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RESEARCH CENTRE ON TRANSPORT POLICY

TRASPOL report 1/25

THE LONG–DISTANCE COACH MARKET IN EUROPE | YEAR 2019 - 2024

In collaboration with: CheckMyBus

The long-distance coach market in Europe
Year 2019 - 2024

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The report is published in collaboration with Checkmybus.it based on the searches on Checkmybus.it website.

Please quote as follows:

Beria P., Sorbona S. (2025). *The long-distance coach market in Europe | Year 2019 - 2024*. TRASPOL Report 1/25 & Checkmybus. Milano, Italy.

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SOMMARIO

1 INTRODUCTION

This report is the **first edition** of the **study on the long-distance coach market in European countries,** prepared by TRASPOL (the Research Centre on Transport Policies of DAStU, Politecnico di Milano) in collaboration with Checkmybus.it that provided the datasets. This edition is based on data from the period 2019-2024, thus including the "pre-covid era", the "pandemic years" and the "new normal" since 2023.
The dataset includes millions of observations, consisting in **monthly average ticket prices and total quantities, by company and by OD pair, across all Europe**.

The report is organized in **three sections**, each one composed by several indicators accompanied by a comment:

a. The profile of users,
b. Traffic volumes and trends,
c. Prices.

The main added value of the report is the focus on prices, given the particular representativeness of the dataset in this field. However, important insights on the overall market composition (by product type) and characteristics (users' profiles, seasonality, etc.) are also produced. A specific work has been done to spatialise the dataset, allowing to effectively map the European market (main cities served, main OD pairs, traffic flows) at an unprecedented level of detail.
Such extensive research aims to be a **valuable tool to monitor the European long distance coach market evolution** over the years, addressed both at coach companies and the public regulators.

All **methodological specifications** are given in the last section. However, it is important to underline here that the report is not reporting absolute data for two reasons: because temporal trends of sold tickets are not reliable, depending on the combination of market dynamics and the varying market share of Checkmybus, and because of confidentiality issues. To guarantee that presented data is sufficiently representative, indicators based on a too limited number of observations have been omitted, too.

The report is freely available at www. traspol.polimi.it and www.checkmybus.it.

1.1 EU COACH MARKET OVERVIEW[1]

Historically, each EU member state regulated the coach and bus market individually, often relying on bilateral agreements between states to govern cross-border transportation. Domestic connections were commonly operated under exclusive concession regimes. EU initiatives aimed at deregulating the international coach sector arrived relatively late, especially in comparison with the processes occurred in the aviation and rail sectors. This resulted in substantial disparities among EU member states in terms of the regulatory framework for road passenger transport operations.
In response to this issue, in 2009, the European Union adopted Regulation 1073/2009, aimed at liberalizing international passenger transport by bus and coach. This regulation, which came into effect in December 2011, combined and simplified two previous regulations (Council Regulation N°684/92 and Council Regulation n°12/98) to create a unified set of rules and procedures for access to the international European market. It also

[1] This section has been written by Vardhman Lunkar and Paolo Beria.

reduced administrative formalities required. Regulation 1073/2009 applies to regular international services, including the possibility for operators to provide cabotage services, albeit with certain restrictions, as these services should be part of a regular international route.
Since 2011, bus operators from all EU member states have been granted equal access to international transport without discrimination based on nationality or place of establishment. While the reform also provides room for member states to further liberalize their domestic markets through bilateral or multilateral agreements, it allows each country to determine the extent of such modifications independently.
The primary goal of the EU's intervention is to inject competition into a sector previously dominated by local (line or regional) monopolies. However, an assessment of the impact of Regulation 1073/2009 conducted in 2020 suggested that its influence in promoting long-distance bus travel was somewhat limited, indicating the need for further measures to promote bus transport as a viable alternative to individual car travel. The international coach market is relatively smaller compared to the domestic ones, as most passengers travel within their own countries. Nevertheless, between 2009 and 2014, international coach passenger numbers grew by 40-60%, indicating a positive response from operators to the opportunities created by international liberalization.

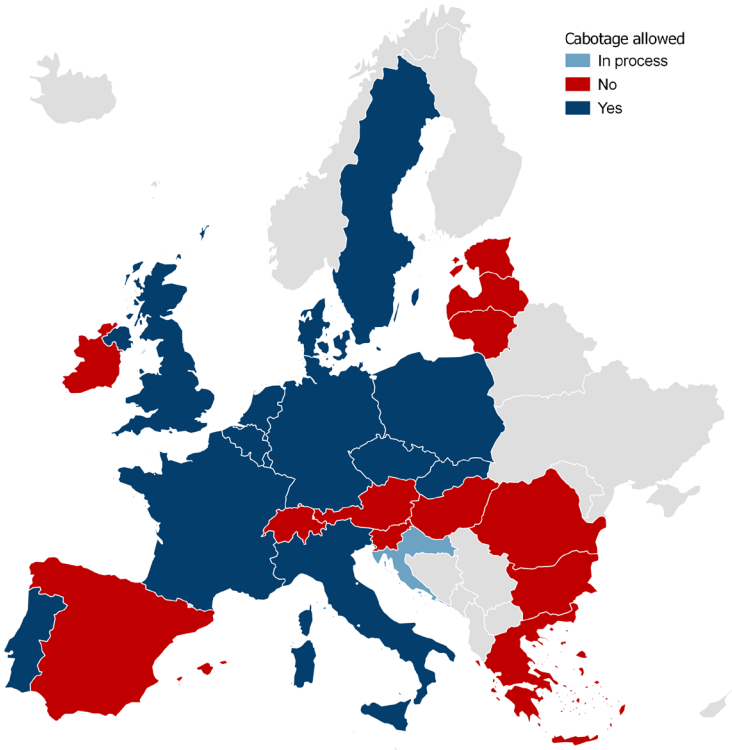


Figure 1. Overview of domestic cabotage deregulation in Europe (2024). Source: authors' elaborations.

Looking at domestic markets, long-distance coach services in Europe have traditionally played a minor role in transportation. In a transportation market dominated by monopolies and heavy state subsidies to rail, coaches have primarily served remote or underserved areas lacking rail infrastructure or adequate public transit options, sometimes even without subsidies. In a Europe of national carriers rooted in national sovereignty and the absence of competitive principles, the process of deregulating and liberalizing coach services in Europe has followed an uneven trajectory, with some countries, like the UK and Sweden, having embraced liberalization earlier, while others, such as Germany, Italy, and France, adopted these changes later – between 2013 and 2015 – but led to rapid industry growth (Figure 1). Other countries followed later, such as Poland, while some countries, particularly in the Balkan region and in Spain, continue to regulate the service through a concession tendering model, where (at best) the competition takes place *for* the market rather than within it. As of the present, at least 70% of the European market for interurban bus services has introduced some level of liberalization.

Today, primary regulatory frameworks can be categorized into the following sections:

- Regional concessions, awarded either directly or through competitive processes, with operators holding exclusive rights to provide services (e.g., Spain).
- Commercial operations subject to non-exclusive authorisation, with no limitations.
- Commercial operations subject to non-exclusive authorisation, with limitations to safeguard Public Service Obligations (PSO) (e.g., France and Italy).
- Commercial operations subject to minimum distance requirements (e.g. Germany, France, Italy, and the Nordic countries *before liberalisation*).

Even if in a significant number of countries the market is substantially liberalised, some barriers to a fully competitive environment still exist. Among them, the intricacy of existing regulatory frameworks creating asymmetrical requirements for domestic and non-domestic operations and, in some countries, a highly bureaucratic process that hampers operators by inducing additional costs and management complexity. Small and medium-sized enterprises (SMEs) are disproportionately affected by these challenges, as they may lack the necessary influence and resources to develop comprehensive EU-wide business strategies.

The way coach operators have designed their networks and products is quite varied. In the following, we try a taxonomy to guide the reader in the remainder of the report.

As mentioned, in many cases the coach system has been – and still is – a **substitute of rail** where rail does not exist or is particularly ineffective. This holds particularly true in remote regions or between low-demand city pairs. The lines, in these cases are usually operated at low or very low frequency, often even weekly, and connect small cities and villages with main regional hubs. These services are often PSOs, but it is not uncommon the case of lines provided on a market-basis (e.g. in Southern Italy).

A second typology of coach services is that of **intercity** connections. This model is relatively recent and can be associated to Flixbus, that was among the first ones massively providing a cheaper alternative to trains serving only the main cities. Interestingly, sometimes this model has been extended to OD pairs previously unserved by rail, i.e. unserved at all.

The "intercity" model has some sub-variants. One relates to the level of service, with the majority of coach operators inspiring to the **low-cost model**, opposed to the less common case of **luxury coaches**.[2] A second dimension is that of network organisation. While most of coach operators adopt the **point-to-point** logic (which gives a competitive advantage against the train system), some reproduce on the road the **hub&spokes** model. Again, Flixbus is the prototype of that. The hub&spokes model is rarely pushed to intermodal integrated networks, such as Itabus in Italy or RegioJet in Czechia.

A third type of coach service is the **night coach**. They often overlap with the substitute of rail case, but this is not always the case.

Finally, a fourth model is that of **airport connections**. As we will see clearly in the report, the airport submarket is very valuable for coach operators, guaranteeing higher yields thanks to the virtual absence of rail competition and to the higher willingness to pay of the travellers.

[2] Rare in Europe, this model is rather common in other continents, where rail is virtually non-existing.

1.2 LIMITATIONS OF THE STUDY

The study presents some limitations, mainly linked to the representativeness of data.
A first limitation is the fact that the quantities observed (= the clicks) depend both on the market trend and the market share of Checkmybus platform itself. Checkmybus could raise its market share in a market independently from the actual overall market trend. For this reason, we will not use quantities to describe time trends, as this information would not be reliable. Quantities are used exclusively within one year (e.g. the share of airport connections on total) and to weight price observations.
Correlated to the first one, a second limitation is represented by the likely overrepresentation of UK data, simply because UK domain matches with the English version of the website. However, this affects exclusively the indicator "U1 – CMB customer base by country domain" and not the elaborations based on the country of origin (that is the geographical origin of the trip).
Thirdly, we acknowledge that the presence of individual companies on the platform is uneven. In particular, large and universally known brands are likely underrepresented in our data because the users will more often use the company's sales channels. To the contrary, small companies, if present, are overrepresented. Similarly, the observations in markets "crowded" with numerous competitors are likely more frequent than in monopolistic markets because CMB is used as a comparison tool. Also, we may guess a higher percentage of tourists among CMB users.
Lastly, the prices observed are monthly averages per OD pair, domain and company. Even if in most cases they are aggregated at the country or OD pair level, there exist cases of data points corresponding to a very limited number of observations, making a monthly average unreliable. For this reason we have removed all data points where an insufficient number of observations was available, for example see the missing values of "P5a – Price index by distance classes, by country and submarket".

1.3 GLOSSARY

In this section we provide a glossary of some specific terms used in the report.

Click: the basic observation refers to "clicks", i.e. to the redirection from a Checkmybus website domain or app, to the bus operator or to a third party reseller. The "click" and its price are considered as a proxy of a sold ticket, even if a limited rate (unknown to us and depending from the operator) of clicks that do not correspond to a sale, exists.

Domain: the website Checkmybus exists in different country versions, whose data are provided separately. The existence of a specific country domain indicates also a larger presence of CMB in the market and consequently a better representativeness of the data. The domains are:

domain	country
AT	Austria
CH	Switzerland
CZ	Czechia
DE	Germany
ES	Spain
FR	France
HR	Croatia
IT	Italy
NL	The Netherlands
PL	Poland
PT	Portugal
UK	United Kingdom

Submarket: each OD pair is classified into four relevant submarkets. In some cases, both airport connections are considered together due to the limited number of international airport connections.

	country origin = destination	country origin ≠ destination
city to city	Domestic intercity	Cross-border intercity
city to airport	Domestic airport	Cross-border airport

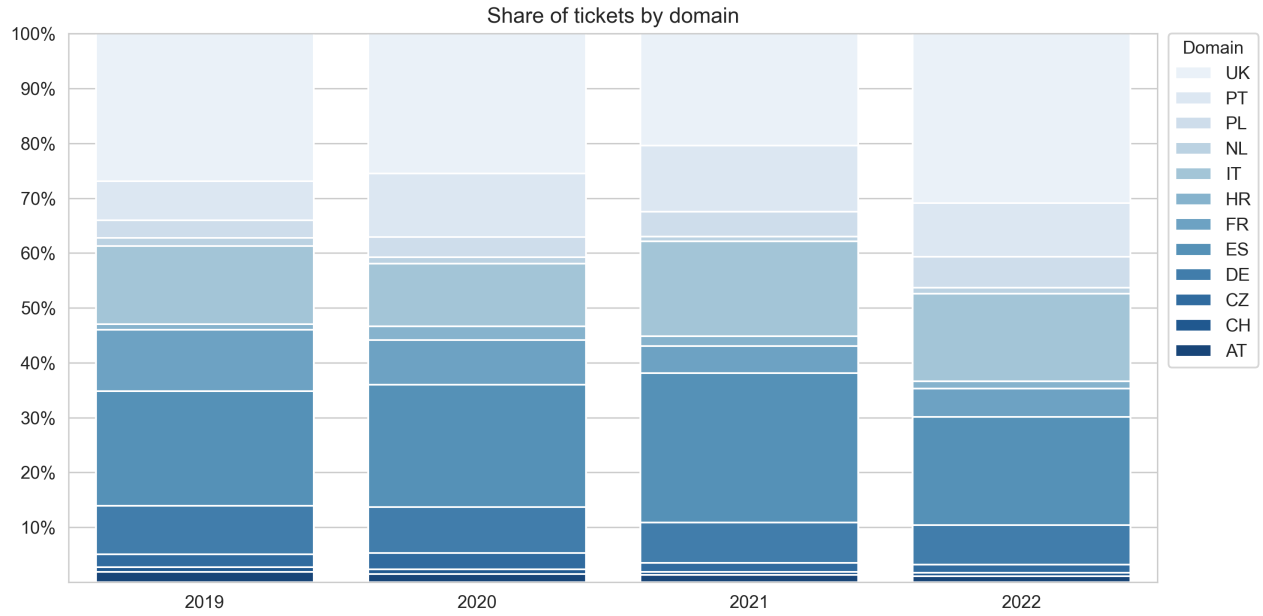
2 Profile of Users

The first group of elaborations deal with the profile of the logged users (a subset of total observations): web domain, somewhat matching with the "culture" of the customer, gender and age.

