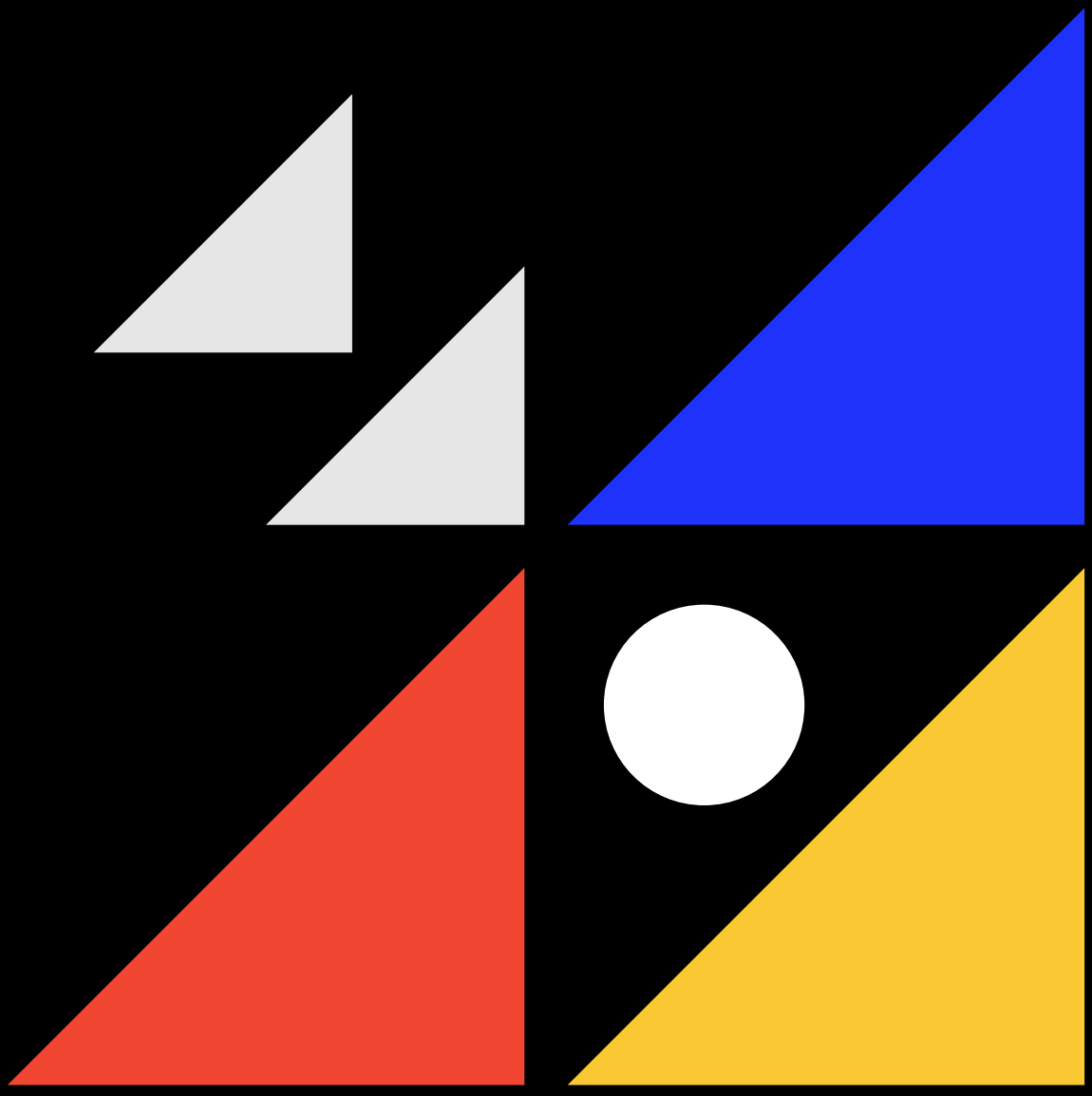
One Size does not Fit All:
A Study of how Airline Business Models have evolved to meet Demand in Europe



IATA

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Executive summary

- This report aims to provide a comprehensive assessment of how airline business models have evolved in order to address and meet the differentiated demand for air transportation in Europe.
- Extensive economic and social benefits are generated for Europe by a spectrum of airline business models adopted by network carriers and LCCs. We retain those terms for the purposes of this report, though many airlines in either category are hybrids, and few are "pure" in the original sense of these terms.
- In this highly competitive and fully transparent air transport market, consumers have benefitted greatly from the nearly 75% decline in the cost of flying since the 1950s. This trend might have reached its limit certainly near-term given the current macro-economic environment, and potentially also longer-term as aviation strives to reach net-zero CO_2 emissions in 2050. Network carriers provide the bulk of inter-continental capacity which facilitates high-value inbound business and leisure travel, as well as trade via air cargo.
- Within Europe, network carriers provide extensive connectivity for Europeans, reaching well beyond the connectivity provided by LCCs, especially for those living in relatively remote areas in Europe.
- LCCs carry more passengers than network carriers in the intra-European market, but network carriers increased their market share by 9% after the Covid-19 pandemic on the O-D itineraries directly competing with LCCs, due to higher maintained service levels.
- We also analyze that banning short-haul flights within Europe would only reduce CO_2 emissions of the intra-European airline sector by no more than 5%, despite the emphasis on the idea of replacing planes with rail. In comparison, the European Union purports, regarding the Single European Sky (SES): "…compared with 2004, the SES (upon completion around 2030-2035) could triple airspace capacity, halve the costs of ATM, improve safety tenfold and reduce the environmental impact of aviation by 10%" [1].
- Network carrier and LCC business models are complementary – not substitutes, and together existing and future business models cater to current and emerging market segments. Regulators formulating aviation policies should therefore seek to establish a framework that allows consumers to make their own choices in function of their own preferences, and that enables multiple existing and future business models collectively to meet the whole spectrum of that demand.
- In fact, regulation ought to favor all forms of transport and connectivity with a view to making them all faster, better, cheaper, and sustainable. Allocating resources to making notably the latter possible, for all forms of transportation, must be a priority. Consumer choice can then be optimized, and the ensuing transportation sector will be more efficient.

1 https://www.europarl.europa.eu/factsheets/en/sheet/133/air-transport-single-european-sky

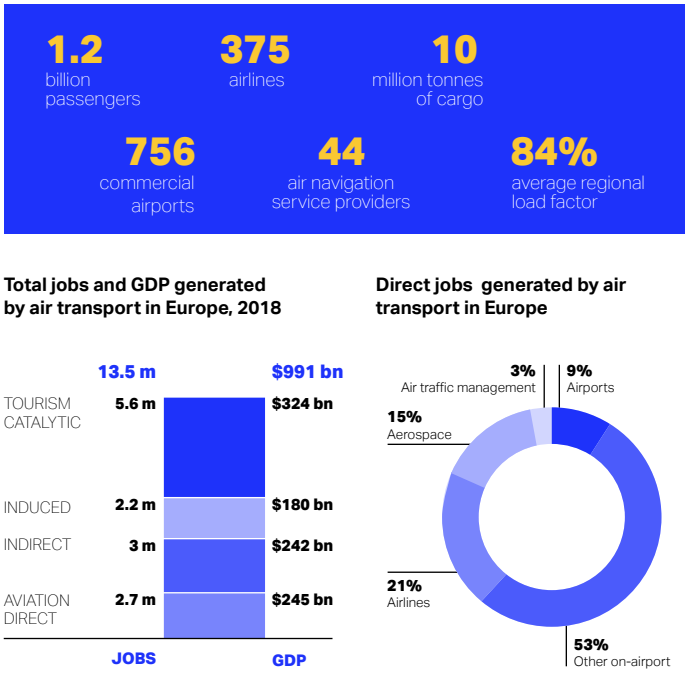
1. Economic and Social Benefits of Air Transportation in Europe

The Covid-19 pandemic produced the sharpest global recession since the Great Depression, and the unprecedented nearly complete halt to air transportation, in addition to the devastating impact it has had on human lives. It is therefore necessary to begin our analysis of the airline sector in Europe with a pre-pandemic reference point in order to understand the sizable contribution of the industry during "normal" times.

As of 2018, the aviation industry supported 13.5 million jobs and USD 991 billion in economic activity for Europe – equal to 3.6% of total employment and 4.4% of GDP (Chart 1).

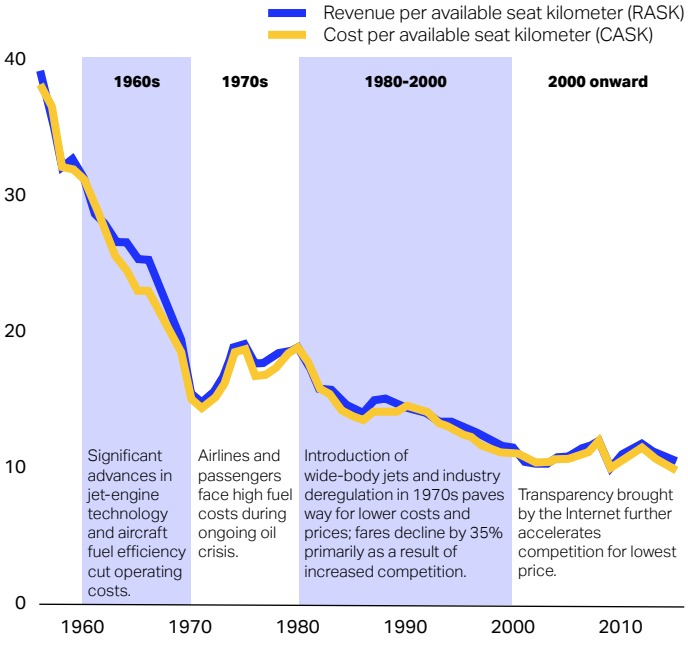
An important factor behind the significant economic and social benefits air transport delivers in Europe today is the steady decrease in the real costs of air travel. Since the 1950s, the cost of flying has fallen by nearly 75% (Chart 2). Thanks to economies of scale, optimization of product delivery, and ever-more fuel-efficient aircraft, airlines have become more cost-effective over time, and have passed those gains on to consumers through lower prices. This has democratized air travel, transforming it from a luxury product to one that in Europe is affordable and accessible to nearly all.

