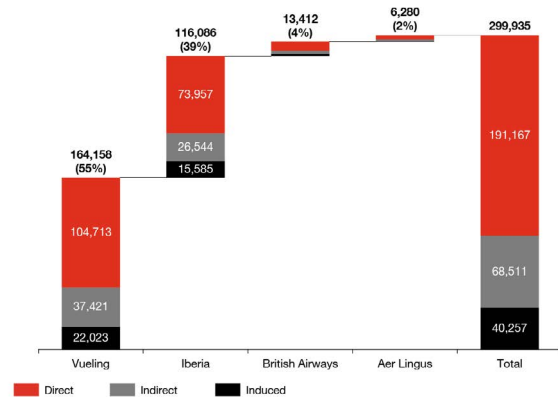


Source: IAG and INE

This means that for every 1,000 passengers flying with IAG to Spain, 14.7 FTE jobs are supported.



**Figure 30: Catalytic effect of IAG on employment (FTE jobs) in Spain by airline**



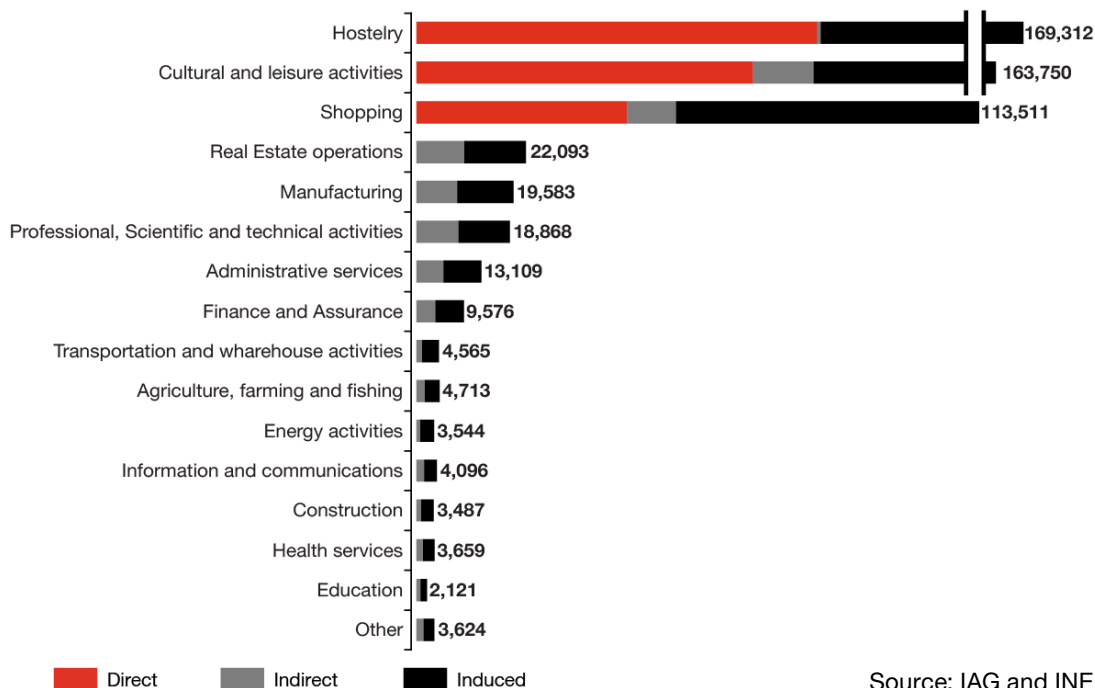
Source: IAG and INE

55% of the total catalytic impact of IAG's airlines on FTE jobs in Spain comes from Vueling. Vueling passenger expenditure supports c.164,000 of the roughly 300,000 FTE jobs. Iberia passenger expenditure supports c.116,000 FTE jobs, representing 39% of the total catalytic impact of IAG's airline on FTE jobs in Spain. British Airways and Aer Lingus support c.20,000 FTE jobs.

The catalytic impact on employment of IAG passenger spending in Spain is distributed across 63 different sectors, evidencing a broad impact of IAG to Spain job creation. The largest sector which benefits from an employment catalytic impact of IAG passenger spending is hostelry where c.169,000 FTE jobs are generated. This is followed by cultural and leisure activities with c.163,000 FTE jobs. The third and fourth largest sectors in terms of employment impact is Shopping, supporting c.113,500 jobs each.

Most of the jobs created result from direct impact, meaning that they directly result from IAG passenger spending. However, there is also evidence of substantial indirect and induced impact on jobs in Spain, particularly real estate operations and manufacturing activities. These are jobs supported as a result of spending from IAG passengers flowing through the supply chain to other industries, or spending of IAG employees, and Spanish households working in the supply chain sectors.

**Figure 31: Catalytic effect on employment (FTE) of tourism resulting from IAG passengers by sectors, Spain 2019**



Source: IAG and INE

### Cross-border trade

#### IAG Cargo operations

IAG Cargo is the cargo division of IAG Group operating (picking up and setting up freight) in 136 countries and transporting more than 428,520 metric tonnes<sup>32</sup> (including tranships - the transfer of cargo between transport forms) of freight across the world in 2019. In the case of Spain, IAG freights over 21% of total cargo and over 36% of total Madrid-Barajas cargo.

IAG Cargo's activity contributes to facilitating international trade and access to international supply chains, a major engine of economic growth. Air cargo is a particularly important transportation mode for high added-value products.

IAG Cargo product offerings<sup>33</sup> include:

- IAG General Cargo, under categories of loose or unitised.<sup>34</sup>
- IAG Cargo Air Mail, to provide services to the world's postal operators.
- IAG Cargo Constant Fresh designed for temperature sensitive perishable products.
- IAG Cargo Constant Climate designed to transport pharmaceutical goods.

Other IAG Cargo solutions include: Prioritise (express services), Courier, Dangerous groups, General cargo or Live animals and pets.

The majority of demand for air freight is for products that are high value-added, and perishables. Examples of these are pharmaceuticals, fresh products, IT products, energy machinery, and gold.

IAG Cargo operates a forwarder business model where the majority of cargo is transported in the hold of passenger aircraft on long-haul routes as opposed to dedicated freight aircraft using the two large hubs IAG airlines has in London Heathrow and Madrid Barajas as distribution centres. This model allows IAG Cargo to utilise the large number of passenger routes in IAG's network to transport cargo worldwide on frequent flights. IAG Cargo's top five routes by origin and final destination (at the country level) are the US to the UK (45,404 metric tonnes), India to the US (31,519 metric tonnes), the US to India (27,515 metric tonnes), domestic routes in Spain (24,214), and China to the UK (19,189 metric tonnes).

**Figure 32: The routes with the largest weight of cargo transported by IAG worldwide in 2019 were between the United Kingdom with the United States, followed by the United States with India**



Source: IAG Cargo. Note: A thicker line shows a larger number of metric tonnes

<sup>32</sup>IAG Cargo has provided data on cargo weight but not cargo value. The methodology used to allocate the cargo transported by IAG has been to select the maximum data recorded by order and route (since it is not possible to discriminate whether cargo is collected or deposited at each airport through which the aircraft passes on a route). With this, we try to get as close as possible to the real data without incurring in overestimation of the cargo transported by IAG.

<sup>33</sup>IAG Cargo only provided data on the metric tonnes, the product offering is the closest approach to know the freighted products

<sup>34</sup>Loose cargo is a single item, and unitised cargo refers to a group of items that are shipped together.

### Transporting pharmaceuticals including Covid-19 vaccines

IAG Cargo plays a key role delivering vaccines around the world due to its Constant Climate Service. During the Covid-19 pandemic IAG supported delivering this vaccine to millions.

- In 2021 IAG Cargo transported over 19 million doses of Covid-19 vaccines around the world.
- IAG Cargo partnered with UNICEF to support its COVAX programme which was aiming to provide equitable global access to Covid-19 vaccines, delivering four million doses of vaccines to Nigeria.

IAG was able to deliver this due to this is its cold chain service Constant Climate and climate controlled facilities at the key hub airports. These ensure that products are kept at the optimum temperature throughout the time they are in the airport.

Madrid - Barajas: In February 2019 IAG Cargo opened a new centre dedicated to its Constant Climate product for transporting time and temperature-sensitive pharmaceutical products. The facility has two dedicated temperature-controlled chambers for 2-8°C and 15-25°C goods totalling over 900 square metres.

Dublin Airport: The Constant Climate located in Dublin is providing services to the growing pharmaceutical market operating in Ireland, the Constant Climate handling facility provides 50m<sup>2</sup> 2-8°C area and twin-chamber five airline pallet temperature-controlled modules.

London - Heathrow: The Constant Climate Centre is a dedicated site for pharmaceutical shipments, and has separate temperature-controlled zones, at 2-8°C and 15-25°C totalling 6,000 square feet.