This dataset is available only for the period 2019-2022.

The first two indicators show a reasonable stability over time, except for some smaller countries where data could be too limited, and an increase of UK domain in 2022, probably linked to a rise of leisure tourism observed after Covid period. The UK data, in general, present different dynamics than the rest of Europe. The highest variability across European domains is, instead, among age classes.

U1 – CMB CUSTOMER BASE BY COUNTRY DOMAIN



The total number of transactions on European CMB websites has been split by country domain and language, representing the distribution of users on the platform. This indicator is just a proxy of the nationality of the coach users, for some reasons:

- The language does not necessarily represent the nationality or the residence of the user, in particular the English version, but just the website where the ticket was purchased.
- The result primarily reflects the different market penetrations of the ticketing platform in respective markets, which is not in principle homogeneous.

This said, the English/UK website is the one generating most of the traffic, followed by the Spanish, Italian and Portuguese ones. Interestingly, German website is just the 5th in terms of traffic. The reasons behind this distribution are various. The preponderance of the three mediterranean countries may be a mix of large touristic demand and fragmentation of the market among many mid and small sized companies. The German case is the opposite, with a clear dominance of one player (Flixbus), whose market power is such that traffic is mainly generated through own sales channels.

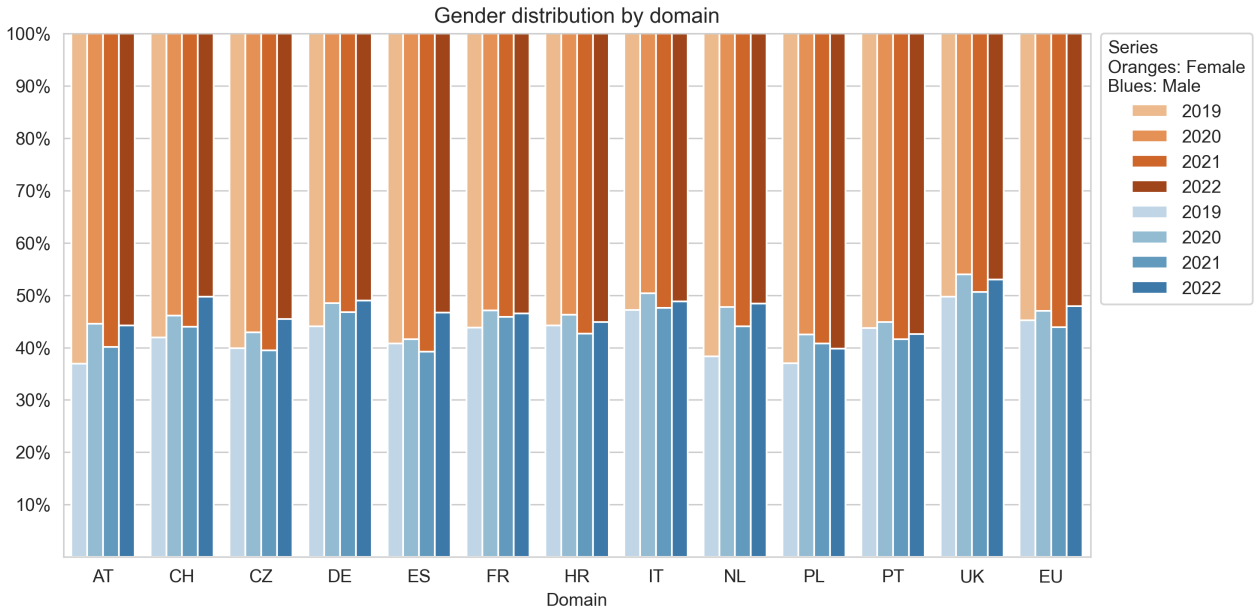
Between 2019 and 2022, Italian, Polish and Portuguese websites grew most, while French and German ones declined more.

Explanation of indicator

The total of unique purchases (the number of transactions, independently by the number of single tickets purchased by transaction) has been classified by CheckMyBus website ***language domain.***

The data does not include information on who travelled, but only on who searched/booked the trip. Also, it represents the language domain through which the ticket is searched/booked, not necessarily the nationality of the traveler nor the country of the trip. The English domain may include more heterogeneous users. The dataset is available only for the years 2019-2022 included.

U2 – GENDER OF USERS, BY CMB DOMAIN

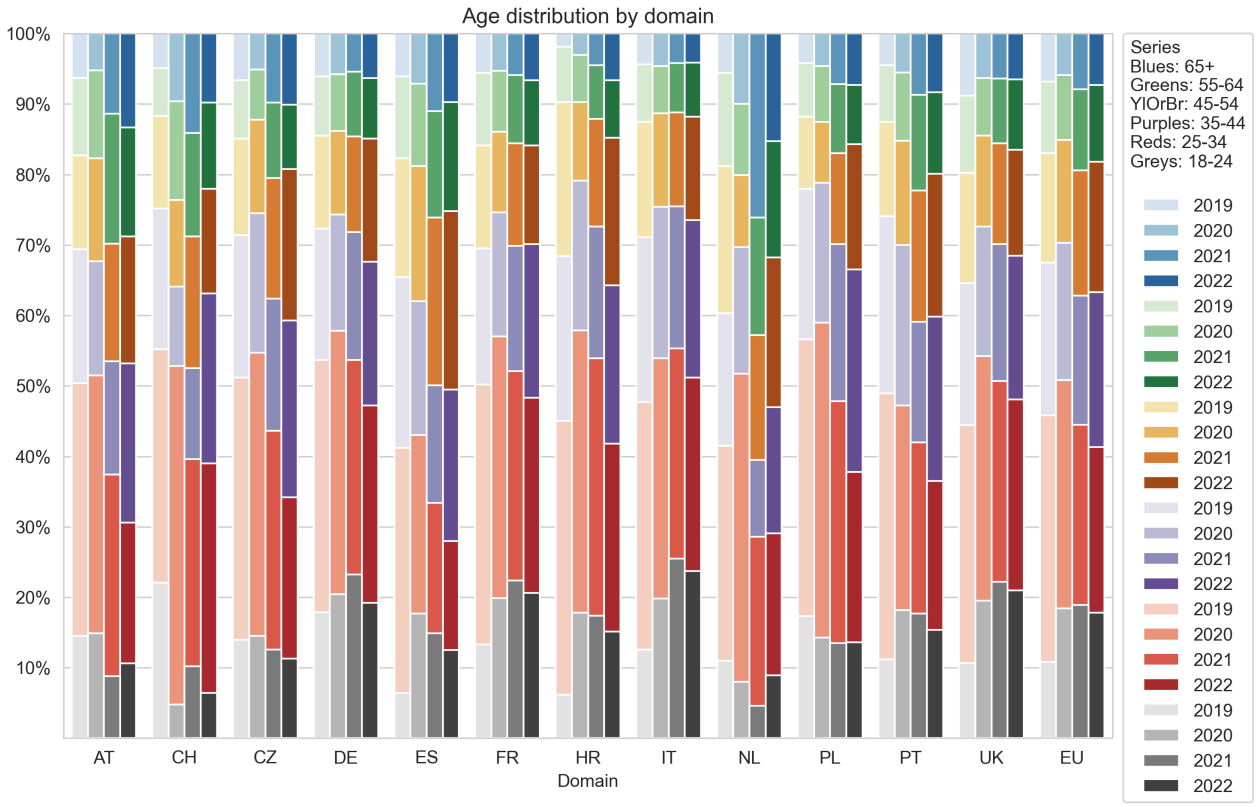


CMB users – and assuming a similar distribution also coach users – are, for a slight majority, men. Countries with the highest share of female purchasers are UK, Italy and The Netherlands. With respect to 2019 (pre-covid), the share of women has systematically increased in most of countries' domains.

Explanation of indicator

For every CheckMyBus website ***language domain****, we compute the* ***share by gender of users*** *that have searched for the ticket (based on unique purchases). The data does not include information on who travelled, but only on who searched/booked the trip. Also, it represents the language domain through which the ticket is searched/booked, not necessarily the nationality of the traveler nor the country of the trip. The English domain may include more heterogeneous users. The dataset is available only for the years 2019-2022 included.*

U3 - AGE OF USERS, BY CMB DOMAIN



Considering the entire Europe, the group of under 34 represents slightly less than 50% of users. However, the distribution by age classes is uneven across CMB domains. UK is the only one where younger grew, wtile in the rest of the continent we observe a general increse of older than 35, sign that the use of coaches is more and more spreading from a low-cost phenomenon for the young to an universal mean of transport.

Post-covid Italy is the country with the youngest population of CMB users (18-24 but also 18-34), followed by France, Germany and UK. In 2019 Germany and Poland were the youngest markets. The dynamics of younger purchasers has generally been positive for very-youngs (18-24), but negative or steady for the aggregate 18-34. The Netherlands has the smallest share of youngs post-covid, but also the largest of over 65 users.

Explanation of indicator

*For every CheckMyBus website **language domain**, we compute the **share by age of users** that have searched for the ticket (based on unique purchases). The data does not include information on who travelled, but only on who searched/booked the trip. Also, it represents the language domain through which the ticket is searched/booked, not necessarily the nationality of the traveler nor the country of the trip. The English domain may include more heterogeneous users. The dataset is available only for the years 2019-2022 included.*

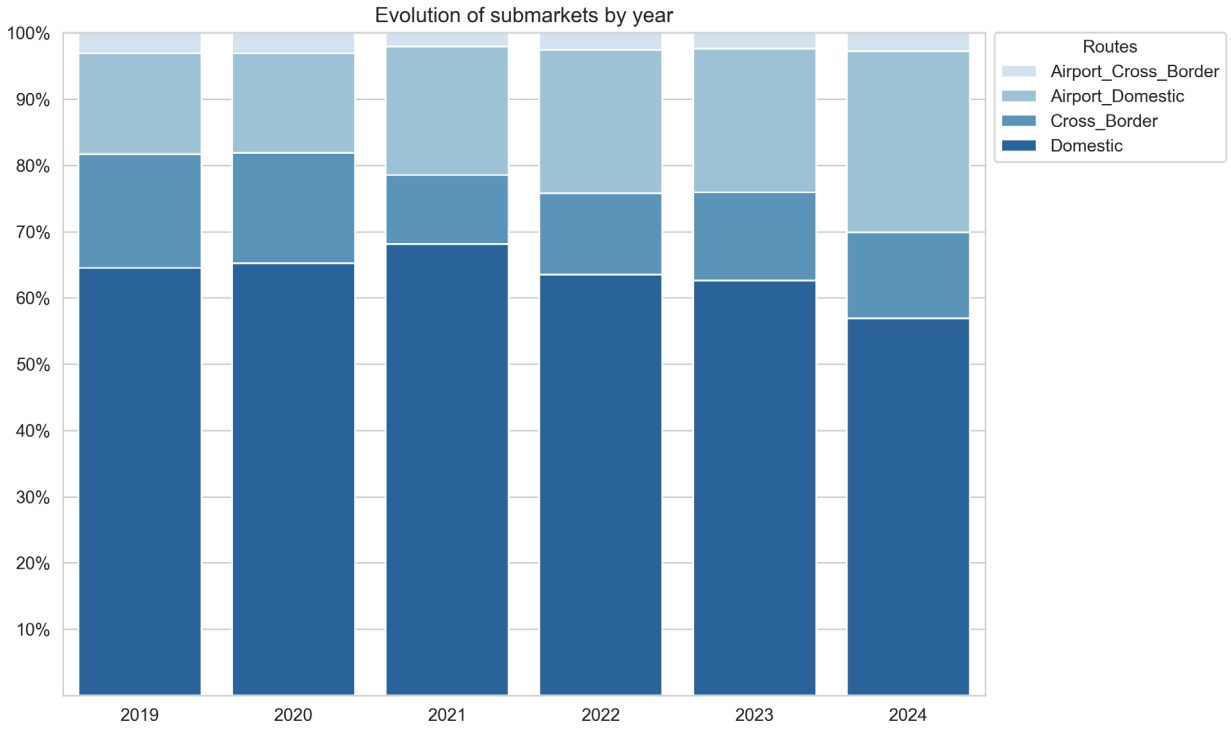
3 TRAFFIC VOLUMES

Price observations are accompanied by quantities, used to weight them in the aggregations. Despite temporal trends and absolute values are not presented here, both because of confidentiality and dependence on CMB market power, quantities can be elaborated in relative terms to provide interesting insights on the types of coach markets, seasonality, and geography of demand.

In this section we explore the market by submarkets, namely intercity and airport connections, domestic and cross-border. Seasonality and distance classes are explored both aggregately for Europe and for single countries. A specific analysis is dedicated to the evolution of network intensity, showing that in the post-covid the market has focused on main routes, probably ending a phase of "exploratory expansion" typical of newly liberalised markets. The market concentration is also studied.

