Overview of Air Transport and Current and Potential Air Connectivity Gaps in the CESE Region

Paper A

Strictly Private and Confidential

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Final Report

pwc

Disclaimer

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Paper A Executive Summary

The financial situation of network carriers in the Baltic States, Central, Eastern and South-East Europe is fragile. At present, a number of state aid cases of air carriers in this region are being investigated - or investigations have recently been closed - by the European Commission (e.g. Adria Airways, LOT, Estonian Air, airBaltic, Cyprus Airways), whilst other airlines in the region might face similar difficulties. PwC was engaged by the European Commission Directorate-General of Mobility and Transport to depict a clear portrait of the current state of play in the Central Eastern and South-East European (CESE)[1] market and analyse the key considerations to be taken in the event of an airline bankruptcy.

The study consists of two papers:

- Paper A: which describes the situation of connectivity in the CESE region through the development of an index which allows to estimate air connectivity in the region and the impact of an airline failure on connectivity

- Paper B: which utilises the connectivity tool developed in Paper A to assess the impact of Malév's collapse and provides a detailed analysis of the social and economic impacts of the collapse

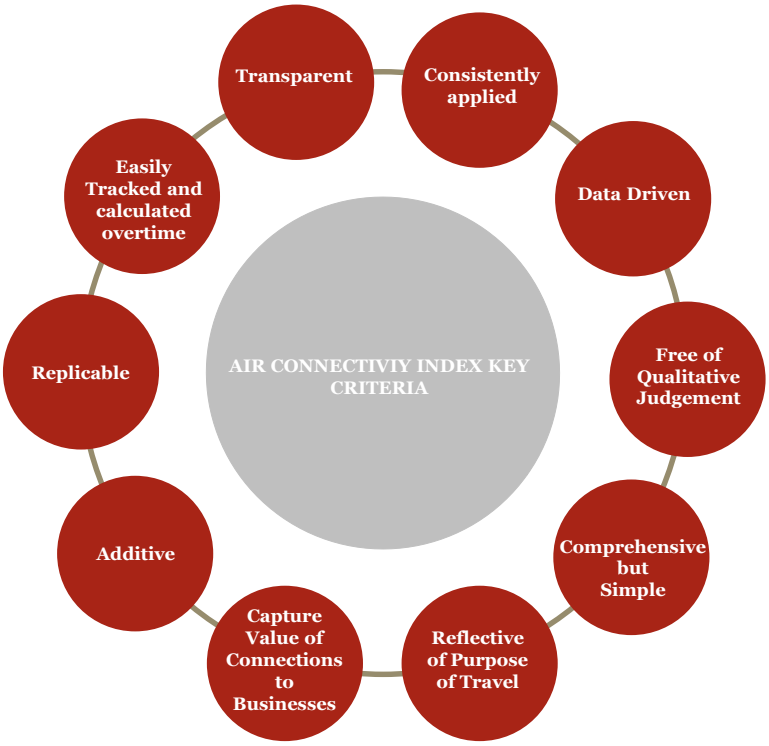
Paper A is the first of the two reports and focuses on assessing the state of air connectivity within the CESE region as well as identifying concerns in relation to current and potential future air connectivity gaps generated, for instance, by the withdrawal from service of existing flag carriers.

a) The study provides a factual account of how the CESE market has developed between 2003 and 2013, whilst assessing the reasons which may have triggered those changes.
b) It then focuses on evaluating air connectivity in the CESE region for the period of 2004 to 2013 which, in conjunction with the route analysis undertaken as part of the study, should provide a tool to assess the impact which an airline failure may have on a specific country, as well as the region it belongs to as a whole.

To assess connectivity, PwC has developed an air connectivity index which takes into account a range of measures to reflect the criteria proposed by the Commission. These are illustrated below.

[1] CESE Countries in this study are defined as Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Malta, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia

Air Connectivity Index Key Criteria



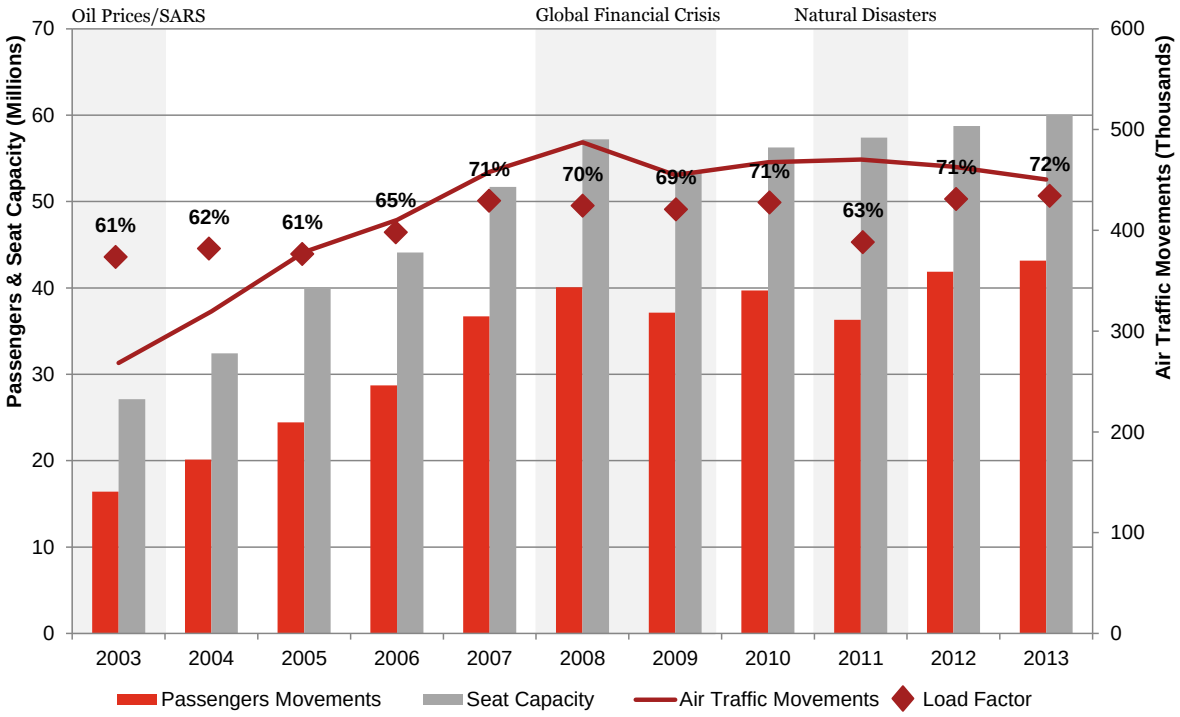
It should be noted that a wide range of factors could be considered in the measurement of connectivity. However, the lack of consistent information across all countries, as well as the requirements for the index, mean that incorporating some of these factors is not possible.

OBSERVATIONS

a) A dynamic and growing aviation market has been observed in the CESE countries between 2003 and 2013 with rapid expansion of LCCs; however, presence of international routes remains minor

The CESE region has been experiencing strong growth over the past decade with air passenger traffic increasing by over 160% between 2003 and 2013. The strongest growth was registered between 2003 and 2008, with passengers increasing from c. 16 million to 40 million, at a rate of 19.5% per annum. However, this growth rate slowed dramatically following the global financial crisis in 2008, with passenger numbers declining in each of 2009 and 2011 reflecting the weak global economy and uncertainty in the Euro-zone. Overall between 2009 and 2013, passenger numbers still increased, but the rate of growth was sharply reduced (4% per annum compared to 19.5% per annum pre-crisis).

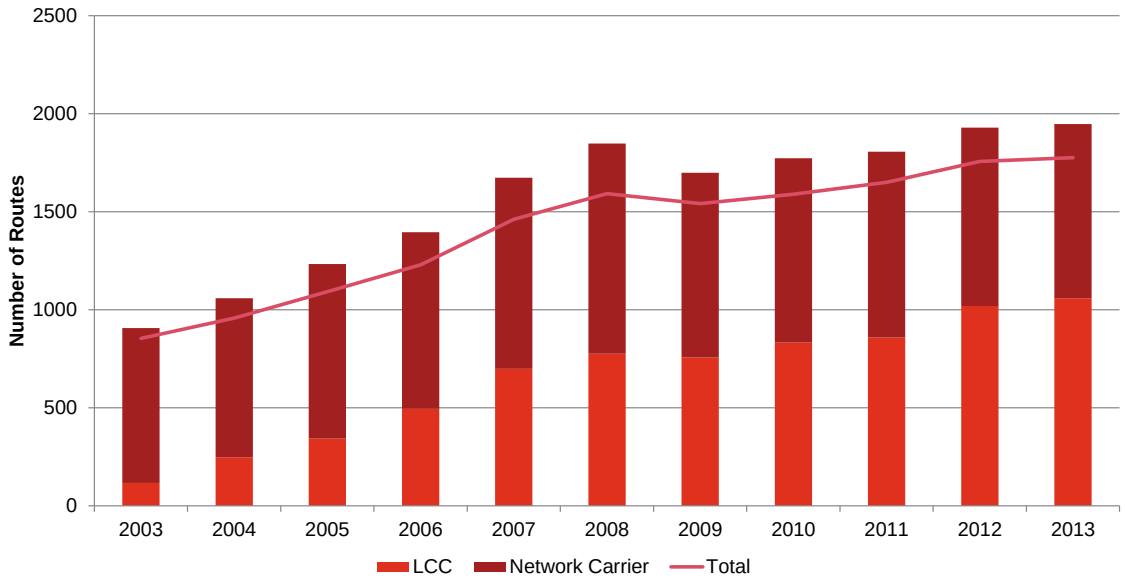
CESE to All Statistics, 2003 to 2013



Source: Sabre ADI/Milanamos (PlanetOptim), PwC analysis

Over the same period, the route network from the region has also developed considerably, doubling (as in the case of EU15 destinations) and more than doubled (in the case of non-CESE/Non-EU destinations). Furthermore, low-cost carriers (LCCs) have also aggressively increased their market share in the CESE region from about 6% in 2003 to 35% in 2013, and reshaped the CESE aviation market, especially in countries such as Hungary following the collapse of legacy carriers such as Malév. The figure below illustrates the rapid expansion of LCCs within the region based on the number of routes served by network carriers versus LCCs.

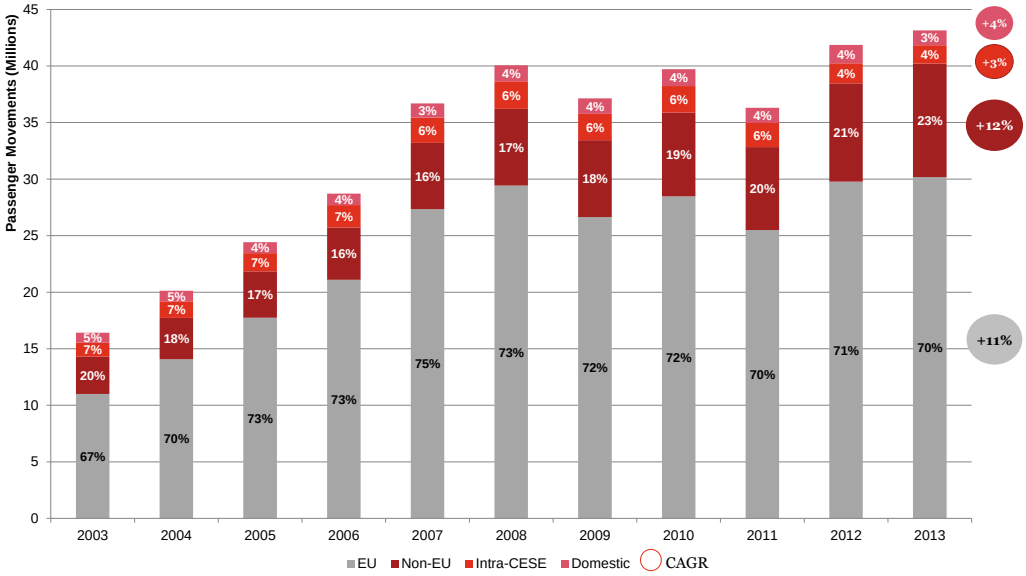
Total Non-directional Route Pairs from the CESE Region by Carrier Type 2003-2013



Note: Network carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

The majority of CESE traffic (i.e. around 70%), as shown below, is directed to EU15 destinations and has grown at a rate of 11% per annum. Traffic to Non-EU destinations has also grown considerably by 12% per annum over the past decade. However, the number of long-haul routes from the region remains very limited, with nearly 99% of flights from the region being short-haul.

CESE passenger breakdown by market, 2003 to 2013

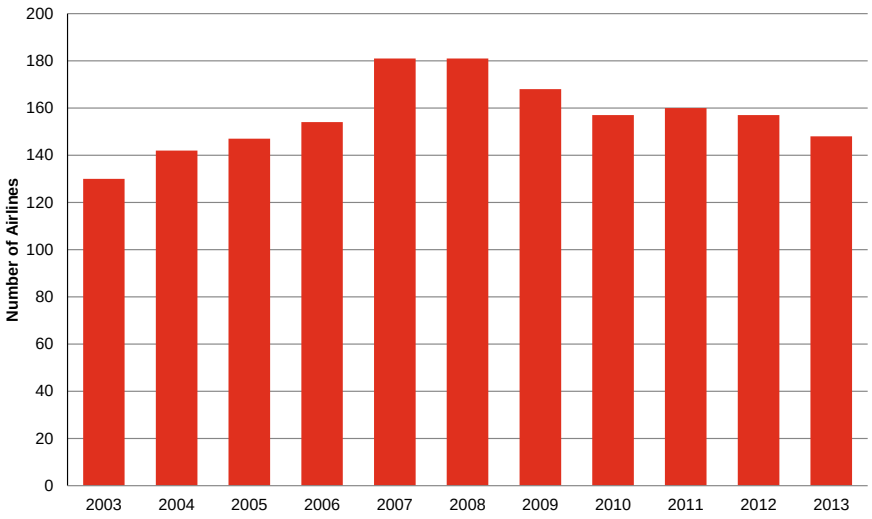


Source: Sabre ADI / Milanamos (PlanetOptim), PwC analysis

b) The CESE region is a developing aviation market which is still comparatively 'immature' relative to the rest of the EU making it more challenging for airlines operating in the region given the scale of operations

Following 2008, the number of carriers operating scheduled services in the region has decreased from about 181 to around 148. Factors which are likely to have contributed to this trend are airline consolidation and the ceasing of operation of a number of flag carriers operating in the region.

Number of Airlines Operating in the CESE Region, 2003 to 2013

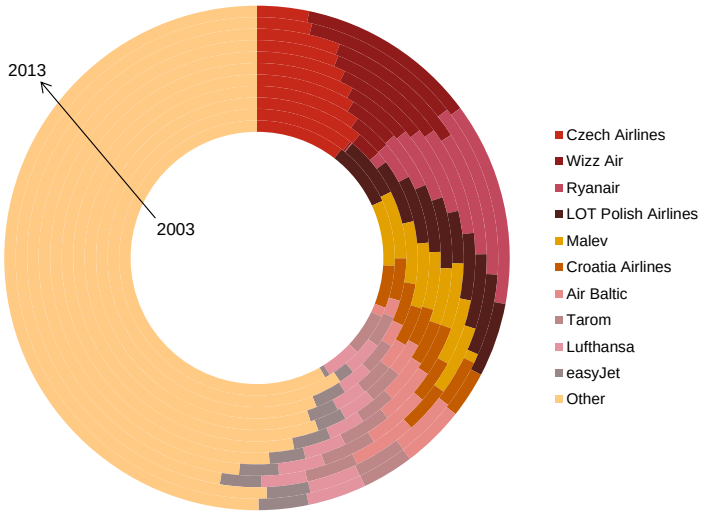


Source: Sabre ADI / Milanamos (PlanetOptim), PwC analysis

The analysis of the top market players in the CESE region has shown considerable changes over the past decade. Particularly notable is the emergence of Wizz Air and Ryanair as major market participants in the CESE

region in 2005, which have increased their market share significantly to become the two largest carriers by seat capacity in 2013. The collapse of Malév in 2012 accelerated this trend with seat capacity of these two LCCs growing at a rate exceeding the growth of previous years. As evidenced by the analysis, the other key carriers identified in the region are Lufthansa and LOT.

CESE Airlines Market Share by Seat Capacity, 2003 to 2013



Source: Sabre ADI / Milanamos (PlanetOptim), PwC analysis

c) The collapse of a number of legacy carriers in the region has translated in a reduction in hub traffic within the region, as well as in a reduction in the volumes of air cargo handled

The loss of network/flag carriers has reduced hub traffic within the region. Previously Budapest and Prague were the key hub airports in the CESE region; however Malév's collapse and CSA's change of strategy have resulted in the disappearance of these hubs. Indirect CESE traffic usually hubs through non-CESE airports. Warsaw Chopin is the only hub in the region with a substantial level of transfer traffic. The non-CESE hub usage varies by region based on geographic location and available services; however, the primary hubs now serving indirect traffic from CESE are Frankfurt, Munich and Vienna, with Vienna, Warsaw, Munich and Frankfurt being the key hubs for Intra-CESE traffic.

A decrease of 0.4% per annum in cargo volumes was observed between 2002 and 2012 for cargo carried by CESE and EU15 airlines. The decrease was more pronounced for CESE airlines which recorded a reduction of 5% per annum as opposed to 0.3% by EU15 airlines. In 2013, the cargo handled by CESE flag airlines corresponded to about 1% of that carried by EU15 carriers. The reduction in volumes handled and the significant difference in how much cargo is carried by EU15 airlines is partially related to the collapse of a number of full service CESE carriers and to the size of the long-haul market in the region. This is also due to the fact that the low cost carriers which took over Malév's routes - Wizz Air and Ryanair - do not provide cargo services. Long-haul cargo was also affected by the withdrawal of long-haul operations from Budapest Airport by American and Delta and Hainan Airlines, who decided to leave the market after Malév's collapse, due to the lack of a local feeder airline.

d) Between 2004 and 2013, business and leisure connectivity for the CESE region have increased by 30% and 78% respectively

Based on the criteria proposed by the Commission two indices were developed, a business and leisure index, as measures of benefits of connectivity are reflective of purpose of travel:

- A **business index** – which focuses on factors such as:

  - importance of the destination city as a business destination,
  - convenience (location of airport in respect to the city centre) and
  - frequency of service

  In order to capture these characteristics, we have created a combined measure which assesses the base level of connectivity based on annual flights – which better reflects convenience and frequency compared to total seat capacity. The base measure is then weighted by the Globalisation and World Cities (GaWC) business connectivity measure[2] for the destination to capture business importance of the destination city. To capture the secondary airport impact as well as onward connectivity, we have also included a component where the base measure (flights) is weighted by the IATA connectivity measure[3], which takes into account the number and economic importance of the destinations served from an airport based on the capacity and frequency of service to each destination weighted by the size of the destination airport in terms of total passengers.