### Cargo's impact on Spain trade

IATA estimates that a 1% increase in air cargo connectivity<sup>35</sup> is associated with 6% more trade, widening business opportunities for firms and consumer choices.<sup>36</sup>

In 2019 Spain had a positive overall goods & services trade balance of €36.6bn, consisting of a goods balance deficit of €-26.6bn and a service balance surplus of €63.2bn. The positive service balance is a result of Spain's economy specialisation in services such as tourism, supported by companies like IAG.<sup>37</sup>

Spain's trade balance in 2019 had a positive position (the value of imports exceeded the value of exports in terms). In addition, the air transport trade balance in Spain is in surplus (value of exports is higher than the value of imports); this is driven by the high value added of freight exported by cargo firms.

### IAG Cargo operations in Spain

According to the Ministerio de Transportes in 2019, Madrid-Barajas moved 50% of total air freight (0.5 million metric tonnes out of total 1.1 million metric tonnes) in Spain. In Madrid-Barajas, IAG bellyhold cargo makes up to almost 44% of the total cargo moved, benefiting from the long-haul flight availability.

IAG Cargo in particular contributes to international trade in Spain, handling over 21% of total air cargo in Spain, and over 36% of goods at Madrid-Barajas in 2019. (See Cross-border section for further information on IAG Cargo activity). Madrid-Barajas airport was involved in 86% of IAG's total cargo movement in Spain, which was approximately 220,000 metric tonnes in 2019.

>20% of total  
**Spain Cargo**  
Freight by IAG

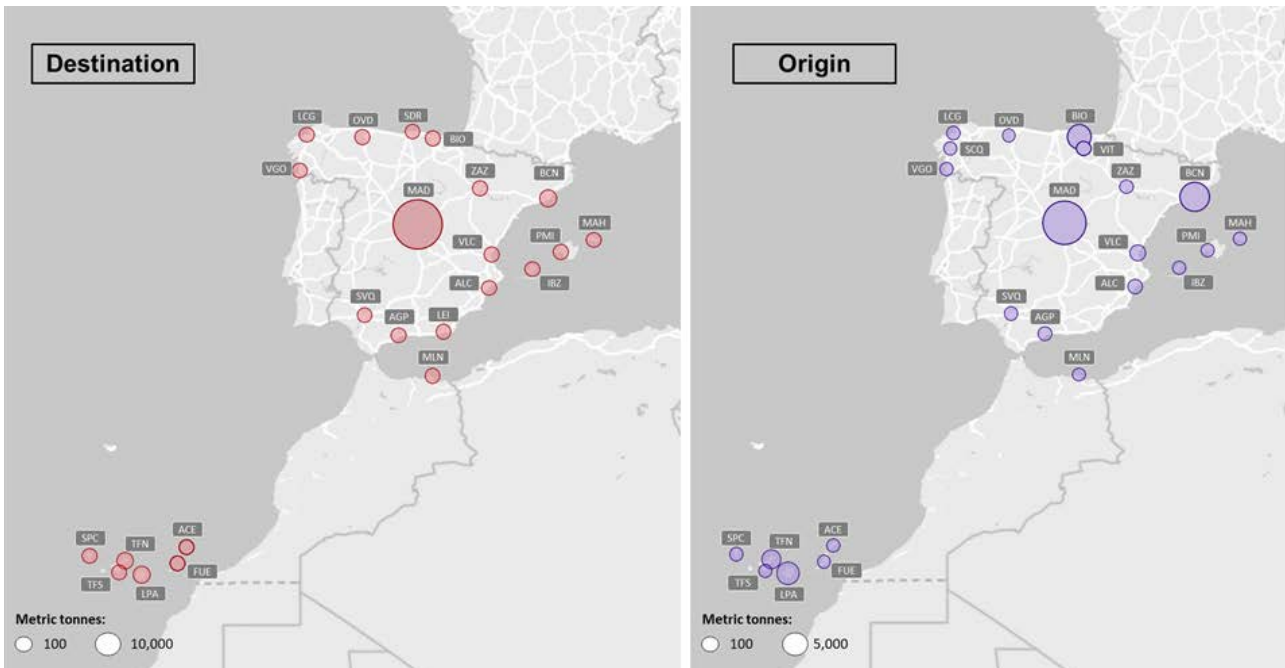
>30% of total  
**Barajas Cargo**  
Freight by IAG

<sup>35</sup>Air connectivity is a composite measure reflecting the ease of accessing various locations around the world. It is a composite measure reflecting the number and economic importance of the destinations served from a country's major airports and the number of onward connections available from each destination'. IATA. Air Connectivity. Measuring the connections that drive economic

<sup>36</sup>IATA. Air Connectivity. Measuring the connections that drive economic growth. <https://www.iata.org/en/iata-repository/publications/economic-reports/air-connectivity-measuring-the-connections-that-drive-economic-growth/>

<sup>37</sup>Ministerio de Industria, Comercio y Turismo, [BALANZA DE PAGOS POR CUENTA CORRIENTE Y DE CAPITAL \(mincotur.gob.es\)](https://www.mincotur.gob.es/)

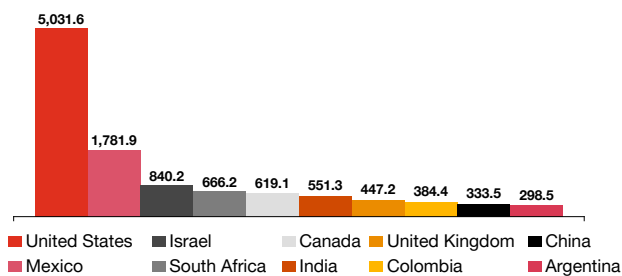
**Figure 33: IAG contributes to Spain connectivity by importing and exporting goods at several airports<sup>38</sup> all around the country. There are 22 locations that receive and send cargo through IAG, with Madrid-Barajas airport the largest in either category.**



Source: IAG Cargo. Note: A thicker line shows a larger number of metric tonnes

IAG airlines exported 15,500 metric tonnes from Spain in 2019. The largest destination countries were the United States (5,013 metric tonnes), followed by Mexico (1,781 metric tonnes), Israel (840 metric tonnes), and South Africa (666 metric tonnes).

**Figure 34: Main destination of Spain’s exports by IAG, 2019 (metric tonnes)**

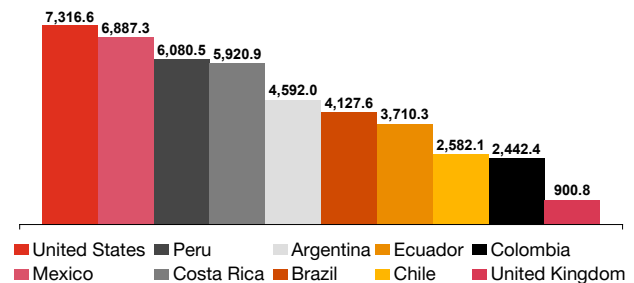


Source: IAG Cargo

Spanish companies benefit from the high connectivity offered by IAG that facilitates the export of high value-added products offering flexibility and high frequencies on the freights to the United States, Israel, or Canada.

AG airlines imported 50,730 metric tonnes to Spain in 2019. The largest origin countries for these imports were the United States (7,316 metric tonnes), Mexico (6,887 metric tonnes), Peru (6,080 metric tonnes), Costa Rica (5,921 metric tonnes), and Argentina (4,592 metric tonnes).

**Figure 35: Main origins of Spain’s imports by IAG in 2019. Metric tonnes**



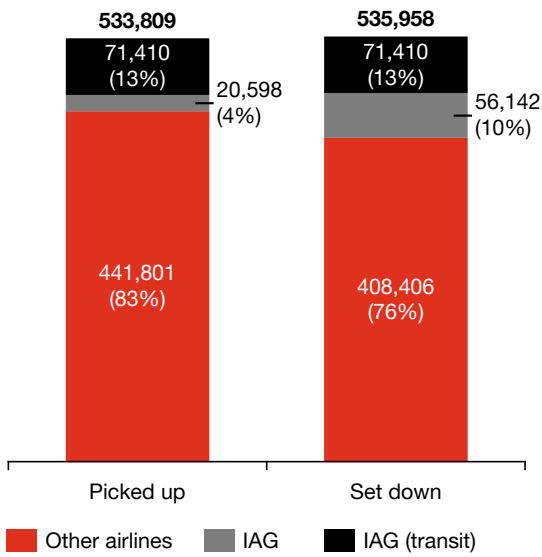
Source: IAG Cargo

IAG Cargo also facilitates the freight of products to Latin America thanks to its network of flights to the continent.

Madrid-Barajas has a critical role in the functioning of the air cargo in Spain. The airport is the largest air freight location in Spain, supported by the large number of consolidation centres and freight facilities of forwarders in the surroundings of the airport, aiding product distribution and improving connections to other airports for custom-bonded trucks.

<sup>38</sup>The map has been populated using IAG Cargo data and includes some airports on the network which are served by trucks as bonded freight not by IAG airline capacity.