The spatialisation of data has allowed us also to map the main cities, airport and OD pairs of the continent.

T1 – EVOLUTION OF SUBMARKETS, BY YEAR



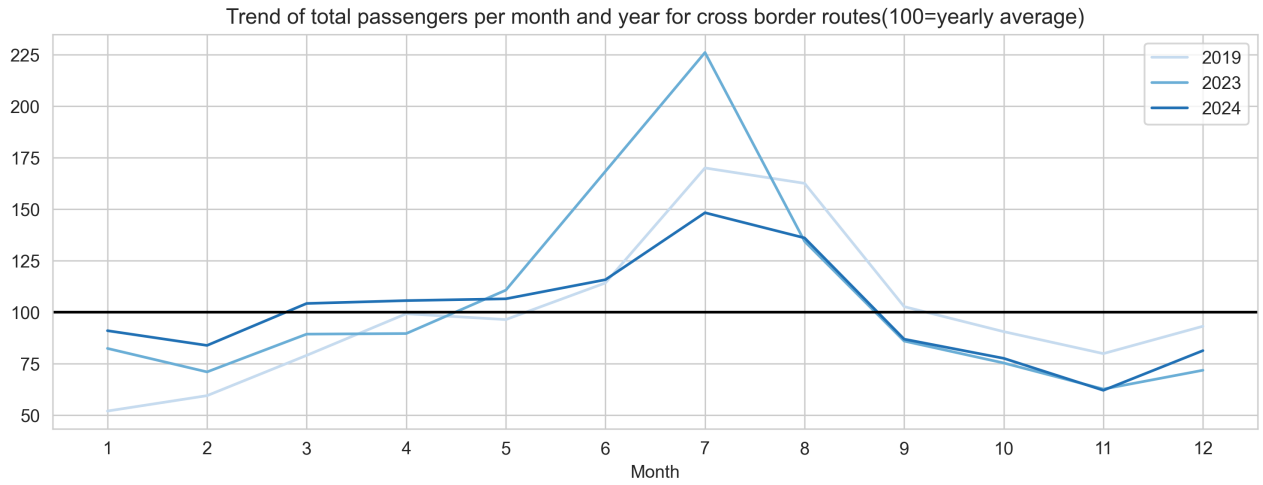
The chart classifies the whole European traffic in terms of clicked tickets into the four submarkets, since 2019.

The main evolution is the relative reduction of intercity traffic (from 81.7% to 69.9% including cross-border) and the corresponding increase of domestic airport connections (from 15.2% to 27.3%). This change has occurred in particular in 2024, as between 2020 and 2023 the changes were relatively limited. International traffic, heavily influenced by covid pandemics, has very slowly been recovering with respect to domestic segments since 2022, but it is still well below the 20% of the pre-covid era.

Explanation of indicator

The total number of tickets sold (quantity of seats) has been split into the four submarkets. The percentage reflects the weight of each submarket with respect to the total of each year. The trend is relative and not absolute because the total number of tickets reflects the number of carriers included in the sample and the variation of market penetration of Checkmybus itself.

T2 – Monthly distribution of total EU traffic, by year



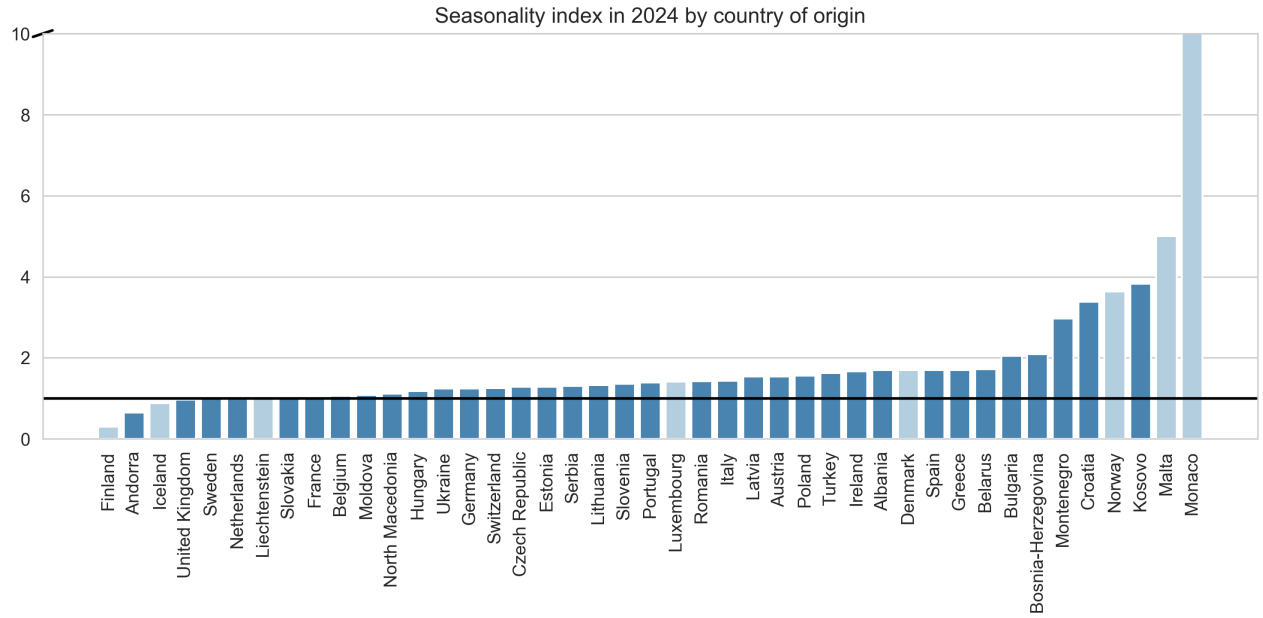
The charts represent the monthly traffic, normalised with the year's average, for the two submarkets of domestic and cross-border intercity routes (all airport connections are excluded here).

The series of 2019 and 2024 are relatively similar, with July and August being the peak months. Passengers in Europe are 40% more than the average for domestic and 50% for cross-border. Peaks in 201 were more pronounced, but similar. The main difference with the pre-covid era is the overturning of Spring and Autumn, wih the first being higher than average in 2024 and the latter in 2019. The months with least traffic in 2024 (Jan, Feb and Nov) are the same of 2019 but their reduction vs. the average is less pronounced. In general, we recognise a more stable market in 2024, with demand more homogeneous than in the past.

Explanation of indicator

The Index represents the total traffic of all 2019, 2023 and 2024 months, referred to the average of the same year (=100). For example, a value of 120 means that the month has 20% more traffic than year's average.

T3 – SEASONALITY INDEX, BY COUNTRY



The index evidences how much traffic is inbalanced between summer and winter months, assuming summer months representing the peak of traffic. This hypothesis holds for most of European countries, with some significant differences. The most unbalanced countries belong to the Balkans, where a mix of leisure and family tourism occurs during summer, and to countries characterised by significant summer tourism such as Spain or Turkey. The fact that other major touristic destination countries such as Italy or France are lower in ranking is determined by the presence of a strong non-touristic market all-year-round and/or to the reliance of tourism on alternative modes such as planes and trains.

Few countries have slightly less traffic during summer than winter, such as France, Netherlands, Switzerland or UK.

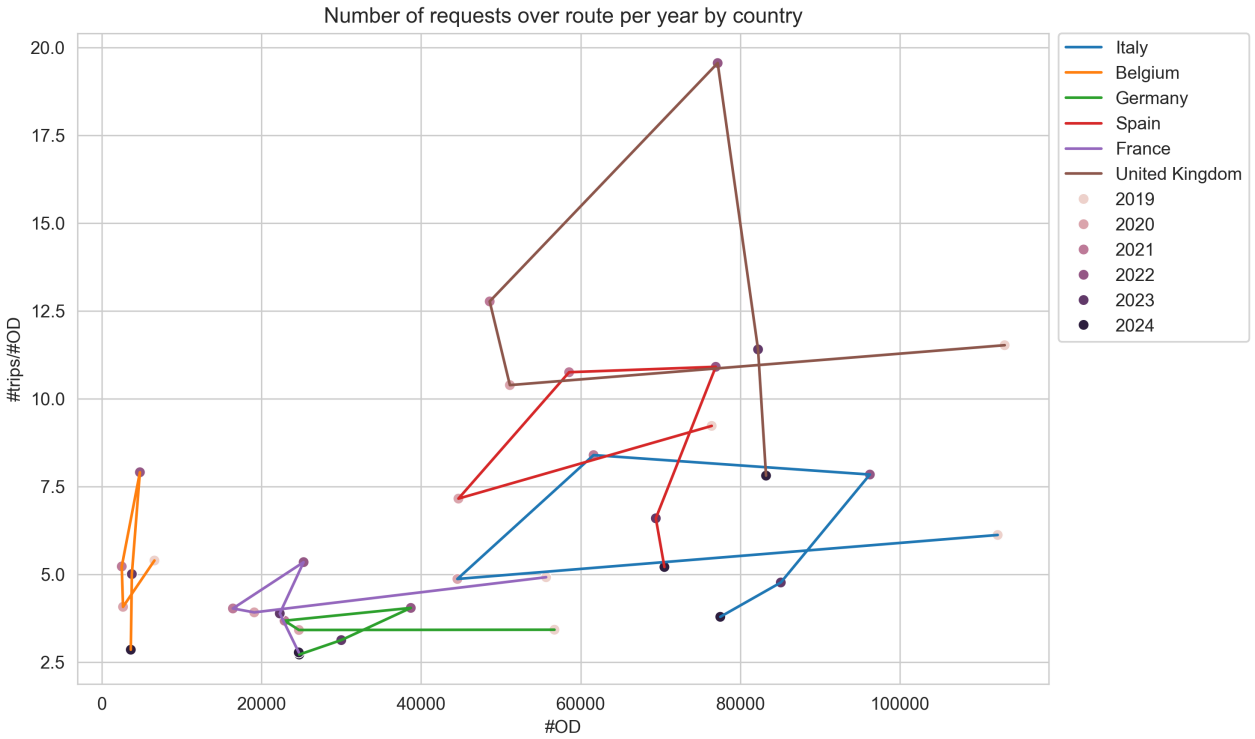
Explanation of indicator

The Seasonality Index is computed, for each European country, as the ratio between the total country generated traffic during peak months of June, July and August, and the total traffic during off-peal months of January, February and March.

$$SI_{country} = \frac{\sum_{OD} Q_{June} + Q_{July} + Q_{August}}{\sum_{OD} Q_{January} + Q_{February} + Q_{March}}$$

The indicator will normally be higher than 1, with summer months having more passengers than winter ones. In the chart, columns in light blue represent countries for which the dataset is poor of observations, suggesting possible data biases.

T4 – Traffic Intensity trend, by country



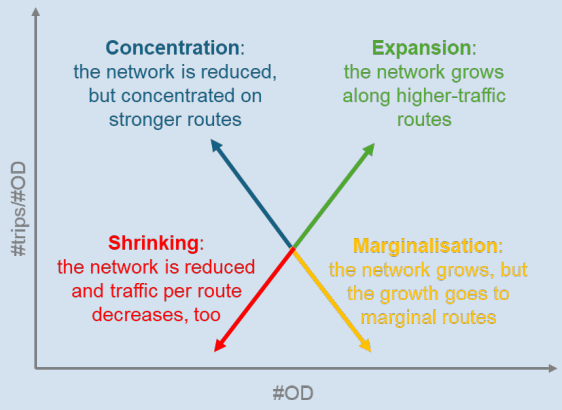
The evolution that the six main continental markets have experienced since 2019 is similar, but the amplitude of variations is very different. In all six countries, the market has shrank since 2019, having experienced both a decrease of searched OD pairs (proxying the "active" network) and the tickets sold per searched pair. The shrink has occurred between 2023 and 2024, as the dynamics during covid years was of concentration: a smaller network, but a higher intensity of purchases. The shrinking may be seen as a physiological phenomenon after a period of expansion, more sustainable in the long-run than a marginalisation of the network.

Explanation of indicator

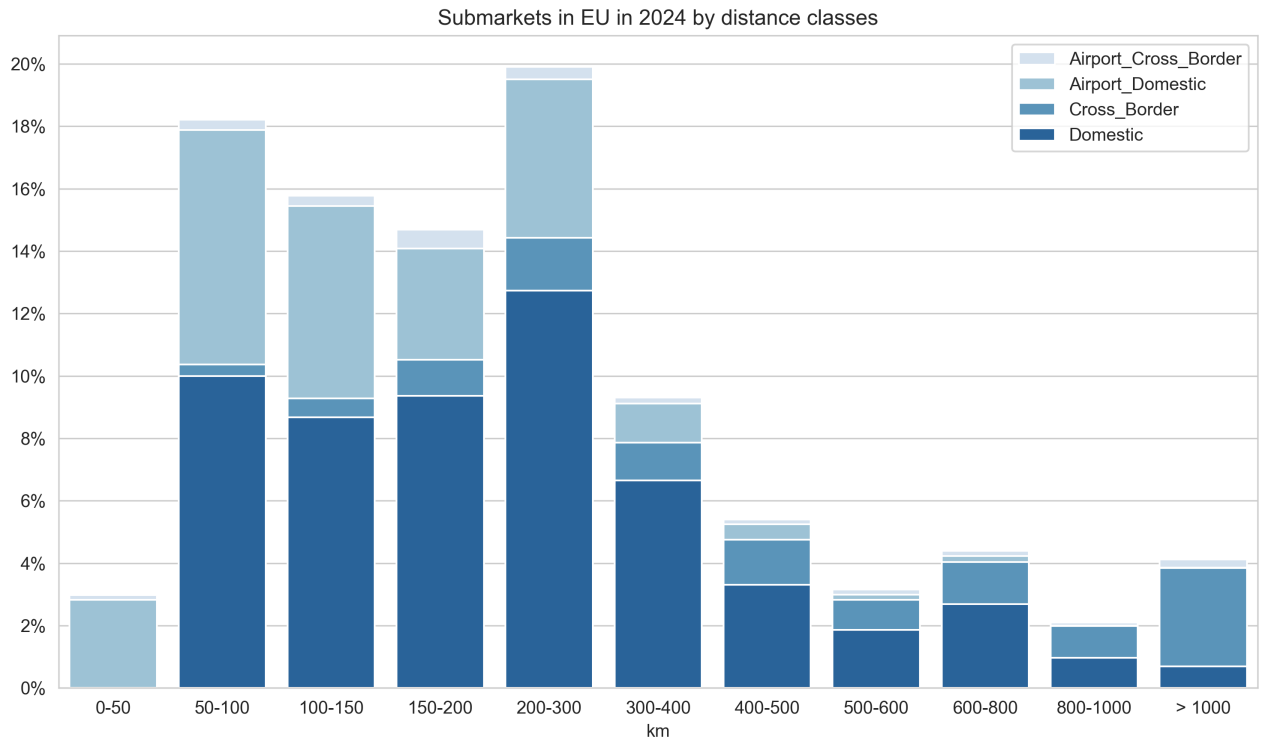
The chart plots two different indicators, that interpreted together represent the way country markets have evolved since 2019.