Chart 1: Overall economic and social benefits of air transport in Europe [2]



Source: ATAG 2020, "Aviation Benefits Beyond Borders" report

Chart 2: The declining cost of air travel



1. Nominal figures deflated using US Consumer Price Index for transportation.

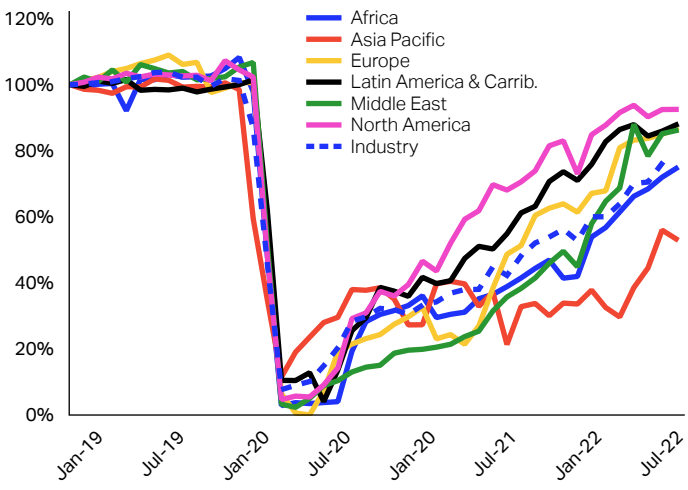
Source: McKinsey & Company

2 The chart from the ATAG 2020 report covers the entire Europe including Ukraine and Russia. However, due to the data reporting issue in Russia and the unusual O-D traffic and airline network situation in Ukraine, these two countries are not included in this report.

Post-pandemic, the air traffic recovery for the European region ranks third, behind North and Latin America, but ahead of the Middle East, Africa, and the Asia-Pacific region, as well as ahead of the industry as a whole. As per August 2022, the Revenue Passenger Kilometers (RPKs) performed by European airlines stood at 74.4% of the RPK level in 2019, following an 11% per month average growth from January to August in 2022 (Chart 3).

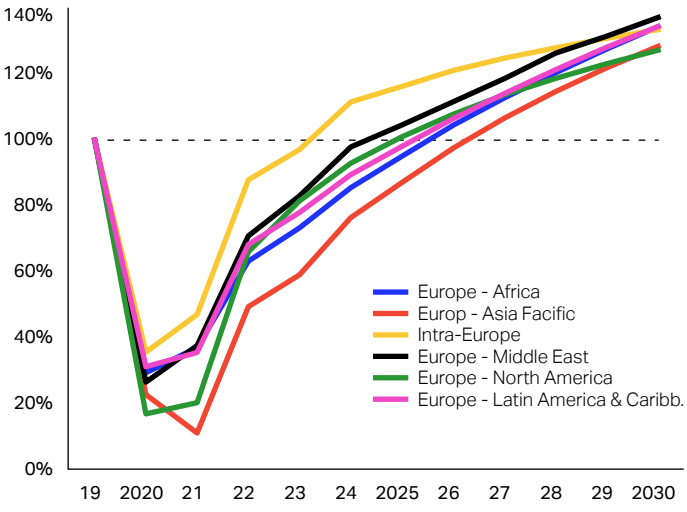
The outlook for the industry looks promising both within Europe and between Europe and other world regions (Chart 4). We expect total passenger traffic within Europe to recover to pre-pandemic levels by 2024 [3], and the majority of the inter-continental markets between Europe and other world regions will recover to the pre-pandemic levels no later than 2025. The only exception is the inter-continental market between Europe and Asia, which is expected to recover in 2026, given the travel restrictions still in place in China.

Chart 3: Comparison of RPK recovery of European airlines versus airlines in other world regions, Indexed January 2019 = 100%



Source: IATA Economics, IATA Monthly Statistics

Chart 4: Demand forecasts for all the Europe-related airline markets, Indexed to 2019 = 100%



Source: IATA Economics, IATA and Tourism Economics Air Passenger Forecast

3 Air Passenger Forecast, September 2022, IATA and Tourism Economics.

2. Fundamentally different, but complementary, Models and Networks

Network carriers' business model and network

In the airline industry, most origins and destinations will never be served by direct flights because the traffic potential is too limited. To overcome this challenge, network carriers have implemented hub-and-spoke networks which allow passengers to connect to multiple destinations in an airport that tends to be the airline's home base. To build hub operations, airlines adapt to demand and geographical constraints. For example, a European airline will endeavor to operate its intra-European flights in the morning, to feed into long-haul flights a few hours later. Operating a hub thus imposes scheduling constraints which tends to be more costly than spreading flights across the entire day. A hub will face stretched resources at peak times, and this is very demanding in terms of staff allocation, infrastructure (airports), etc. The eco-system that serves the operations must be designed to absorb peaks in activity, while limiting the costs associated with lulls in activity. There are three types of hubs: medium-haul to medium-haul, medium-haul to long-haul, and long-haul to long-haul. Airlines pick one model primarily based upon the geographical location of the hub (for example Western Europe for medium to long-haul, the Middle East for long-haul to long-haul etc.).

Network carriers can expand their offerings thanks to cooperation with other airlines. An airline may decide not to operate all routes with their own aircraft and to rely on third parties instead. The most common way to implement this approach is to sign codeshares, i.e. publish a flight number from the airline selling the ticket with the operating airline. In this way, airlines can offer customers a greater choice among a larger number of routes. Network carriers tend to focus on the inflight product and services. They offer several cabin classes, and a range of services including meals etc., with a view to cater to a spectrum of passenger needs, from the lower-end (best-buy approach) to premium traffic. The corporate clients are an important and demanding market segment for the network carriers. Corporates often book using specialized travel agencies in order to obtain 24/7 service, as well as reporting and duty of care. Catering to the full spectrum of customer needs is clearly of benefit to the traveler, though it does tend to add to airlines' costs.

In essence, routes and frequencies are optimized for satisfying demand, although this may not be the optimal cost allocation. For example, it is important for network carriers to offer dependable and regular schedules to cater to corporate customers, even if this drives costs higher. The way in which airlines can cope with this fact is to optimize revenue by driving (non-corporate) traffic to off-peak flights.

Low-cost carriers' (LCCs) business model and network

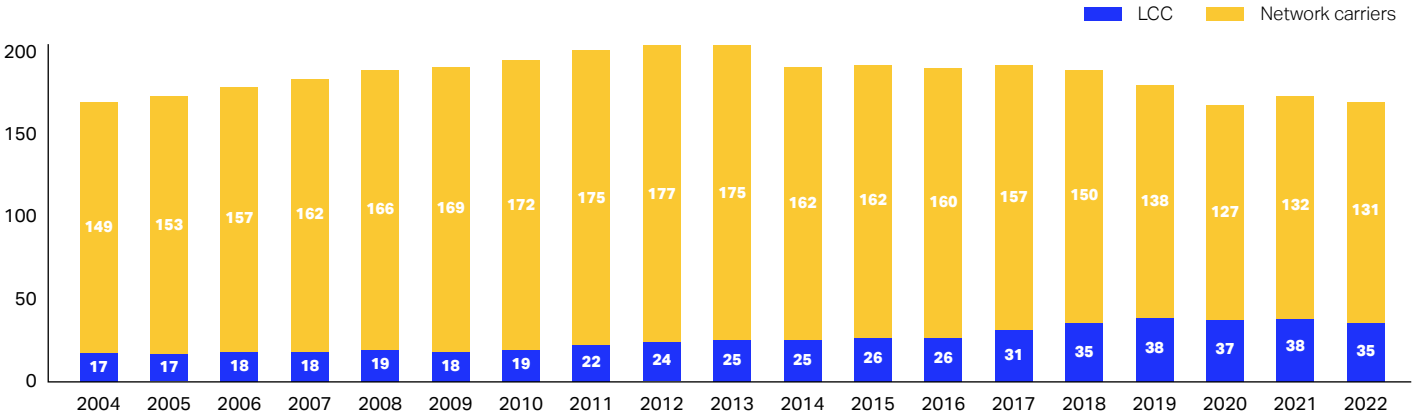
The low-cost model was launched by Southwest Airlines in the US, and was subsequently widely adopted elsewhere, including in Europe (Chart 5). This business model brought significant change to the air transport industry by basing strategic decisions on costs. Today the focus includes low price, value, unbundled services, in addition to other evolutions — and the same can be said about network carriers. Nevertheless, we retain the colloquial term in this report and refer to costs in this broader sense. The low-cost business model caters almost exclusively to short and medium-haul routes, owing to the fact that a cost advantage is more challenging to achieve on a long-haul operation, given the fuel consumption, the type of airports served, and the aircraft flown.

The cost-based network focuses on secondary lower-cost airports. To the extent that such airports are less capacity-constrained than many hubs, charges will tend to be lower and slot-use conditions might not apply. As for fleet utilization, a medium-haul aircraft may be used during a longer time window, often beyond what is possible with larger aircraft used on long-haul flights. Moreover, LCCs can perform shorter turnarounds, in general no more than 30 minutes, during which time they enable passengers and baggage to disembark and reembark, as well as refueling the aircraft. The competition from the LCC model has prompted network carriers also to focus on efficiency, and today the two business models are comparable in the short-haul intra-European market in this regard.

Competition has increased significantly also as a result of LCCs now flying from capacity-constrained airports and while LCCs initially focused on routes not served by the network carriers, they increasingly compete head-to-head on some overlapping routes. While LCCs do not operate hubs, they often have an operating base in multiple locations from which they can deploy aircraft and retain flexibility in doing so.

By focusing on costs, LCCs have been able to propose significantly lower fares on the routes served. The attractive pricing model has generated demand on routes otherwise not offering enough traffic potential. The low-cost business model has revealed significant price-elasticity of demand, notably among leisure travelers, and it has also created a new price reference for consumers.