  The index was calculated as follows:

  Business Connectivity measure *= 0.5*(Annual flights x GaWC city weighting)+0.5*(Annual flights x IATA measure)*

- A **leisure index** – for passengers travelling for leisure purposes low fares and available capacity to popular and well-connected destinations tend to be the key determinants. In order to capture connectivity for leisure passengers, we have taken total available seat capacity and weighted each route by the destination's measure of the IATA connectivity index. The leisure connectivity index takes into account an additional layer to the IATA connectivity index in that it weights the destination by the IATA connectivity index rather than the total passengers. The index was calculated as follows:

  Leisure connectivity measures *= annual seat capacity by route * weighting based on IATA connectivity measure*

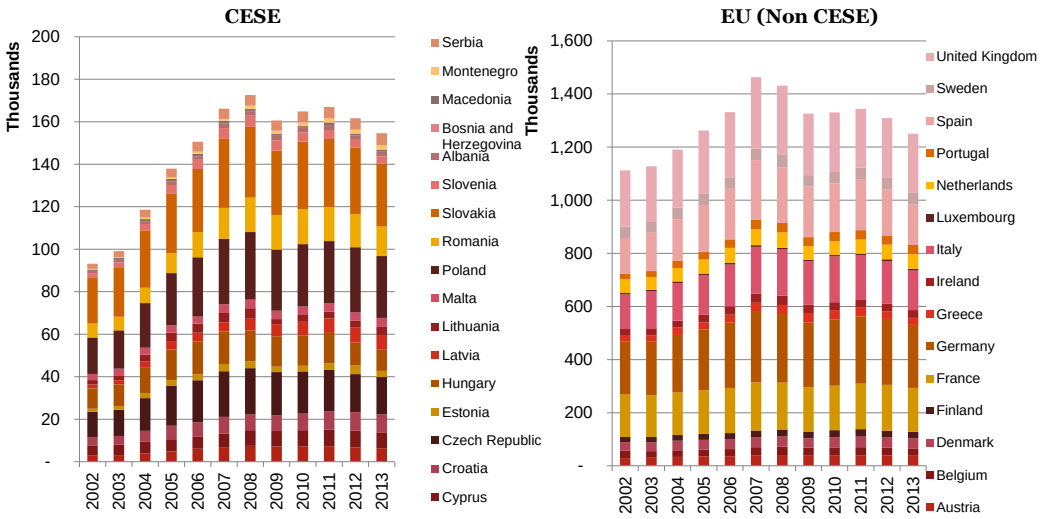
Business Connectivity:

The peak in business connectivity, for the CESE and EU15 region, was achieved prior to the global financial crisis with a continuous decrease observed in the following years. Business connectivity in the CESE region has increased by 30% since 2004, from around 118,600 to approximately 154,600 in 2013. This compares to an increase of only 5% experienced in the EU15 states, perhaps indicating the maturity of the market. However, the difference in magnitude in connectivity between the two regions vastly differs, with connectivity levels in the CESE region in 2013 representing around 12% of those registered in the EU region.

[2] Weighting of the destination city is based on the distribution of the GaWC connectivity measure where a weighting of 1 is given to the highest ranked city with other city weightings being based on their measure of connectivity relative to the best-connected city based on the GaWC connectivity measure. See 1Appendix E. -Weightings.

[3] Weighting of the destination airport is based on the distribution of the IATA connectivity measure, where a weighting of 1 is given to the highest ranked airport with other airport weightings based on their measure of connectivity relative to the best-connected airport based on the IATA connectivity measure. See Appendix E. -Weightings.

Business connectivity measure by State, 2004 to 2013

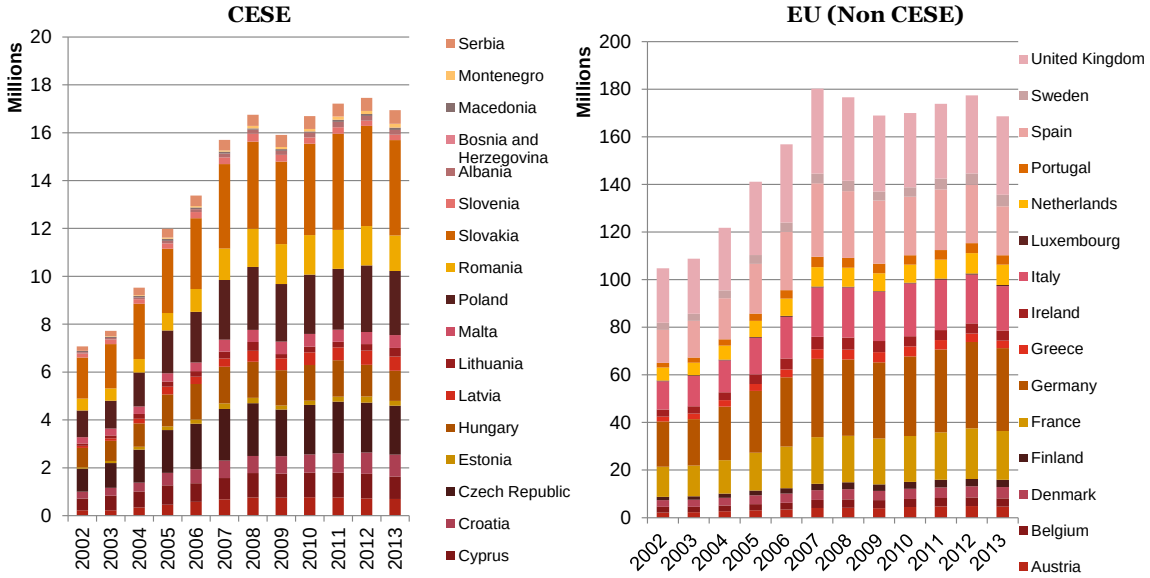


Note: Slovakia includes Vienna; Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Leisure Connectivity:

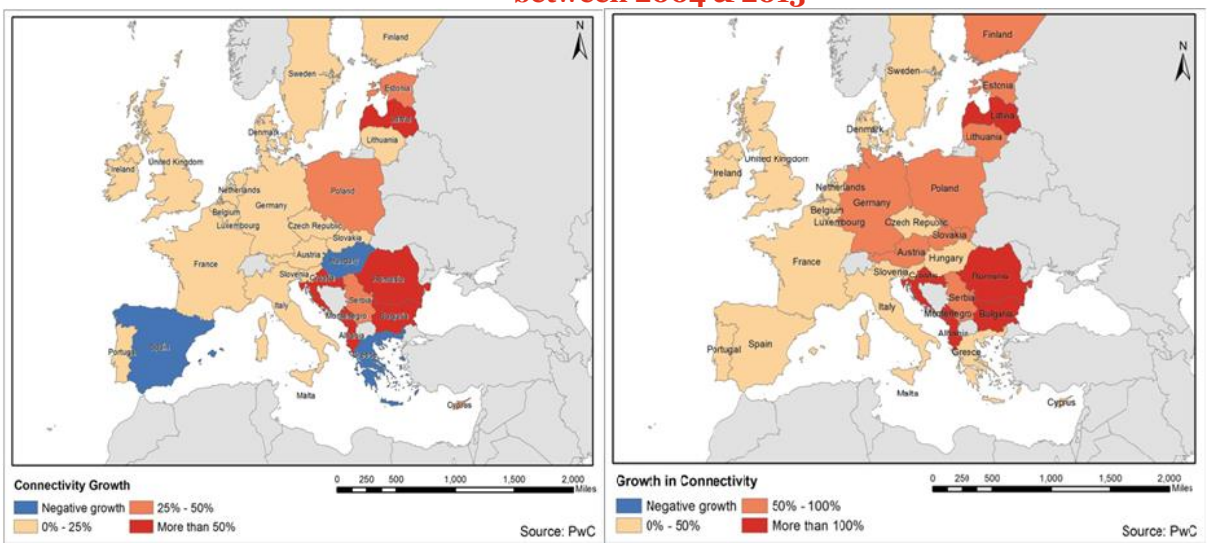
The trends for leisure connectivity observed in the CESE region and the EU states (not inclusive of CESE countries) are very similar with magnitude representing the only real difference between the two. Leisure connectivity in CESE has increased by approximately 78% between 2004 and 2013 as opposed to an increase of 38% in the EU15 region. This shows that the CESE region maintains leisure connectivity better than business connectivity, reflective of capacity being replaced by LCCs to smaller airports and/or less important destinations from a business perspective.

Leisure connectivity measure by State, 2004 to 2013



Note: Slovakia includes Vienna; Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Percentage Change in Business (Left) and Leisure (Right) Connectivity Measure by State between 2004 & 2013

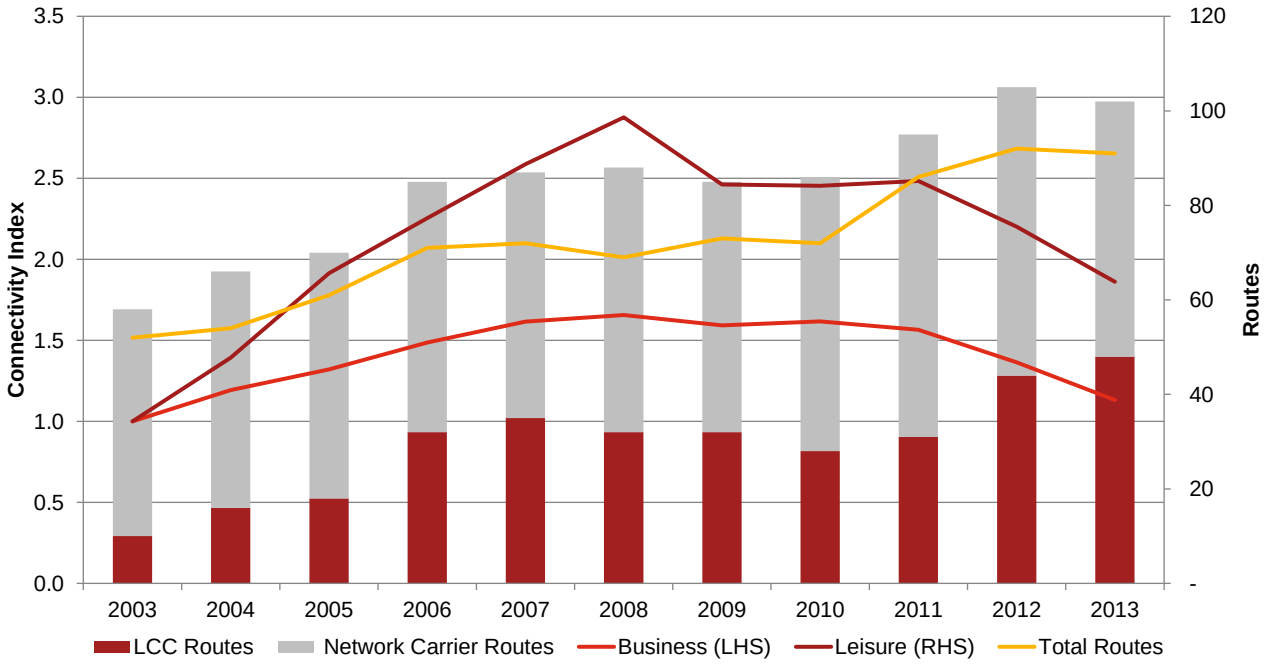


Source: PwC analysis

e) Despite an increase in the number of total routes served, the level of connectivity is still decreasing, with Intra-CESE connectivity appearing most vulnerable

Intra-CESE connectivity has deteriorated significantly since 2008, both at a leisure and business level. The most considerable drop has occurred after 2011 when a number of flag carriers ceased operations (e.g. Malév, FlyLAL, etc), and some of the linkages to important destinations were lost.

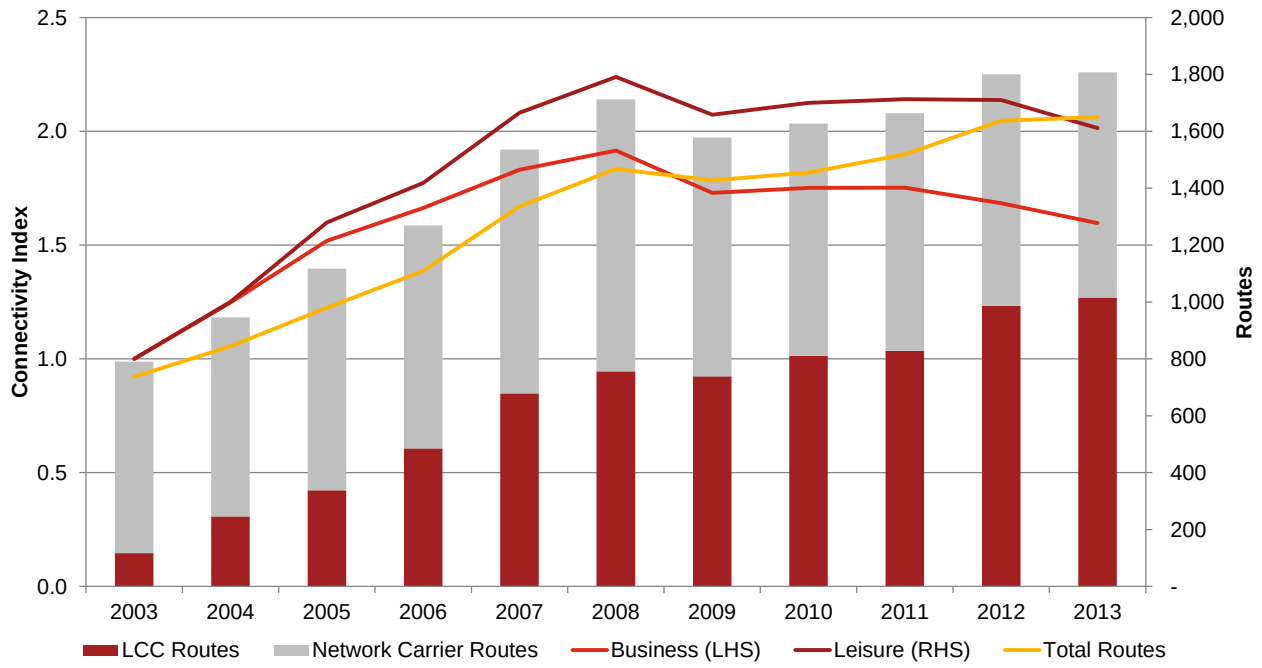
Intra-CESE Connectivity, 2003 to 2013



Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Connectivity from the CESE region to EU15 Member States has increased considerably since 2002, registering an increase of over 70% in business connectivity and over 120% in leisure connectivity. Growth in business connectivity can be attributed to the increasing interest in investing in the region which is developing economically. The increase in leisure connectivity, on the other hand, is attributable to the increasing penetration and expansion of LCCs such as Ryanair, Wizz Air and easyJet. However, despite an increase in the breadth of routes offered, a decrease in connectivity has been recorded between 2012 and 2013, probably driven by the withdrawal from service of a number of national legacy carriers which have meant the disappearance of several key routes.

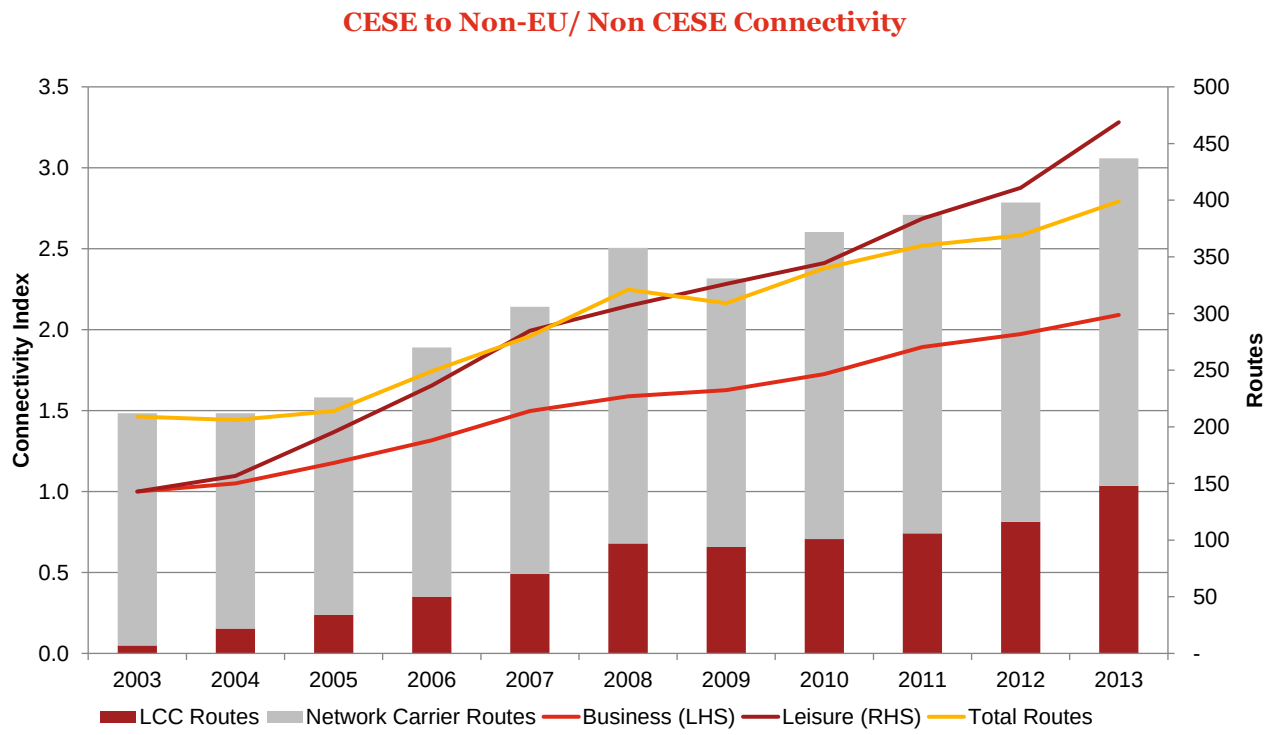
CESE to EU15 Connectivity, 2003 to 2013



Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

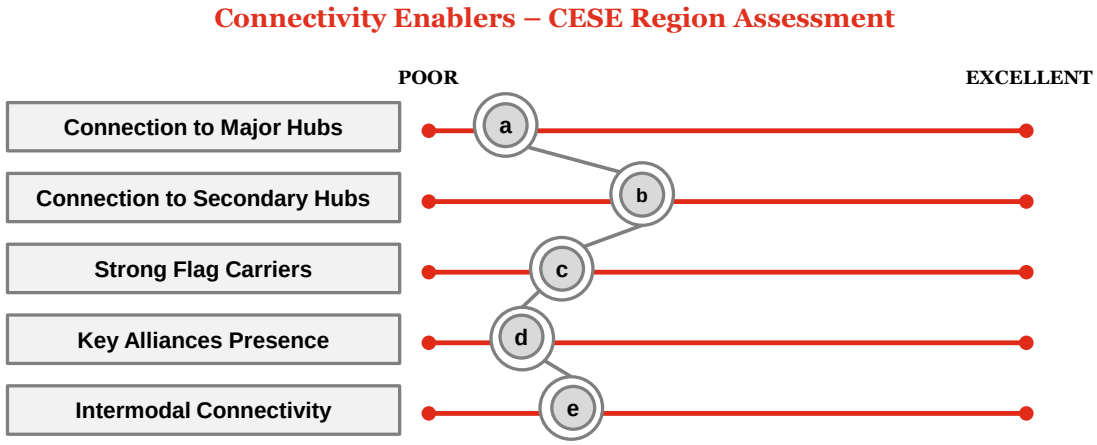
f) Connectivity to Non-CESE/Non-EU countries has grown considerably over the last decade, however, long-haul connectivity remains very limited with nearly 99% of flights from the region being short-haul

The number of links between CESE countries and Non-EU/Non-CESE countries has doubled between 2003 and 2013. This growth has corresponded to a significant increase in both business and leisure connectivity which grew by 107% and 220% respectively between 2002 and 2013.



Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

g) The CESE region currently scores low on the five key connectivity enablers, with poor connections to major and secondary hubs, the lack of strong flag carrier, the low presence of key alliances in the region and poor intermodal connectivity



Note: the above assessment is purely illustrative and is based on a comparison with the EU15 region

As evidenced by the assessment of the identified connectivity enablers above, the region is faced with a number of challenges, which include:

- The lack of connections to primary and secondary hubs, which is key to business connectivity and onward connections as it facilitates access to the global air network;

- The lack of strong flag carriers in the region which would allow for the development of a hub able to sustain traffic to/from and within the region. In addition, the vulnerable state of a number of CESE carriers, further exacerbate the connectivity issue to key hubs, as the existing links to these airports may be lost in the case of a flag airline failure;
- The absence of key alliances in the region which offer seamless connections to the wider air network and ensure competitive air fares; and
- The lack of intermodal options which would offer the region with an alternative to air traffic where possible.

It is anticipated that the establishment of a regional hub in the current market would not be sustainable. This is further supported by the recent trends which have been identified in the region and which show a shift of transfer traffic from the West to the East as driven by the rise in activity by the Gulf carriers and Turkish Airlines.

h) A high number of routes within the CESE region are low density and in many cases not commercially viable from an airline perspective

Over half of the routes operated in the intra-CESE network have registered less than 10,000 passengers in 2013. Thin routes tend to be operated exclusively by local network carriers with factors such as high operating costs and limitations posed by the aircraft which can be used on the route (e.g. LCCs would find it difficult to operate on these routes as not sustainable with the typical narrow body aircraft they operate) likely to be some of the main reasons.