- *Number of OD pairs searched: the indicator computes the number of single ODs searched on CMB, with origin in the analysed country.*
- *Trips per OD pair: the indicator represents the average trips per searched OD pair. The larger the number, the more country traffic is concentrated in fewer (crowded) routes.*

The interpretation of the trend of the two indicators can be seen in figure.



T5 – SUBMARKETS DISTRIBUTION BY DISTANCE CLASSES



The distribution of the four different product classes varies in funcion of the distance. Airport connections are concentrated in the 50-300km range and become marginal for longer routes. For domestic intercity routes the peak is at 200-300 km, but the distribution is quite homogeneous between 50 and 400km, that represents the vocational market for intercity coaches.

The distribution of cross-border services depends on the size of countries. The largest share is for pairs of more than 1000km, but we observe local peaks at 150-300km or 400-500km, determined by the connections from smaller states (e.g. Belgium-France or Czechia-Austria).

This distribution has changed quite significantly since 2019. In particular, the airport segment has grown substantially (e.g. 100-150km doubled from being the 2.9% of the entire market, to the 6.2%) within its entire vocational range (0-300km). Symmetrically, the intercity segment has reduced, but just in the very-long relations (e.g. 600-800km domestic passed from 5.5% to 2.7%). Domestic longest journeys (>1000km) have declined substantially, from 2.1% to 0.7% of the total.

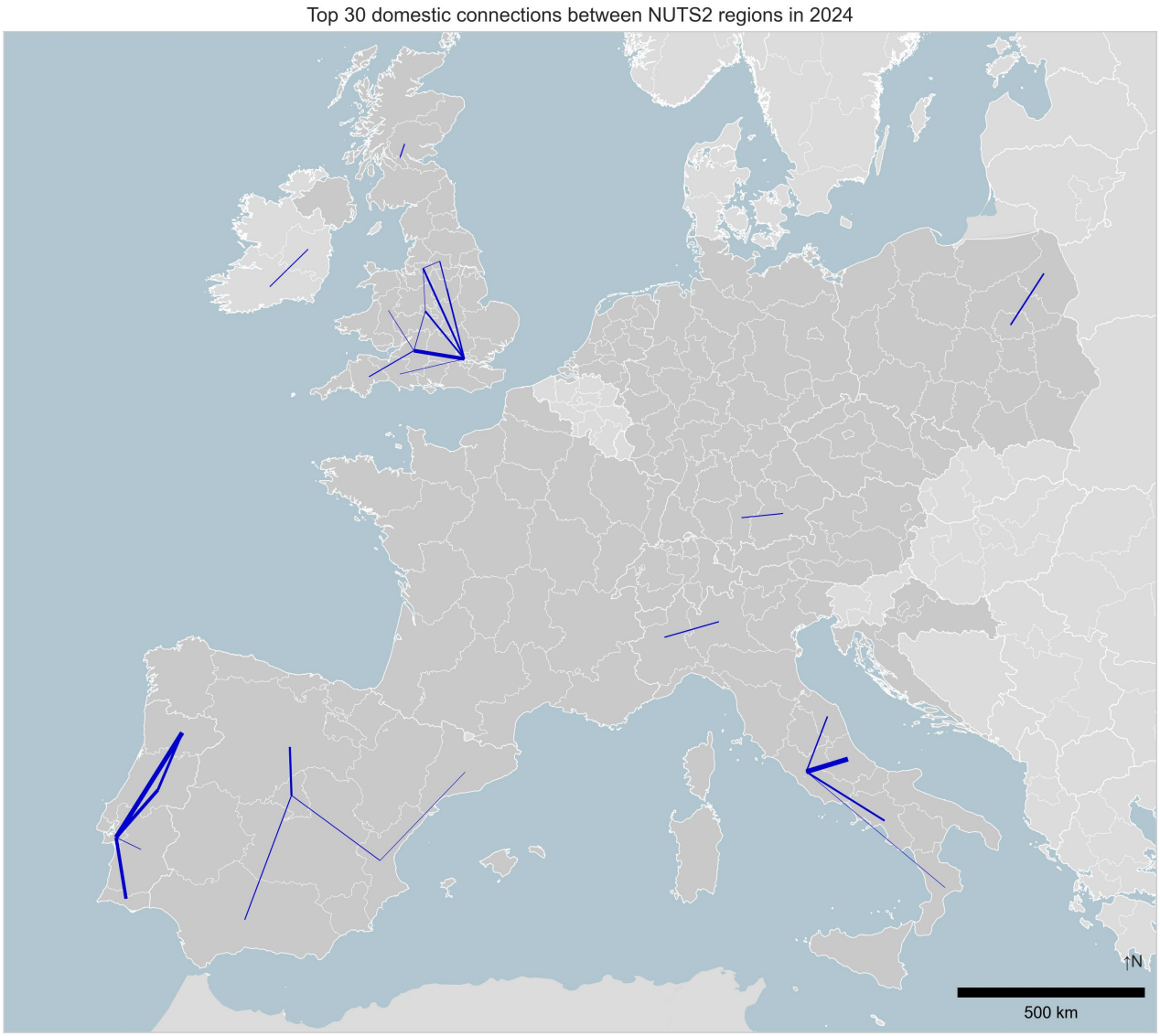
The tendency is therefore a concentration of passengers in the short-mid distance range, with an increasing role of airport connections.

Explanation of indicator

Assumed 100% the total of "clicked" tickets in Europe, the chart represents the shares of the groups of submarkets and distance classes. For example, 10% means that 1 ticket out of 10 in Europe is a domestic connection on a distance of 50-100km.

To exclude local public transport, that is locally present in the dataset, we erased any intercity connection below 50km. The same filter for airport routes has been set at 20km, thus aiming to exclude just the local connections. Of course, this filter does not guarantee perfection, as there can well be open-access services shorter than 50km or regional PSO connections that are longer.

T6 – TOP-30 EUROPEAN DOMESTIC OD PAIRS

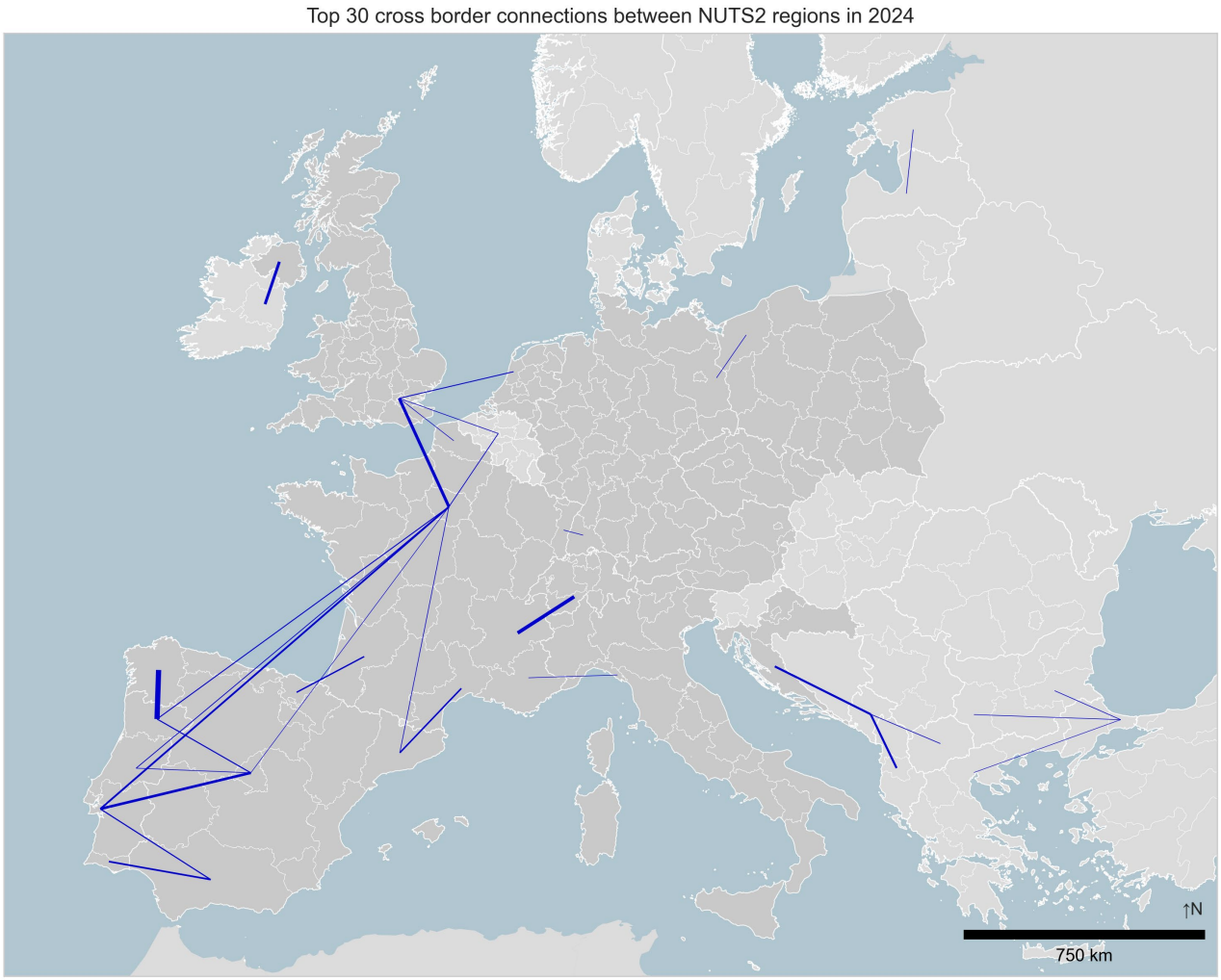


The map shows the main continental local markets for domestic connections (including airport ones). Portugal towards Lisbon and Porto, England towards London, and Central Italy towards Rome represent the largest European markets for coaches. Most of them fall in the mid-range of distances, but there are also some long connections (e.g. Calabria to Rome or Seville to Madrid).

Explanation of indicator

The map is created by grouping all geolocated city-to-city OD pairs, according to their NUTS-2 region. Consequently, a segment will include more routes connecting the two respective regions. All domestic connections are included (intercity and airport)