**Figure 36: IAG cargo in Spain, 2019 (metric tonnes)**

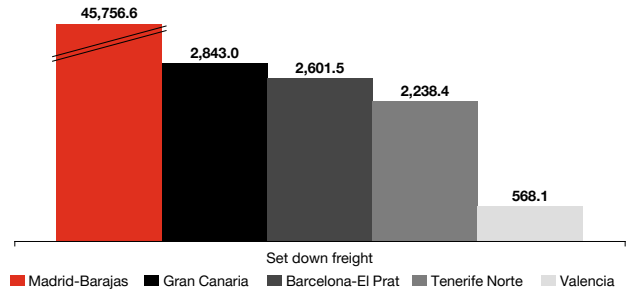


Source: AENA & IAG Cargo

Out of the total freighted goods more than one third of products were arriving at Madrid-Barajas as their final air freight destination while two thirds had onward transit to other domestic or international airports. The numbers show the critical role of Madrid-Barajas as a cargo hub, benefiting from IAG's extensive network of long-haul passenger flights for cargo transportation.

Madrid-Barajas is the airport in Spain where the largest volume of IAG cargo is imported to, with 45,756 metric tonnes arriving ('set down freight') in 2019, followed by Gran Canaria in the Canary Islands with 2,843 metric tonnes.

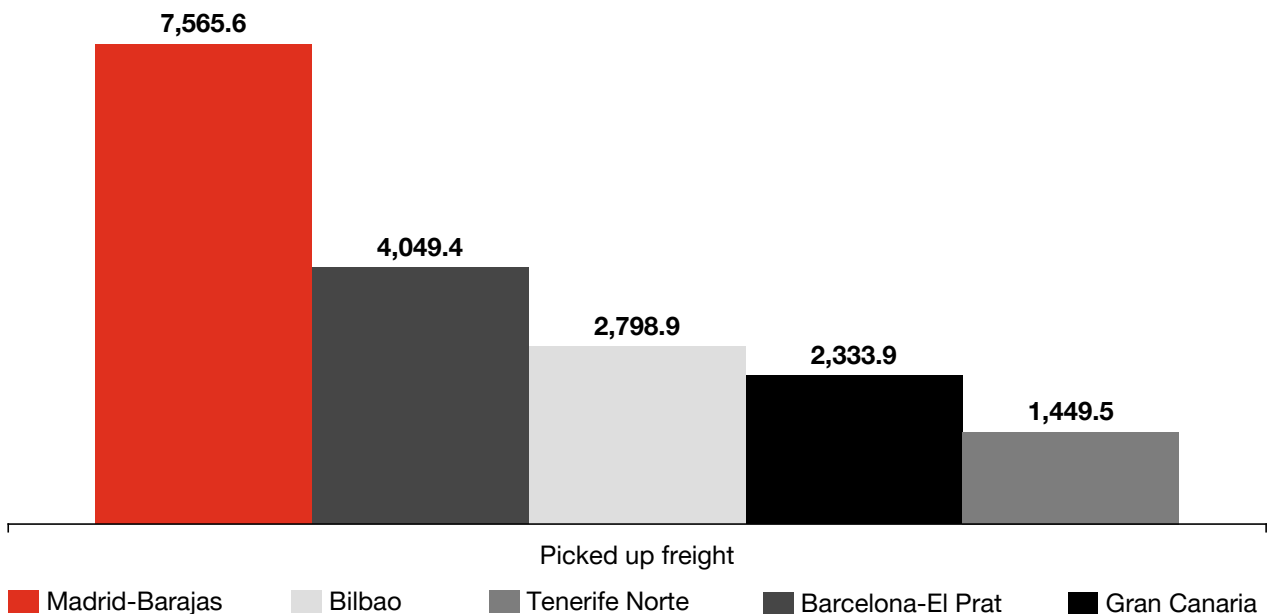
**Figure 37: Spain's set down freight by airports. Only final destination, 2019 (metric tonnes)**



Source: IAG Cargo

Figure 37 shows the importance of air connections with the islands in Spain, specifically in the case of the provision of high value-added products to the Canary Islands, the second destination of IAG Cargo set down freights. Madrid-Barajas is also the airport which had the largest volume of goods exported ('picked up freight') considering only the origin of the product and excluding products in transit, followed by Barcelona-El Prat and then Bilbao airports.

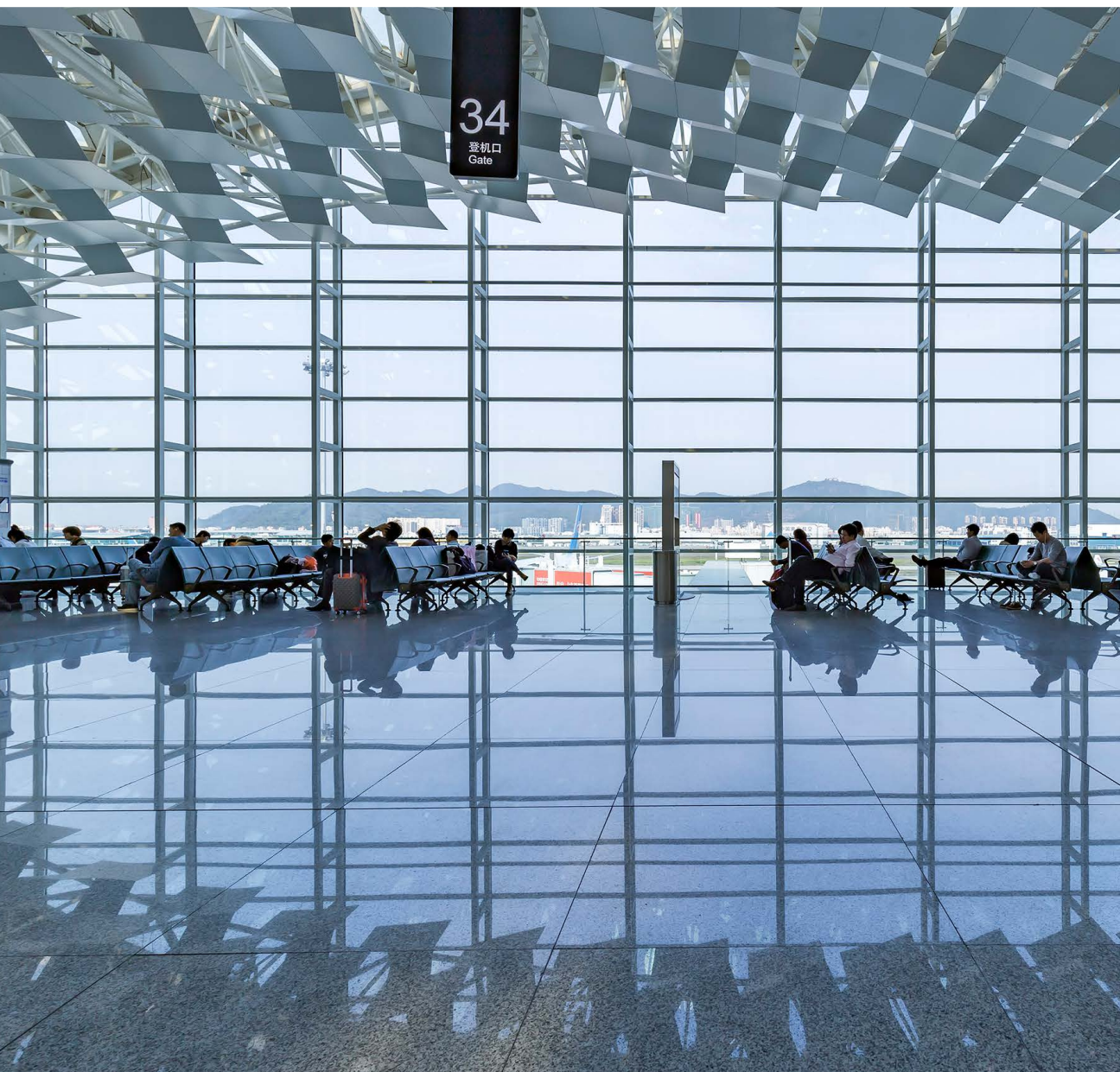
**Figure 38: Spain's picked up freight by origin airport, 2019 (metric tonnes)**



Source: IAG Cargo

Madrid Barajas also plays a strategic role in supporting the export of products thanks to its hub-and-spoke system, which facilitates the arrival of products from all regions of Spain to be distributed around the world using IAG airlines network and its long-haul flights. Note: Line thickness indicates the weight in terms of metric tonnes.

# Sustainability





## Aviation's net zero challenge

The aviation industry faces a challenge to decarbonise in order to keep the EU on track to meeting its environmental commitments. The sector is in the process of adapting so that it can continue to provide the economic benefits described in this report, including its contribution to EU GDP, jobs, trade and connectivity, whilst minimising the impact it has on the environment.

Domestic and international aviation accounted for 3.8% of EU greenhouse gas (GHG) emissions in 2019<sup>39</sup>. Passenger levels are rapidly recovering after the Covid-19 pandemic, with the International Air Transport Association (IATA), the global airline trade association, expecting numbers travelling in 2023 to be 86% of the 2019 peak.<sup>40</sup> Forward projections estimate a doubling of passenger numbers by 2040.<sup>41</sup> As a result of this expansion and the carbon intensity of the industry, aviation is forecasted to be a sector with one of the largest residual emissions remaining after technically and economically feasible reductions in the UK by 2050.<sup>42</sup>

Improving the sustainability of the aviation industry is an important component in meeting the EU's commitment to be climate-neutral by 2050 – an economy with net-zero greenhouse gas emissions.