To conclude we have observed that despite significant growth in air connectivity in the CESE region over the last decade, connectivity still lags behind that of EU15 countries – across all modes of transport, even accounting for population and relative income levels. The aviation market in the region is still relatively 'immature' compared to the rest of the EU15 States, making it more challenging for airlines operating in the region, given the scale of operations. Connectivity has been significantly affected by the ceasing of operations of a number of airlines in the region. Intra-CESE connectivity, in particular, has been lost despite LCCs taking market share from struggling and defunct flag carriers. Long haul connectivity remains limited with nearly 99% of all flights being short haul. The loss of network/flag carriers has also reduced hub traffic within the region. Previously Budapest and Prague were the key hub airports in the CESE region, however, the primary hubs now serving indirect traffic from CESE are Frankfurt, Munich and Vienna, with Vienna, Warsaw, Munich and Frankfurt being the key hubs for Intra-CESE traffic. A high number of routes in the region remain quite thin and are might not be sustainable from a commercial perspective.

1. *Introduction*

1.1. Background

As noted by the Terms of Reference (ToR) for this study, the financial situation of network carriers in the Baltic States, Central, Eastern and South-East Europe (CESE) is fragile. At present, a number of state aid cases of air carriers in this region are being investigated by the European Commission (e.g. Adria Airways, LOT, Estonian Air, airBaltic, Cyprus Airways). Other airlines in the region might face similar difficulties. The purpose of the study is to depict a clear portrait of the current state of play in the Central, Eastern and South-East European (CESE)[4] market and analyse the key considerations to be taken in the event of an airline bankruptcy.

The study consists of two papers:

- Paper A: which describes the situation of connectivity in the CESE region through the development of an index which allows to estimate air connectivity in the region and the impact of an airline failure on connectivity; and

- Paper B: which utilises the connectivity tool developed in Paper A to assess the impact of Malév's collapse and provides a detailed analysis of the impacts of the social and economic impacts of the collapse.

This document is Paper A of the study, describing the current connectivity status in the CESE region.

1.2. Study Scope

In portraying the air transport sector in the CESE countries, this paper assesses possible concerns in relation to current and potential future air connectivity gaps (e.g. in case of bankruptcy of existing carriers, the connectivity consequences the region may face, as compared to the current state). There are many ways in which connectivity can be defined. The International Civil Aviation Organization (ICAO), defines connectivity as an indicator of a network's concentration and its ability to move passengers from their origin to their destination seamlessly[5]. This can be measured in a variety of ways to capture different elements of connectivity at different levels of granularity

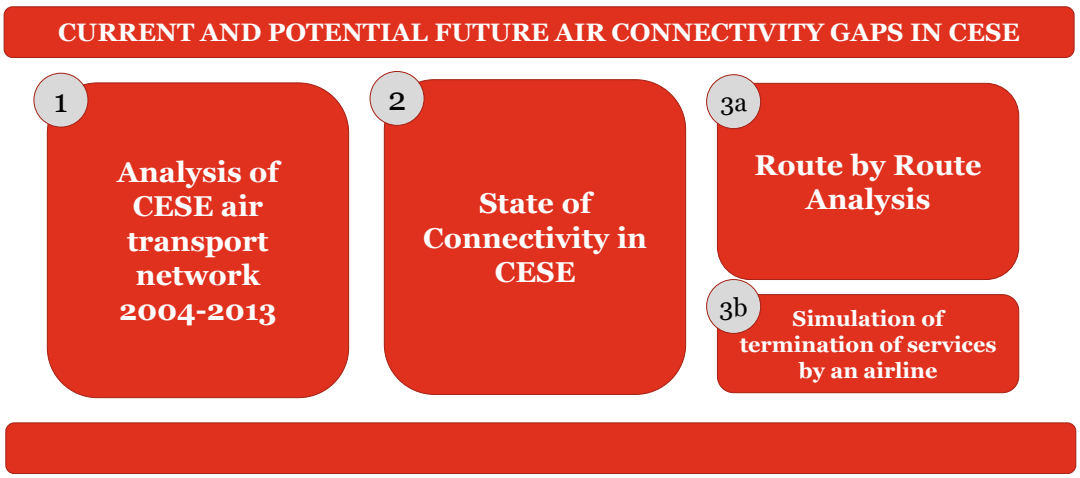
The analysis provides an overview of the possible changes in the market, identifies the reasons that may trigger those changes, and reviews the most vulnerable routes that, in case of disappearance of existing carriers, would not be taken up by competition.

1.3. Approach

The requirements of this paper, as set out by the Commission, are for this study to be built on three main pillars providing an overview of the air transport sector in the CESE region, between 2004 and 2013, as well as current and potential future connectivity gaps, and a simulation of an airline failure.

4 CESE Countries in this study are Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Malta, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia

5 ICAO (2013), Worldwide Air Transport Conference (ATConf/6-WP/20)



1.4. Data Sources

A list of the sources and tools used to build the evidence base for this study are presented in the table below.

SOURCE	DESCRIPTION
Airline Schedules	PwC subscribes to Sabre ADI/ Milanamos (PlanetOptim), which provides access to an airline schedules database.
EUROSTAT	Yearly statistics based on obligations to Member States to provide data covering EU, Norway and Switzerland and selected data in other countries. On top of air transport traffic information various supporting data are included among which demographic data, economic data (by sector). The data are generally given by year, allowing creating time series and analyses. Freight data is also available through its database.
IATA	PwC purchases data (i.e. annual air transport statistics and forecasts) as well as publications on an as-required basis. Passenger and freight data are available at a region and country level.
MIDT	PwC subscribes to Sabre ADI / Milanamos (PlanetOptim), providing in depth access to worldwide traveller itineraries as well as airfare information
Flightglobal Pro	Flightglobalpro is an online data source providing up-to-date news and data for the global air transport industry covering both airport and airline key facts and figures (including summary financial information) It also provides access to ACAS which has regular updates on fleet data, aircraft orders and aircraft retirements
OMEs' Forecast	Forecast by aircraft manufacturers such as Boeing and Airbus which provide projections for the next 20 years
Economic Data	Various sources such as IMF, EIU, Global insight and internal PwC data provides historical and long-term forecasts for economic data by country This includes Gross Domestic Product, Inflation, Population, Currency exchange rates, retail sales prices, unemployment, etc.

A key data source used throughout our analysis is Sabre ADI/ Milanamos (PlanetOptim)[6]. This tool enables detailed and robust analysis to identify trends and relationships, allowing us to assess the following:

- the number of passengers by route and airline
- the number of scheduled seats by route and airline;
- the number of air traffic movements by route and airline;
- the ultimate origin/destination of airline passengers;
- the true origin through point of sale information;
- passengers by route and class of travel;
- which routes are highest yielding for the airlines;
- the number of connecting vs direct passengers;
- trends in hubbing; and
- the impact of introducing a new service on demand to estimate generated vs. diverted passengers.

Sabre ADI / Milanamos (PlanetOptim) has 12 years of monthly data. Additional data has been gathered from other various sources, such as:

- National governments
- Regulatory authorities
- Airport authorities and industry groups (ACI)
- Airline associations
- Individual airlines

1.4.1. Stakeholder interviews

We conducted interviews with stakeholders on each of the papers to gain an understanding of what some of the Member States believe is important in measuring connectivity, as well as the current connectivity situation. A list of entities with whom we had discussions is below.

Country	Stakeholder
Hungary	CAA Hungarocontrol Ministry of National Development Tensi tours Wizz Air Budapest Airport GE
Poland	LOT CAA Ministry of Transport
Latvia	Air Baltic
Cyprus	Cyprus Airways Hermes Airports Department of Civil Aviation
Slovenia	Adria Airways Ljubljana Airport
Czech Republic	Czech Airlines Czech Aeroholding Ministry of Transport

[6] PwC has recently changed subscription over from Sabre ADI to Milanamos (PlanetOptim). The analysis undertaken in this paper has been sourced as Sabre ADI/Milanamos (PlanetOptim) as the ultimate source of raw data is the same.

1.4.2. Survey

We conducted an online questionnaire aimed at capturing the views that could not be captured through stakeholder meetings. This survey captures the views of the industry on connectivity in the region (CESE airlines, airports and public authorities).

1.5. Limitations

Although the Sabre ADI/ Milanamos (PlanetOptim) is one of the most comprehensive airline data sources available, there are some issues with the completeness of data as it relies on a combination of a large number of sources to compile. There are some limitations where data is estimated, for example, LCC data tends to be less reliable as these are not captured in the Global Distribution System (GDS) given the primacy of bookings with these airlines. One particular limitation we should note is the ability of the data to capture transfer passengers. The information captures individual passenger ticketing itineraries and therefore, if a passenger 'self-connects' on separately purchased tickets then this would not be captured. In addition, the Sabre ADI/Milanamos (PlanetOptim) source only captures scheduled flights; therefore unscheduled charters as well as general aviation, military flights etc. are not part of the data.

Where anomalies in the data have been evident, we have sought to verify with the data provider, however, PwC has not independently verified the data.

1.6. Structure of the report

The remainder of the report is structured as follows:

Chapter 2 – focuses on the CESE air transport network between 2004 and 2013

Chapter 3 – looks at the state of connectivity in the CESE region

Chapter 4 – considers the need for a regional hub

Chapter 5 – presents the findings of a route by route analysis and looks at the scenario of a potential termination of air services by an airline

Chapter 6 – includes the concluding remarks

Appendices:

- **A** – contains the outputs of the analysis conducted in section 2
- **B** – presents the outputs of the analysis of CESE carrier-operated routes
- **C** – contains a list of the CESE countries included in the study
- **D** – presents the description of various key connectivity indicators for each State, describes how the key connectivity index for this study was developed
- **E** – contains further information on weightings for the connectivity analysis
- **F** – contains a summary of the key indicators by country for 2013

2. The CESE Air Transport Network

2.1. Introduction & Approach

This chapter presents a snapshot of the situation in air transport in the CESE region and its development since 2003.

We performed an analysis of the historical air transport market operating within, to and from the CESE region. Our analysis examines air traffic from January 2003 to December 2013 at a route level in the CESE region, including domestic, regional and international travel. More specifically, the assessment draws on the analysis of the following elements:

- Passenger Movements
- Route Pairs (Number of destinations available)
- Frequency
- Seat Capacity
- Load Factors
- Market share by airline
- Cargo Volumes
- Intermodal Services

In addition, we have analysed how the position of the network carriers in the region has changed overtime.

2.2. Evolution of the CESE air transport network between 2003 and 2013

2.2.1. Overview

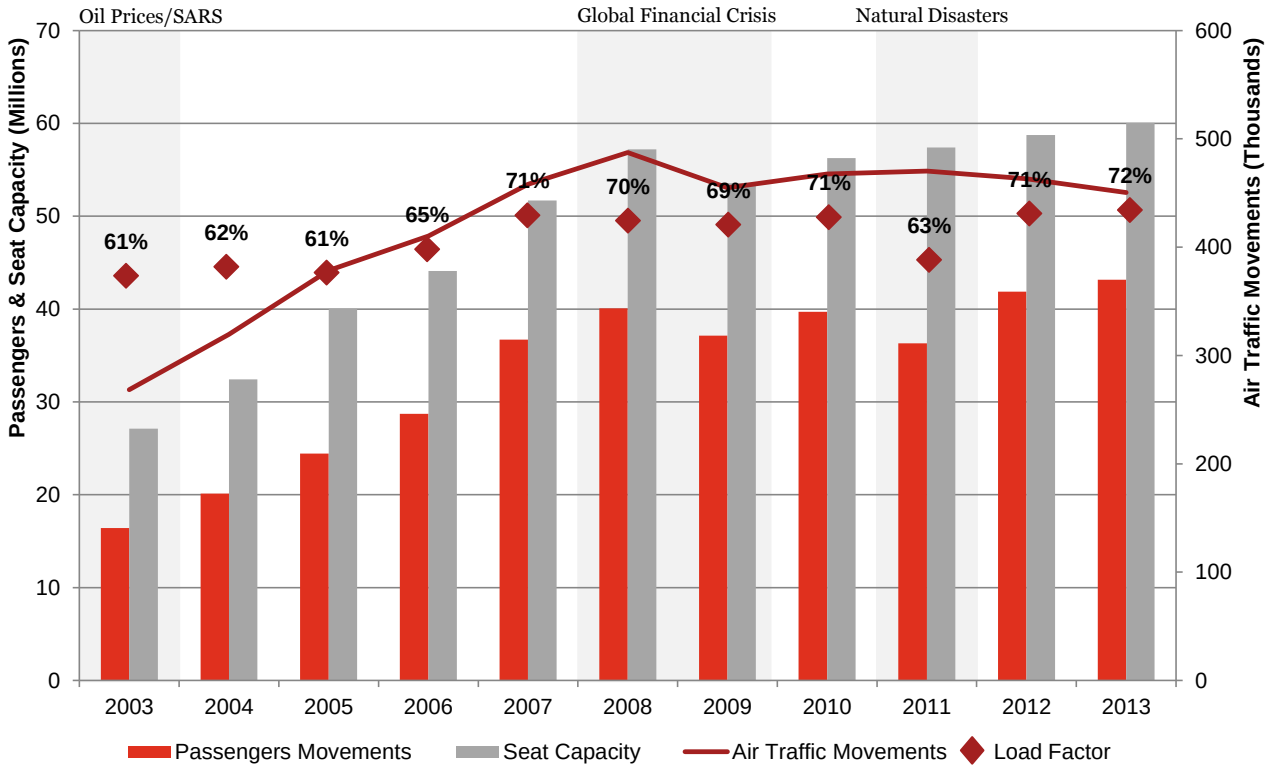
Between 2003 and 2013, air passenger traffic in the CESE region has experienced significant growth increasing by over 160%, from 16 million passengers in 2003 to over 43 million in 2013. Air transport in the region has undergone considerable change as a number of flag carriers have been restructured or have failed and as LCCs have increased their presence in the market from 6% in 2003 to 35% in 2013.

Despite a significant decrease in demand during the global financial crisis that began in 2008, a general year on year increase has been observed for both passenger and seat capacity originating in the CESE region. Passenger numbers from 2003 to 2013 showed a more variable and generally higher level of growth than offered capacity: between 2003 and 2008, growth in passengers was higher than growth in available capacity, increasing from 16 million passengers to 40 million, at a rate of 19.5% per annum (versus 16% annual growth of capacity). However, this growth rate slowed dramatically following the global financial crisis in 2008, with passenger numbers declining in each of 2009 and 2011 reflecting the weak global economy and uncertainty in the Euro-zone. Overall between 2009 and 2013, passenger numbers still increased, but the rate of growth was sharply reduced (4% per annum compared to 19.5% per annum pre-crisis).

In comparison, seat capacity increased at a rate of 16% per annum over the period of 2003 to 2008, from approximately 27 million available seats to 57 million available seats. Following the financial crisis, capacity offered from the CESE region dropped by 6%, and subsequently growth in the period 2009-2013 slowed, with a compounded annual growth (CAGR) of 3%. It was only in 2012 that available capacity reached the level offered prior to the global financial crisis, with 59 million available seats. The average load factor of flights operating from the CESE region showed a general increase from 2003 to 2013, from 61% to 72%.

Alongside increases in passengers and available seats, the number of flights operating from the CESE region in the period 2003 to 2008 also increased significantly from around 270,000 flights to approximately 490,000 movements in 2008. Growth in frequencies ceased in 2008, declined somewhat in 2009 and has remained relatively static since at circa 450,000 movements.

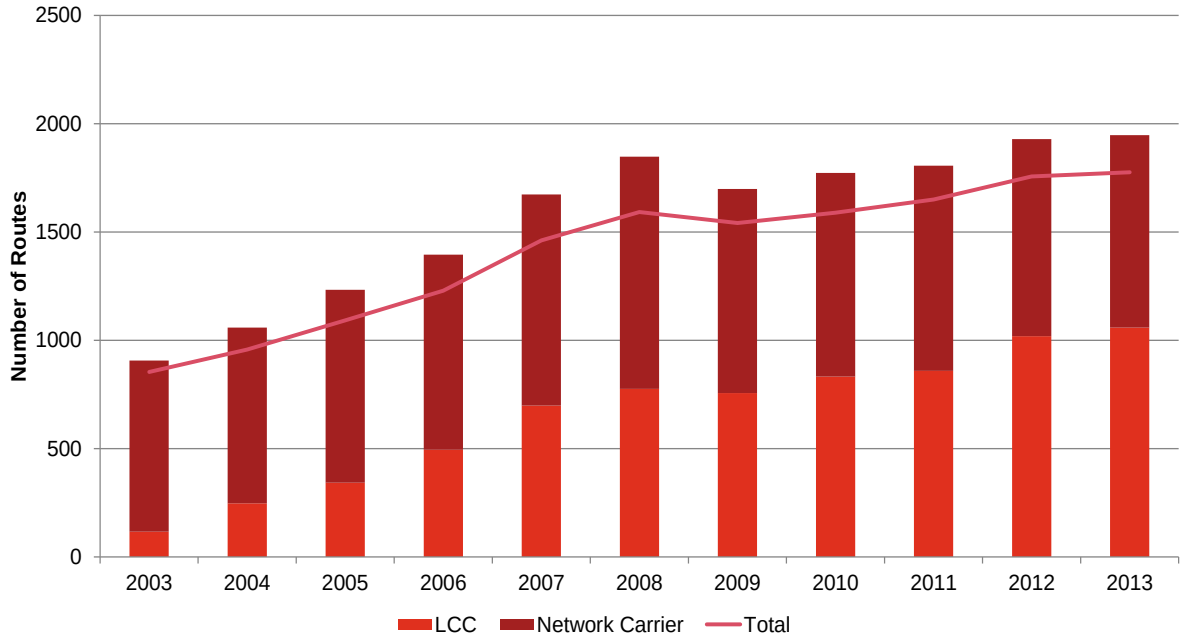
Figure 2-1: Trends of Passenger Numbers, Seat Capacity, Frequency and Load Factors of all CESE Flights



Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity and Segment Data

The number of scheduled route pairs from airports in the CESE region have followed broadly similar trends. Overall the number of routes has more than doubled between 2003 and 2013, although rate of increase has slowed since 2008. LCCs have driven significant growth in route networks whereas the number of routes offered by network carriers declined.

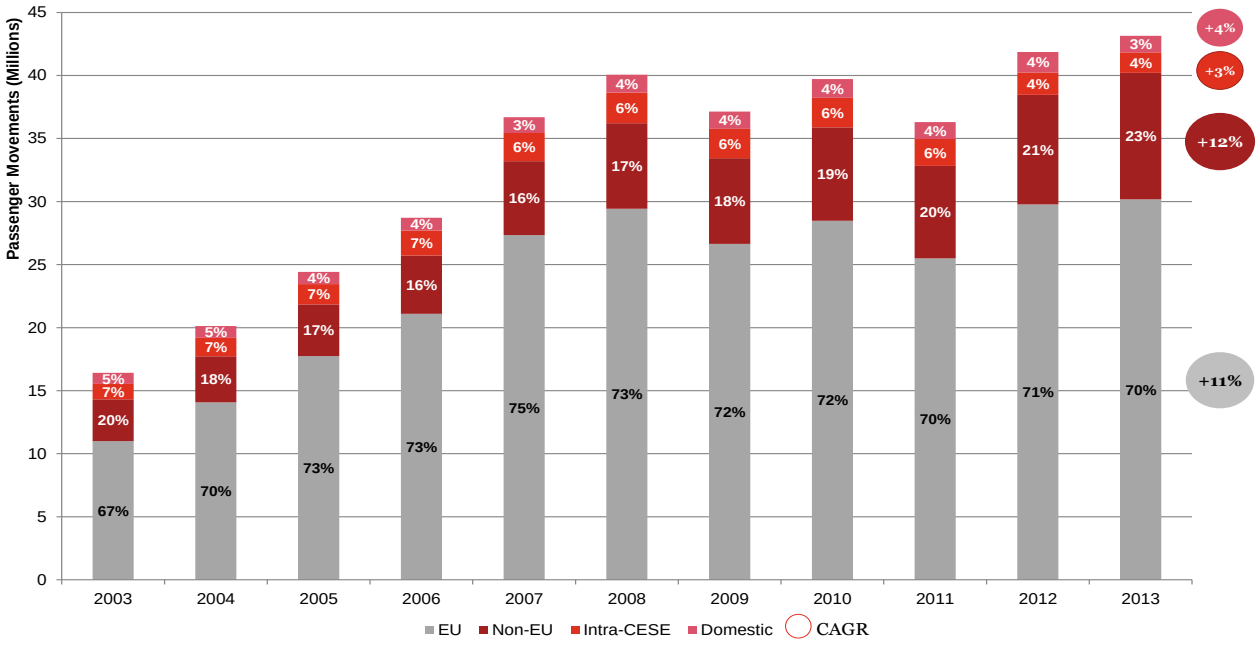
Figure 2-2: Total Non-directional Route Pairs from the CESE Region by Carrier Type 2003-2013



Note: Network carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

Figure 2-3 below, shows the breakdown of passenger demand by region of travel. The highest demand for passenger traffic from the CESE region is to EU15 destinations, which made up 70% of all traffic in 2013 and grew at a rate of 11% per annum. The percentage of travel to non-EU destinations has also increased from 20% in 2003 to 23% in 2013, a growth rate of 12% per annum. The increase in travel to/from other European and non-European destinations probably reflects increased interest in doing business in these countries which are still in a phase of economic development and beginning to recover from the financial crisis. Domestic and Intra-CESE travel, on the other hand, have only grown at a rate of 4% and 3% per annum respectively.