T7 – Top-30 European cross-border OD pairs



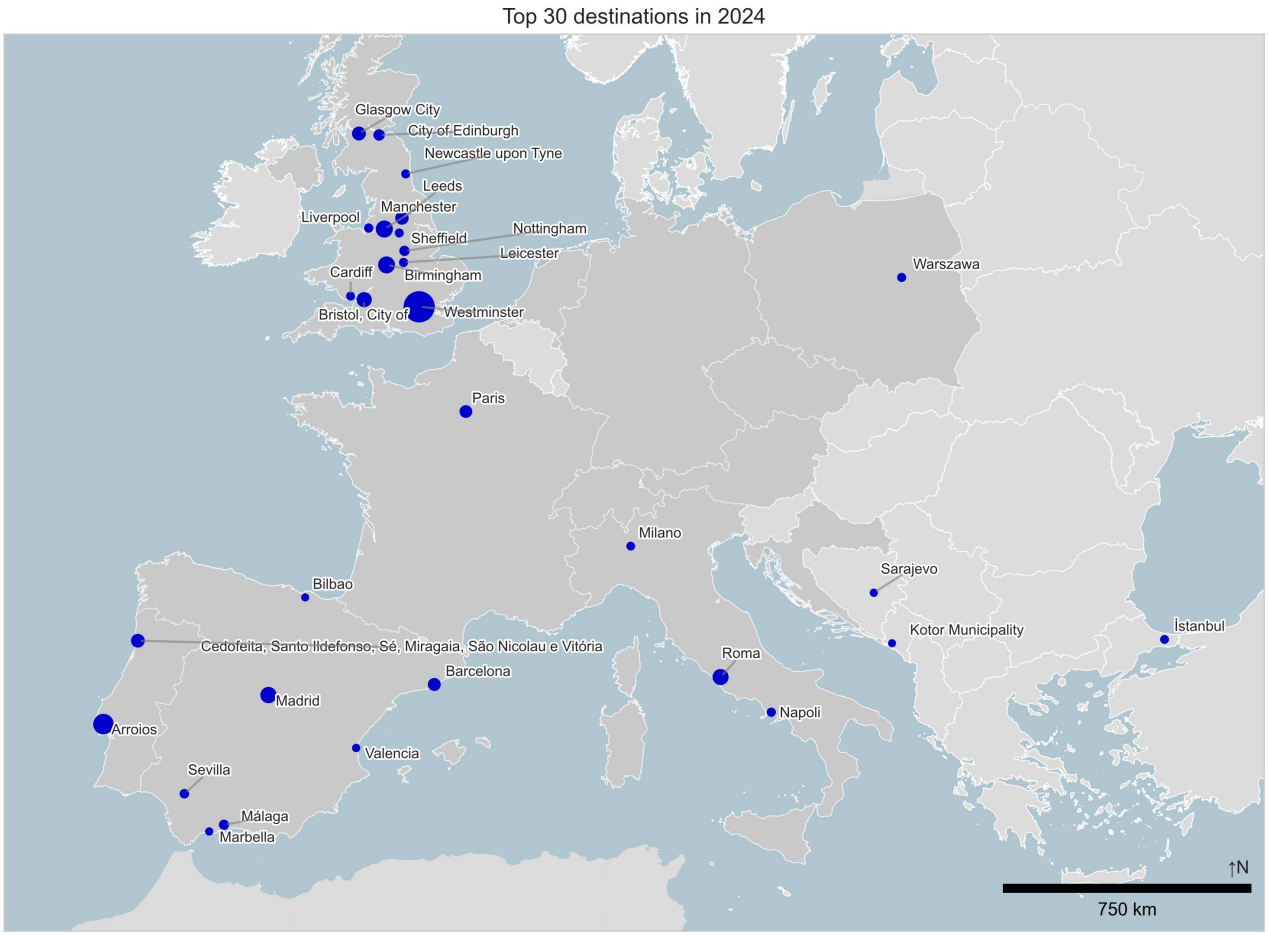
When looking at cross-border markets, the largest ones are from Geneva region to Rhone-Alpes in France and from Galicia to Porto. In both cases, they involve neighbouring regions with significant cross-border relations. However, most of top-30 international routes involve Paris and more limitedly Madrid and London. Interestingly, too, Portugal is the origin of many of these pairs, sign that coach works as a substitute for rail for touristic and leisure market.

Another group of large OD pairs can be seen in the Balkan region, again showing a role of the coach when train is ineffective.

Explanation of indicator

The map is created by grouping all geolocated city-to-city OD pairs, according to their NUTS-2 region. Consequently, a segment will include more routes connecting the two respective regions. All cross-border connections are included (intercity and airport)

T8 – TOP-30 EUROPEAN CITY DESTINATIONS



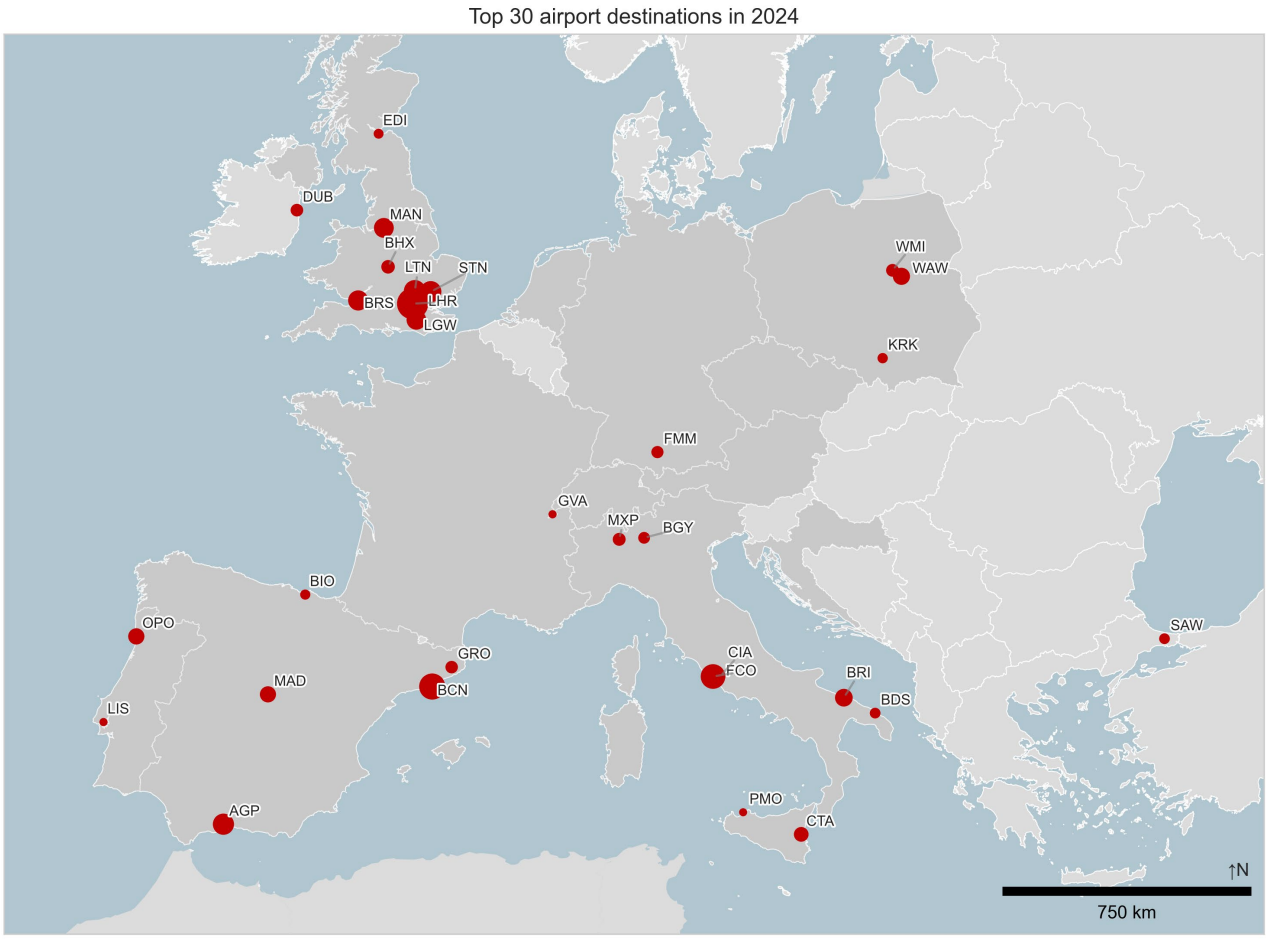
Most of top-destinations are in UK, where coach market is very developed and all buses operate under open-access market rule. Out of UK, the main destinations are usually large cities (Porto, Lisbon, Madrid, Barcelona, Rome, Paris, Warszawa, etc.), but with some exceptions, such as Sarajevo, Marbella or Kotor. Interestingly, no city in Central Europe belongs to the top-30, sign of the predominant role of rail in large markets such as Germany or Belgium or Austria.

Explanation of indicator

The map depicts the largest cities of origin of booked trips, in one entire year. All intercity services are included.

The name shown in the map is the one of the LAU, that in some cases is smaller than the city (e.g. Arroios is a central neighborhood Lisbon).

T9 – Top-30 Airport destinations



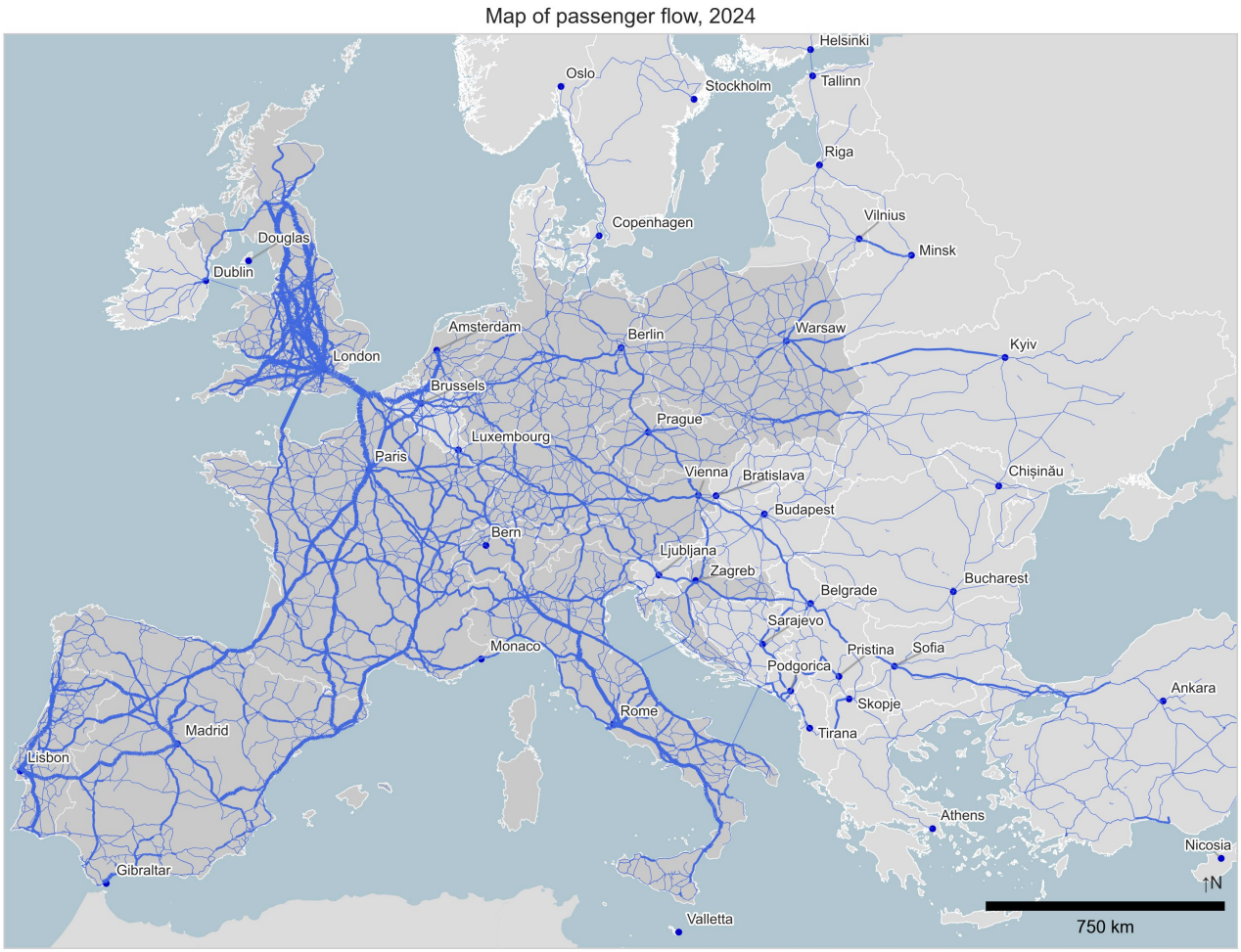
The map of main European airports in terms of coach passengers shows that the phenomenon of open-access airport connections is very significant especially in UK, Spain, Italy and Poland. Again, almost no airport in Central Europe belongs to the top-30, being probably connected via rail.

Explanation of indicator

The map depicts the largest airports of origin of booked trips, in one entire year. All airport services are included.

The name shown in the map is the IATA code of the airport.

T10 – EUROPEAN PASSENGERS FLOWS



The map represents the entire European passengers flows that used Checkmybus platforms, assigned to the real road network.

The overall picture is extremely more homogeneous than any other similar map representing rail or air flows: coach system is more pervasive and less polarised, differently from rail that is significantly more concentrated on few main corridors.

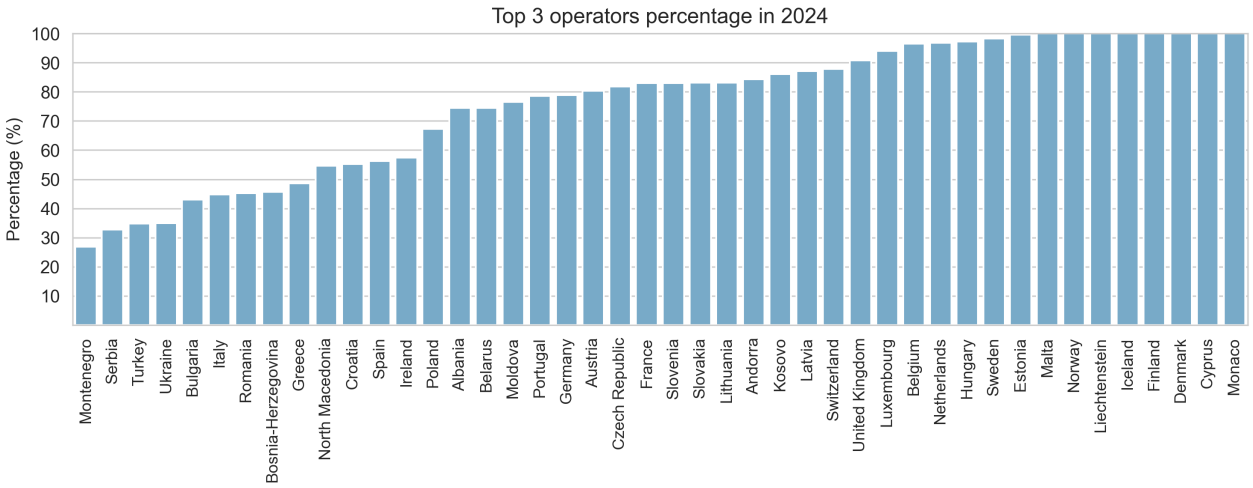
UK has the highest density – likely for the absence of regional PSO that makes any bus company virutally present on the platform. Portugal, Spain, France and Italy include the corridors with the highest density of passengers, while the remaining of Central and Eastern Europe is slighlt less dense.