Chart 5: Number of European LCCs and Network carriers, 2004-2022



Source: UNWTO

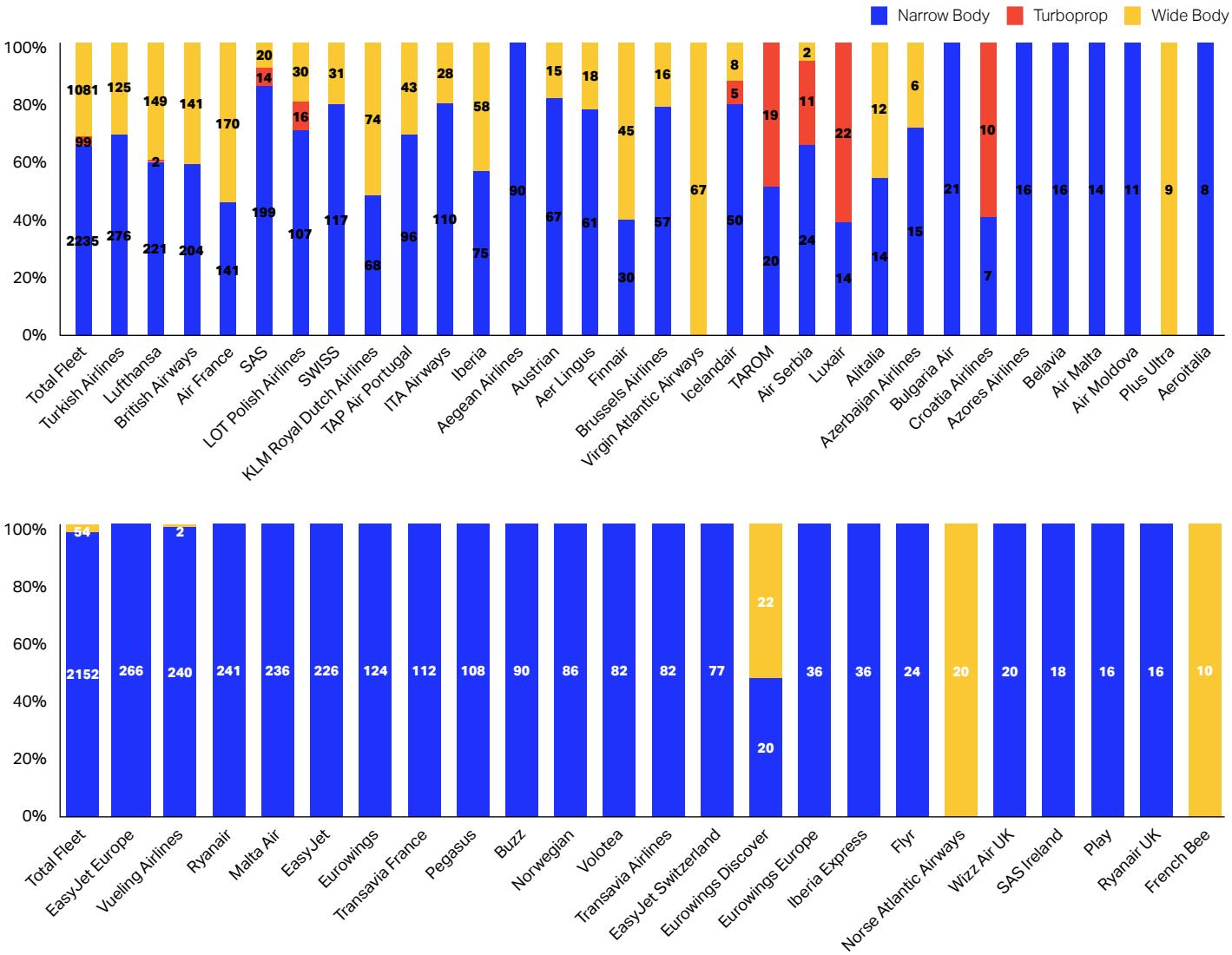
As the low-cost model is about offering low fares, it mostly attracts leisure travelers whose behavior it has influenced. Instead of choosing a destination and trying to find the best offer, travelers may instead choose the destination based on the fare. The traveler who opts for the lowest fare will benefit from little flexibility and few options, while those ancillaries will be offered and priced separately, potentially yielding a higher total price than that offered by a network carrier. In any case, the disaggregated pricing model is less convenient for corporate travelers who might not find a direct route with an appropriate flight schedule, and who would not choose an airport further away from business centers.

LCCs adopt fleet and cabin configurations which support their cost-focused model. Hence, they tend to operate fewer types of aircraft in order to derive economies of scale in their maintenance (Chart 6). The choice of fewer aircraft types is congruent with the greater specialization in the routes operated: narrow-bodied aircraft for short to medium-haul operations, and widebody for those who operate low-cost long-haul-only flights (e.g. French Bee, Norse Atlantic). The network carriers, on the other hand, tend to operate a wide variety of aircraft types which is necessary to accommodate their more varied networks. In the cabin, the low-cost approach tends to mean shorter pitch and higher seat density.

The distribution model of LCCs is largely online direct sales. This is a less costly distribution model than the network carriers' still great reliance on the Global Distribution System which involves a few aggregating organizations intermediating between airlines and travel agents. This system allows airlines to convey offers to a wider audience. However, it is costly, characterized by the oligopolistic pricing power of the intermediaries, thus increasing the price to the final consumer.

Where LCCs might be a major provider of traffic to less congested airports, the flexibility of the LCC business model can allow the airline to switch airports or no longer base at the airport, in response to changes in demand and pricing. This is in contrast to carriers which serve mostly capacity-constrained airports on at least one end of the route as their base/hub. In this latter case the airports power is amplified through the waiting list of airlines competing for the use of the airport and high consumer demand. Switching airports is simply not an option for many network carriers given their sunk costs in the hub and depending on the routes served and aircraft deployed.

Chart 6: Network carriers (top) and LCCs (bottom) fleet composition in 2022, ranked by size (left to right)



Source: IATA Economics, Cirium

Evolving business models

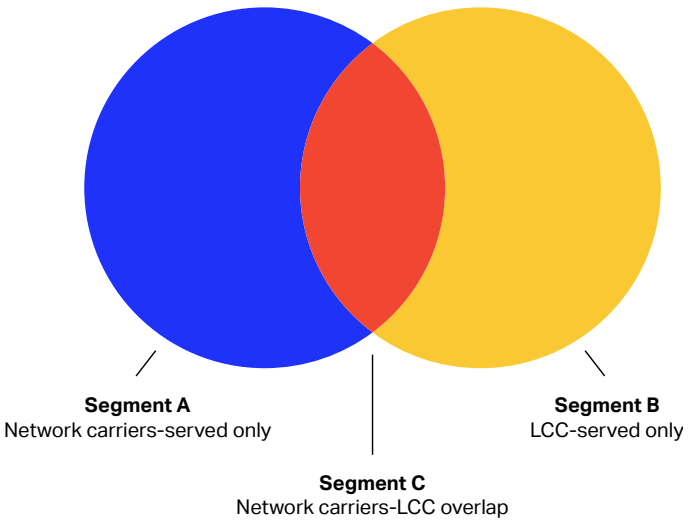
As the two main business models each offer a set of advantages and disadvantages, both can learn and borrow from each other. Network carriers have created low-cost subsidiaries and vice versa for some LCCs. Network carriers can use an LCC subsidiary to feed their hub, and progressively to transfer aircraft from their main operations to the low-cost subsidiary. Such a strategy can be an effective way to reduce costs. However, its deployment has limitations in terms of the potential loss of coherence in the passenger experience. For example, a business class long-haul passenger will not necessarily be comfortable with a medium-haul feeder flight offering a more basic product.

On the LCC side, some carriers have introduced new products and services for corporate customers and have implemented a light distribution via travel agencies. New aircraft yet to come to market could provide significant cost savings per seat, and promote long-haul flights provided by LCCs – currently a challenging market segment to target for LCCs in general. Moreover, some LCCs also have implemented virtual interlining – interlining otherwise being a feature reserved for network carriers. Virtual interlining consists of offering the opportunity to book two separate flights with two separate tickets and provide an insurance in case of flight delays or missed connections. A further business model development is the emergence of ultra-low-cost carriers which cater to the niche that is uncompromising in the preference for only the simplest possible service.

Hence, we understand that there is a degree of fluidity between the two main types of business models as distinct market segments morph in function of evolving passenger demand. In some cases, this creates segments that can be served by both types of airlines, while other segments cannot because the demand specificities are such that only a certain business model can satisfy it.

The beauty of the situation is that there is room for all types of airline business models, and more are likely to emerge as travelers' preferences and circumstances evolve. We can think of the European market segments in terms of the diagram below (Chart 7). Segment A is the business travel and higher-end segment which can only be satisfied by network carriers. Segment B is the part of leisure travelers who will always prefer LCCs. Segment C is the mixed segment where preferences might fluctuate, combine, and take new forms. This is where we might find the ultra-low-cost carriers and the hybrid business models currently. Clearly, in order to satisfy all types of European travelers, the regulation surrounding the aviation industry needs to enable this type of innovation in terms of business models.

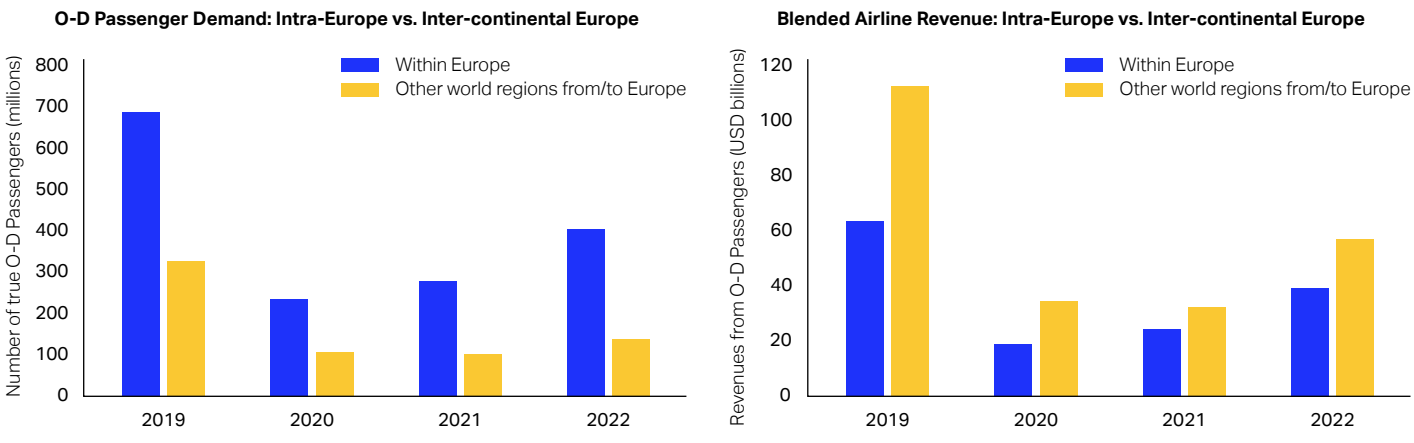
Chart 7: Business models serve distinct market segments in the European aviation sector



3. The Importance of intra-European Air Transportation

Network carriers and LCCs play very different roles in the intra-European (flights within/between European countries) and the inter-continental European (flights from European countries to other world regions, and vice versa) airline markets. Before the Covid-19 pandemic, the total number of origin-to-destination (O-D) passengers carried by network carriers and LCCs in the intra-European market was about twice that of the inter-continental European markets (Chart 8). However, in terms of total airline revenues, the inter-continental European markets are about 1.5-2 times greater than the intra-European market (Chart 8). Given the distinctive characteristics of the intra- and inter-continental European airline markets, we focus on the intra-European market in this section and turn to the inter-continental European markets in section 4.