Figure 2-3: Passenger Movements by Region



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

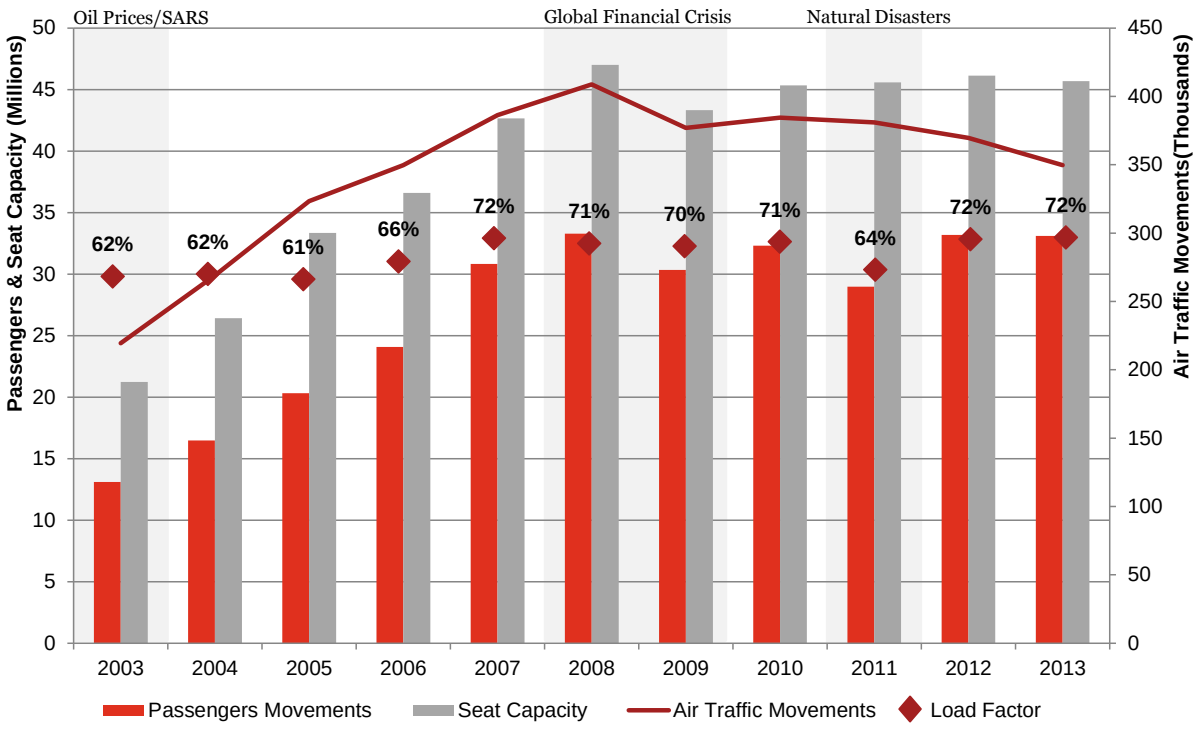
2.2.2. CESE to other EU traffic

2.2.2.1. Overall

Definition: 'CESE to other EU' traffic has been defined as traffic originating or transferring from the CESE region to other EU15 Member States (including those in the CESE region). Thus, this includes domestic traffic within CESE states and traffic between CESE States which will be amongst other traffic subsets examined in greater detail in subsequent sections.

The CESE to other EU market segment comprises the majority of the air transport from the CESE region, corresponding to 76% of the total seat capacity market share in 2013. As shown in Figure 2-4, passenger movements have more than doubled over the past decade, increasing from 13 million in 2003 to 33 million passengers in 2013 at an average rate of 10% per annum. After reaching its peak in 2008, seat capacity has slightly decreased in recent years from 47 million seats offered in 2008 to 46 million 2013, a trend which was also observed in the frequency of service offered, which has decreased by 14% since 2008.

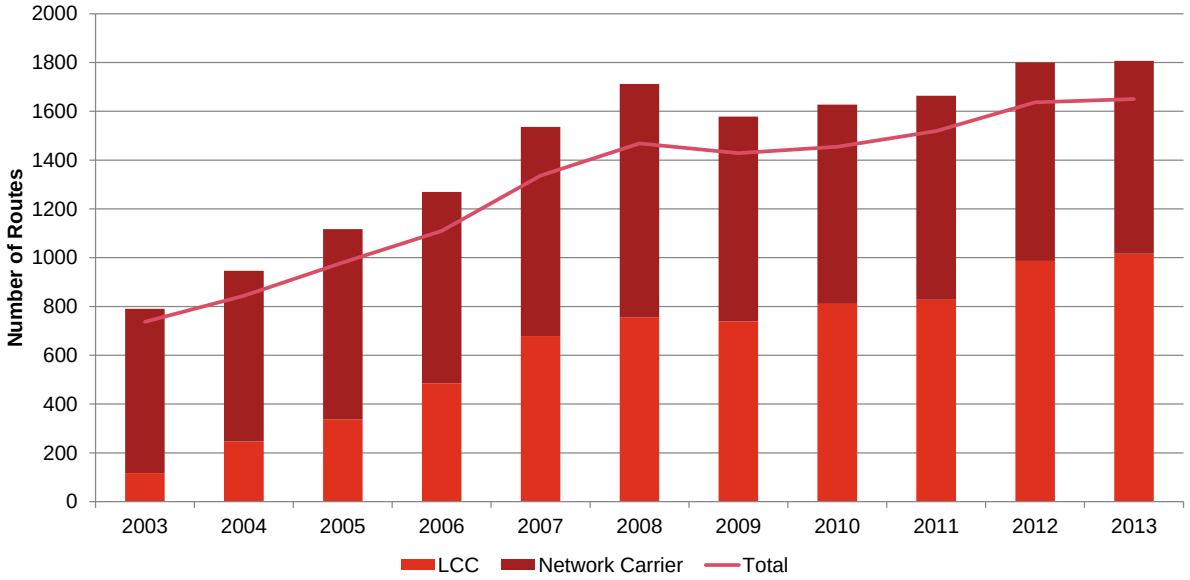
Figure 2-4: CESE-Europe Passenger Numbers, Seat Capacity, Frequency and Load Factors 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

As shown below, the number of routes operated between the CESE region and the rest of the EU more than doubled between 2003 and 2013. The growth was almost exclusively in the LCC sector, with routes operated by network carriers remaining fairly static.

Figure 2-5: CESE-Europe Route Pairs by Carrier Type 2003-2013



Note: Network Carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

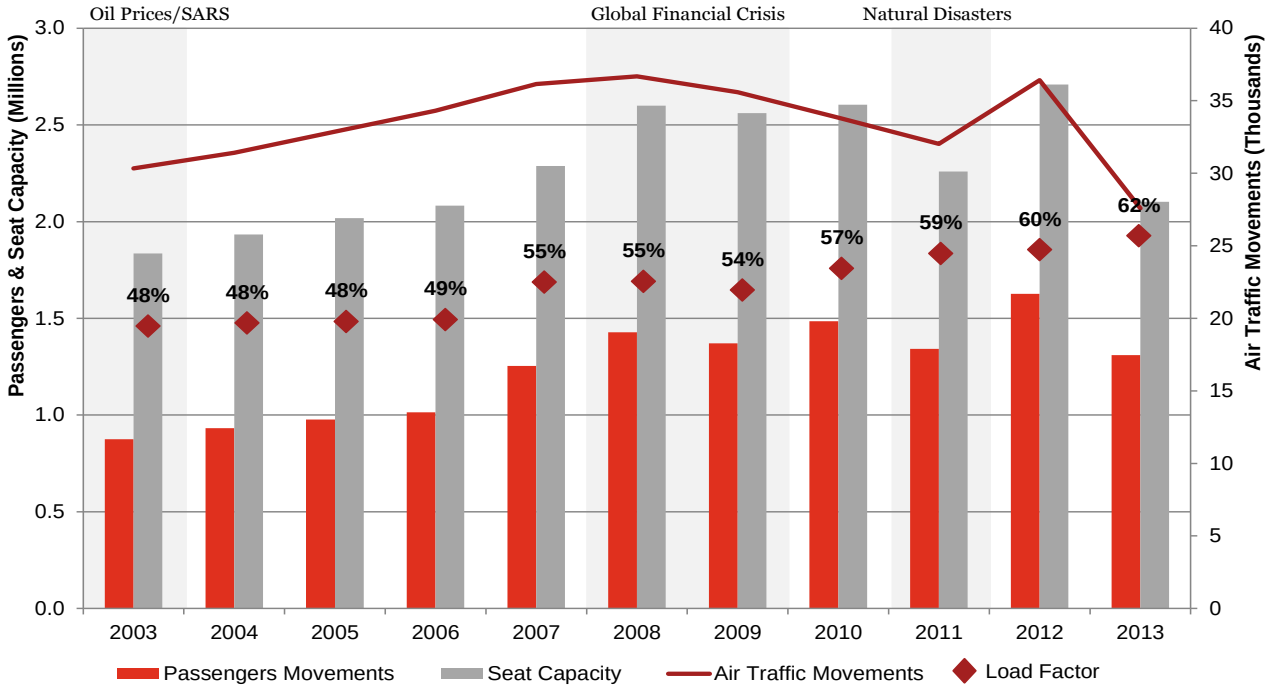
2.2.2.2. CESE to CESE traffic [Intra-CESE traffic]

Definition: Intra-CESE traffic is a sub-set of CESE-other EU traffic. It is been defined as traffic originating and terminating within CESE states. This data set includes domestic travel within a single CESE state, which we will examine separately from regional travel between CESE states.

2.2.2.2.1. Domestic Traffic

A total growth of 50% in passenger movements was observed between 2003 and 2013 from 900,000 to 1.3 million passengers. Domestic traffic within CESE states has been highly variable on a yearly basis, particularly since 2008. Prior to 2008, passenger movements grew at a faster rate than seat capacity i.e. at a rate of 10% per annum versus 7% for seat capacity. Following the global financial crisis, however, both traffic demand and seat supply decreased to approximately 2007 levels. In 2012, a significant increase in seat capacity was observed in the region. This could be a result of OLT Express adding significant capacity to the Polish domestic market (the largest in the CESE region) in 2012, and ceasing operations in July of the same year. The load factors observed across the domestic markets are lower than the overall load factors for all traffic originating from the CESE region. For instance, in 2013 the load factors across the domestic CESE market were of 62% as compared to 72% for overall traffic.

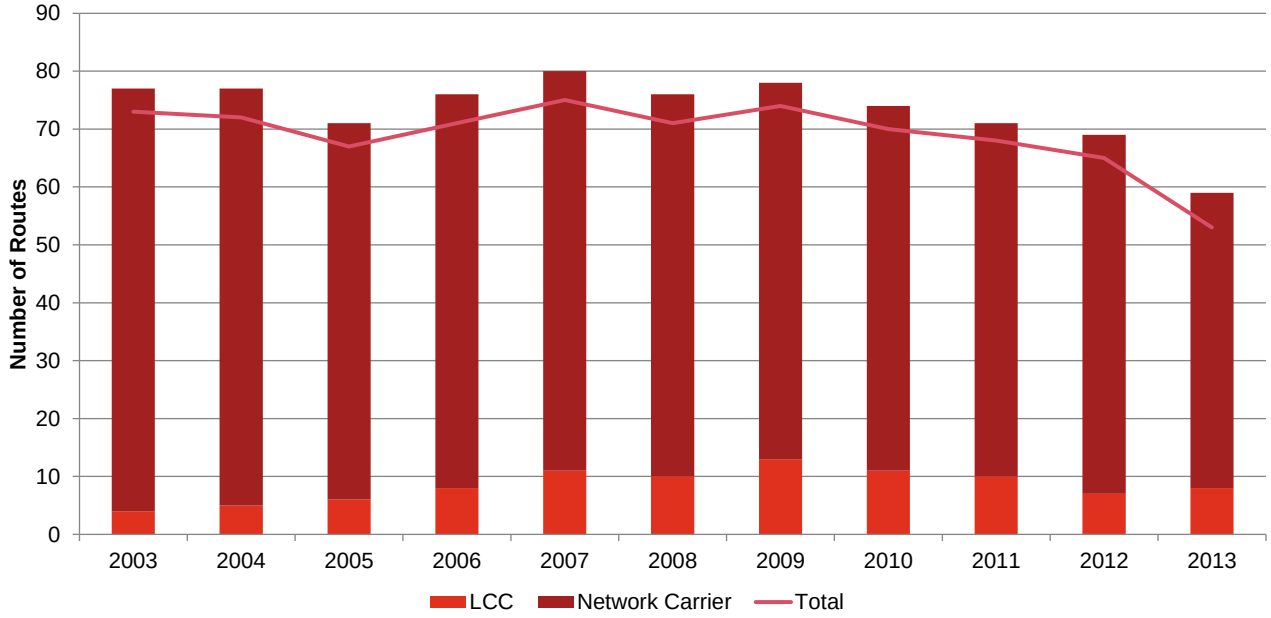
Figure 2-6: Domestic Passenger Numbers, Seat Capacity, Frequency and Load Factors 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

As shown in Figure 2-7 below, the number of routes offered domestically has been decreasing. LCCs operate a much smaller proportion of domestic routes, which may be due to shorter route distances and lower passenger demand which may mean it is not commercially viable to operate such routes with typical LCC aircraft.

Figure 2-7: CESE Domestic Market Route Pairs by Carrier Type 2003-2013



Note: Network Carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

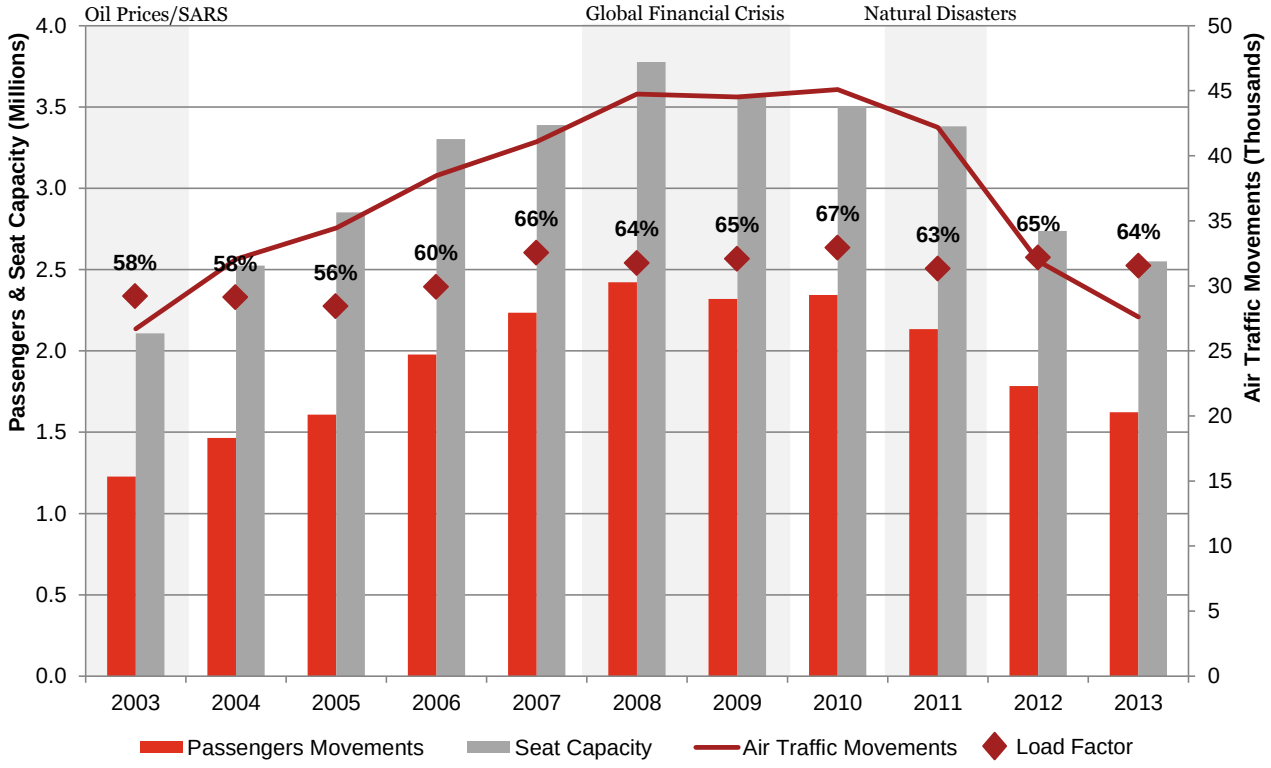
The only countries within the CESE region with a substantial domestic air transport networks are Poland, Romania and Croatia.

2.2.2.2.2. Intra-CESE

As shown in Figure 2-8, intra-CESE travel, like CESE-other EU travel, grew rapidly up until 2008. In the period that followed, however, intra-CESE traffic has declined equally rapidly – whereas travel to/from other EU had only stagnated. Furthermore, it is not apparent that the decline has ceased.

In 2003, passenger movements were 1.2 million, reaching their peak in 2008 at 2.4 million (i.e. growing at a rate of approximately 15% per annum). Following the global financial crisis, passengers decreased to about 2.3 million and seat capacity consequently adjusted to meet the reduced demand. After reaching a peak of 67% in 2010, load factors dropped again to 64% in 2013. Passengers may be seeking alternative surface routes, but this trend is difficult to capture given data limitations.