## Green Deal & the Sustainable and Smart Mobility Strategy

The European Commission presented in 2019 the European Green Deal<sup>43</sup> with the goal of transforming the EU into a modern, resource-efficient and competitive economy, ensuring:

- No net emissions of greenhouse gases by 2050.
- Economic growth decoupled from resource use.
- No person and no place left behind.

The aviation industry faces a challenge to decarbonise in order to keep the EU on track to meeting its environmental commitments: transform Europe into the first climate-neutral continent by 2050<sup>44</sup>. The goal requires cutting transport-related greenhouse emissions by 90%. However domestic and international aviation accounted only for 13.9% of total transport greenhouse emissions in EU-28 in 2018<sup>45</sup>, being the road transport responsible for 71.1% of total emissions.

In order to tackle the transport and aviation emissions, the Sustainable and Smart Mobility Strategy sets out a list of measures to support aviation's sustainable transformation:

- Supporting the development of new aviation technologies.
- Making flying more efficient through the Single European Sky.
- Gradually replacing fossil jet fuel with sustainable alternatives.

- Making sure carbon emissions are cut in a cost effective way through the EU Emissions Trading System.

The aviation sector is in the process of adapting so that it can continue to provide the economic benefits (GDP & trade), connectivity, while stimulating innovation whilst minimising the impact it has on the environment committing to:

- Sustainability and net zero carbon emissions by 2050 for all flights within and departing from Europe, as expressed in the DESTINATION 2050 initiative of 2021.
- European Union Fit For 55 and RefuelEU Aviation; to foster biofuel use, with a minimum mandate for the use of SAF on flights of 2% in 2025, 5% in 2030, and a gradual increase to 63% in 2050.

## IGAG sustainability leadership

IGAG's past achievements and future strategy demonstrate that it is committed to making the aviation industry a more sustainable part of the EU economy, and the group will play a central role in the sector's decarbonisation.

IGAG has a history of leadership in the aviation industry's progress towards sustainability, including setting precedents for meaningful and challenging targets:

- In 2019 IGAG became the first airline group to commit to reaching net zero carbon emissions by 2050, meaning it will remove all the direct and indirect emissions associated with IGAG operations (such as aircraft fuel and ground facility electricity).
- IGAG stretched this target further in 2021 becoming the first airline group to commit to reaching net zero Scope 3 emissions by 2030, meaning it will additionally remove all indirect emissions associated with products IGAG buys and sells (such as emissions related to aircraft deliveries).
- In 2021 IGAG became the first airline group to commit to 10% sustainable aviation fuels (SAF) by 2030.

Looking forward, IGAG's vision is to be one of the world's leading airline groups on sustainability. IGAG is a large airline group which understands that its scale supports its ability to influence the sector as a whole, and it takes seriously its ability to play a leadership role in the sector, taking on a variety of leadership positions in industry associations.

Globally IGAG representatives are active in IATA's Sustainability and Environmental Advisory Council and working groups. IGAG representatives lead sustainability activities within the Oneworld Alliance, including chairing the Environmental and Sustainability Best Practice Group.

<sup>39</sup>European Commission. European Environmental Agency (EEA)

<sup>40</sup><https://www.iata.org/en/pressroom/2022-releases/2022-12-06-01/>

<sup>41</sup><https://www.iata.org/en/iata-repository/publications/economic-reports/airline-industry-economic-performance---june-2022---report/>

<sup>42</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1095952/jet-zero-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095952/jet-zero-strategy.pdf)

<sup>43</sup>Green Deal encompasses the European Climate Law, the Sustainable and Smart Mobility Strategy, and the Zero Pollution Action Plan

<sup>44</sup>The 2021 European Climate law

<sup>45</sup>EEA.

## IAG sustainability strategy

In its 2021 Sustainability Report IAG sets out its ambitions and strategies to drive change to create truly sustainable aviation, and meet these targets.<sup>46</sup> IAG has aligned its environmental strategy to its overall strategic priorities, and sets out nine strategic priorities against which its sustainability strategy and progress is tracked. These are:

<p>Clear and ambitious targets relating to IAG's most material issues.</p> <p style="text-align: right;"><b>1</b></p>	<p>Low-carbon transition pathways embedded in business strategy.</p> <p style="text-align: right;"><b>2</b></p>	<p>Management incentives aligned to delivering a low-carbon transition plan.</p> <p style="text-align: right;"><b>3</b></p>
<p>Leadership in carbon disclosures.</p> <p style="text-align: right;"><b>4</b></p>	<p>Accelerating progress in low-carbon technologies including aircraft technology, SAF, carbon offsets and carbon removals.</p> <p style="text-align: right;"><b>5</b></p>	<p>Accelerating innovation in low-carbon technology.</p> <p style="text-align: right;"><b>6</b></p>
<p>Industry leadership in the innovation and deployment of SAF including power-to-liquids.</p> <p style="text-align: right;"><b>7</b></p>	<p>Stepping up our social commitments including on diversity, employee engagement and sustainability as a core value</p> <p style="text-align: right;"><b>8</b></p>	<p>Industry leadership in stakeholder engagement and advocacy.</p> <p style="text-align: right;"><b>9</b></p>

IAG has created a Flightpath Net Zero strategy in order to meet its net zero emissions target which it recognises is essential in order to limit global warming below 1.5°C. Its roadmap is a 30 year plan, incorporating short (1-2 year) and medium term (3-5 year) targets to stay on track. The pillars of this roadmap are: new aircraft and operations; Sustainable Aviation Fuels (SAF); market-based measures with offsets; and carbon removals.

### Flightpath net zero

IAG launched its Flightpath net zero<sup>47</sup> a package of measures to reduce its carbon footprint by 2030 and to reach net zero CO2 emissions across its full operations and supply chain by 2050. Flightpath net zero highlights

- 1st airline group worldwide to commit to achieve net zero carbon emissions by 2050.
- By 2025: 10% reduction in CO2 per passenger kilometre.
- By 2030: 20% reduction in net CO2 and use of 10% sustainable aviation fuel.
- By 2050: Net zero CO2 across its full operation and supply chain.



<sup>46</sup><https://www.iairgroup.com/-/media/Files/IIAG/documents/sustainability/sustainability-report-2021.pdf>

<sup>47</sup><https://www.iairgroup.com/en/sustainability/flightpath-net-zero>

## Supply chain strategy

IAG extended its net zero commitment for 2050 to its supply chain in 2021. IAG is committed to supporting and monitoring its suppliers' performance to ensure that all products and services provided to IAG reach net zero emissions by 2050. IAG Global Business Services (IAG GBS) leads on this mission, and is supported by EcoVadis which provides sustainability ratings to enable IAG to monitor its supply chain.

## Sustainable Aviation Fuel (SAF)

IAG has committed to using 10% SAF by 2030 with appropriate government support, and estimates that this will be the equivalent of using 1 million tonnes of sustainable fuel. This commitment is important as IAG's scale is able to support the development, improvement and availability of SAF for the whole sector. IAG is investing \$865m<sup>48</sup> in SAF purchasing and investments to support the construction of a waste residue plant in the North East of England. Purchasing SAF and future purchase agreements help to support the financial viability of SAF, in addition to the investments in SAF production capacity that IAG has made. IAG has also been responsible for coordinating the oneworld roadmap to 10% SAF by 2030. The Spain's Jet Zero strategy

additionally notes that the development of a thriving SAF industry has additional benefits to the Spain as it has the potential to provide thousands of green jobs and support fuel security in the Spain. Furthermore, this transition to net zero has the potential to benefit parts of the Spain which are less well-performing with historically manufacturing and engineering focus.<sup>49</sup>

Iberia is the number-two airline in the world in regards to the reduction of CO2 emissions on long-haul flights.

Among the initiatives to promote the production of SAF, in October 2021, Iberia and Repsol operated the first flight with a mixture of biofuel generated from waste at the Petronor plant.

In June 2022, they partnered again in the operation of the first transatlantic flights from Spain with SAF sourced from waste.

Innovation in low-carbon technologies is central to IAG's sustainability strategy, and provides a route to meet decarbonisation targets across the group and to drive industry-wide change. The next section of this report focuses on how IAG is supporting innovation in the aviation sector, to support sustainability and other goals.

## Iberia Chair for the Decarbonisation of Air Transport

In 2020 Iberia created the Iberia Chair for the Decarbonisation of Air Transport together with the Polytechnic University of Madrid, actively collaborating in the search for solutions that help us decarbonise air transport:

- Assessment of initiatives that lead to more efficient flights.
- New fuel that reduces emissions.
- More efficient waste management system.

## Aviator Project

Along with 16 partners, Iberia takes part in the AVIATOR project, led by the Spanish National Institute of Aerospace Technology (INTA) and funded by the European research and innovation programme Horizon 2020 and National Research Council Canada (NRC).