Chart 8: True O-D passenger demand and airline revenue: intra-Europe versus inter-continental Europe



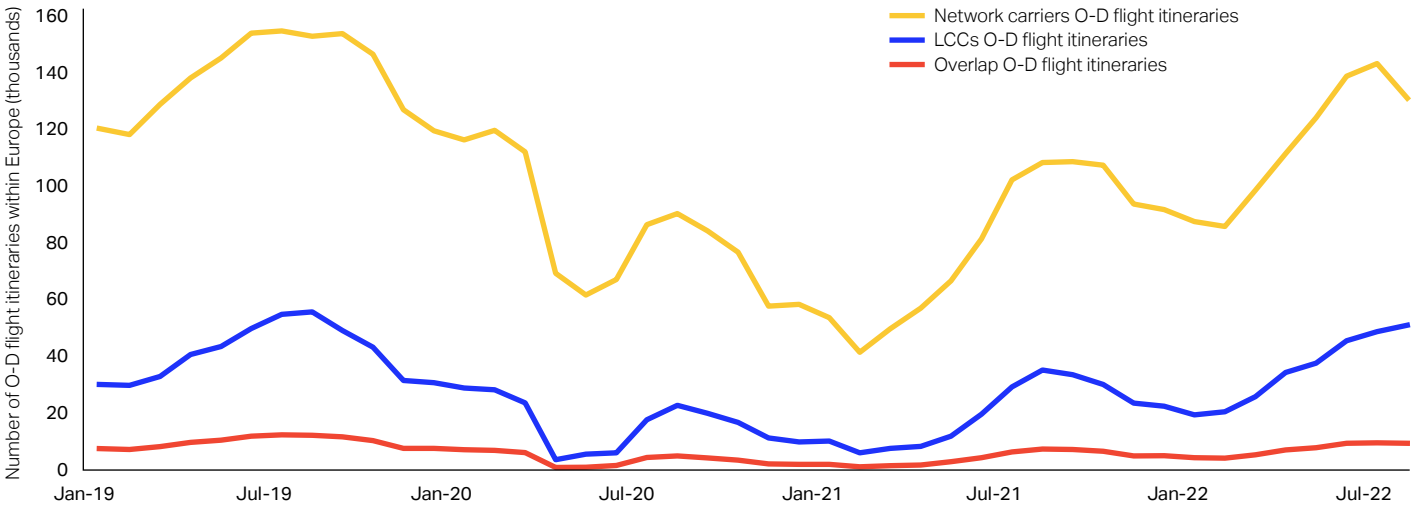
Source: IATA Economics, DDS

Network carriers provide larger coverage than LCCs in the intra-European airline network

Network carriers have historically offered larger intra-European airline networks and continue to do so despite LCCs increasingly operating many high-demand routes. Within Europe, the number of true-origin-to-true-destination (O-D) flight itineraries served by network carriers is 2-4 times greater than the flight itineraries served by LCCs before the pandemic (Chart 9). The number of O-D flight itineraries served only by network carriers accounted for 79% of the entire intra-European airline network in 2019, compared with 15% that was served only by LCCs (Chart 10). Furthermore, the O-D flight itineraries served by both network carriers and LCCs are even smaller, accounting for just 6% of the entire network. Hence, the common perception that LCCs dominate the intra-European airline market is true in terms of passengers carried but network carriers are the most important providers of air transport connectivity within Europe.

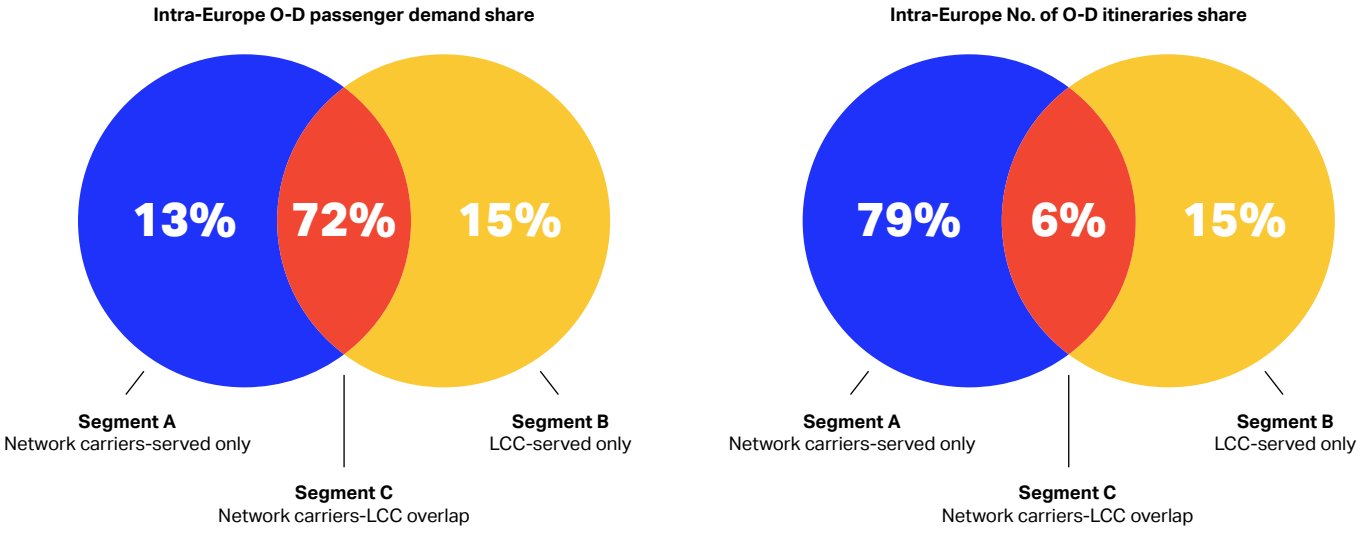
However, from the O-D demand perspective, the 6% overlapping itineraries carry 72% of the total O-D passenger demand in the intra-European market (Chart 10). In other words, network carriers through the hub-and-spoke system devote 79% of their O-D itineraries to enabling the 13% of the O-D passengers living in remote areas to connect with other European cities and enjoy the benefits of the free movement of people and goods.

Chart 9: Intra-Europe Airline Network by network carriers and LCC



Source: IATA Economics, DDS

Chart 10: Intra-European Airline Network by O-D flight itinerary



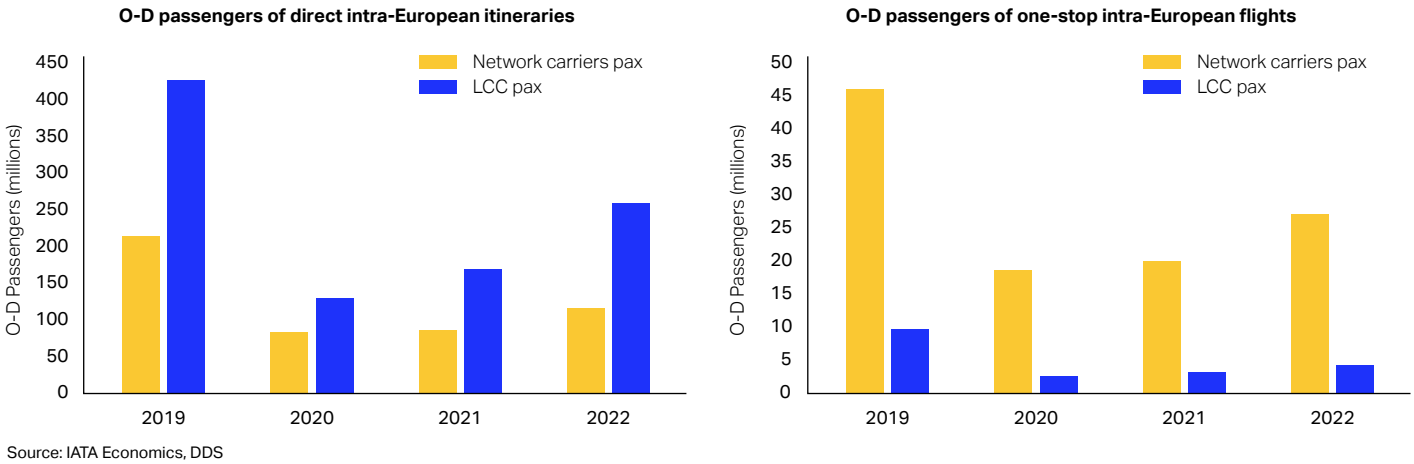
Source: IATA Economics, DDS

4 A true-origin-to-true-destination (O-D) refers to a unique air travel itinerary, which consists of the origin airport – connecting airport #1 – connecting airport #2 – connecting airport #3 – connecting airport #4 – the destination airport. For example, a flight trip departing from London (LHR) and arriving in Zurich (ZRH) via Paris (CDG) is on a different O-D itinerary compared with a trip departing from London (LHR) and arriving in Zurich (ZRH) via Geneva (GVA).

LCCs continue to carry more passengers than network carriers but lost market share on routes directly competing with network carriers during the pandemic

LCCs carry more O-D passengers than network carriers on direct-flight itineraries, while network carriers remain in their leading position on one-stop O-D flight itineraries in Europe (Chart 11 left). In 2019, network carriers provided direct flights for 222.5 million O-D passengers, compared with 407.3 million passengers transported by LCCs in that year. In 2022, (to August), the total number of O-D passengers served by network carriers on direct flights has surpassed the whole of 2021 (88.9 million) and reached 122.2 million. The number of O-D passengers carried by direct flights served by LCCs reached 249.1 million as per August 2022, exceeding the 165.3 million transported in 2021. As for the one-stop intra-European market, network carriers surpass LCCs which generally do not operate connecting flights in their network (Chart 11 right).