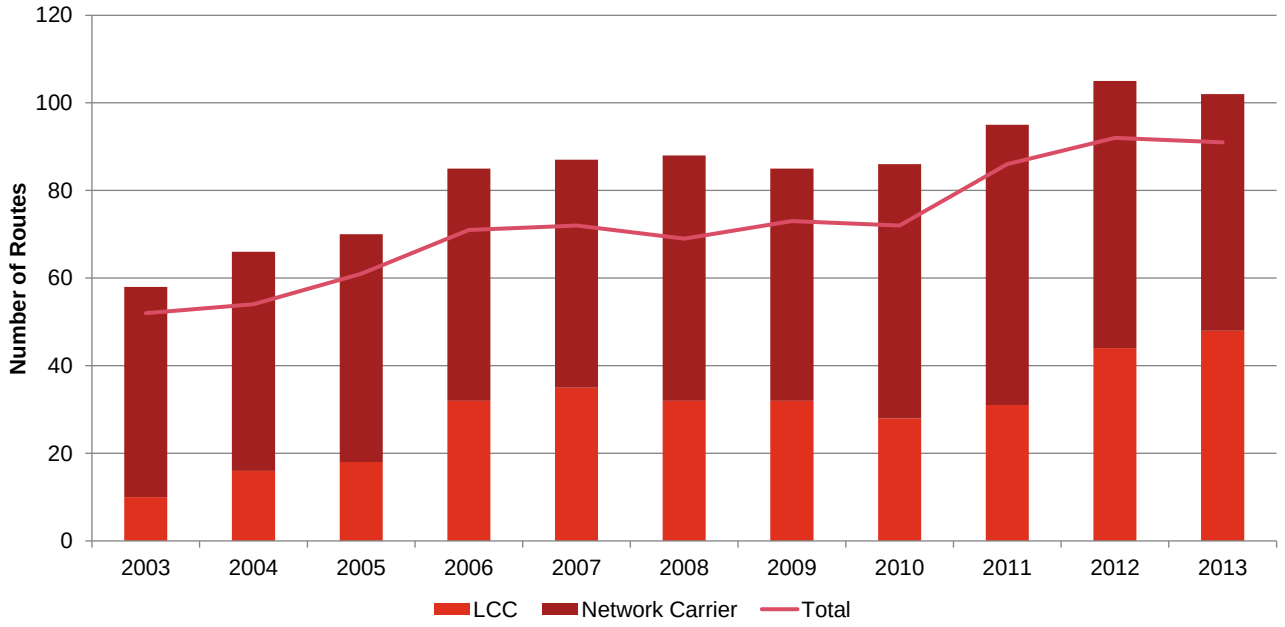
Figure 2-8: Intra-CESE International Capacity, Passenger Numbers and Load Factors 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Historically, air transport in the Intra-CESE market was provided by network carriers; however, LCCs have increased their market share - particularly in the last 2 years, with LCCs now operating on around 50% of routes between CESE states. LCCs have been the primary driver of the increase in the number of routes offered in recent years with routes offered by network carriers remaining fairly stable over the last decade. LCC growth in the Intra-CESE market segment has been particularly strong since 2012, which can be partially explained by the failure of Malév in 2012. This facilitated the entry of several LCCs to replace part of the dropped Malév capacity on routes with previously little LCC penetration.

Figure 2-9: Intra-CESE Route Pairs by Carrier Type 2003-2013



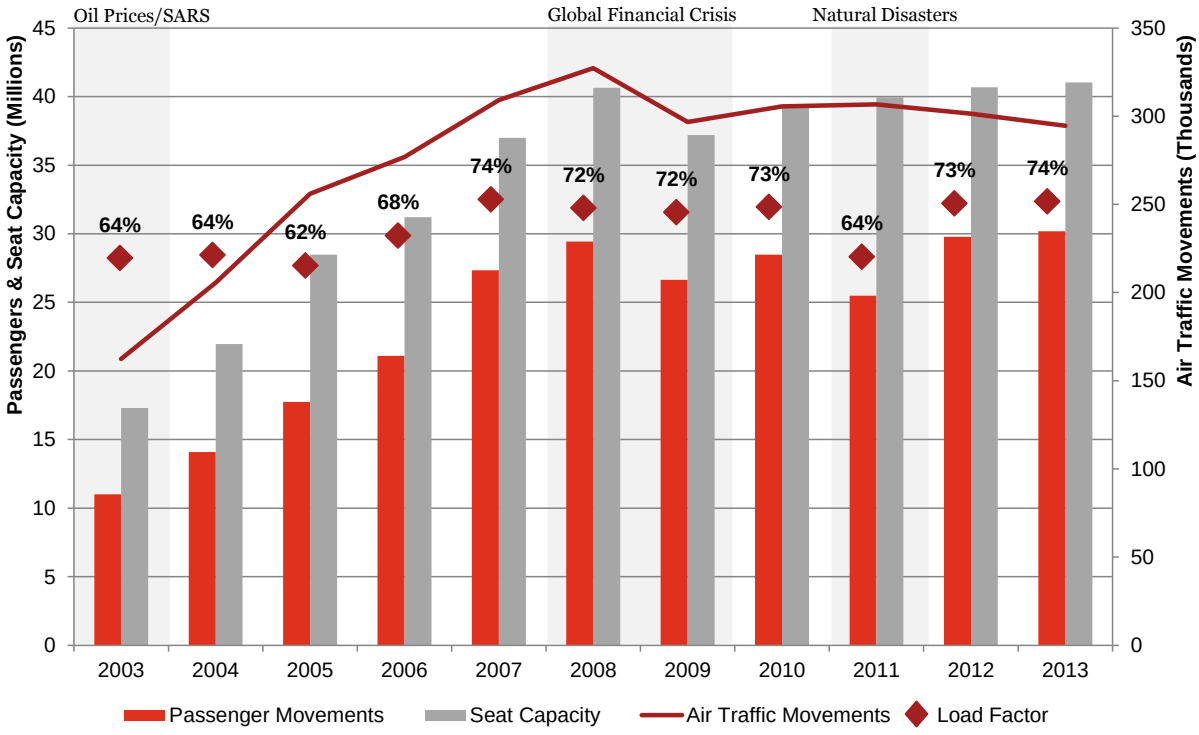
Note: Network Carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

2.2.2.3. CESE to EU15 traffic

Definition: 'CESE to EU15' traffic is defined as traffic originating in the CESE states, and travelling to EU15 Member States. It is therefore another subset of the total CESE-other EU traffic described above in section 2.2.2.1.

Air passenger demand between the CESE region and EU15 Member States has increased considerably since 2003 from 11m to over 30m (i.e. a growth of 11% per annum on average). As in the wider European market, the strongest growth occurred in the period to 2008 (22% per annum), but has since fluctuated before regaining 2008 levels from 2012. The rate of growth of seat capacity to 2008 was 19%, substantially lower than passenger numbers. Available seat capacity has shown cautious growth from 2010 and regained 2008 levels from 2012.

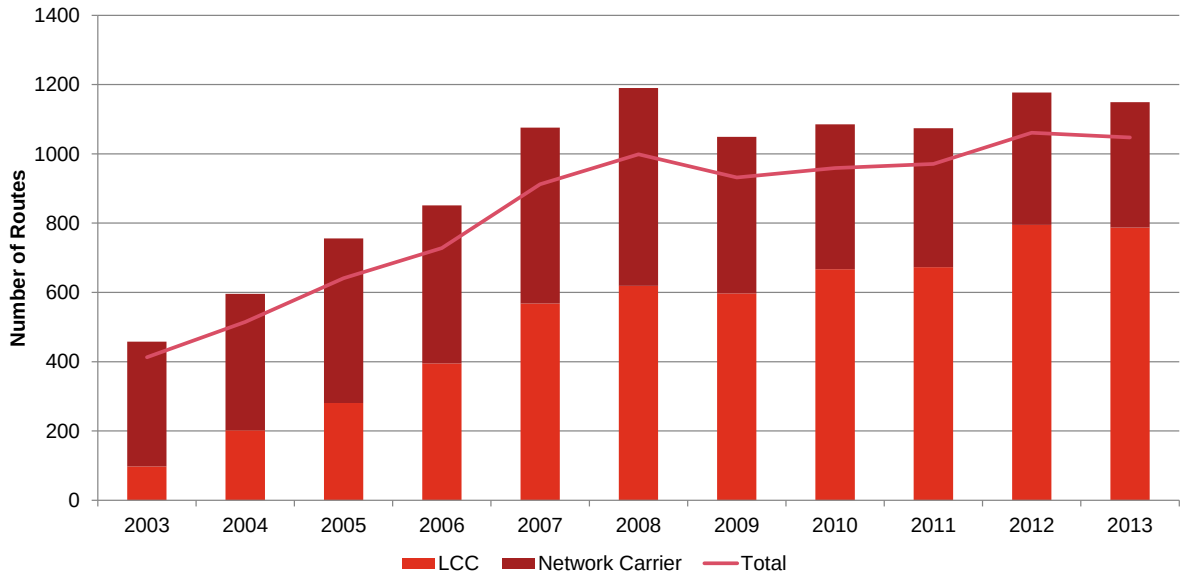
Figure 2-10: CESE-EU15 Seat Capacity, Frequency, Passenger Numbers and Load Factors 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

As illustrated in Figure 2-11 below, the CESE to EU air network in terms of route pairs more than doubled between 2003 and 2013. Growth has been exclusively in the LCCs sector, with network carriers' market share and absolute number of routes offered both declining.

Figure 2-11: CESE-EU15 Route Pairs by Carrier Type 2003-2013



Note: Network Carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

2.2.3. CESE to Non-CESE/EU destinations traffic

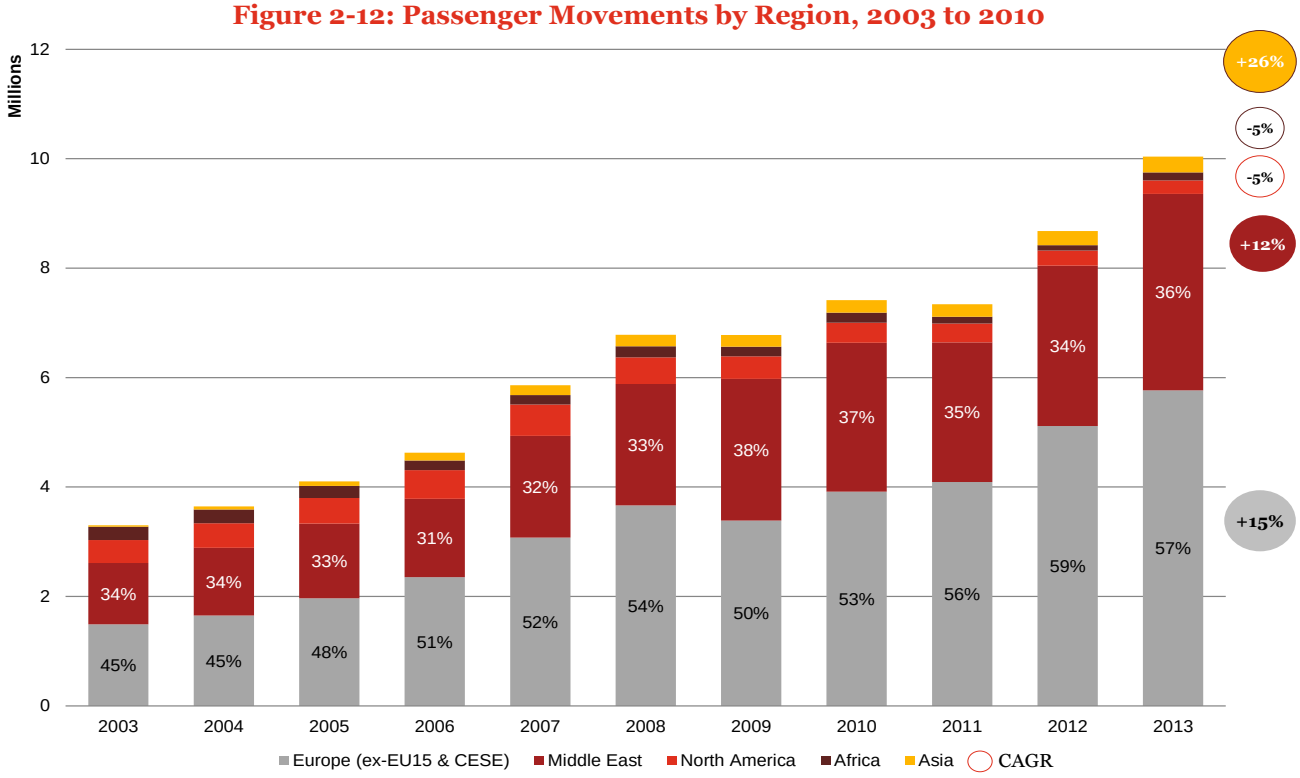
2.2.3.1. Overall

Definition: 'CESE to Non-CESE/EU' traffic was defined as traffic which between the CESE region and destinations outside the EU (including non-EU Europe).

As illustrated in Figure 2-12 below, the majority of all non-EU travel[7] is to non-EU European states and has grown at an average rate of 15% per annum between 2003 and 2013. This far outstrips growth to any other region, and these European markets now account for 57% of total non-EU traffic, up from 45% in 2003. The absolute size of market has grown from around 1.5 million passengers in 2003 to nearly 6 million in 2013.

Amongst other non-EU markets, there is also strong growth in the Middle East and in Asia, which have grown at average rates of 12% and 26% respectively (the latter from a low base). In terms of absolute size of market, it is the Middle East which is significant, and which increased from 1.1 million passengers in 2003 to c. 3.6 million in 2013.

Figure 2-12: Passenger Movements by Region, 2003 to 2010



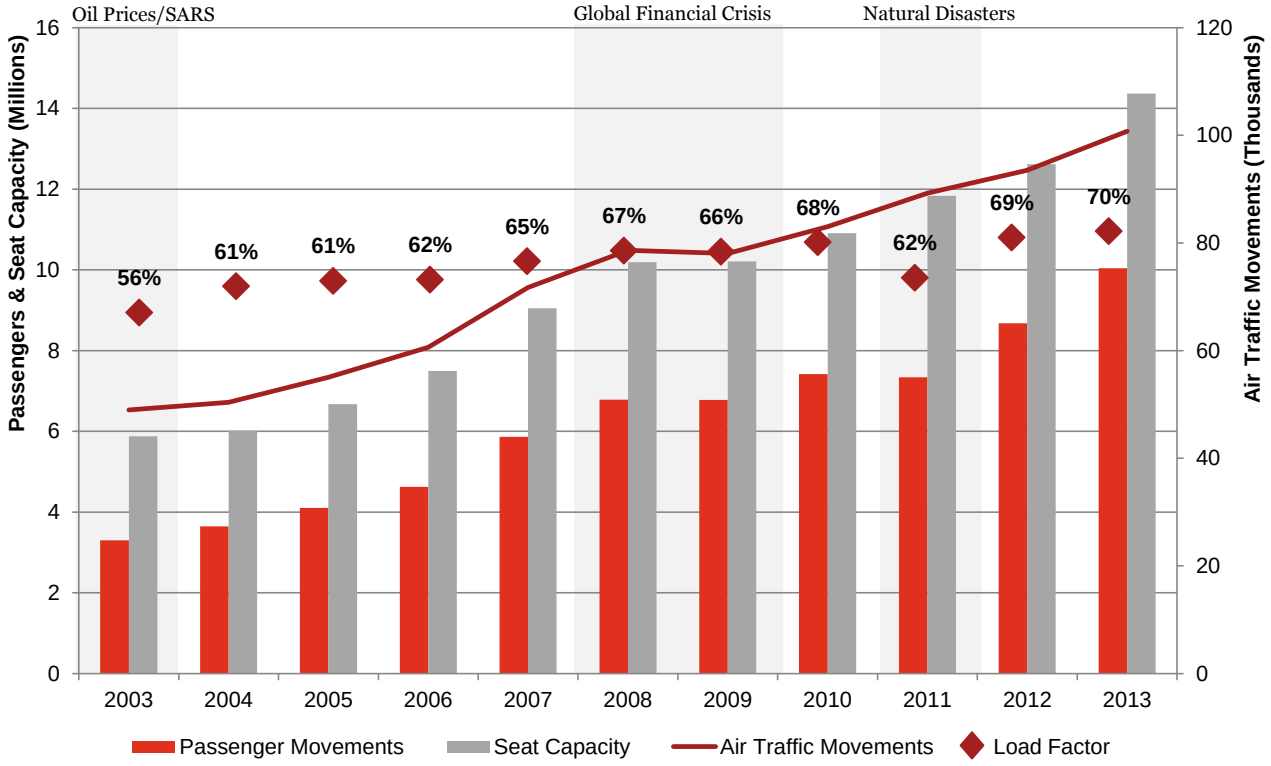
Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

As illustrated in Figure 2-13 below, traffic demand and consequently seat capacity, have been steadily growing since 2003 at rates of 12% and 9% per annum respectively. Similarly, frequency has also been steadily growing over the same period at a rate of 8%. As was the case for domestic travel, this slight lag of frequency behind capacity suggests that a small degree of up-gauging of aircraft might have occurred. Whilst overall traffic fell sharply in 2009 amidst the global financial crisis, flight capacity between the CESE and non-EU/CESE states remained stable, as did passenger numbers. Load factors have also registered an increase from 56% in 2003 to 70% in 2013. These passenger growth rates exceed those seen in the overall CESE to EU/CESE market segment, which were of 10% per annum. This may reflect the maturation of the CESE market, as routes offered and traffic from the CESE region expand across the globe, increasing international connectivity. However, the high

7 Non-EU is defined as non-EU15 and non-CESE traffic

level of growth may also be somewhat misleading, as due to the relatively small size of the market segment in 2003, any sustained positive change in traffic is likely to produce a significant growth rate compared to the larger CESE to EU/CESE market segment.

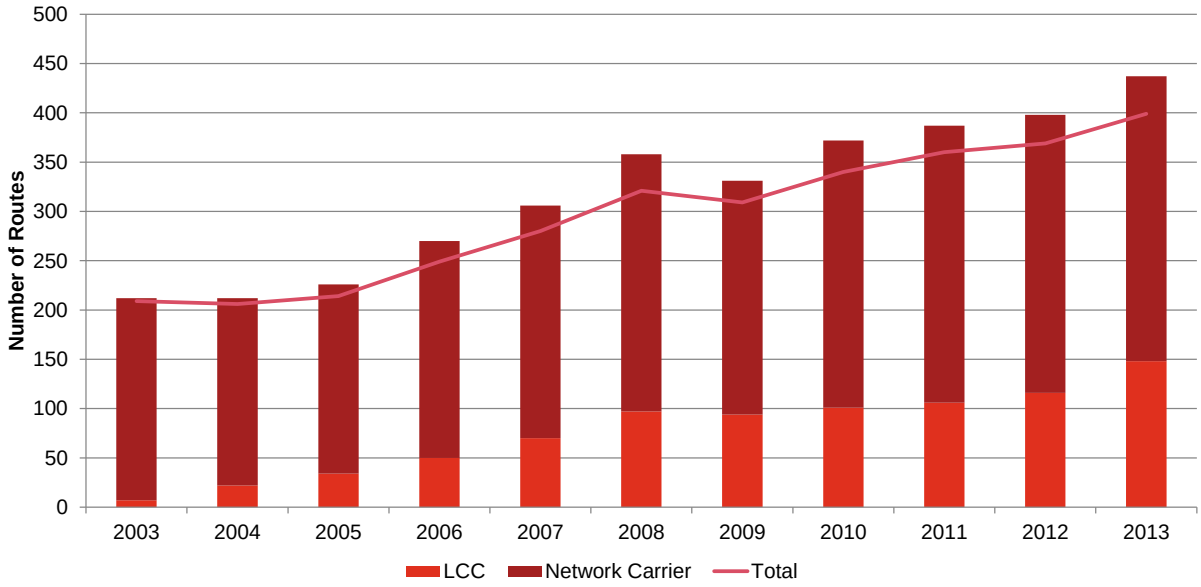
Figure 2-13: CESE-Non-EU/Non-CESE Seat Capacity, Passenger Numbers, Frequency and Load Factors 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Over the past decade, the number of route pairs between the CESE and Non-EU/Non-CESE states has doubled, with key markets being Russia, Turkey, Norway, Switzerland, Israel and Ukraine. Growth is observed both from network carriers and LCCs. This growth is particularly remarkable compared to the expansion of the route network to EU and CESE countries as its development is supported by a more marginal impact by LCCs.