Explanation of indicator

The total yearly quantity of each OD pair has been assigned to the road network (highways and trunk network) according to the routing performed to compute the distance. The routing does not always match with the real path followed (that is unknown), especially when alternative routes exist, and should then be considered as a general overview.

The map excludes all trips below 50km (intercity market) and 20km (airport market).

T11 – MARKET CONCENTRATION



The chart represents the degree of concentration of European coach market in 2024, in terms of market share (on Checkmybus) of the three main operators per country.

Iperconcentrated markets mainly belong to small markets (or where CMB is barely present) and/or small-sized countries (where long-distance coach market is negligible). The main exceptions among mid-sized or larger markets are The Netherlands, Belgium and especially UK, with a concentration of the top-3 above 90%.

The other large countries with significant coach market, have generally a share of top-3 companies ranging between 60% and 90%. Spain, but particularly, Italy are the exceptions, where a large market cohexists with a limited dominance of top players.

Countries with the lowest concentration tend to be in the East and Balkan areas (plus Turkey), with a very high market fragmentation.

Two caveats are necessary:

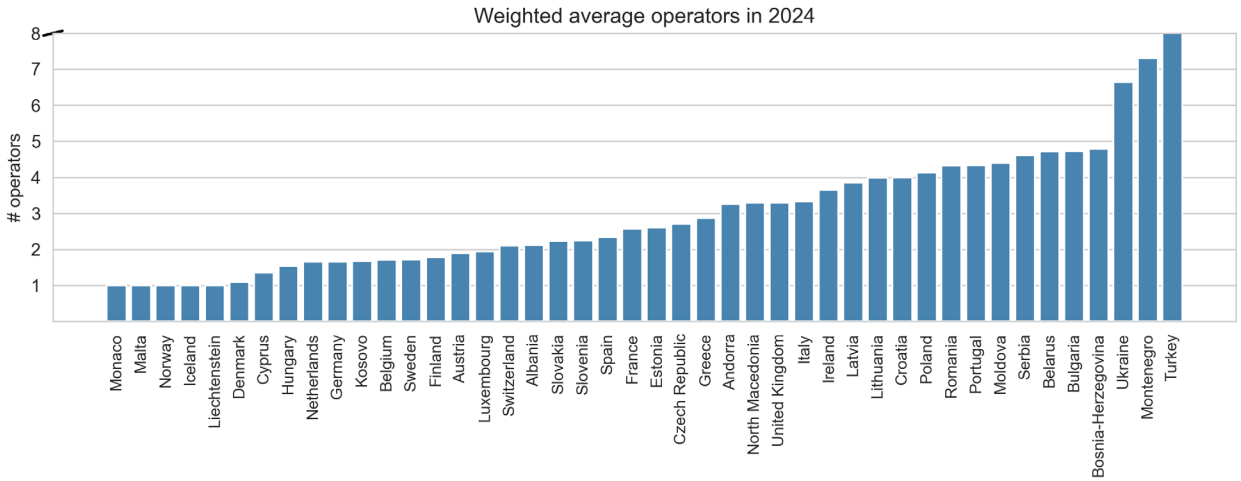
1. Large brands such as Flixbus, are likely underrepresented vs. smaller operators, given their ability to reach directly the customer without an intermediary platform
2. It must be also noted that this description includes also short-distance market connections such as airport buses, very relevant in terms of turnover, but representing a small share of km driven with respect to intercity market. This explains for example the figure for Germany, where the second and third operators are airport shuttles.

Explanation of indicator

For each country of origin, the top-3 companies in terms of number of sold tickets are selected. The indicator represents the share of these three companies with respect to the entire country market.

All submarkets (intercity, cross-border and airport) are included. Tickets are counted as one independently from the length of the trip.

T12 – WEIGHTED AVERAGE OPERATORS



Another way to measure market concentration is the average weighted number of operators per route. A higher value means that the passengers of that country more often can chose among many brands for their journeys.

Countries with the highest number of average operator per route are again the Eastern ones. For example, in Poland – a country with a significant penetration of Checkmybus – there are on average 4 companies per route.

Among largest markets, the ones with less options for travellers are Spain and Germany, the first because non domestically liberalised and still operating under the concession regime, the second because of the domincance of Flixbus. Interestingly, other liberalised markets such as Italy or France present a much higher degree of competition (with 3.3 and 2.5 average companies per route, respectively).

Explanation of indicator

For each route we counted the number of operators present, independently from their relative market share on the route. Then, the number of operators per route has been computed by country of origin by weighing with the number of tickets per route. Example:

	Quantity	# Operators
route 1	1000	3
route 2	100	1
average		**2,82**

All submarkets (intercity, cross-border and airport) are included.

4 Prices

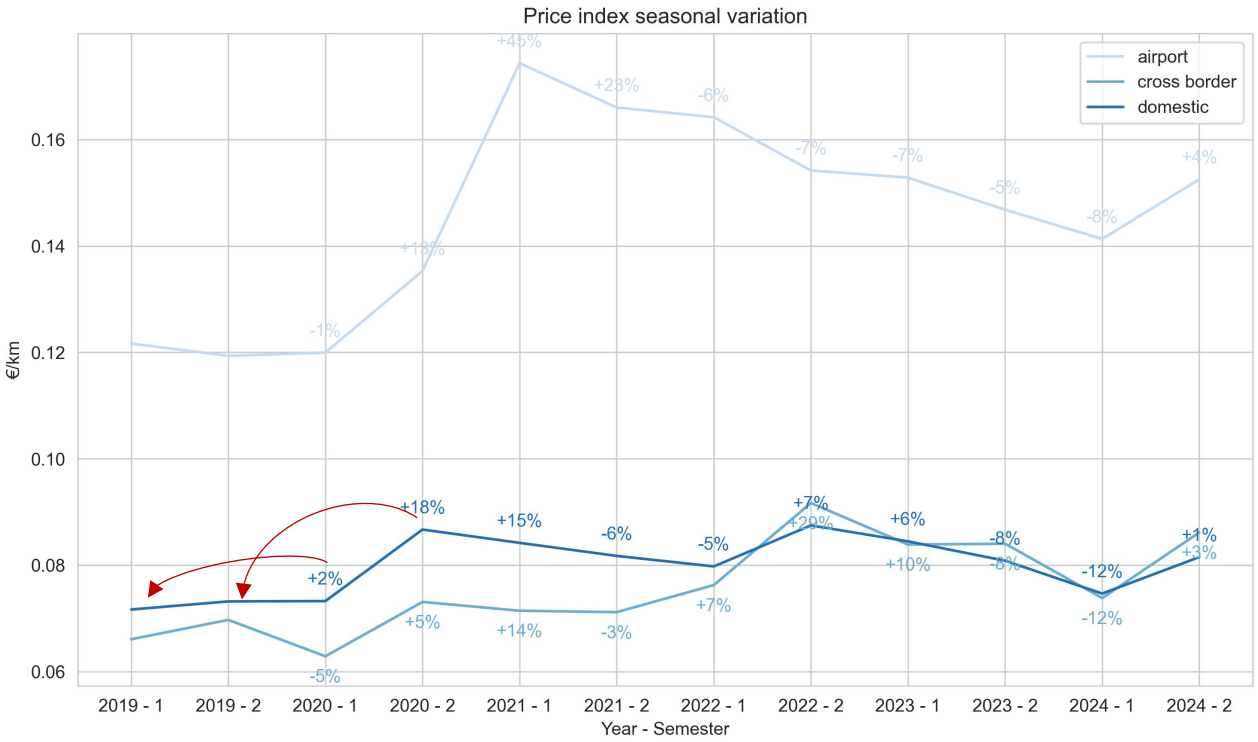
The core of the report are prices observations. All prices are normalised with travel distance, given the clear negative correlation with it, producing our Price Index. Price observations can be consistently observed over time, since 2019, and on a monthly basis depending on seasonality of demand.

It is worth remembering that the Price Index is not exactly the actual revenue because the platform is not directly selling tickets, but the price "clicked" by the traveller before being redirected to the operator's platform to finalise the purchase.

Prices heavily depend on the type of bus service, that we defined as submarket. In particular, airport connections cost significantly more than normal intercity connections, sign of a higher willingness to pay of users for this kind of service. Price Index can be also compared across countries, provided that distance differences are controlled (as in "P4 – Monthly EU Price Index, by submarket").

Foto di Claudio Schwarz su Unsplash

P1 – EU PRICE INDEX TREND, BY SUBMARKET



The chart shows the trend of prices in Europe, from 2019 to 2024. Overall, prices have grown quite substantially (+15%) in five years (2024 vs. 2019), but:

- ✓ 2024 is on average slightly lower than 2023 (-3%), due to the steep reduction of the first semester.
- ✓ the moment of growth in the three submarkets have been quite different;

The domestic intercity market, that is the one that remained more aligned with 2019, saw the growth already in 2020 but then maintained a similar price level until today. The cross-border market remained relatively stable until the beginning of 2022, but boomed in the 2nd semester of 2022 (+29% year on year). The airport connections are the ones that grew the most during covid (+45% in year on year 2021 vs 2019/20) but then slightly declined by 5 to 8% every year until 2nd semester of 2024.

The level of price of airport routes is approximately double than that of "normal" intercity routes.

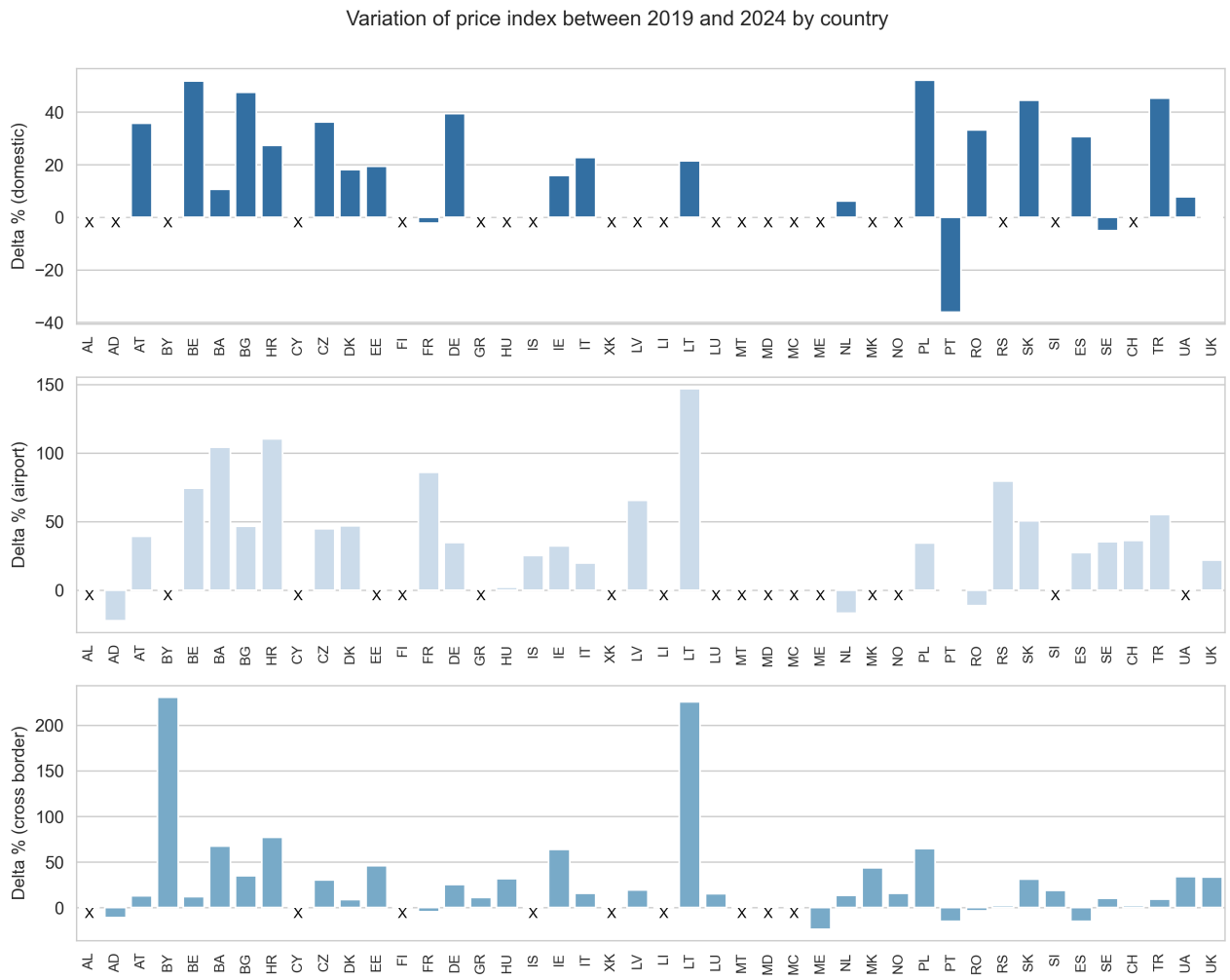
Explanation of indicator

The Price Index is the weighted average of monthly average prices observed by Checkmybus. The price refers to "clicks", that is tickets actually selected by the user and redirected to the e-commerce platform. The weighting is based on purchased quantities, irrespective of the number of unique transactions (a transaction may include more than one seat).

The indicator is computed by year, semester and submarket (intercity domestic, intercity cross-border, airport routes).

The percentages in the chart refer to the variation with respect to the previous comparable semester. E.g. semester 1 of year 2022 vs. semester 1 of 2021.