Chart 11: Intra-European O-D passengers from direct and one-stop flight itineraries (data for the year 2022 covers O-D passengers from January to August)



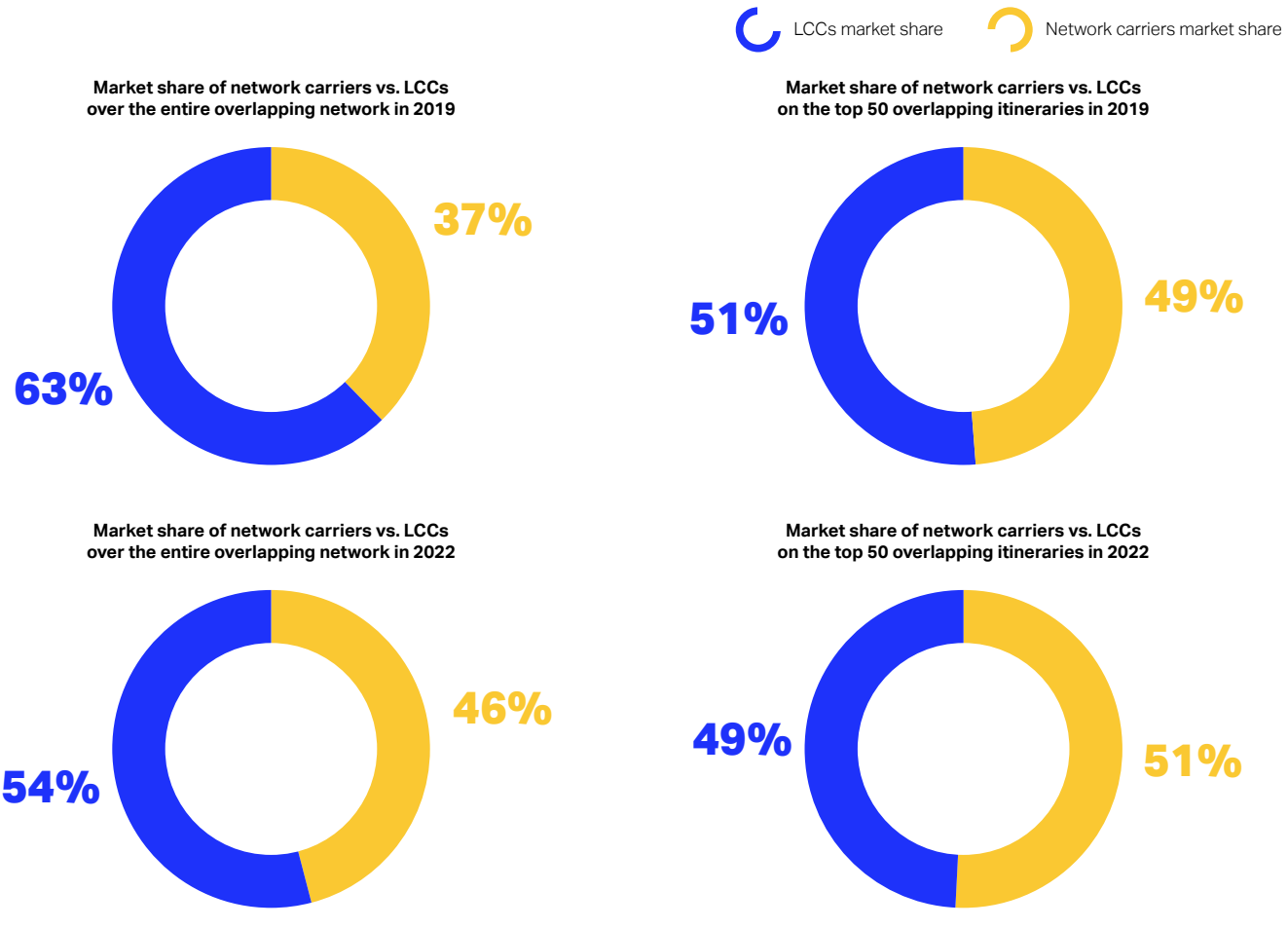
Source: IATA Economics, DDS

However, network carriers and LCCs only compete directly on a relatively small number of O-D itineraries with high demand (Chart 10). Looking only at that segment of the market reveals that network carriers have gained market share from the LCCs since 2019, rising from 37% to 46% of the market share on these overlapping itineraries, weighted by total O-D passengers on a given flight itinerary (Chart 12). In addition, network carriers have a further 5-percentage-points gain in market share if we limit the analysis to the top-50 overlapping itineraries with the largest passenger flows. In 2022, network carriers benefit from a 51% market share of these top-50 overlapping itineraries, which is a 2-percentage points increase compared with 2019. This evolution shows that network carriers were able to maintain a relatively higher level of service than LCCs in the wake of the Covid-19 pandemic, although, in terms of total passengers carried, LCCs are still dominant in the intra-European market (Chart 12).

The changes in market share of network carriers and LCCs in the intra-European market could be attributable to the patterns of O-D passenger demand fluctuations in different market segments served by network carriers and LCCs, respectively. These patterns can be seen in our clustering analysis covering the period from January 2019 to August 2022 (Chart 13).

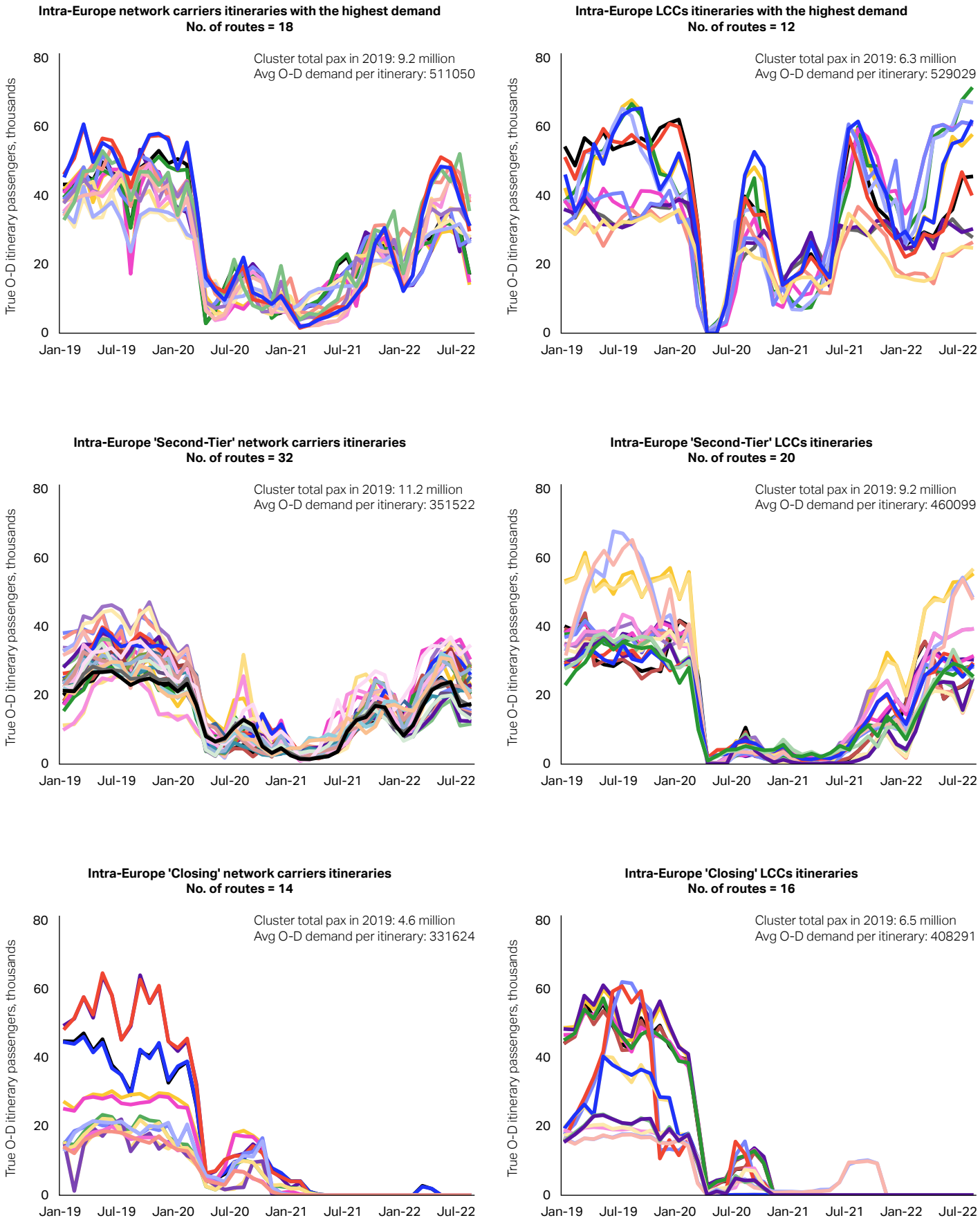
Looking firstly at the O-D itineraries with the highest O-D passenger flows in the respective networks (Chart 13, top panel), 18 non-stop flight itineraries that connect major European cities, such as London (LHR)-Amsterdam (AMS), Paris (ORY)-Madrid (MAD), London (LHR)-Zurich (ZRH), etc., are assigned by our algorithm to the "highest-demand" cluster in the network carriers' network. On average, this cluster had 511,050 O-D passengers per itinerary in 2019, and its total passenger flows represented about 3.6% of network carriers' total O-D demand in that year. In contrast, the "highest-demand" cluster for LCCs contains 12 distinct non-stop domestic itineraries, mostly in the domestic Türkiye market but also in the domestic Spain and Italy markets. In 2019, the average number of O-D passengers per itinerary in this cluster was 529,029, and its total passenger flows represented about 1.5% of the LCCs' total network O-D demand. Thus, the highest-demand flight itineraries of network carriers and LCCs are not overlapping, indicating that network carriers and LCCs focus on very different market segments in terms of the networks with the highest O-D demand. The clustering results can be seen in Appendix C.

Chart 12: Market shares of network carriers and LCCs O-D passenger demand in the intra-European market



Source: IATA Economics, DDS

Chart 13: Clustering analysis on O-D passenger demand fluctuation patterns in network carriers and LCCs



Source: IATA Economics, DDS

Due to the distinct characteristics of the two market segments, the O-D passenger demand also shows different fluctuation patterns. As network carriers' highest-demand routes are largely non-stop international itineraries, the O-D demand for these itineraries was affected more by international travel restrictions posed by both endpoint countries during the pandemic. As a result, network carriers experienced a long depression in demand in their highest-demand itineraries, which started in April 2020, had a small rebound in July/August 2020, and bottomed again for almost 12 months until July 2021. In contrast, the fluctuation patterns of the "highest-demand" cluster of LCCs are very different. Given that these itineraries are all domestic routes, as soon as the country (i.e. Türkiye/Spain/Italy in this case) eased its travel restrictions domestically, the demand for these LCC routes rebounded almost immediately.

Unlike the "top-tier" segments which contain fewer routes with the highest demand, the "second-tier" market segments are made up of a larger number of routes with relatively lower demand per itinerary (Chart 13, middle panel). There are 32 non-stop O-D itineraries classified to this cluster for the network carriers, containing both international routes (e.g. London (LHR)- Frankfurt (FRA), Marid (MAD)-Rome (FCO)) and domestic routes (e.g. Munich (MUC)- Düsseldorf (DUS)). In comparison, the 20 O-D itineraries assigned to the "second-tier" cluster for LCCs are all international non-stop routes, such as Dublin (DUB)-London (UK), Barcelona (Spain)-London (UK), Dublin (DUB)-Amsterdam (AMS) (see Appendix C).