This project aims to assess the impact of aviation emissions on local air quality at airports and their environment, in order to develop cleaner and more efficient engines.



<sup>48</sup>Including future investments and purchases

<sup>49</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1052706/Levelling\\_Up\\_WP\\_HRES.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052706/Levelling_Up_WP_HRES.pdf)

# Innovation



### IAG's innovation strategy

IAG is investing in solving these business challenges through research and innovation. Innovation is a focus across multiple areas of the business, including accelerated climate tech adoption, customer solutions, and operational efficiency. Innovation within IAG happens both at the level of the group, and individual airlines. IAG supports innovation across a range of areas: sustainability and fuel innovation, airside innovation, new customers and loyalty offerings, and enhanced tech and cyber.

Hangar 51 is IAG's core innovation platform to fund, support and scale emerging technologies. Launched in 2016, its mission is to work with start-ups and scale-ups that can help innovate and transform IAG, as well as the wider travel industry.

Hangar 51 programmes include:

Accelerator, to scout for and rapidly test new technologies.

Labs, to rapidly prototype new solutions for operational use.

Venture capital, to support the growth of early-stage start-ups.

Incubator, to support the implementation of new technologies within our operations and the commercial development of portfolio companies.

R&D, to horizon scan for new opportunities and technologies to stay at the forefront of innovation relevant to the sector technologies within our operations and the commercial development of portfolio companies.

IAG Tech is the group's internal platform which supports the group to enhance their technology capabilities. IAG Tech works across the group's operating companies and helps to roll out new technologies across the business to embed innovation in practices. This includes implementing new platforms and systems, and delivering initiatives to reduce costs and improve efficiency such as the automation of processes.



## Emu

Emu Analytics joined IAG's Hangar 51 global accelerator programme and was embedded within IAG to develop innovative digital twin solutions focused on cargo and passenger logistics. As part of this work, BA and IAG Cargo now have access to real-time tools that assist with tactical decision-making; saving fuel, cost and improving overall ground operations.<sup>50</sup>



### Innovation in sustainability

Innovation is a central part of IAG's response to the challenge of making the aviation industry more sustainable. Climate technology is supported by IAG through the Hangar 51 platform, which has been scouting for and working with sustainability start-ups since 2019. IAG's engagement with new technologies and support for them will help to bring these technologies to market faster. In turn, these technologies will help IAG in meeting its future sustainability targets

and enable it to decarbonise the group and support the industry as a whole becoming more sustainable. The 2022 Jet Zero Strategy notes that the technologies which will be needed to decarbonise aviation are still being developed, making innovation central to the sector's green transition.<sup>51</sup> Creating new jobs and technologies as part of this transition demonstrates how innovation, sustainability and economic output can all be advanced while the sector undergoes these significant changes.

<sup>50</sup> Emu Analytics <https://www.emu-analytics.com/casestudies/iagcargo>

<sup>51</sup> UK Department of Transport. Jet Zero Strategy Delivering net zero aviation by 2050 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1095952/jet-zero-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095952/jet-zero-strategy.pdf)

## ZeroAvia

IAG and British Airways were the first airline in the world to invest in Hydrogen powered flight. In 2021 IAG's accelerator programme Hangar 51 accelerated and made an investment into ZeroAvia, an innovator in hydrogen-powered aircraft. They use hydrogen produced from electrolysed water to power a fuel cell which produces electricity for the motor. This partnership is intended to accelerate the development of an aircraft with no CO<sub>2</sub> emissions. ZeroAvia subsequently secured investment from three large carriers in the USA and has increased the size of their team in the US and Spain.

The company has a research hub in Kemble, Gloucestershire, from where it made the Spain's largest hydrogen powered flight in 2023. ZeroAvia has the target of producing hydrogen powered motors for small commercial passenger flights before 2030. IAG continues to back the company to produce larger powertrains that can be used on larger aircraft and contribute to IAG's plan to reach net zero by 2050.<sup>52</sup>



<sup>52</sup> British Airways Media Centre <https://mediacentre.britishairways.com/factsheets/details/86/Factsheets-3/217?category=1&pgok=L2ZhY3RzaGVldHM->

# Conclusion





IAG makes a significant economic and social contribution to the Spain by enabling global connectivity in the movement of people and goods.

Iberia, with its hub - and - spoke business model, centres its operations at Madrid - Barajas where it mainly connects the Spanish capital with the main European capitals and American destinations.

Vueling, with its point-to- point operating model, has an extensive network within Spain, particularly to the Balearic Islands and across the EU with passengers departing mainly from the Barcelona - El Prat airport.

IAG contributes €6.5bn gross value-added to Spain GDP, and supports c.71,000 FTE jobs, by its direct, indirect, and induced impacts. For every €1 spent by IAG in the Spanish economy, €1.50 of GVA is created elsewhere across the economy, and for every direct IAG employee, a further 2.8 FTE jobs are supported in the Spanish economy. Additionally, through the tourism and business travel its flights facilitate, an additional €15bn of catalytic GVA and c.300,000 FTE jobs are supported in the Spain.

Additionally, IAG's airlines, including IAG Cargo, transported 428,520 metric tonnes of freight in 2019, reaching 136 countries. Due to the high value of this cargo, this contributes to Spain maintaining a balance of payments surplus on air cargo, facilitating exports to countries such as the US, Israel, or Canada.

IAG is also an industry leader in sustainability, setting industry leading targets for decarbonisation. It also has a forward-looking approach to innovation, with initiatives such as Hangar 51 helping to support and scale emerging technologies across travel.

IAG's scale in the Spain means its operations are a core component of the country's travel infrastructure. The magnitude of its economic footprint in Spain identified in this report is a reflection of this.



# Appendix 1: Technical approach and detailed methodology



## Our approach

### Step 1: Building the input–output model

We built a bespoke input–output model using the following INE data:

- The Spanish’s input–output tables
- GVA, employment and consumption data by industry
- National and regional labour productivity levels over time

### Step 2: Applying the model to IAG’s operational expenditure

Once constructed, we apply the model to data provided to us by IAG. This data includes:

- Operational expenditure by IAG operating company, supplier, and location. This is matched to proprietary PwC and Companies House data.
- Capital expenditure by IAG operating company, supplier, and location.
- Aggregated employment data, by IAG operating company, pay band, and location. These data are aggregated to FTE equivalents.

## Economic Modelling Approach

### Measuring economic contribution

We estimated IAG’s economic contribution to the Spanish economy against two indicators:

1. Contributions to GDP: measured in terms of Gross Value Added (GVA).
2. Employment: expressed as the number of full time equivalent (FTE) jobs supported.

GVA measures the value that is added by a business or industry sector. It is measured as the difference between the value of goods and services produced and the goods and services used as an input. It is, therefore, the company and sector level equivalent of GDP, and summing all sector–level GVA in an economy produces a measure of that economy’s GDP.<sup>53</sup>

The contribution across the indicators are divided into three tiers as shown in Figure 47 below:

- **Direct impact:** This is the impact of IAG’s own day to day operations. Direct GVA is calculated as a sum of returns to labour and capital, while direct employment is the total number of employees for the year, in terms of FTE.
- **Indirect impact:** This is the impact on the Spanish economy as a result of IAG’s procurement, this includes both the economic value added from immediate suppliers but also of the wider supplier chain (supplier of the supplier and so on).
- **Induced impact:** This is the impact from the spending of IAG’s employees and that of the employees linked to the supply chain.

### Approach to estimating the direct economic contribution

We use an income approach<sup>54</sup> using data from IAG’s financial accounts to calculate its direct contribution to GVA, which is shown below. To calculate the direct employment contribution, we used human resources data.

### Approach to estimating indirect and induced economic contribution

We used an input-output model to estimate IAG’s indirect and induced contribution to the economy. Input-output modelling enables us to account for how industries interact and relate to one another, by estimating how activity by one company stimulates economic activity elsewhere in the economy.

An input output table provides information on what a typical business in the suppliers sector requires for producing one unit of output. It allows us to trace the typical input requirements through the entire supply chain for production activities in each sector and calculate the total value of production stimulated. An input-output table also provides data on the share of revenue that constitutes profit and wages for each sector. Hence we can apply this ratio to the total production value simulated and estimate the total GVA in the supply chain by sector associated with this.

Additional statistics on employment provide information on the number of individuals that work in any particular sector. As we know the output simulated in each sector, we can estimate the production value to job ratio. We then apply this to the total production value simulated in the supply chain, which allows us to estimate indirect employment, i.e. the number of jobs supported in the supply chain.

These steps are repeated to calculate the induced contribution, with an addition of using wage data to estimate how much production is stimulated in the supply chain that supports the products employees buy, e.g. arts, entertainment and food.

We then applied IAG’s financial and employment data to the multipliers for each of the key indicators, to estimate the indirect and induced contribution across the Spain.