P2 – EU PRICE INDEX VARIATION, BY COUNTRY



The dynamics of prices has not been the same across European countries. The chart details the overall variation between 2019 and 2024. The variation can be due to many different causes: changes in market concentration, changes in route length mix, appearance or withdrawal of specific operators, etc.

Among the largest markets, France and Italy are the ones that grew less. France, in particular, had a negative dynamic in the intercity market, but experienced a significant growth in airport market. Germany, Austria and Spain grew by 30%-40% in the domestic markets.

Explanation of indicator

The indicator expresses the variation in percentage of the Price Index between the last year of analysis and the reference year, by country and submarket. The chart reports "X" for groups with an insufficient number of observations in both years.

P3 – EU PRICE INDEX, BY DISTANCE CLASSES AND SUBMARKET

The average price is influenced by the mix of distance classes and its change over time. For this reason, a correct comparison of price trends must refer to homogeneous distance classes. In the chart we observe a clear dependency of unit price with distance, with functions tending asymptotically to the marginal cost. For domestic intercity routes, prices have grown very little from 2019 to 2024, and more in the short-mid ranges than in the long ones.

Airport and cross-border routes, instead, have increased significantly.

Airport routes, i.e. trips starting or ending at an airport, guarantee a revenue premium to the operator, with prices that are around the double of similarly long domestic intercity routes.

The same holds, in 2024, also for cross-border connections, whose prices are perfectly comparable to airport ones. However, this was far from true in 2019, when cross-border connections were slightly more expensive than domestic ones.

This mismatch can be explained with the different degree of contestability of the three markets, with the domestic one much more exposed to the competition of rail below 500km and with HS and aviation above such threshold, than airport and cross-border connections. The degree of intramodal competition, instead, could be appreciated only at the scale of the OD pair.

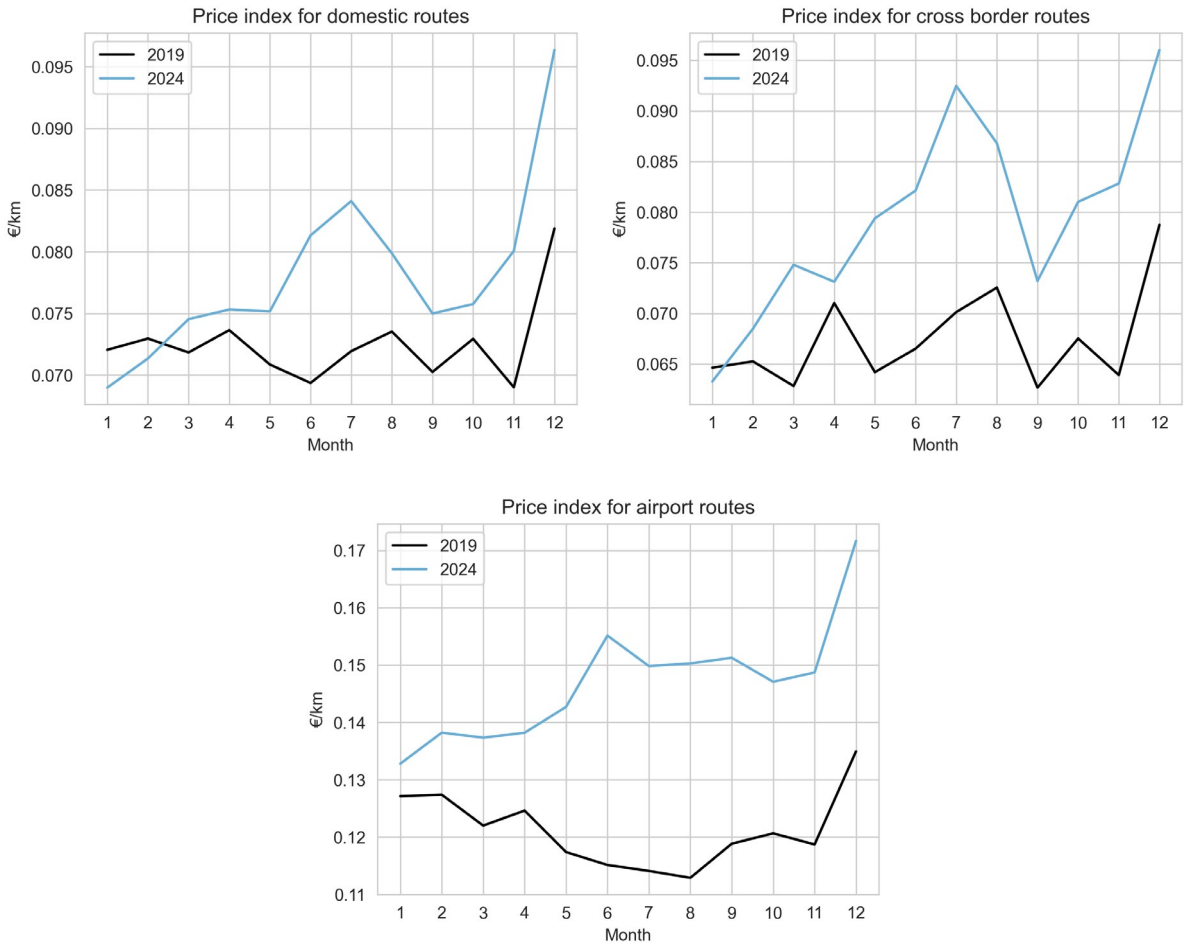
Explanation of indicator

The Price Index is the weighted average of monthly average prices observed by Checkmybus. The price refers to "clicks", that is tickets actually selected by the user and redirected to the e-commerce platform. The weighting is based on purchased quantities, irrespective of the number of unique transactions (a transaction may include more than one seat).

The indicator is computed by submarket (intercity domestic, intercity cross-border, airport routes) and by distance classes.

The chart shows both the year of analysis and 2019 (with dashed lines) as a reference.

P4 – Monthly EU Price Index, by submarket



Price trends were characterised before covid (2019) by a very limited seasonality, except for Christmas period when a growth of approx. 1€cent/km could be observed.

During 2024, the pattern differs significantly. We observe a broader seasonality of prices, both for domestic and cross-border routes, with July and December systematically more than 20-30% more expensive than in January.

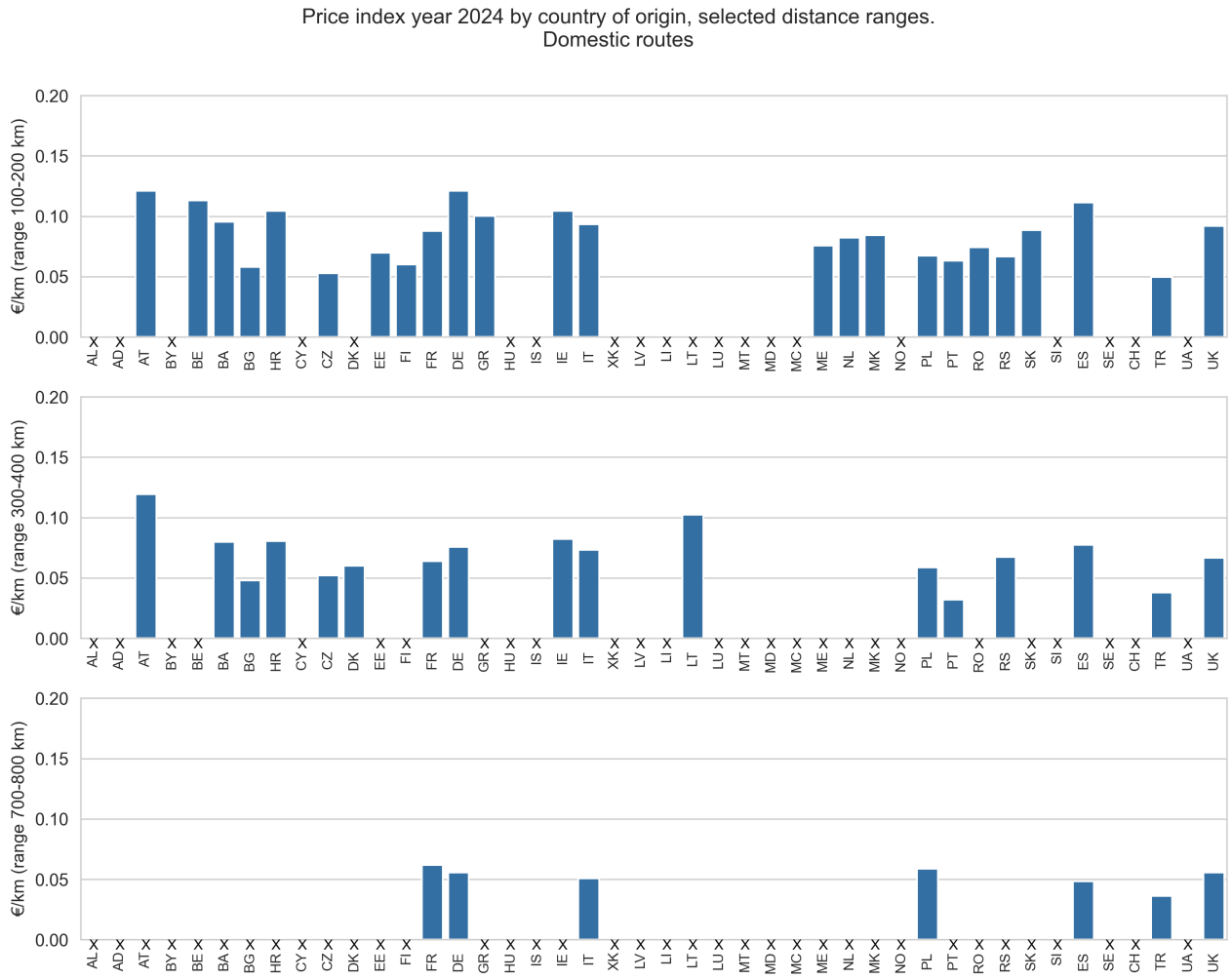
Airport routes, instead, show a low seasonality in Summer and grow (as they did in 2019) in December and a significantly higher price level. Off-peak prices are concentrated between January and April, when leisure trips become more numerous.

Explanation of indicator

The Price Index is the weighted average of monthly average prices observed by Checkmybus. The price refers to "clicks", that is tickets actually selected by the user and redirected to the e-commerce platform. The weighting is based on purchased quantities, irrespective of the number of unique transactions (a transaction may include more than one seat).

The indicator is computed by year, month and submarket (intercity domestic, intercity cross-border, airport routes).

P5A – PRICE INDEX BY DISTANCE CLASSES, BY COUNTRY AND SUBMARKET



To compare prices across European countries in an unbiased way, we must compare routes of similar distance. In the chart we considered three representative distance ranges: 100-200km, 300-400km and 700-800km. Missing values refer to countries without routes of such length or with an insufficient number of observations to be considered as reliable.

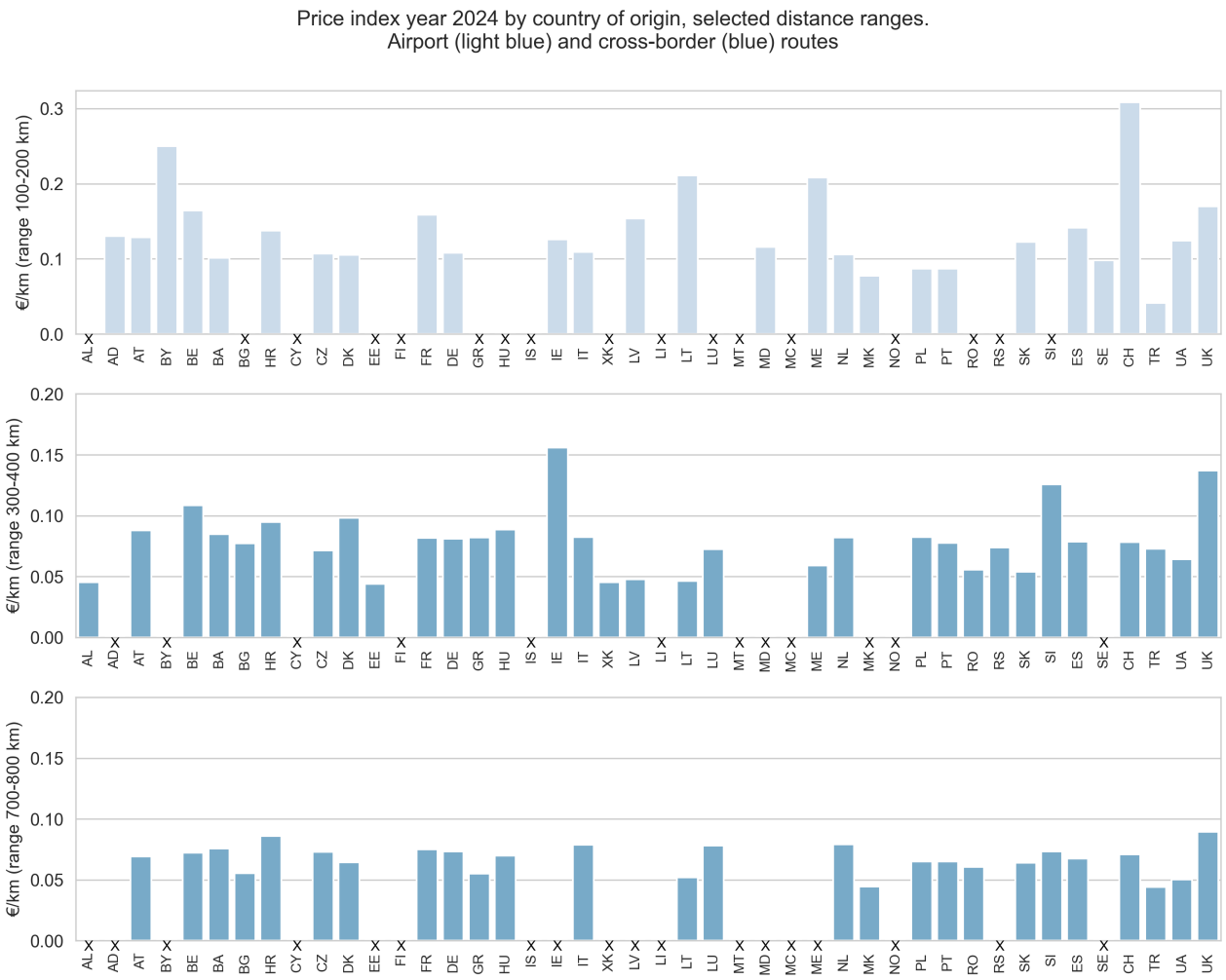
The price differences are quite broad, also considering the different PPPs, and some reveal interesting patterns. For example, the highly competitive market in Czechia guarantees users with prices that are significantly lower than peers such as Slovakia. In Germany, prices are higher than France for shorter routes but cheaper for longer ones.