Figure 2-14: CESE- Non-EU/Non-CESE Route Pairs by Carrier Type 2003-2013

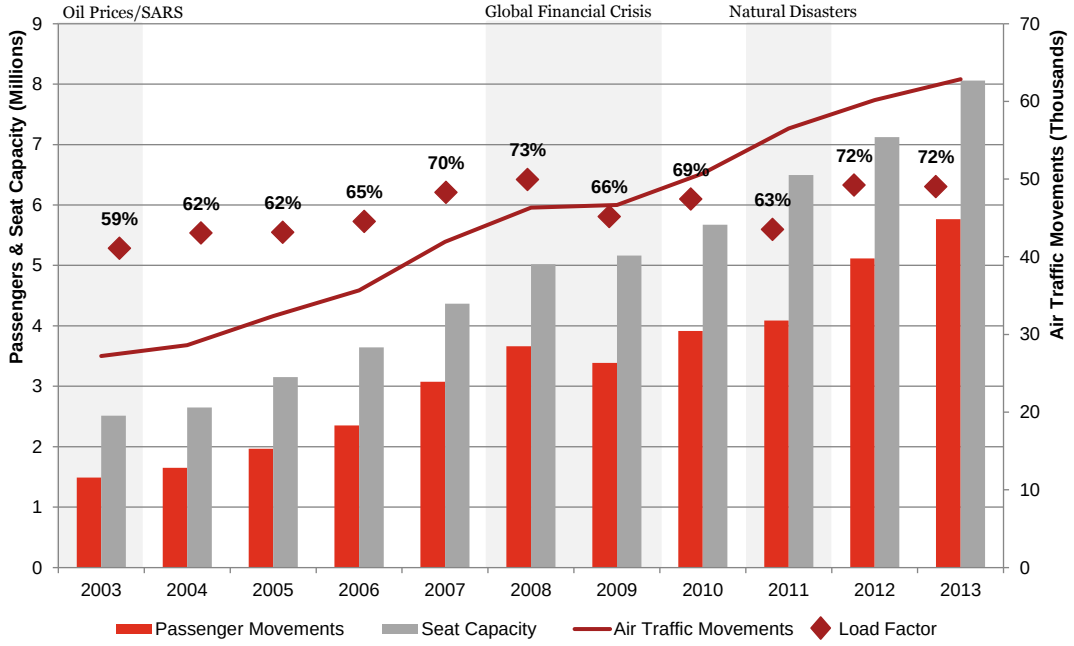


Note: Network Carrier and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim) Capacity Data

2.2.3.2. Europe (Non-EU & Non-CESE)

The majority of CESE to Non-EU/Non-CESE traffic is still directed to European states which are not part of the EU or located in the CESE region. Travel demand has been growing at an average rate of 15% per annum, whilst seat capacity grew at 12% per annum. Although demand decreased in 2009 amidst the global financial crisis, airlines continued to increase seat capacity. Thus, load factors, after dropping from 73% in 2008 to 66% in 2009, have since regained strength to 72%.

Figure 2-15: CESE to Europe (Non-EU) Statistics 2003-2013

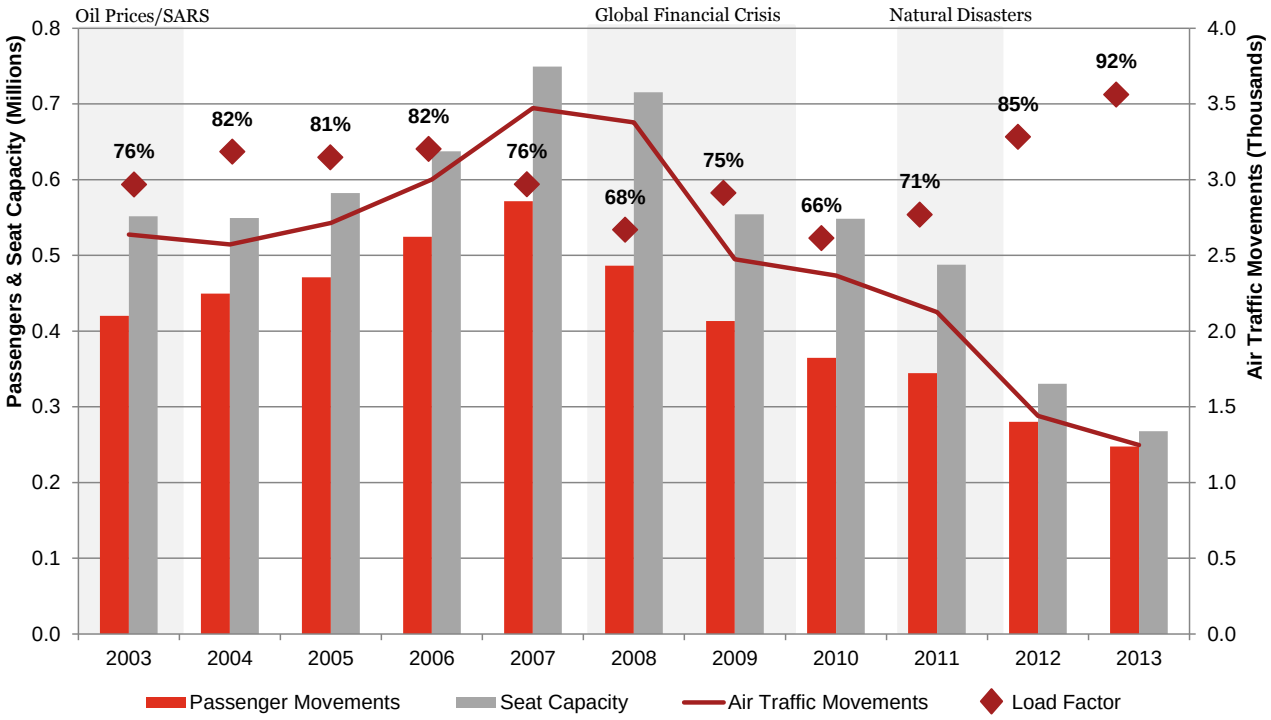


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.2.3.3. North America

Whereas total CESE-Non-EU/Non-CESE traffic showed overall growth over the 2003 to 2013 period, direct North American traffic has fallen strongly since 2007, likely exacerbated by the global financial crisis. Since 2008, North American route pairs peaked at 19 in 2010 (from 16 routes in 2003) but have since fallen to 5 in 2013. Passenger numbers have decreased at an average rate of 5% per annum between 2003 and 2013, alongside decreasing seat capacity which dropped by 7% per annum. The drop in the number of routes served between 2010 and 2013 could be a result of American Airlines and US Airways pulling some of the serviced from Budapest after the collapse of Malév.

Figure 2-16: CESE to North America Statistics 2003-2013

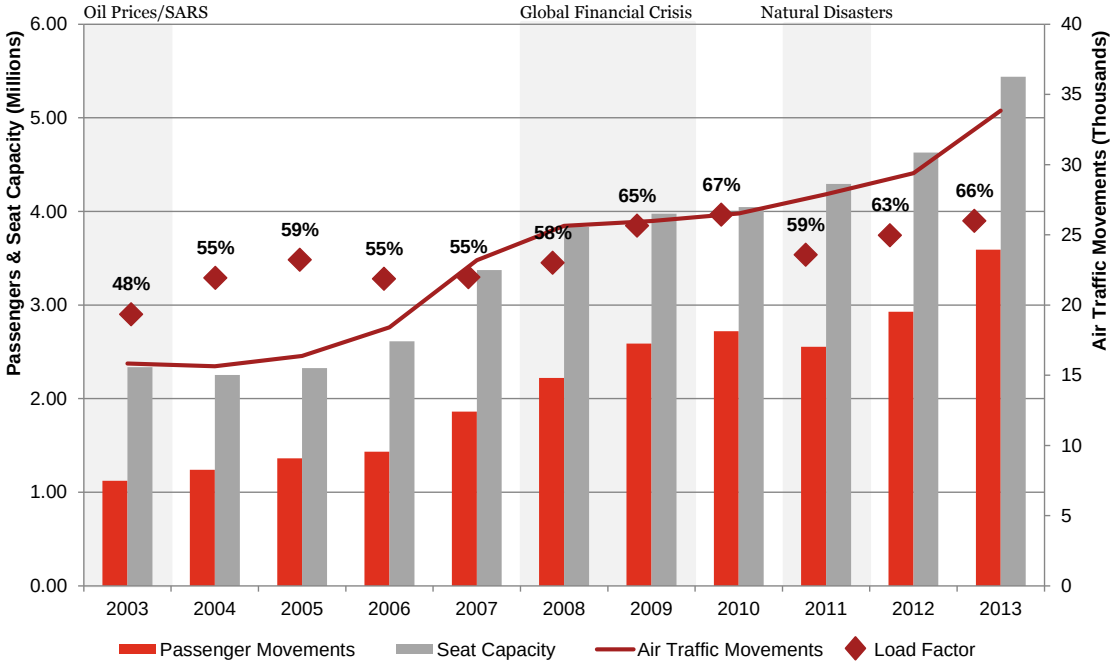


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.2.3.4. Middle East

Generally, the 2003 to 2013 period has been one of growth for Middle Eastern traffic. Annual scheduled flights increased every year since 2003 at an average rate of 8% per annum from around 16,000 to 34,000 movements. Passenger numbers have followed a broadly upward trajectory over the 2003 to 2007 period. Capacity declined slowly from 2003-2007, but has generally increased since (with the exception of 2011, when passenger numbers dipped). Passengers have grown at an average rate of 12% per annum since 2003. Load factors have increased from 48% to 66% as capacity has been more closely aligned to demand. This may reflect the growing market share shown by Gulf carriers in Europe over the last decade, and may also be related to the failure of several CESE flag carriers diverting further traffic to Gulf carriers.

Figure 2-17: CESE to Middle East Statistics 2003-2013

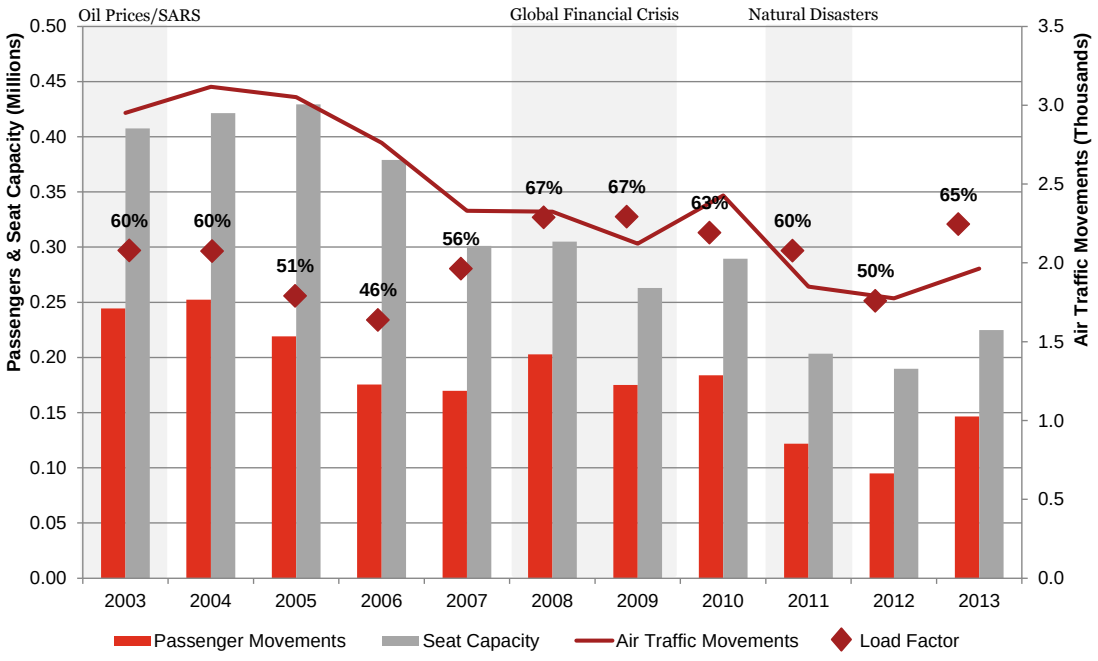


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.2.3.5. Africa

African traffic from the CESE region has never been a large market segment of CESE traffic, and has decreased further over the 2003-2013 period. Although there have been periods of minor growth since 2003, passenger numbers, capacity and frequency have decreased at an average rate of 5%, 6% and 4% respectively. Average load factors increased from 60% to 65% in 2013. Route pairs have also fallen from 25 in 2003 to 14 in 2013. The majority of African routes were to North African countries, and the reduced passenger numbers since 2010 may be a result of regional instability over the period.

Figure 2-18: CESE to Africa Statistics 2003-2013

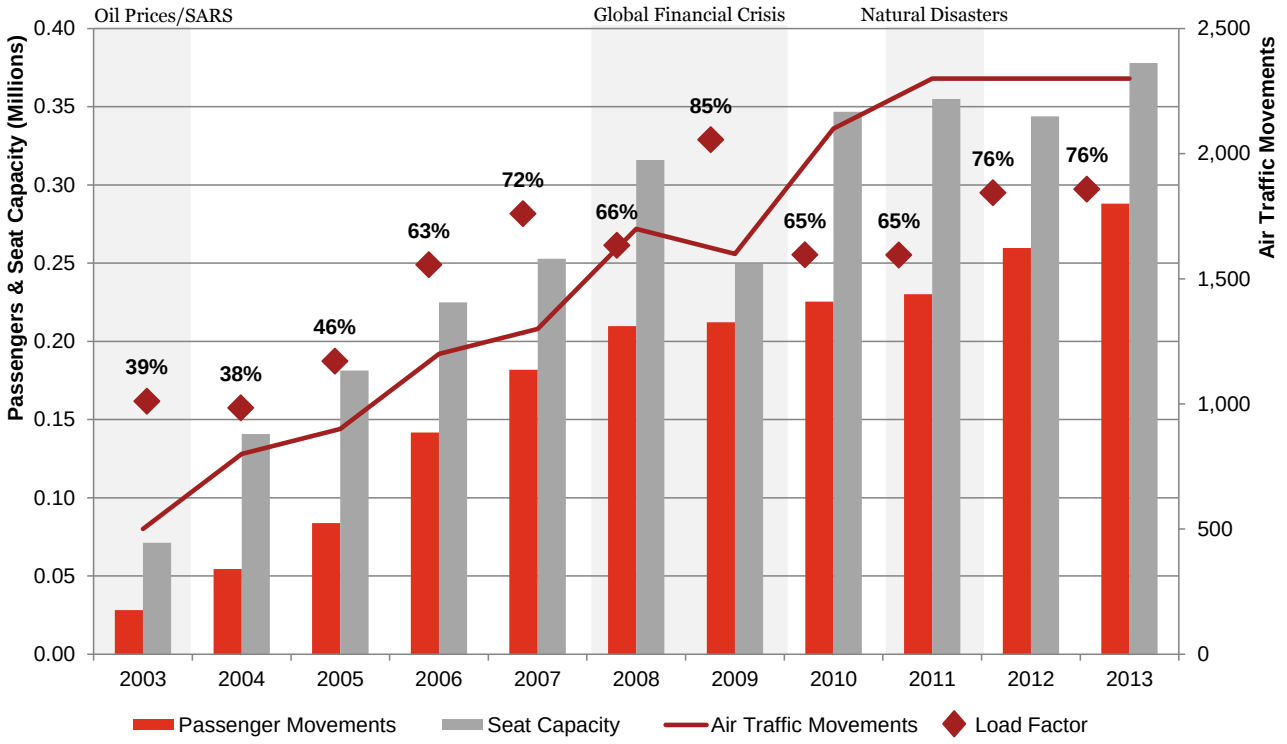


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.2.3.6. Asia

A small number of flights operate between the CESE region and Asian destinations, with many passengers transferring through Gulf States rather than travelling directly. The number of direct routes offered increased from 4 in 2003 to 7 in 2013. However, the total number of passengers travelling directly to Asia has grown significantly since 2003, as has capacity. Passenger numbers increased at a rate of 26% per annum, from around 28,000 passengers to over 288,000. Load factors have also increased from 39% in 2003 to 76% in 2013.

Figure 2-19: CESE to Asia Statistics 2003-2013



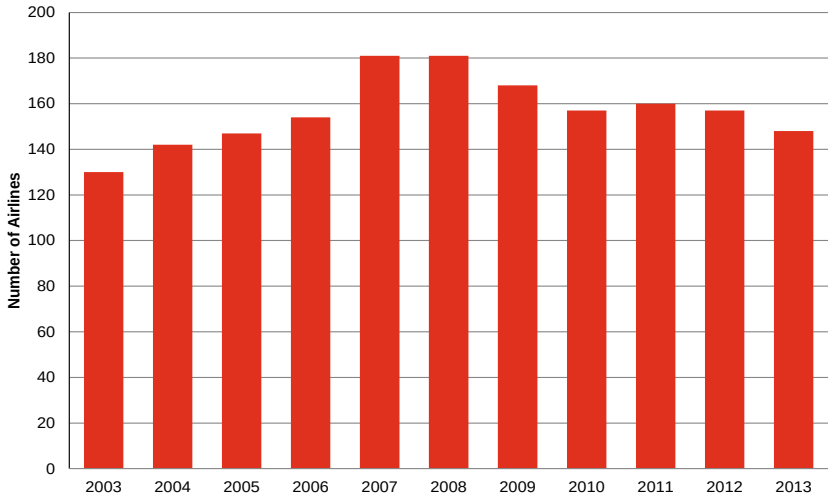
Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.3. Airlines operating in the CESE region

2.3.1. Overview

Over the 2003 to 2013 period, the number of scheduled airlines operating in the CESE region shows an increasing followed by decreasing trend. Over the period of 2003-2008, the number of airlines serving the CESE region increased year on year from 130 to 181. Since 2008, the trend is of decreasing number of airlines with a slight increase in 2011, to only 148 operating in 2013. This, when taken with the stability of passenger numbers over the same period (shown in Figure 2-1) suggests that traffic has been moving to airlines with a larger market presence while smaller airlines cease operating in the region.

Figure 2-20: Number of Airlines Operating in the CESE region 2003-2013

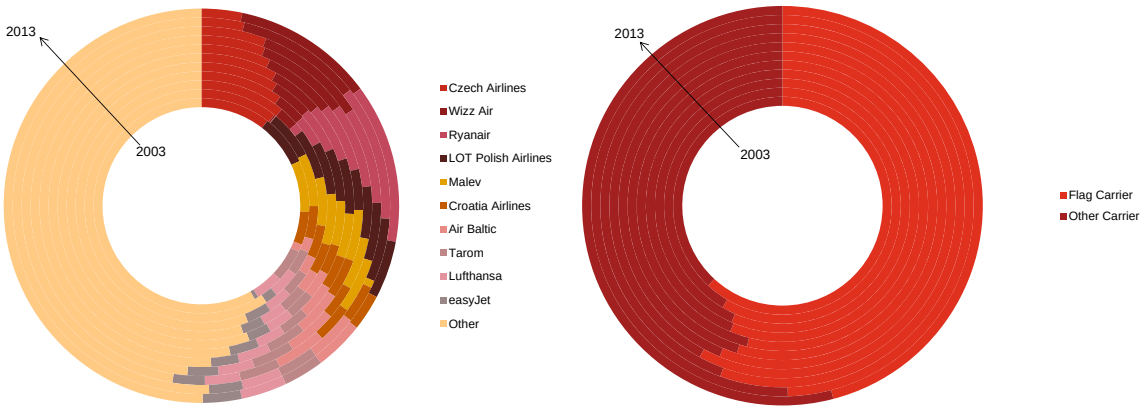


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

We identified the top market players in the CESE region by a number of different factors, including capacity, flight frequency, route pairs, average seats per operation, passenger numbers and load factors. The top carriers identified by capacity are shown in Figure 2-21. Particularly notable is the emergence of Wizz Air and Ryanair as major market participants in the CESE region in 2005, then subsequently increasing their market share to become the two largest carriers by capacity in 2013. Also notable is the cessation of Malév's operations observable in 2012, and the subsequent growth in capacity which this shutdown provided Wizz Air and Ryanair. Both carriers in 2012 and 2013 increased capacity at a rate exceeding the growth of previous years.

Another important trend is the consolidation of services by the top 10 carriers over the 2003 to 2013 period. In 2013, the top 10 carriers provided 42% of total CESE capacity, which by 2013 had increased to 53% of total capacity in 2011. However, following Malév's collapse the top 10 airlines' combined market share dropped slightly to 50% in 2013. As was shown earlier in section 2, growth up until 2008 was strong and largely taken up by (if not due to) LCCs with little impact on passenger carriage by network airlines. In the period since 2008, LCC presence has continued to grow amidst far softer market growth – which has been more significantly at the expense of network airlines. An overall decline in market share for flag carriers in the region can also be observed between 2003 and 2013 from approximately 62% to 46%.