### Deriving the Multipliers

We derive Type I, and Type II, multipliers for output, GVA and employment. Type I multipliers account for the direct and indirect impact, while Type II also capture the induced impact. In order to derive the multipliers, we first construct a technical matrix, A, which shows detailed purchases per unit of output by the purchasing firm from the various domestic supplying industries. It is calculated by dividing the entry in each row by the total gross output for its respective column.

<sup>53</sup> After adjusting for taxes and subsidies on products.

<sup>54</sup> Note: Income approach is a method of calculating GDP, which is based on the idea that all expenditures in an economy should equal total income generated by the production of economic goods and services

### Calculating Type I multipliers:

- We use a technical A1 matrix, in which each cell in row i and column j represents the value of industry i's output required to produce a unit of output in industry j.
- In the case of the Spain model the technical matrix A1 in a 63 x 63 matrix.

### Calculating Type II multipliers

- To calculate Type II multipliers, we also include an additional notional sector, 'endogenous labour'. It involves adding a new row that is composed of the ratio between compensation of employees and total output, and a column that consists of the ratios of private consumption on each industries output to an estimated household income. Hence for the Spain and Scotland model the technical matrix A2 becomes:
  - For the Spanish model a 63 x 63 matrix.

From the A matrices, we then calculate the Leontief matrices.<sup>55</sup> In order to do this we first construct the I - A matrix, where I is an identity matrix with the same dimensions as A.<sup>56</sup>

For Type I multipliers we invert the I - A matrix, excluding the column for private consumption and row for compensation of employees, yielding  $L1 = I - A1^{-1}$ . This returns a matrix of output multipliers.

To calculate Type I GVA and employment multipliers we take each sectors respective 63 x 1 column vector of output multipliers for L1: (Note 63 x 1 column vector for Spanish model)

Where i = buying (column) IAG's sector corresponding to the Input Output Table

We then calculated the 1 x 63 row vector of GVA-to-output ratios across the buying sectors:

To calculate the GVA effect for each sector we multiply the row vector by the column vector:

The type I GVA multiplier is then calculated as the following:

$$x = \left[ \frac{GVA_1}{Output_1} \cdots \frac{GVA_{63}}{Output_{63}} \right]$$

To calculate the GVA effect for each sector we multiply the row vector by the column vector

$$GVA\ Effect_i = x \cdot l_i$$

The type I GVA multiplier is then calculated as the following

$$Type\ I\ GVA\ Multiplier\ for\ sector\ i = \frac{GVA\ Effect_i}{GVA_i / Output_i}$$

Repeating the steps above, but instead with a row vector of employment-to-output ratios for each buying sector

$$y = \left[ \frac{Employment_1}{Output_1} \cdots \frac{Employment_{63}}{Output_{63}} \right]$$

$$GVA\ Effect_{i_{\square}} = y \cdot l_i$$

$$Type\ I\ Employment\ Multiplier\ for\ sector\ i = \frac{Employment\ Effect_i}{Employment_i / Output_i}$$

For Type II multipliers, we inverted the I - A matrix, including the column for private consumption and row for compensation of employees yielding  $L2 = (I - A2)^{-1}$ . As explained above the L2 differs from L1 because it includes the induced effects in addition to the direct and the indirect effects. The induced effect is a result of the additional spending of employees.

Again, repeating the steps above to calculate the sectoral GVA output ratios, GVA effects and GVA multipliers using L2 instead of L1 will yield Type II GVA multipliers, and similarly for Type II Employment multipliers.

### Direct GVA estimation

The process for estimating the direct GVA impact on one country or region for multinational organisations such as IAG is not straightforward. This is because IAG creates value across borders, so it is not immediately obvious how the aggregate value that IAG creates should be attributed. To make the question even more complex, much of IAG's capital is mobile – meaning that the production process itself is mobile. To address these complications in allocating IAG's capital, we follow two principles below which provide the foundation of our estimate of IAG's direct GVA impact in the Spain.

**Firstly**, allocation of GVA from multinational organisations to an area within national boundaries should follow the same principles as that of the National Statistical Authority (NSA) for the Spain, the Office for National Statistics (ONS), in tandem with relevant international national accounting standards such as the

<sup>55</sup>Also referred to as the Leontief inverse.

<sup>56</sup>The Identity matrix is a matrix in which all elements along the principal diagonal are 1 and the remaining elements are zero.

System of National Accounts (2008) (SNA, 2008), published by the United Nations in conjunction with the European Commission, the Organisation for Economic Co-operation and Development, the International Monetary Fund and the World Bank Group.

**Secondly**, the allocation of GVA from IAG should follow the same principles as used by the ONS in the compilation of the Input - Output tables in their National Accounts, which contain GVA aggregates by industry. This indicates that GVA is equivalent to: Gross Operating Surplus + Compensation of Employees + Taxes on Production. Each of these terms are examined below:

**1. Gross Operating Surplus (GOS):** GOS in its appearance in National Accounts such as the Input Output table is not net of depreciation. This is broadly equivalent to the concept of earnings before interest, taxes, depreciation, and amortisation, as stated in the financial statements. In order to assess IAG's EBITDA relevant to the Spain, it must be determined what portion of IAG's profits are relevant to Spain activity. The ONS uses taxable profits as the starting point for understanding a company's gross operating surplus. This is informative, as it shows the country in which subsidiaries' profits are booked should be the country against which their GVA is accounted. As

such, all EBITDA from IAG subsidiaries that are generated in the Spain should be understood as contributing to Spain GVA.

- 2. Taxes on production:** these are defined as 'unrequited payments levied on the production and importation of goods and services, the employment of labour, the ownership and use of buildings or other assets used in production'.<sup>73</sup>
- 3. Compensation of employees (COE):** with respect to IAG, these have two main components: wages and salaries and social insurance contributions. In order to understand the proportion of this relevant to the Spain, we use data on wages and employee numbers by region, provided to us by IAG.



## Catalytic impact on the Spanish economy enabled by IAG's operations

Below, we set out the methodology for estimating the catalytic impact of IAG passengers expenditure on the Spanish economy.

### Step 1: Estimating the number of IAG passengers who are not domiciled in the Spain

- IAG supplied us with a total number of passengers by route. However, this data was not disaggregated by direction of travel, so we make the simplifying assumption that a representative aeroplane is equally likely to carry empty seats in either direction, in any given cabin and on any given route. For the subset of IAG flights that are international, we therefore divide the total passenger numbers by 2.
- Calculating inbound factor ratios:
  - The 'inbound factor ratio' calculates for a given international route, the split of passengers between international passengers from a foreign country arriving in the Spain compared to the number of Spain passengers travelling back to the Spain (as an example, in the case of US & Spain routes the inbound factor is 45%, meaning that 45% of the passengers on the route are from the US).
  - Using international passenger survey (IPS) data from the ONS we can compute the inbound factor ratio by dividing the number of international passengers between two countries in a route going to the Spain (e.g. US residents travelling to the Spain by air) by the number of passengers that travel from the Spain to the US and the number international passengers from that country travelling to the Spain (e.g. Spain residents travelling to the US + US residents travelling to the Spain by air).
- To obtain the number of international passengers arriving in the Spain flying with IAG we multiply the total number



of IAG passengers arriving per country by the inbound factor ratio of that particular country.

## Step 2: Calculating passenger expenditure

- To compute the expenditure of international passengers:
  - We obtain the share of IAG international passengers by dividing IAG international passengers arriving in the Spain by all international passengers arriving by plane into the Spain (using ONS IPS data).
  - We multiply the expenditure by sector of international air passengers arriving into the Spain by the share of IAG international passengers (also provided by the ONS International Passenger Survey).
- To compute the domestic expenditure of domestic passengers:
  - We multiply the total expenditure of domestic tourists in the Spain (ONS) by 2% - the percentage of domestic tourists that travel by plane.
  - To estimate the increased rate of the consumption level of a domestic passenger when travelling (compared when not travelling) we divide the daily average expenditure of a domestic passenger by the average daily expenditure of a domestic passenger minus 1.
  - We multiply the amount of the expenditure of domestic tourists travelling by plane by the share of IAG passengers in the air tourism market. We assume that the share of IAG in the Spain tourism market is equivalent to the share of IAG in the domestic air tourism market in the Spain. We multiply the increase of consumption when travelling domestically (+61%) to obtain the proportion of consumption by domestic tourists which is the result of travelling.
- To estimate the catalytic impact we assign the total expenditure of domestic and international passengers to the 63 different sectors (obtained from ONS) in the Input - Output Table.

In the catalytic effect distribution by industry we include direct impact as we have to estimate the GVA generated by passengers expenditure. In sum, we get expenditure data from ONS to estimate GVA generated by that expenditure.