While the profile of the network carriers "second-tier" cluster is similar to that of the network carriers "highest-demand" cluster, the LCC "second-tier" cluster depicts very different patterns compared with the LCC "highest-demand" cluster. On these major international non-stop O-D itineraries, the passenger demand of LCCs almost fell to zero, following the international air travel restrictions during the Covid-19 pandemic. This contrasts sharply with the non-stop international routes served by network carriers, as shown in both clusters of network carriers, where network carriers still maintained a moderate level of demand even during the most challenging period. This finding implies that in this market segment, while LCCs had more flexibility in adjusting their network to minimise economic losses caused by the pandemic, network carriers provided relatively greater reliability of service than LCCs in the face of the Covid-19 pandemic.

We also identified a number of flight itineraries that could potentially be at risk of closing permanently, although before the pandemic these itineraries benefited from sustained O-D passenger demand (Chart 13, bottom panel). In the network carriers network, 14 major routes fall into this category due to very low passenger demand, if not zero, while 16 LCC routes are in a similar situation. It proves that both network carriers and LCCs have borne significant losses in terms of traffic on some of their major O-D itineraries, and we would hope that these customers will again be able to benefit from these routes after the challenging time caused by the pandemic.

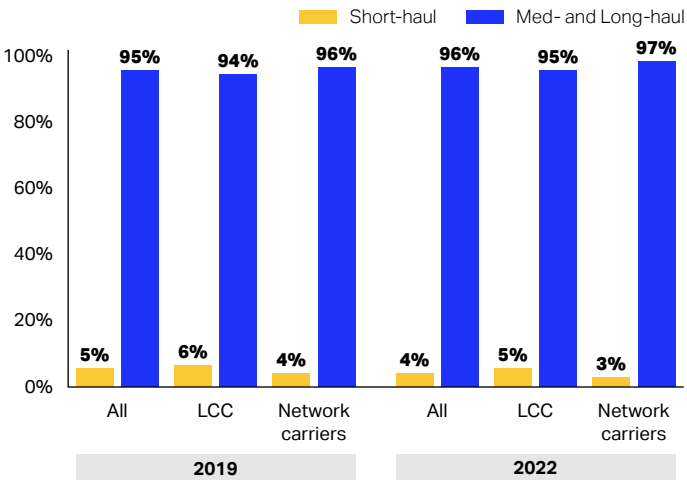
In sum, the clustering analysis reveals that the extent of impacts that the Covid-19 pandemic caused on network carriers and LCCs differ by their corresponding market segments. LCCs have benefited more in the form of a relatively speedy recovery in demand on the highest-demand routes due to their focus on domestic markets, and the associated lower exposure to travel restrictions. On the other hand, on the major non-stop international itineraries where LCCs were facing the same exposure to travel restrictions, network carriers showed somewhat greater resilience than LCCs.

Banning short-haul flights within Europe has limited impact on emissions

It is important to note that in 2019, only 5% of the RPKs of the intra-European market generated by short-haul flights, defined as covering a maximum distance of 500 km. This number decreased by one percentage point in 2022 to just 4% (Chart 14). LCCs have a slightly higher share of RPKs on this distance — at 6% in 2019 and 5% in 2022, while the network carriers' share is limited to 3-4% of RPKs stemming from these short-haul flights.

If we multiply the average fuel burn per 100 RPK on the short-haul routes by the short-haul RPKs, and apply the CO_2 emissions factor to the total fuel consumption, the CO_2 emission share of the short-haul flights within Europe should be proportional to that of the short-haul RPKs. Therefore, banning short-haul flights within Europe would only reduce total CO_2 emissions of the intra-European airline market by 5% at the most. Hence, the seemingly common perception that banning short-haul flights in the intra-European market would make a big difference to the environment in the region is mistaken. Such a policy would also have significantly less impact on emissions than the Single European Sky (SES), which the European Union claims: "…compared with 2004, the SES (upon completion around 2030-2035) could triple airspace capacity, halve the costs of ATM, improve safety tenfold and reduce the environmental impact of aviation by 10%." [5].

Chart 14: Share of RPKs in the intra-European market: short-haul vs. med/long-haul



Source: IATA Economics, Cirium

5 https://www.europarl.europa.eu/factsheets/en/sheet/133/air-transport-single-european-sky

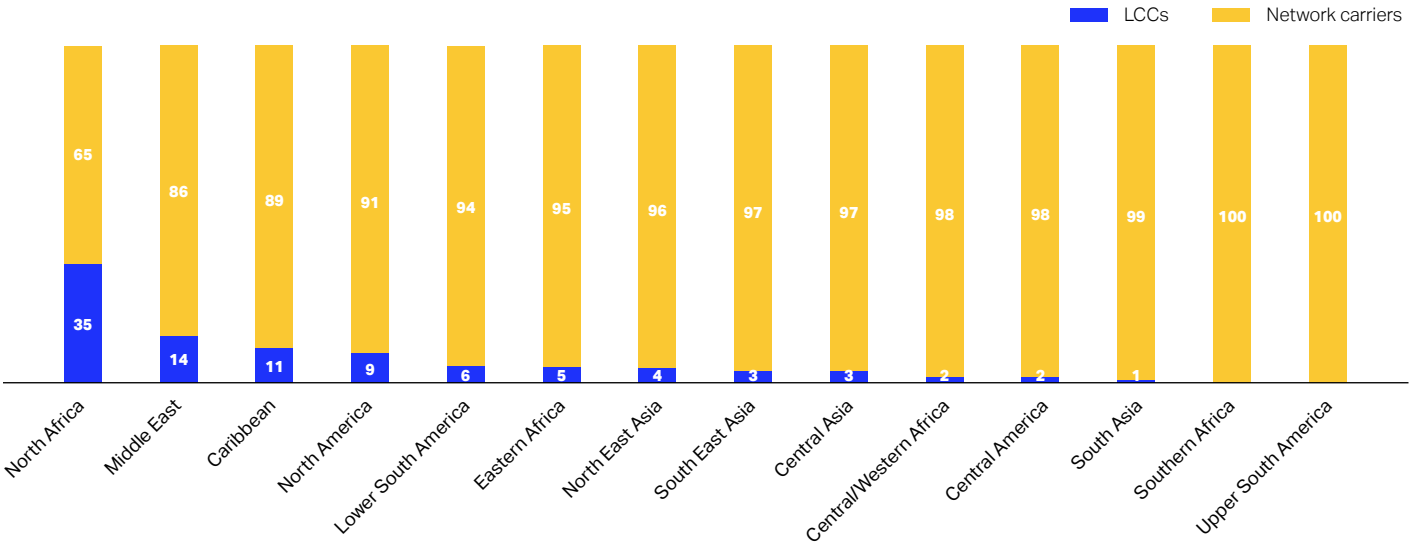
4. Inter-continental Connectivity is vital for Europe

Network carriers dominate the inter-continental air travel markets between Europe and the world

Network carriers have an unambiguously dominating role in terms of providing Europe with its inter-continental connectivity. In 2019, the total air transport seat capacity for passenger flights between Europe and other continents was almost exclusively provided by network carriers, except for the Europe-North Africa, Europe-Middle East, and Europe-Caribbean region pair markets (Chart 15). LCCs' business model and fleet composition are typically not aimed at this long-distance inter-continental market segment, which is thus nearly wholly dependent upon network carriers (Chart 15).

The market shares per type of business model in the inter-continental European market, based on passenger flows, confirm the dominant position of the network carriers. Their share of network coverage is 99%, operating alone in this very large and distinct market segment. The LCCs that focus on long-haul make up nearly 1% of the total inter-continental market, and only 0.3% of the routes offered are served by both network carriers and LCCs (Chart 16).

Chart 15: Seat capacity by network carriers and LCCs for inter-continental air travel from/to Europe in 2019, %

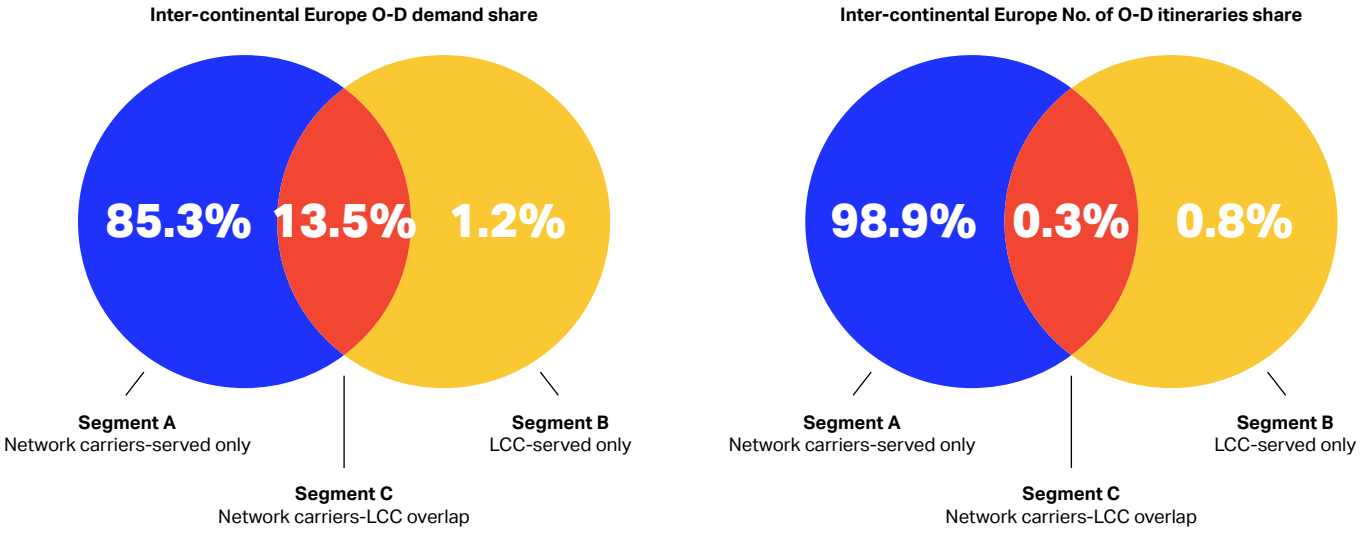


Source: IATA Economics, OAG

Network carriers bring large and unique economic value to Europe through inter-continental air travel