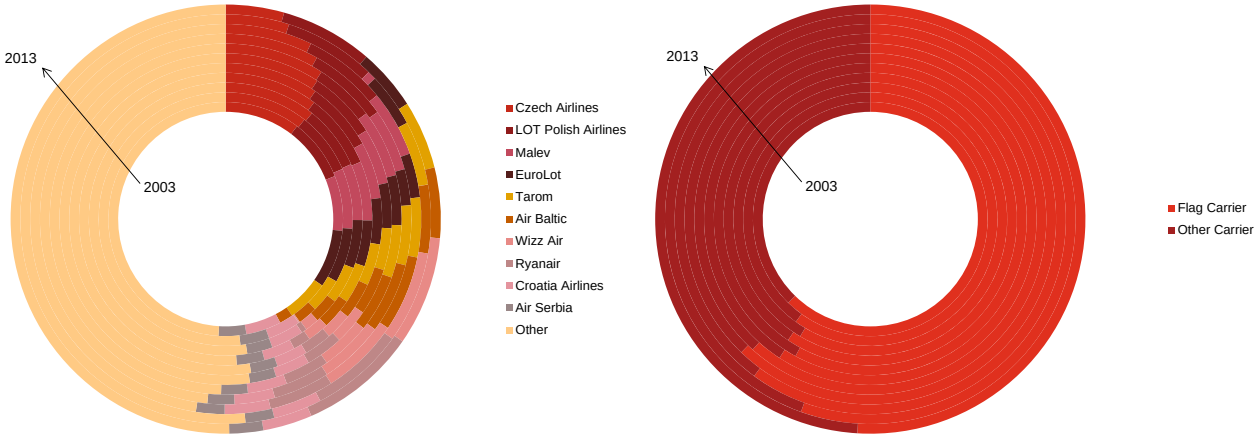
Figure 2-21: Capacity of Airlines operating in the CESE Region 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

The flight frequency market share of CESE airlines broadly mirrors that of capacity, as capacity is a function of flight frequency itself. Key differences include changes in the top 10 airlines by frequency compared to capacity; Lufthansa and easyJet are no longer in the top 10 by frequency, replaced by EuroLot and Air Serbia[8] which operate smaller aircraft. General trends are similar otherwise, demonstrating the entry of Ryanair and Wizz Air into the CESE market in 2005 and Malév's cessation in 2012. Another key observation is the increasing market share by flight frequency of AirBaltic, which is also reflected in capacity. Analysis of frequency shows that flag carriers operations have reduced from 62% in 2003 to 51% in 2013, with some fluctuation in the interim years.

Figure 2-22: Flight Frequency of Airlines operating in the CESE Region 2003-2013

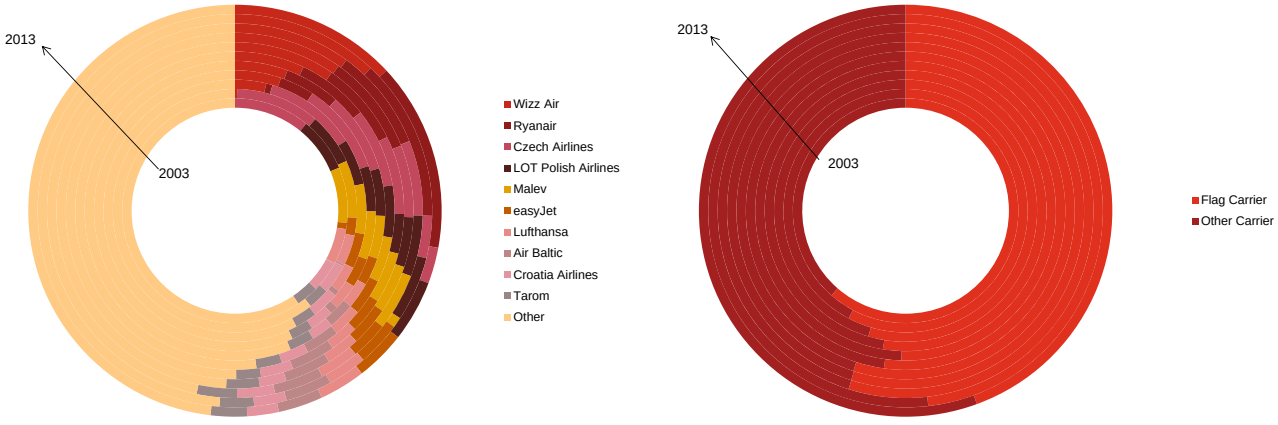


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Analysis of passenger carriage offers some additional insights over that of capacity provision. In particular this data indicates that Czech Airlines' passenger carriage has declined more substantially than its capacity provision, especially since 2011.

As with capacity, the market share of flag carriers in terms of passengers has decreased from 61% to 44% over the course of a decade.

Figure 2-23: Airline Passengers in the CESE Region 2003-2013



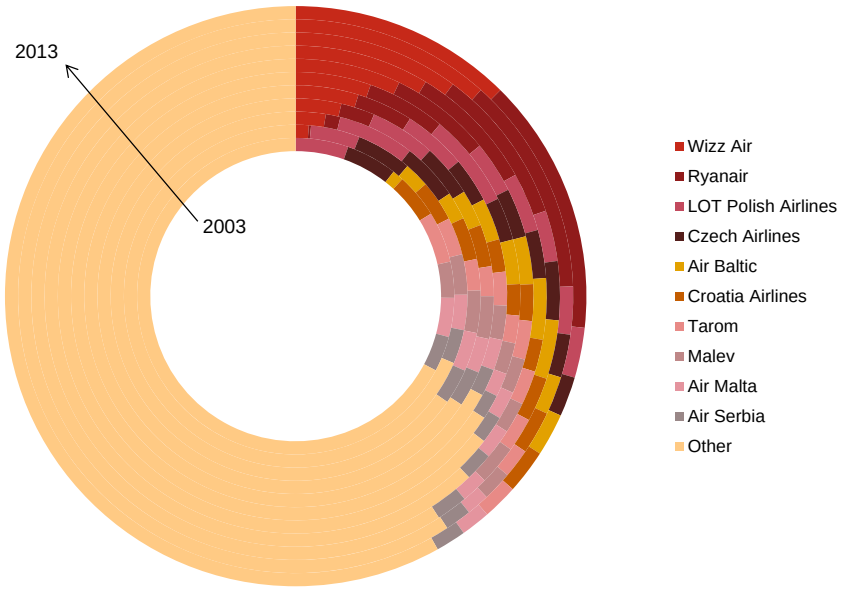
Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

8 Prior to 2013, Air Serbia operated under the name Jat Airways.

The market share of the top 10 airlines is slightly lower in respect of route pairs, where the top 10 airlines were operational on 42% of routes in 2013. We observe that whilst the number of routes offered by the top 10 airlines remains stable over the 2003 to 2013 period (excluding Malév in 2012 and 2013), Wizz Air and Ryanair show regular year on year increases in routes offered from the CESE region. This reaches a peak in 2013, with 27% of routes offered being served by these two airlines.

Of all the variables used to assess the market share of carriers, route pairs offers some of the most significant findings in terms of market change. In 2003, network carriers contributed to 61% of all route pairs but by 2013, this share has dropped dramatically to 30% as the number of routes available has grown.

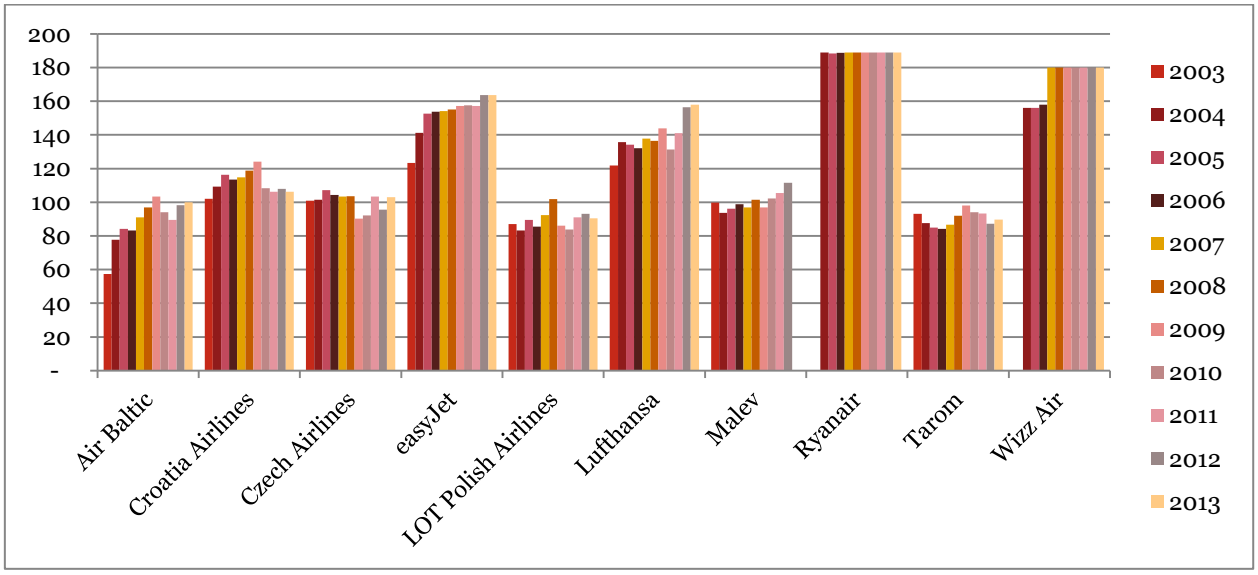
Figure 2-24: Route Pairs offered by CESE Airlines 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

We also examined the average aircraft size of the top 10 airlines. The data shown below in Figure 2-25 indicates the average seat capacity of aircraft in use by each of these airlines, over the period 2003-2013. Amongst the LCCs Ryanair and Wizz Air, there is substantial stability – due mainly to the single aircraft type these airlines hold in their fleet. Croatia Airlines has similarly retained stability in aircraft size. Amongst other carriers, the easyJet fleet shows a small and slow increase in size. Amongst other carriers there is slightly more variation. Malév, Air Baltic and to a lesser extent Tarom and Lufthansa had upgauged aircraft type over the period, though it is notable that in general the aircraft deployed are smaller than those of the newer entrant LCCs.

Figure 2-25: Average Aircraft Size of Airlines Operating in the CESE Region 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.3.2. Key Airlines

2.3.2.1. Wizz Air

Wizz Air is a Hungarian low cost carrier founded in 2003, with its head offices at Budapest Airport. Wizz Air does not operate using a hub airport, but rather point-to-point services with aircraft based at multiple airports and in several countries. Wizz Air is privately owned by the private equity firm Indigo Partners, and currently operates a single aircraft type fleet of 45 A320-232's. However, Wizz Air has orders in place for 26 A321-200's and will soon have two aircraft types; both are a short to medium range airliner although the A321 are a stretched fuselage variant of the A320 family, providing additional seating capacity given their configuration of 220 seats versus the 180 seats of the A320-200 currently in use. Several orders are also in place for Airbus A320-200's, which are likely to be for expansion of Wizz Air's operations. Replacement of current aircraft is also a possibility for several of the newly ordered A320-200's, but is unlikely to be the planned outcome for many of the aircraft due to the relatively young average age of 3.9 years, and only 1/3 of the fleet over 5 years in age.

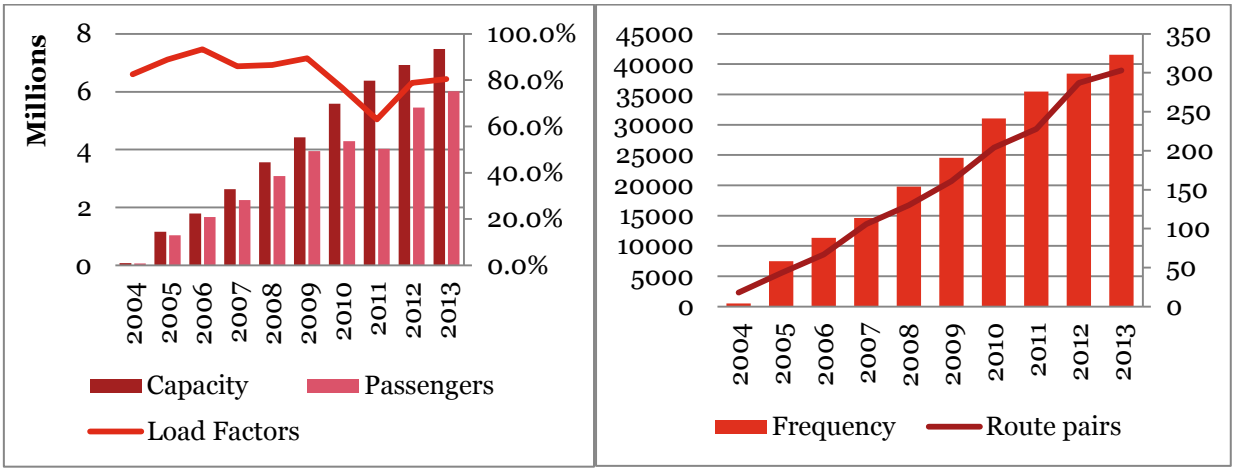
Table 2-1: Wizz Air fleet and aircraft orders, as at 2014

Manufacturer/Model Series	In Service	Orders	Options
Airbus A320-200	42	43	45
Airbus A321-200	0	26	0

Source: Flightglobal

As shown in Figure 2-26: Wizz Air CESE Statistics 2004-2013, Wizz Air has shown rapid year-on-year growth in the CESE region since its founding. Beginning in 2004, Wizz Air has increased capacity and frequency year-on-year, as well as routes served. Passenger numbers follow a similar trend, although in 2011 passenger numbers show the only year of negative growth, falling by 6% compared to 2010. Load factors since 2004 are more variable, showing an overall downward trend, with the lowest point also in 2011 corresponding to the reduced passengers served.

Figure 2-26: Wizz Air CESE Statistics 2004-2013[9]



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Wizz Air has announced 15 new routes operating from the CESE region in 2014, the operation of which is likely to include some of the new aircraft currently on order. These include routes from Sibiu, Donetsk, Prague, and several routes from Skopje, a key Macedonian airport (formerly the hub of MAT Macedonian Airlines).

2.3.2.2. Ryanair

Ryanair is an Irish low cost carrier, with operating bases in over 60 countries, and a fleet of almost 300 aircraft. Ryanair has rapidly expanded its operations in the CESE region since beginning services in 2004, and increased its services year on year since then. Growth of frequency and capacity briefly plateaued from 2008 to 2010; then new services offered by Ryanair resulted in increased services during 2010 and 2011. Due to the collapse of Malév in 2012, during which period Ryanair rapidly began operating new routes to pick up the dropped capacity on Malév's routes, Ryanair greatly increased services that year and again the following year.

Ryanair offers a fleet of only a single aircraft type, consisting entirely of Boeing 737-800s. Ryanair currently has 175 aircraft on order, many of which are likely to be used for expansion of services across Europe, but although Ryanair has an average fleet age on only 5.4 years, with over 1/4 of the fleet over 7 years in age some of the newly ordered craft are likely to be replacement for aging craft.

Table 2-2: Ryanair fleet and aircraft orders, as at 2014

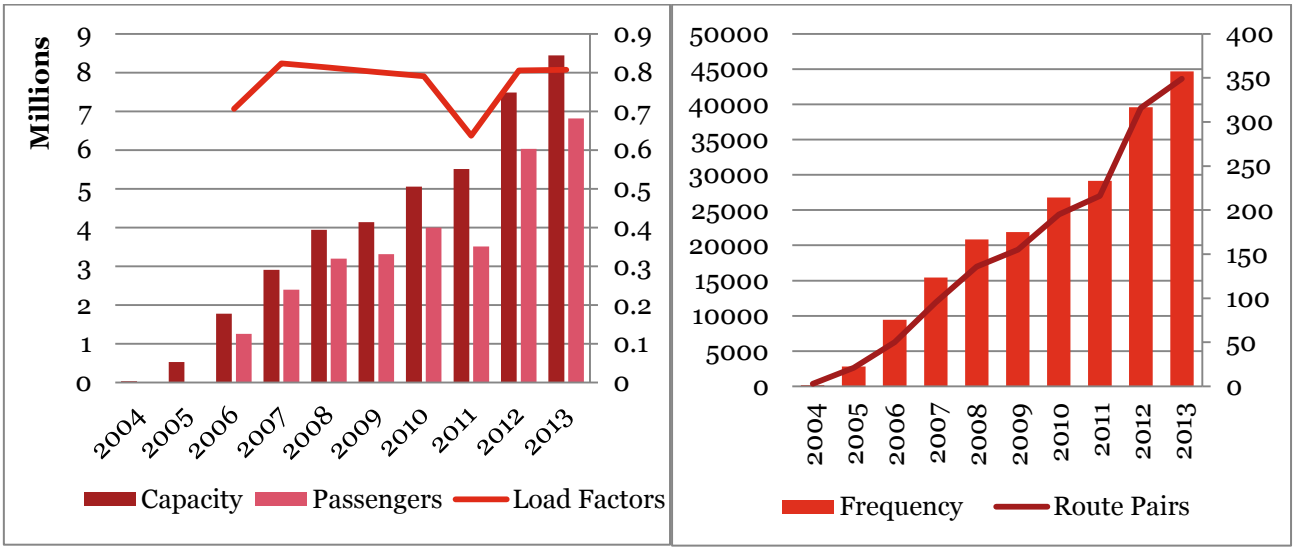
Manufacturer/Model Series	In Service	Orders	Options
Boeing 737-800	298	175	0

Source: Flightglobal

As shown in Figure 2-27, similarly to Wizz Air, Ryanair has shown consistent strong year on year growth in capacity, frequency and route pairs. Passenger numbers have also increased in a similar fashion, although as with Wizz Air passenger numbers have decreased in 2011, by 12.2% compared to 2010. Load factors similarly drop in 2011, falling by 18.8 percentage points.

9 Passenger numbers, load factors and average passengers per flight are unavailable for 2004.

Figure 2-27: Ryanair CESE Statistics 2004-2013[10]



Source: SABRE ADI/ Milanamos (PlanetOptim)[11], PwC analysis

Ryanair intends to offer 82 new routes out of the CESE region in 2014, and began operations on domestic Polish routes in the same year. Additionally, several new routes are scheduled to open out of Malta, the Czech Republic and Croatia.

The chief executive of Ryanair, Michael O'Leary, has revealed new plans for the airline to attract more business travelers. The airline, in a move similar to that of easyJet, has started looking into flying to primary airports (rather than secondary airports) and providing services which directly appeal to business customers. For instance, the airline has recently introduced allocated seating and intends to offer higher-priced, yet more flexible tickets aimed at the business community, giving them the opportunity to change flights more easily, without further penalty. Other services, such as fast-track through security are also being explored.

2.3.2.3. Malév[12]

Malév Hungarian Airlines was the national carrier of Hungary until February 2012, when it ceased operations. Prior to the cessation of operations, Malév was one of the largest carriers in the CESE region in terms of operated capacity, frequency and passenger volume. Malév was based at Budapest Airport, and its shutdown caused a significant change in routes and airlines operating out of that airport. Malév had operated a fleet of 23 aircraft, primarily consisting of Boeing 737 aircraft (-600,-700 and -800 series aircraft), although the fleet also contained a single Boeing 767-200ER and four Bombardier Dash 8 Q400 turboprop aircraft. The fleet age was of 8.4 years at the time of the shutdown.