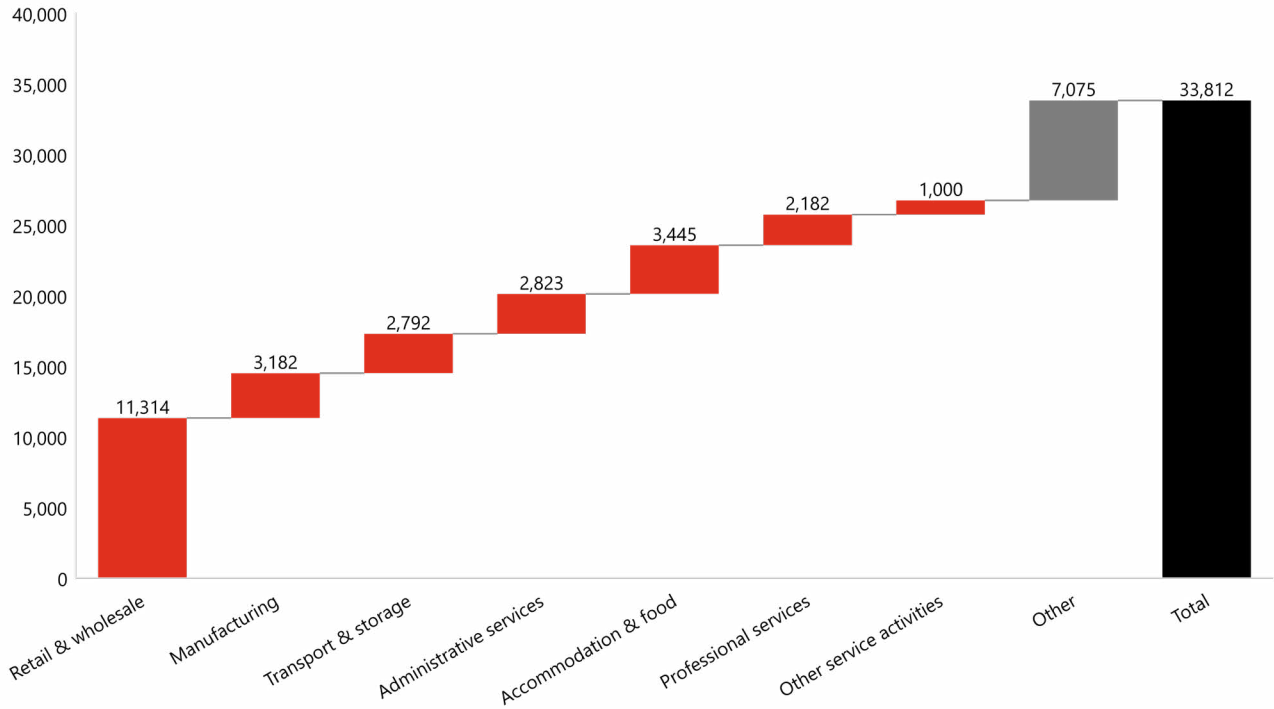
# Appendix 2: Additional Data



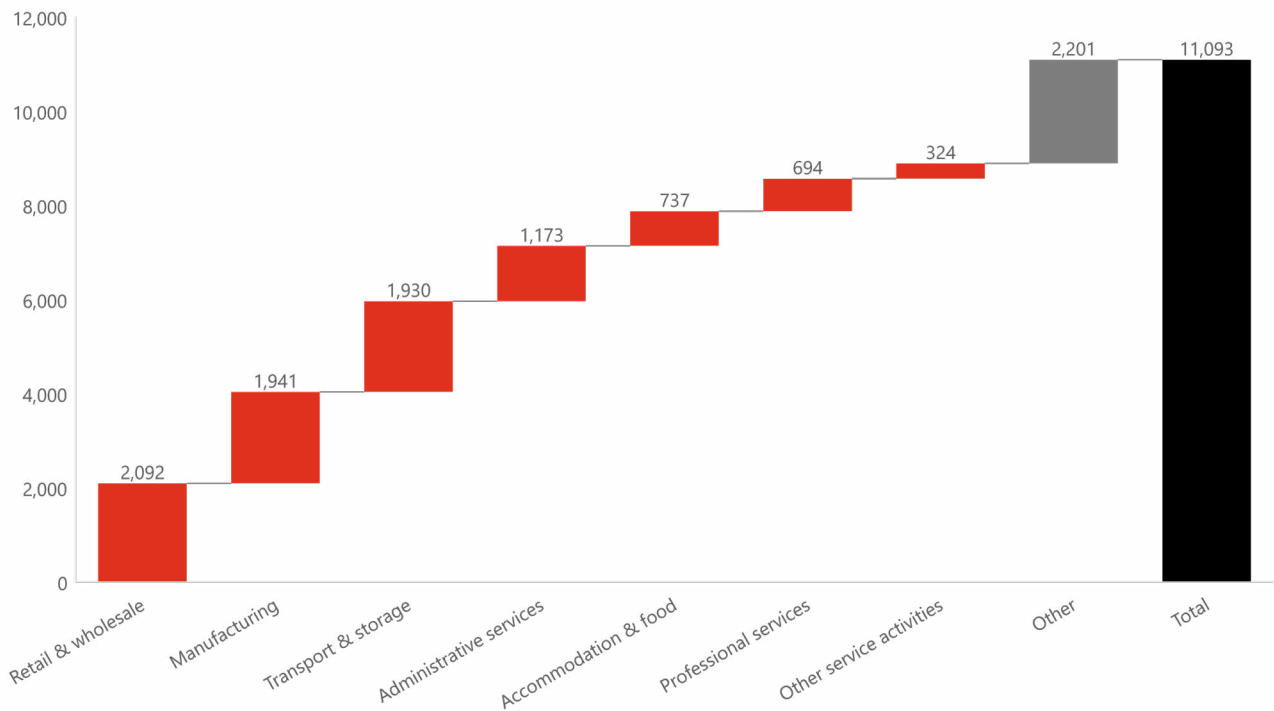


Below are some additional results from that are not included in the main body of the report.

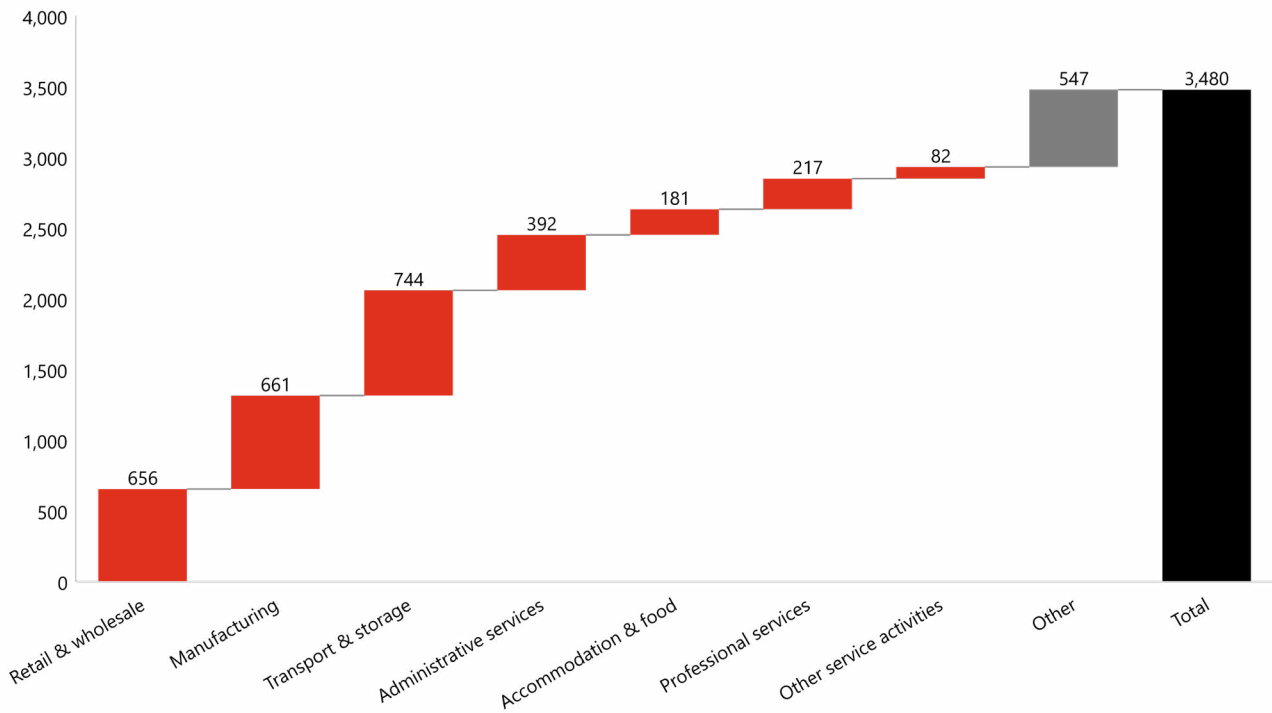
**Figure 39: Iberia supported c.34,000 jobs, from supply chain and wage-induced spending, in the Spanish economy**