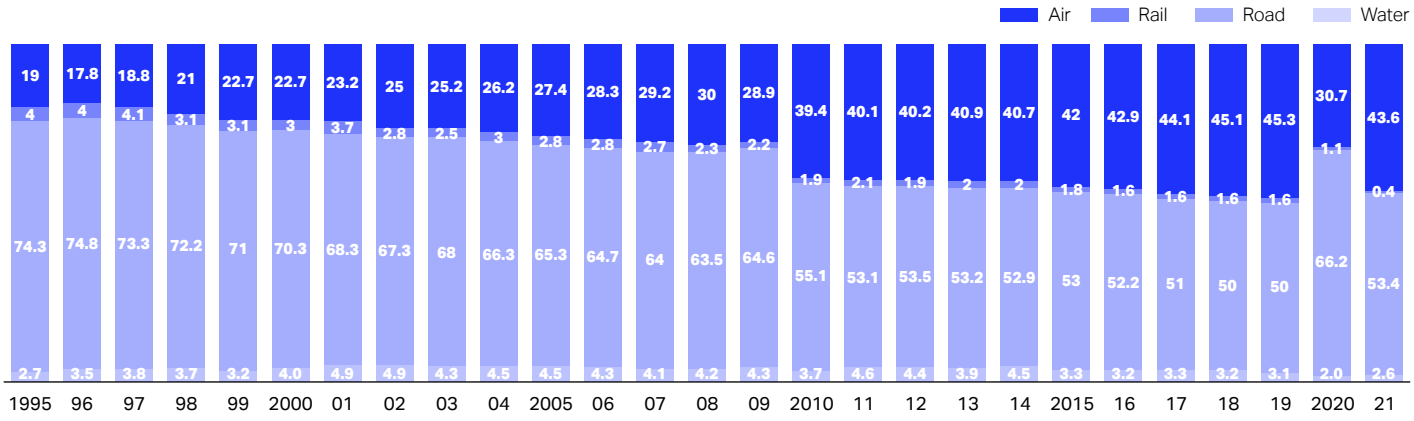
Over the past two decades, inbound tourism has increasingly favored air transport. Just prior to the pandemic, the United Nations World Tourism Organization (UNWTO) estimated that 45.3% of tourists arriving in Europe (including both intra-European and inter-continental arrivals) travelled by air, a 22.6-percentage points increase from 2000 (Chart 17). Europe sports many of the top tourism destinations for leisure travelers worldwide, placing the region as a global leader in this domain. Spending by tourists visiting Europe increased by 40% between 2000 and 2019. As stated above, while both network carriers and LCCs underpin the tourism industry within Europe, it is network carriers that bring the vast majority of travelers from other world regions to Europe, with more than 90% of the inter-continental seat capacity being provided by European network carriers.

Chart 16: Inter-continental European market share per type of business model, 2019



Source: IATA Economics, DDS

Chart 17: Inbound arrivals in the European Union by mode of transportation, %

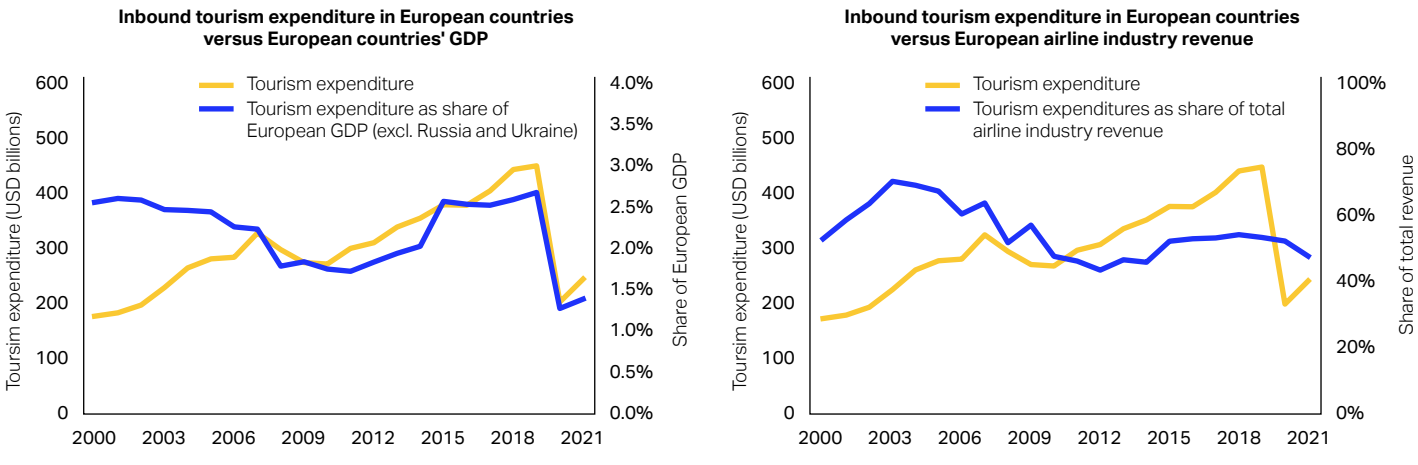


Source: UNWTO

Backed by the strong inter-continental connectivity provided by network carriers for Europe, expenditures of inbound tourists have been a critical contributor to both European countries' GDP as well as to the total revenue of the European aviation industry (Chart 18). Inbound tourism expenditure contributed around 2.0%-2.5% of European countries' GDP prior to the Covid-19 pandemic (Chart 18, left). Although the travel restrictions imposed because of the pandemic cut the share of tourism expenditure in GDP by almost half in 2019-2020, it is expected that tourism will return to its former share once air travel recovers to the pre-pandemic level. In relation to spending on plane tickets, i.e. essentially airline revenue, inbound tourism expenditure peaked in the early 2000s at some 70% of the total and has since stabilized at about 50% (Chart 18, right).

Although a breakdown of the tourism expenditure by intra- and inter-continental European markets is not available from the UNWTO data, it can be inferred from the O-D passenger demand in Chart 8 that, on average, travelers from other world regions spend 1.5-2 times more during their visits (e.g. airfares, hotels, souvenirs, food, etc.) in Europe than travelers within Europe, suggesting that the inter-continental European markets likely contribute about 30% more than the intra-European market to total tourism expenditure in Europe.

Chart 18: Tourism expenditures in European countries as a share of European countries' GDP and a share of the European airline industry's total revenue between 2000 and 2019

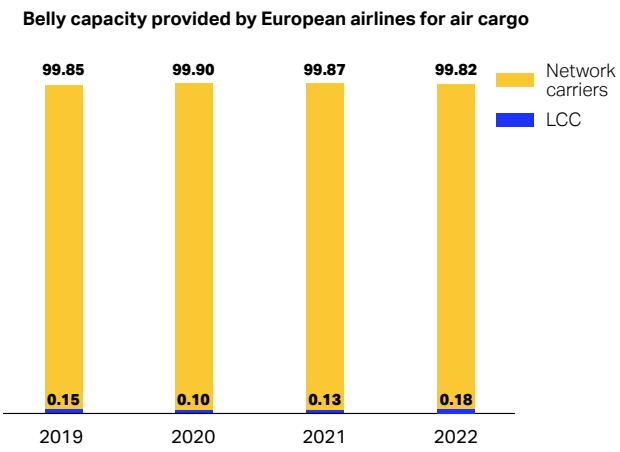


Source: UNWTO, World Bank, IATA Economics

5. Network Carriers provide critical Capacity to meet Air Cargo Demand

Connectivity is not only about passengers but also about trade. Network carriers are critical to European trade in that they provide both dedicated freighters as well as belly capacity for air cargo, both generally absent from LCCs. The air cargo market is characterized by the transportation of high-value, perishable, or otherwise time-sensitive freight. During the Covid-19 pandemic, airlines also transported vaccines and other medical equipment to countries in need. Cargo is mainly transported in the bellies of passenger aircraft or on dedicated freighter aircraft, each representing 50% of air cargo prior to the pandemic. Even though European LCCs have seen a steady rise in their cargo-tonne kilometers (CTKs) over the past decade, their share of total air freight is negligible compared to that carried by network carriers (Chart 19). Network carriers are able to offer this all-important air cargo capacity mainly thanks to their extensive global networks as well as the high proportion of large-sized aircraft in their fleet.

Chart 19: European airlines' cargo-tonne kilometers (CTKs)

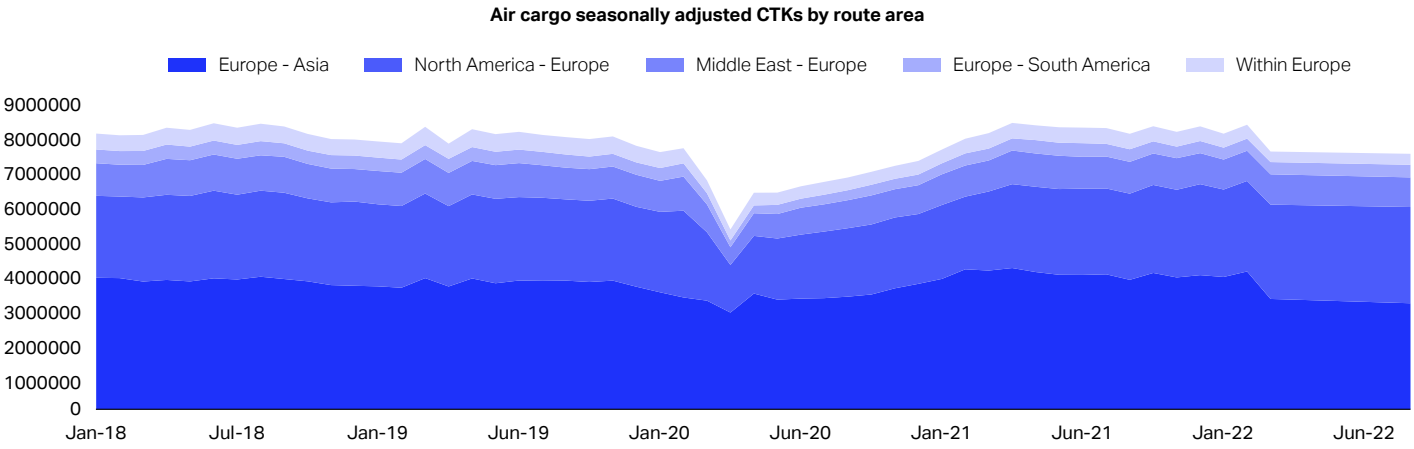


Source: IATA Economics

Demand for air cargo in the intra-European market is relatively small in comparison with the inter-continental European markets (Chart 20). The largest air cargo demand is found in the inter-continental market between Europe and Asia, followed by the North America-Europe market. The Middle East-Europe market sees slightly higher demand than the Europe-South America market, which is about the same size as the intra-European market. In all these region-pairs, network carriers are the only providers of air cargo capacity along with the dedicated cargo airlines.