Explanation of indicator

The Price Index is the weighted average of monthly average prices observed by Checkmybus. The price refers to "clicks", that is tickets actually selected by the user and redirected to the e-commerce platform. The weighting is based on purchased quantities, irrespective of the number of unique transactions (a transaction may include more than one seat).

The indicator is computed by submarket (intercity domestic, intercity cross-border, airport routes), by distance classes and country. Values are not corrected for PPP (purchasing power parity)

P5B – PRICE INDEX BY DISTANCE CLASSES, BY COUNTRY AND SUBMARKET



A similar analysis is performed for airport routes and cross-border routes.

Among airport connections we observe high prices in Eastern Europe, probably due to the diffusion of small, fragmented and semi-chartered services, in contrast with Western Europe liner connections. While on a Europe basis airport connections are more costly than normal intercity routes, this is not necessarily true everywhere and for every distance threshold. For example, in Germany airport connections of 100-200km are slightly cheaper than their intercity peers.

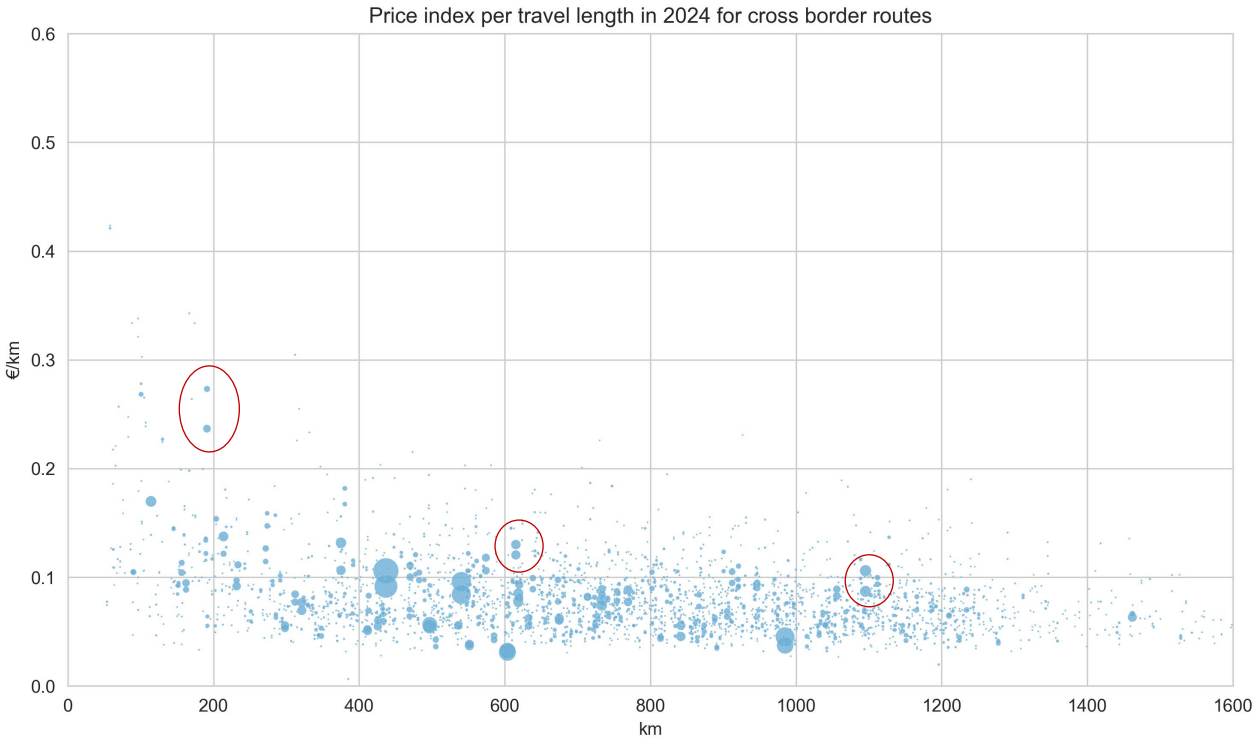
Long cross-border connections prices are considerably similar across countries, sign that country differences and presence of PSO are blurred by a real unique market of productive factors. For shorter routes, among outliers, Ireland and UK suffer of higher prices due to expensive and slow ferry segments.

Explanation of indicator

The Price Index is the weighted average of monthly average prices observed by Checkmybus. The price refers to "clicks", that is tickets actually selected by the user and redirected to the e-commerce platform. The weighting is based on purchased quantities, irrespective of the number of unique transactions (a transaction may include more than one seat).

The indicator is computed by submarket (intercity domestic, intercity cross-border, airport routes), by distance classes and country. Values are not corrected for PPP (purchasing power parity)

P6A – PRICE INDEX FUNCTIONS, NON-AIRPORT ROUTES



The chart visualizes all European non-airport routes, clarifying the relations between distance, price and size of the market.

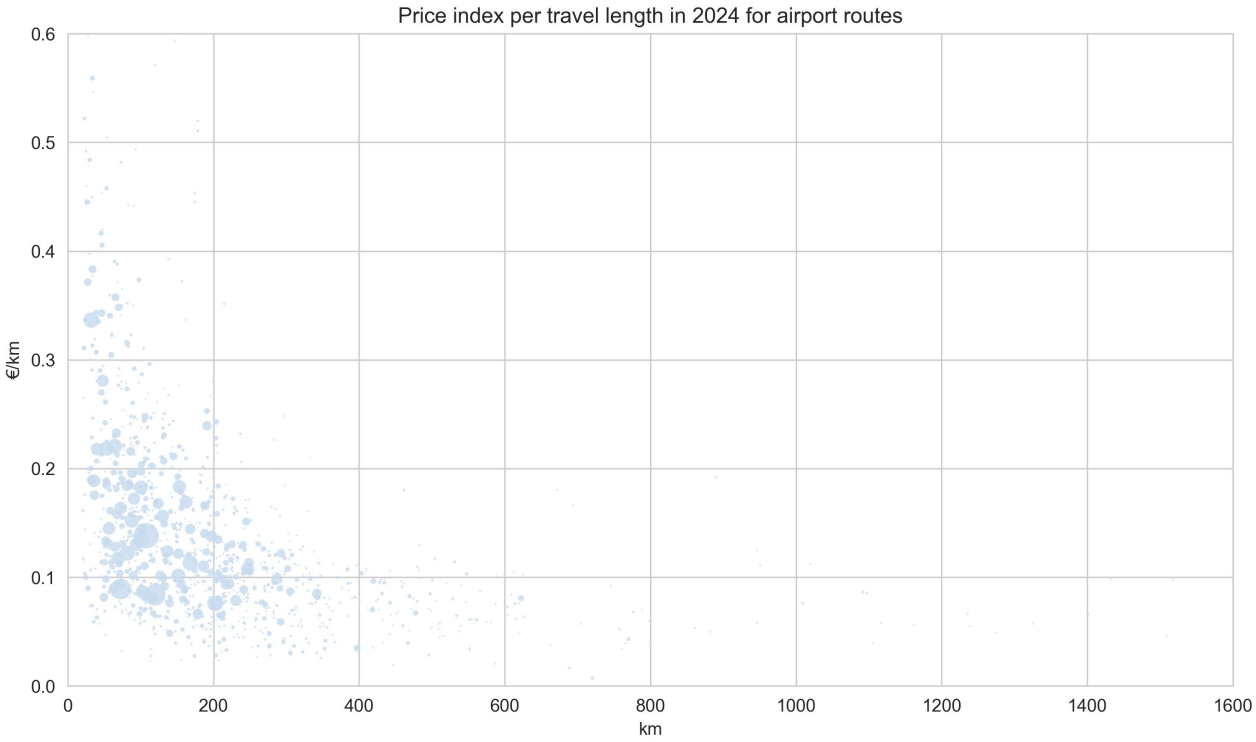
The price function suggested by the scatterplot is rapidly declining between 50 and 200 km and then remains relatively stable above 200km. We can observe many price outliers in the high range, but most of them are low-demand pairs, with some relevant exceptions of high-demand and high-revenue ones (some examples circled in red). Similarly, it is interesting to see how some of the "richest" pairs have low prices, probably thanks to fierce competition.

Explanation of indicator

The chart plots all OD pairs present in the dataset (filtered for micro-pairs) as a dot, whose characteristics are:

- *x-axis: distance*
- *y-axis: unit price in €/km*
- *size: purchased quantity in the year*

P6B – PRICE INDEX FUNCTIONS, AIRPORT ROUTES



The chart visualizes all European airport routes, clarifying the relations between distance, price and size of the market.

The price function is substantially different from that of the intercity pairs. Th bulk of routes and demand is concentrated around 100km, but sold quantities are comparable to those of the most crowded intercity routes.

Prices, as already underlined, are significantly higher than those of intercity pairs, for similar distances. The variability of prices is extremely high. For example, around 100km, prices vary from about 7 €cent/km to more than 20 €cent/km.

Explanation of indicator

The chart plots all OD pairs present in the dataset (filtered for micro-pairs) as a dot, whose characteristics are:

- *x-axis: distance*
- *y-axis: unit price in €/km*
- *size: purchased quantity in the year*

5 METHODOLOGICAL NOTE

The elaborations presented in this document are developed starting from the **database** provided by **Checkmybus** and including all web domains, languages and intermediary platforms. For this report are considered all **users' travel searches carried out between 2019-2024.**

When a user searches an origin-destination pair, Checkmybus returns all available options, including price. These options are obtained either directly from the operators or by means of other intermediary platforms (e.g. Kayak.com). When the user "clicks" on the preferred option, *he is redirected to the sales platform (the operator, an intermediary or a GDS). The information recorded is **the quantity of seats requested in every individual search and the associated price**. The **monthly average of these prices** is the main data point of our dataset, associated with the quantity of which it is the average.

More in detail, the database contains, for each search (i.e. for each record):

- Name of the origin-destination pair (specific places of departure and arrival until 2022, city of departure and arrival since 2023) and coordinates
- Operator who provides the service and reseller (if present)
- Number of tickets searched for in the month
- Number of individual purchases for in the month
- Average selling price of tickets.

Origin City	Origin Country	Origin Latitude	Origin Longitude	Destination City	Destination Country	Destination Latitude	Destination Longitude
Manchester	United Kingdom	53,48076	-2,24263	London	United Kingdom	51,50735	-0,12776

Company	Operator	Culture	Source	Quantity	Purchases	Avg. Price
National Express	National Express	en-GB	CheckMyBus	xxx	xxx	xx,xx

The information contained in the database has been enriched according to the following specifications:

- (2019-2022) Aggregation of places of departure and arrival at the LAU and NUTS level…
- …and definition of specific locations to consider origins / destinations in airports (IATA code instead of the municipality's ISTAT code)
- Correction of wrong coordinates and countries associations (e.g. Kosovo vs. Serbia)
- Drop of non-European observations
- Association of a mode (bus, air route, train) to all records through the classification of each individual company
- Drop of observations related to modes different than coach
- Tagging as "airport route" for all those that have origin and/or destination at an airport
- Tagging as "cross-border route" for all those having a different country for origin and destination.

The most challenging operation in terms of computational burden has been the estimate of the actual **road distance** between all OD pairs. To perform that, we have used weighed shortest path routing algorithm in Python based on OSM trunk road network. The distance is used to compute the **price per km indicator**.[3]
The routing has been stored and used also to produce the map "T10 – European passengers flows".

The outcome of the preliminary operations is a dataset including the following variables and detailed by year, month, company, domain of origin and OD pair.

O_Routing_ID	O_Country	O_IATA	D_Routing_ID	D_Country	D_IATA	OD_Analysis_ID
AD_r2804753	Andorra		ES_08019	Spain		AD_r2804753/ES_08019

OD_Routing_geom	Cross_Border	Operator	Airport	Year_num	Month_num	Semester	Source
LINESTRING (2.1613885938291295 41.40064546433223, 1.5182182969273381 42.5037954066936)	True	Alsa	False	2024	1	1	CheckMyBus

Domain	Quantity	Unique_purchases	QxP	Avg_price	Distance	Price/km
IT	xx	xx	xx.xx	xx.xx	189.588	0.xxxx

The indicators and infographics of this report are all derived from this dataset (and from a secondary one including aggregate information on users, limited to 2019-2022 period) through operations that are shortly described in the blue boxes at the bottom of each page.

[3] QxP is the product of quantity and price and is used to compute the weighted averages of aggregated indicators.

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