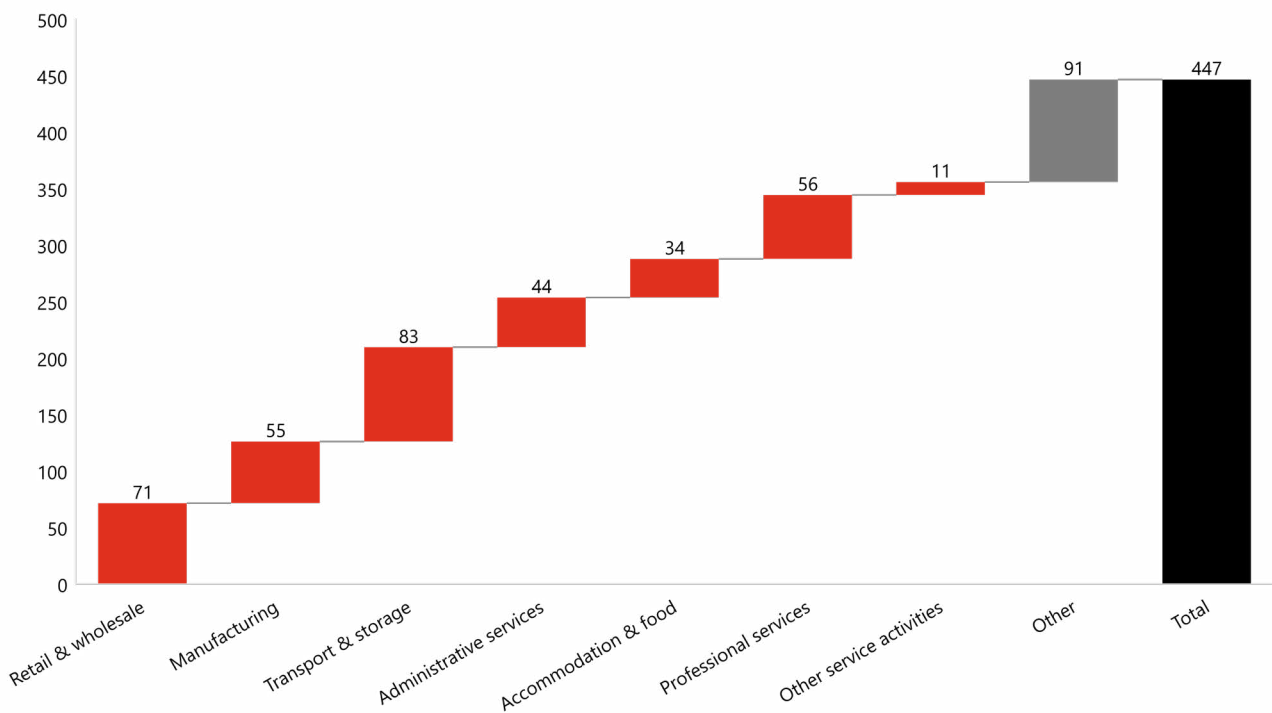
**Figure 40: Vueling supported c.11,100 jobs, from supply chain and wage-induced spending, in the Spanish economy**



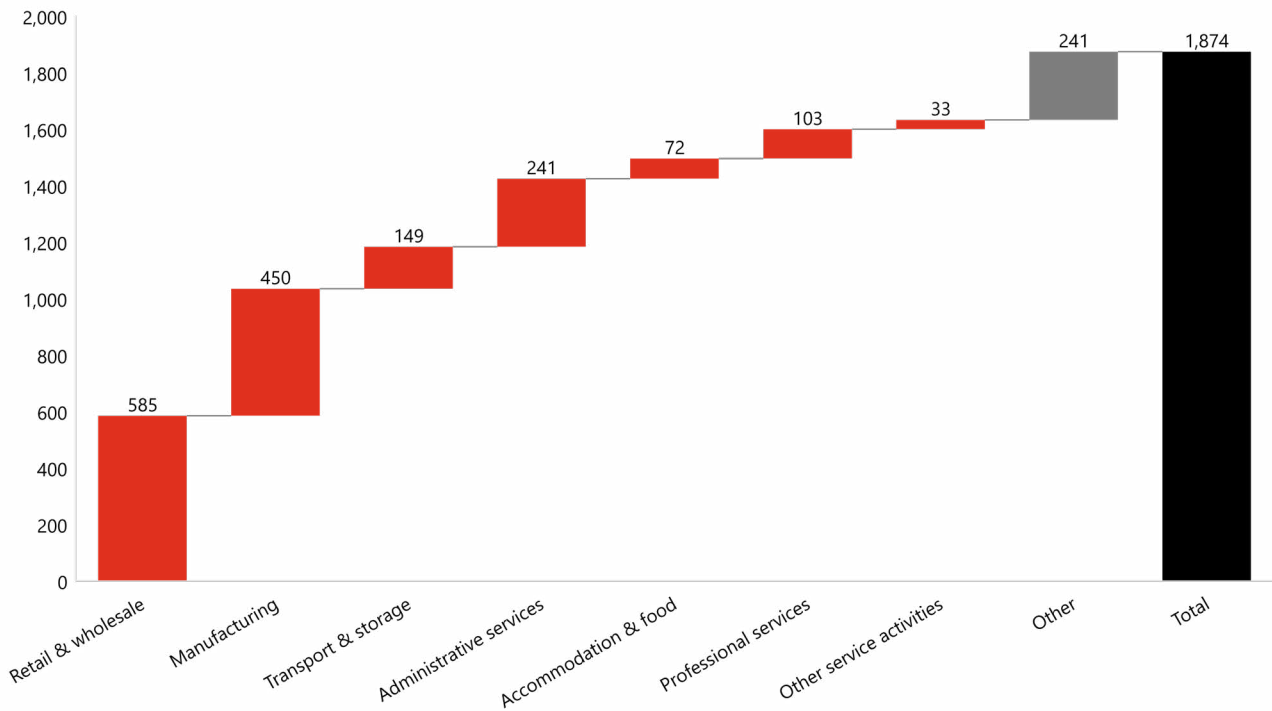
**Figure 41: BA supported c.3,500 jobs, from supply chain and wage-induced spending, in the Spanish economy**



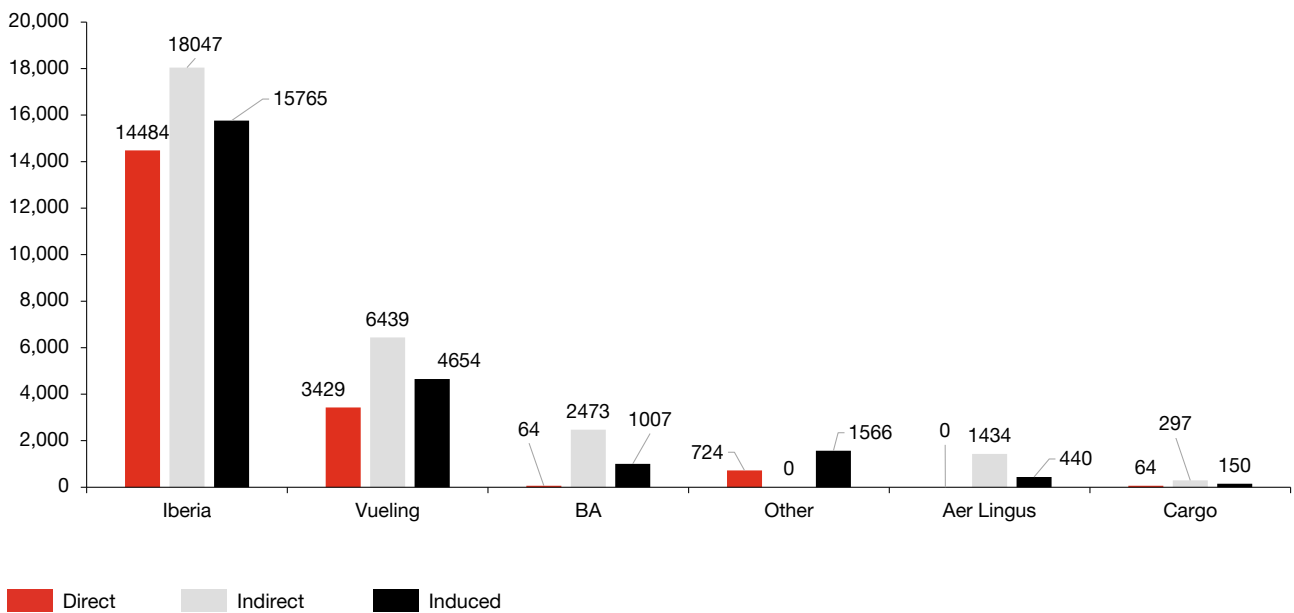
**Figure 42: IAG Cargo supported c.450 jobs, from supply chain and wage-induced spending, in the UK economy**



**Figure 43: Aer Lingus supported c.1,900 jobs, from supply chain and wage-induced spending, in the Spanish economy**



**Figure 44: IAG supported a large number of full time equivalent employees (FTE) in Spain, across different channels of impact**



IAG supports a significant number of jobs across impact channels in the Spain. Iberia has a proportionally higher weighting of direct impacts, with other airlines having comparatively higher indirect impacts. The difference in impacts by channel is because other IAG airlines have lower direct employment in the Spain, but still make supply chain purchases that then lead to broader employment impacts throughout the Spanish economy.

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