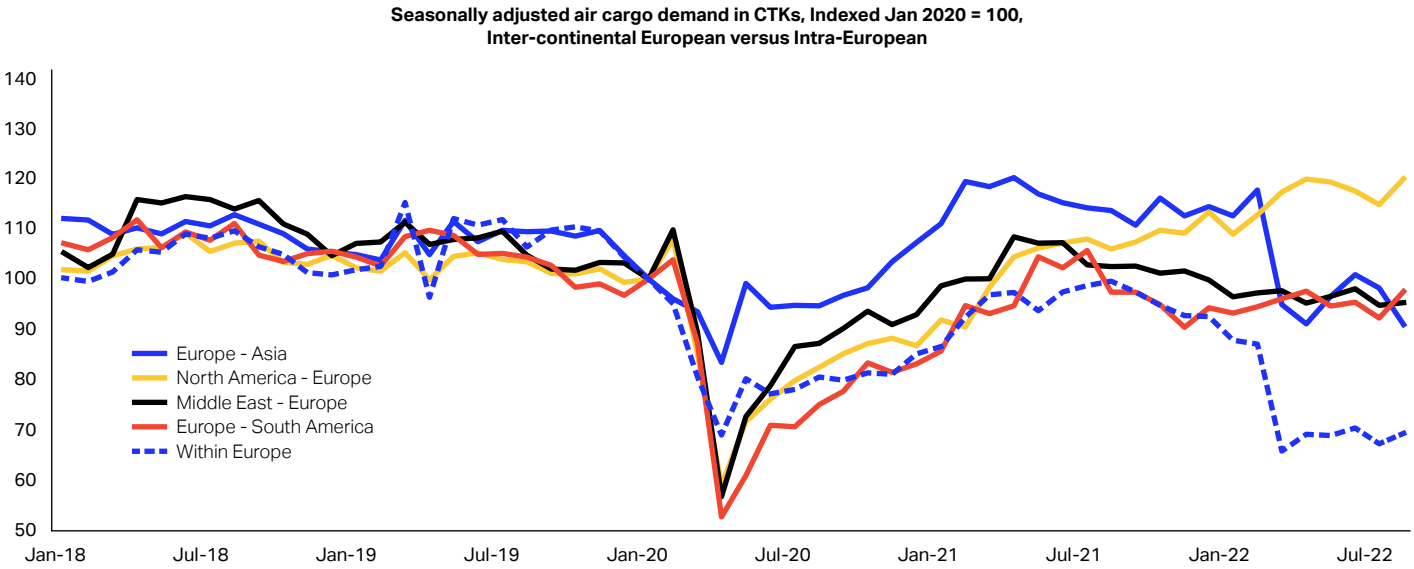
Post pandemic, air cargo demand in the inter-continental European market is quite different from that in the intra-European market (Chart 21). The North America-Europe inter-continental market has seen the most sustained recovery, already surpassing the pre-pandemic level. The intra-European market experienced two major simultaneous shocks from both the pandemic and the war in Ukraine, and therefore not surprisingly remains at the lowest CTK level since 2018. The Europe-Asia inter-continental market benefited from the fastest recovery until the lockdowns that were imposed by China because of the Omicron variant resulted in another significant drop in CTKs in this region-pair market.

Chart 20: The intercontinental- and intra-European air cargo demand by route area



Source: IATA Economics, IATA Monthly Statistics by Route

Chart 21: The inter-continental and intra-European air cargo demand recovery status after the Covid-19 pandemic



Source: IATA Economics, IATA Monthly Statistics by Route

6. Summary and Recommendations

This report discusses the critical but different roles that network carriers and low-cost carriers (LCCs) have in the intra- and inter-continental European airline markets. Our analysis shows that the two main airline business models often focus on distinct market segments in Europe. While LCCs carry more passengers on intra-European O-D journeys, this fact alone does not convey the full complexity of the market or the contribution of network carriers to intra-European connectivity.

Network carriers remain the largest providers of air transport connectivity both within Europe and in the inter-continental markets. On the inter-continental front, network carriers have an unambiguously dominating role, which contributes crucial economic value to European countries' GDP as well as to the total revenue of the European aviation industry.

Network carriers transported 222.5 million O-D passengers on direct intra-European flights in 2019, compared to 407.3 million who chose to fly with LCCs within Europe. On flights that involve one connecting stop in the intra-European market, network carriers surpass LCCs which generally do not operate connecting flights in their network.

In the segment in which network carriers and LCCs compete directly, which only accounts for 6% of the total O-D flight itineraries but carries 72% of the O-D passenger demand in the intra-European market in 2019, network carriers have increased their market share from 37% to 46% after the Covid-19 pandemic. In addition, the extent to which the pandemic has affected O-D demand shows different patterns in the network carriers' and LCCs' networks, given their specific focus on international and domestic markets on the highest-demand itineraries, respectively – and also their respective exposure to the impact stemming from travel restrictions which were and still are imposed mostly on international travel.

Our analysis reveals that one size does not fit all in the European airline industry. Indeed, network carriers and LCCs complement each other significantly more than they are substitutes. Policies should not favor any particular business model but instead promote the coexistence of different business models. This would encourage healthy competition and the maximization of consumer choice and welfare.

Appendix A:
The Scope of Europe as defined in this Report

Europe minus Ukraine and Russia [6]:

Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faeroe Islands, Finland, France, Georgia, Germany, Greece, Greenland, Hungary, Iceland, Ireland (Republic of), Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia (former Republic of Yugoslavia), Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Serbia and Montenegro, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom.

EU member countries make up on average 70% of the total passenger numbers of the above-mentioned countries.

6 Ukraine is not included in this report because the O-D passenger flows and airline network of the Ukrainian airline market have been significantly affected by the war, which would make Ukraine an outlier of the analysis in this report. Russia is excluded because of lack of data.

Appendix B: European Low-cost Carriers (LCCs)

Airlines in Europe are distributed along a spectrum of airline business models adopted by network carriers and LCCs. We retain those terms for the purposes of this report, though many airlines in either category are hybrids, and few are "pure" in the original sense of these terms.

Airline name	Code ICAO	Code IATA
Albawings	AWT	2B
Bees Airline	UBE	7B
Blue Air Transport Aerian	BLA	0B
Buzz	RYS	RR
Corendon Airlines	CAI	XC
Corendon Airlines Europe	CXI	XR
Corendon Dutch Airlines	CND	CD
easyJet	EZY	U2
easyJet Switzerland	EZS	DS
Eurowings	EWG	EW
Eurowings Discover	OCN	4Y
Eurowings Europe	EWE	E2
FlyOne	FIA	5F
French Bee	FBU	BF
Iberia Express	IBS	I2
Jet2.com	EXS	LS
Norwegian	NOZ	DY
Norwegian Air Norway	NAN	DH
Pegasus Airlines	PGT	PC
Pobeda	PBD	DP
Redwings Airlines	RWZ	WZ
Ryanair	RYR	FR
Smartwings	TVS	QS
Transavia Airlines	TRA	HV
Transavia France	TVF	TO
Volotea	VOE	V7
Vueling	VLG	VY
Wizz Air	WZZ	W6
Wizz Air UK	WUK	W9

Appendix C:
O-D Flight Itineraries classified in the Clusters

Network carriers highest-demand cluster	LCC highest-demand cluster	Network carriers second-tier cluster (examples)	LCC second-tier cluster
LHR-AMS (UK-Netherlands)	**ADB-SAW** (Türkiye domestic)	**LHR-FRA** (UK-Germany)	**DUB-LGW** (Ireland-UK)
AMS-LHR (Netherlands-UK)	**SAW-ADB** (Türkiye domestic)	**FRA-LHR** (Germany-UK)	**BHX-DUB** (UK-Ireland)
LHR-GVA (UK-Switzerland)	**AYT-SAW** (Türkiye domestic)	**LHR-ARN** (UK-Sweden)	**BCN-LGW** (Spain-UK)
GVA-LHR (Switzerland-UK)	**SAW-AYT** (Türkiye domestic)	**ARN-LHR** (Sweden-UK)	**LGW-BCN** (UK-Spain)
LHR-MAD (UK-Spain)	**PMI-BCN** (Spain domestic)	**FRA-HAM** (Germany domestic)	**DUB-AMS** (Ireland-Netherlands)
MAD-LHR (Spain-UK)	**BCN-PMI** (Spain domestic)	**HAM-FRA** (Germany domestic)	**AMS-DUB** (Netherlands-Ireland)
ORY-MAD (France-Spain)	**SAW-ADA** (Türkie domestic)	**LHR-LIS** (UK-Portugal)	**STN-DUB** (UK-Ireland)
MAD-ORY (Spain-France)	**ADA-SAW** (Türkie domestic)	**LIS-LHR** (Portugal-UK)	**DUB-STN** (Ireland-UK)
LHR-ZRH (UK-Switzerland)	**CTA-MXP** (Italy domestic)	**MUC-DUS** (Germany domestic)	**MAN-DUB** (UK-Ireland)
ZRH-LHR (Switzerland-UK)	**MXP-CTA** (Italy domestic)	**DUS-MUC** (Germany domestic)	**DUB-MAN** (Ireland-UK)
LHR-MUC (UK-Germany)	**TZX-SAW** (Türkie domestic)	**LHR-BCN** (UK-Spain)	**BHX-DUB** (UK-Ireland)
MUC-LHR (Germany-UK)	**SAW-TZX** (Türkie domestic)	**BCN-LHR** (Spain-UK)	**DUB-BHX** (Ireland-UK)
BCN-MAD (Spain domestic)		**LHR-FCO** (UK-Italy)	**AMS-LGW** (Netherlands-UK)
MAD-BCN (Spain domestic)		**FCO-LHR** (Italy-UK)	**LGW-AMS** (UK-Netherlands)
HAM-MUC (Germany domestic)		**NCE-LHR** (France-UK)	**LGW-GVA** (UK-Switzerland)
MUC-HAM (Germany domestic)		**LHR-NCE** (UK-France)	**GVA-LGW** (Switzerland-UK)
ATH-SKG (Greece domestic)		**FCO-MAD** (Italy-Spain)	**DUB-LHR** (Ireland-UK)
SKG-ATH (Greece domestic)		**MAD-FCO** (Spain-Italy)	**LHR-DUB** (UK-Ireland)
			LTN-AMS (UK-Netherlands)
			AMS-LTN (Netherlands-UK)