Table 2-3: Malév fleet, as at 2012

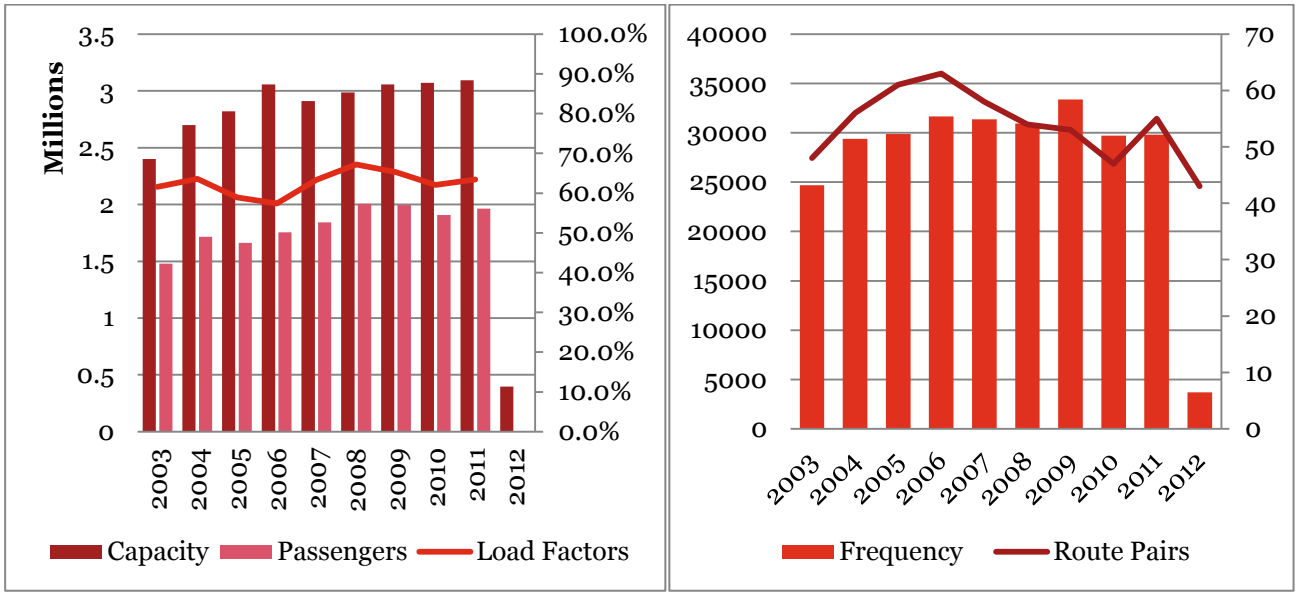
Manufacturer/ Model Series	Aircraft Type	In Service
Boeing 737-600	Narrow Body	6
Boeing 737-700	Narrow Body	7
Boeing 737-800	Narrow Body	5
Boeing 767-200ER	Wide Body	1
Bombardier Dash 8 Q400	Turboprop	4

[10] Passenger numbers, load factors and aircraft movements are unavailable for 2004.
[11] Passenger data for Ryanair for 2004 and 2005 was deemed to be unreliable and has been excluded from Figure 2-27.
[12] Please note an in-depth analysis of Malév and the Hungarian market is available in Paper B.

Source: Flightglobal

As shown in Figure 2-28, prior to the shutdown of operations on February 3rd 2012 Malév's operations were stable, although with high levels of load factor variation. The analysis of average aircraft size (see Figure 2-25 in previous section) indicates that the average capacity of aircraft operated by Malév was somewhat lower than most of its competitors. Malév's shutdown was due to the EU-ordered repayment of illegal governmental aid, and as a result there was no reduction in services prior to the shutdown, with all services ceasing at once. This has had a significant effect on connectivity and passenger travel across the entire CESE region.

Figure 2-28: Malév CESE Statistics 2003-2013



Note: Passengers and Load Factors for 2012 may not be reflective of actual figures for the year, due to the airline ceasing service at the beginning of 2012, therefore only capacity has been included in the chart.
Source: SABRE ADI/ Milanamos (PlanetOptim)[13], PwC analysis

2.3.2.4. LOT Polish Airlines

LOT Polish Airlines is the national carrier of Poland, and one of the largest carriers operating in the CESE region. The airline operates out of Warsaw Chopin Airport as its primary hub, and is a member of Star Alliance. Originally a state-owned carrier, LOT Polish Airlines was partially privatised in the period 1992-1999. Currently, the airline is still majority-owned by the state (68%), and a 2012 attempt to sell a major stake to Turkish Airlines did not go ahead.

LOT Polish Airlines currently operates an active fleet of 34 aircraft, which consist of Boeing and Embraer aircraft. Currently 3 more Boeing aircraft are on order, at least one of which is suggested to be a replacement for a currently owned Boeing 787-8 which is to be leased to FinnAir.

Manufacturer/Model Series	Aircraft Type	In Service	Orders	Options	In Storage
Boeing 737-400	Narrow Body	2	0	0	1
Boeing 767-300ER	Wide Body	0	0	0	1
Boeing 787-8	Wide Body	4	3	0	0
Boeing 787-9	Wide Body	0	0	2	0
Embraer E170	Narrow Body	10	0	0	0
Embraer E175	Narrow Body	12	0	0	0
Embraer E195	Narrow Body	6	0	0	0

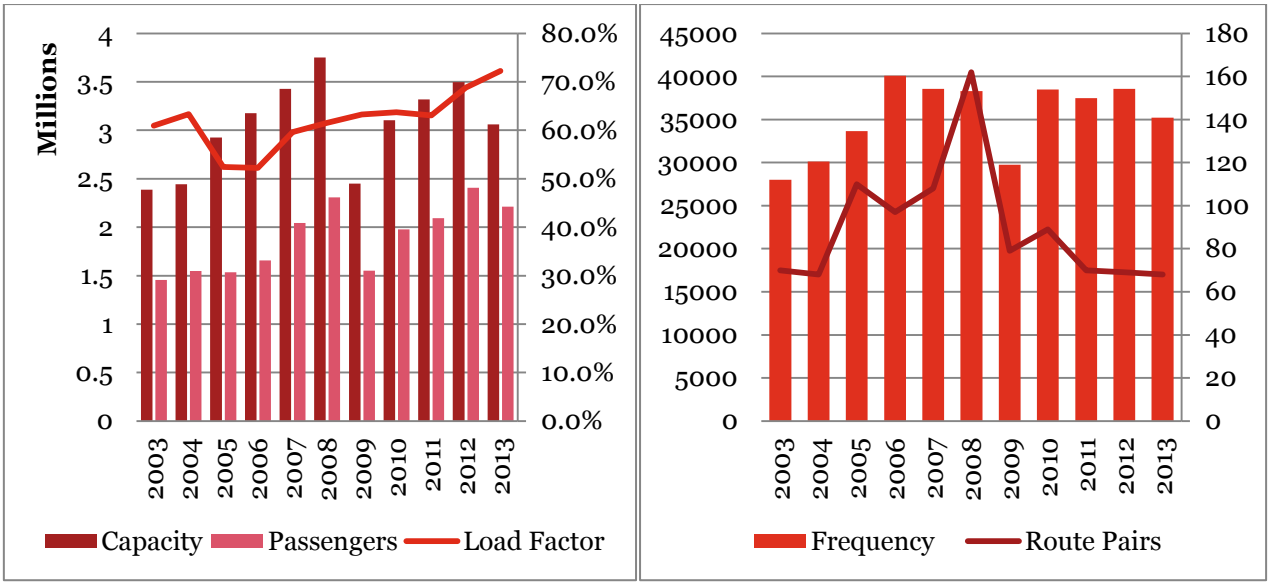
[13] Passenger and load factor data for 2012 have been excluded as Sabre considers passenger bookings rather than those actually travelled; therefore, Malév's 2012 passenger figure, if included, would be artificially high in Figure 2-28.

Embraer ERJ-145	Regional Jet	0	0	0	3

Source: Flightglobal

As illustrated in Figure 2-29, prior to the global financial crisis in 2008, LOT Polish Airlines was showing regular strong positive growth in passengers served and capacity offered, with CAGRs of approximately 9.7% and 9.5% respectively. Flight frequency offered also increased over this period, although peaking in 2006 rather than 2008. LOT Polish airlines was affected particularly strongly by the 2008 crisis however, with capacity, passengers served and flight frequency decreasing by 35%, 33% and 22% respectively in 2009. Capacity, passengers and frequency have somewhat recovered over the following years, although all three fell again in 2013 following several years of growth or stability. Despite this growth however, LOT Polish Airlines has not posted a profitable year since 2008, however the airline was reported to have become profitable in 2013. LOT Polish have also greatly reduced the coverage of their services since 2008, with route pairs served falling from 162 in 2008 to only 68 in 2013. Load factors in 2013 are also slightly lower than in 2008. Load factors on LOT Polish airlines fell from 2008 to 2011, but have increased since 2012. LOT Polish underwent a fleet restructuring, which is related to change in strategy by the airline which is now seeking to profile itself as a 'niche network carrier' by aligning CESE routes to its long-haul operations, with CESE thus becoming its 'targeted home market'.

Figure 2-29: LOT Polish Airlines CESE Statistics 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

In 2014, LOT Polish Airlines, which is currently under state aids investigation, has not announced any new routes to be opened from the CESE region, although it has proposed compensatory measures to face competition increasing services on some of the existing routes to major European and North American hubs.

2.3.2.5. Lufthansa

Lufthansa is a full service airline and the flag carrier of Germany, with two major operating hubs in Frankfurt and Munich International Airports. Lufthansa is one of the world's largest airlines, with a fleet of 281 aircraft (3 in storage), and serving 165[14] destinations over the world. It was one of the founding members of Star Alliance, and until 1994 was state-owned. It is currently owned by private investors (88.52%), MGL Luftverkehrswerte (10.05%) Deutsche Postbank (1.03%) and Deutsche Bank (0.4%). Due to the diverse nature of Lufthansa's operations, their fleet has a profile of many different aircraft types and capacities, although not all of these

[14] Data current as of 7-13 May 2014

aircraft types operate within the CESE region. In 2013, the only Lufthansa crafts operating out of the CESE region were Airbus A319/A320/A321's and Boeing 737-300/737-500's.

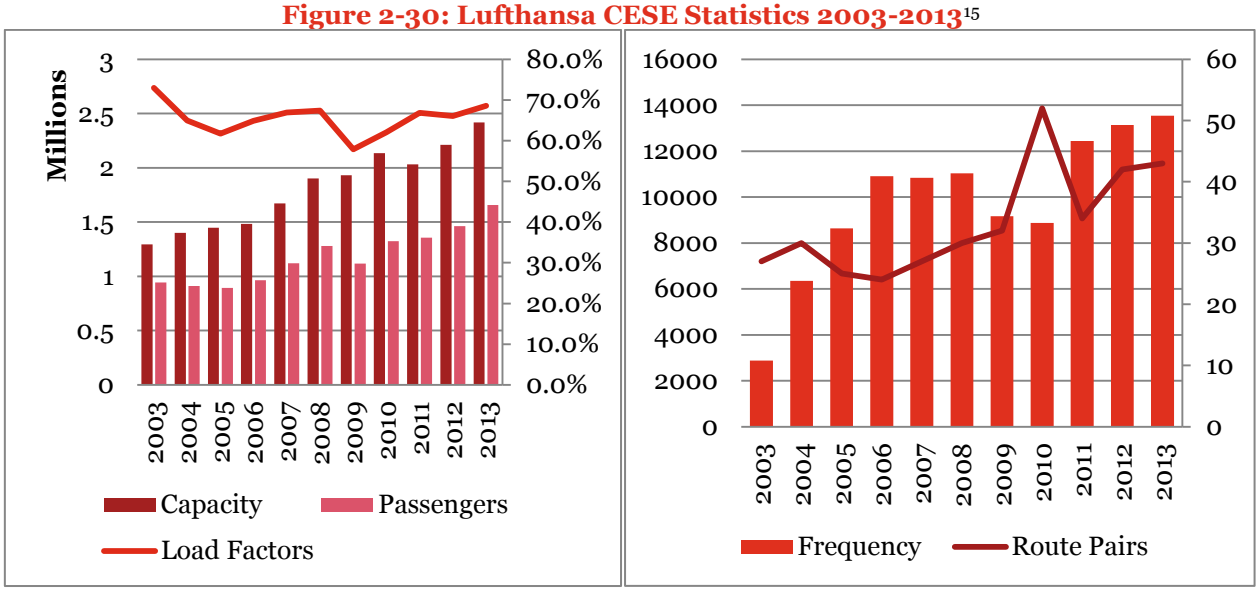
Manufacturer/Model Series	In Service	Orders	Options	In Storage
Airbus A319-100	32	0	0	0
Airbus A320-200	59	99	0	0
Airbus A321-100	20	0	0	0
Airbus A321-200	42	42	0	0
Airbus A330-300	19	0	0	0
Airbus A340-300	19	0	0	0
Airbus A340-600	24	0	0	0
Airbus A350-900	0	25	30	0
Airbus A380-800	10	4	0	0
Boeing 737-300	10	0	0	2
Boeing 737-500	13	0	0	1
Boeing 747-400	17	0	0	0
Boeing 747-400 Combi	2	0	0	0
Boeing 747-8I	11	8	20	0
Boeing 777-9X	0	20	0	0
Bombardier CS100	0	0	30	0

Source: Flightglobal

Lufthansa has nearly 200 confirmed aircraft orders, including options for a new model of aircraft in the Bombardier CS100 orders. These aircraft may be used for expansion of new routes, but Lufthansa has an aging fleet with an average age of 12.2 years and over 80 aircraft aged over 10 years, so many will likely be used as replacements for craft to be retired.

As shown in Figure 2-30, Lufthansa was not particularly negatively affected by the 2008 financial crisis. Passenger numbers and frequency fell somewhat in 2009, and capacity growth was reduced. From 2009 onwards, passenger numbers rapidly recovered, although capacity fell again in 2011 following a sharp increase in 2010, which may suggest passenger estimations in 2010 were overly optimistic by Lufthansa. Following a period of route pair decrease from 2005 to 2006, route pairs have increased year on year until 2011. Despite Lufthansa's large market share of passengers and capacity, Lufthansa does not operate large number of routes from the CESE region, suggesting their business model is one of few but deep routes. Even though the CESE market may not be of particular interest to Lufthansa, it is certainly an important market for its subsidiaries. In particular, it is essential to support the growth of Germanwings and to secure Austrian's position in the market.

Figure 2-30: Lufthansa CESE Statistics 2003-2013[15]



Note: A data issue for the year 2010 has been reported by the data provider
Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

2.3.2.6. Austrian Airlines

Austrian Airlines has been 100% owned by Deutsche Lufthansa since September 2009. Like its parent company, it is a full-service carrier and is based at Vienna International Airport. Austrian Airlines has two subsidiaries of its own; Tyrolean Airways, which is a regional airline, and Lauda Air, a charter carrier. With a total of 75 aircraft, 2 of which are in storage, and none on order, Austrian shows few plans for expansion after a restructuring program which began in 2012.

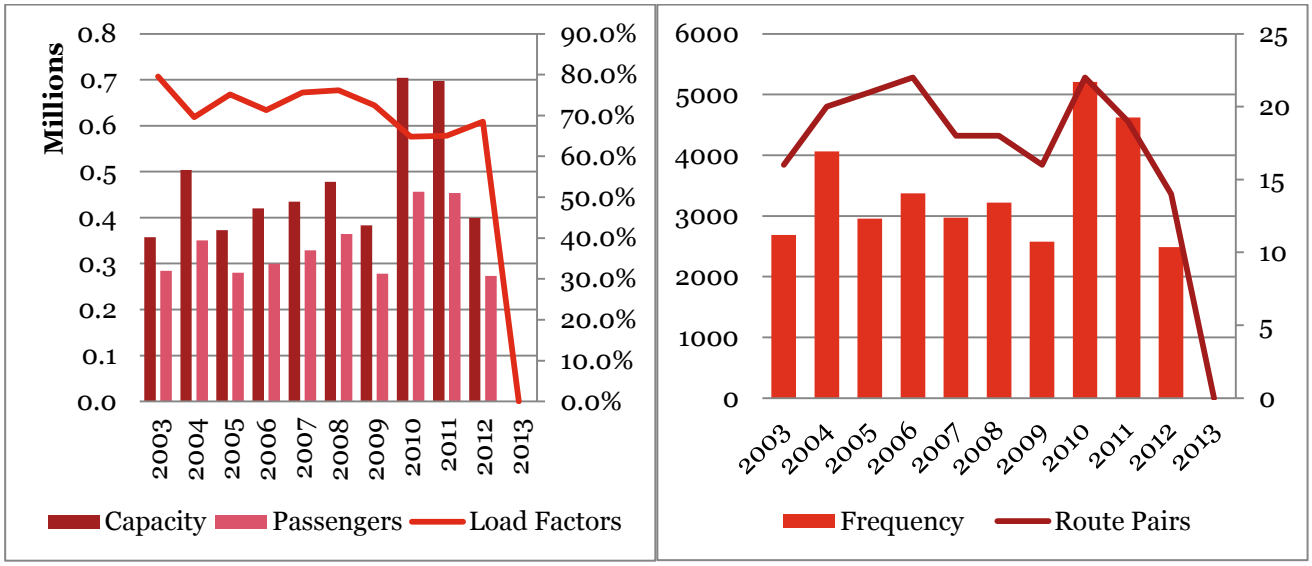
Aircraft	In Service	In Storage	On Order*
Airbus A319-100	7	0	0
Airbus A320-200	16	0	0
Airbus A321-100	3	0	0
Airbus A321-200	3	0	0
Boeing 767-300ER	6	0	0
Boeing 777-200ER	5	0	0
Bombardier DHC-8Q-402	8	1	0
Bombardier DHC-8Q-402(NG)	4	0	0
Fokker F-28-0070	6	1	0
Fokker F-28-0100	15	0	0

Source: Flightglobal

Austrian currently offers both domestic and international routes, particularly to Eastern Europe and the Middle East and acts as Lufthansa's operator in the CESE region, along with Germanwings (an LCC which is also part of the Lufthansa Group). In July 2012, Austrian Airlines transferred all of its mainline operations to Tyrolean. Overall, Lufthansa and Tyrolean increased their operations in the region which compensates capacity lost by the withdrawal of Austrian Airlines, as shown in Figure 2-31 and Figure 2-32.

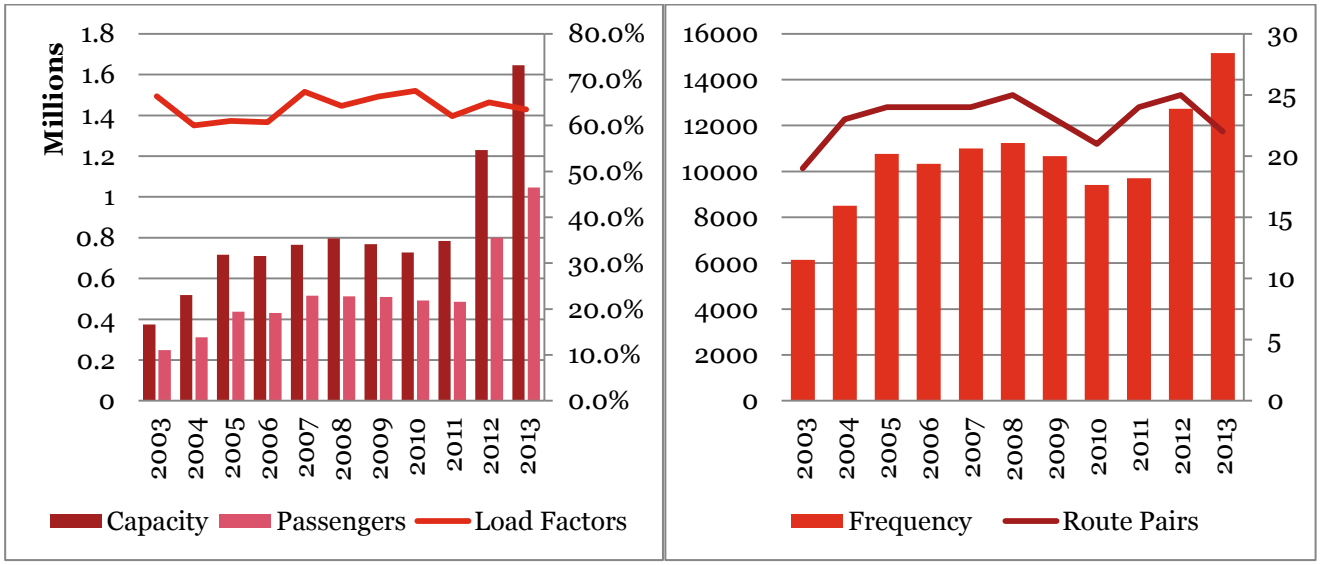
[15] Average passengers per flight are unavailable for 2003 and 2004.

Figure 2-31: Austrian Airlines CESE Statistics 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Figure 2-32: Tyrolean Airlines CESE Statistics 2003-2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

After the collapse of Malév, with Vienna acting as their main hub, Austrian Airlines, along with their subsidiaries and parent company, have managed to capitalise on the collapse of the Hungarian flag carrier.

2.4. Cargo Flows in the CESE Region

2.4.1. Cargo Overview

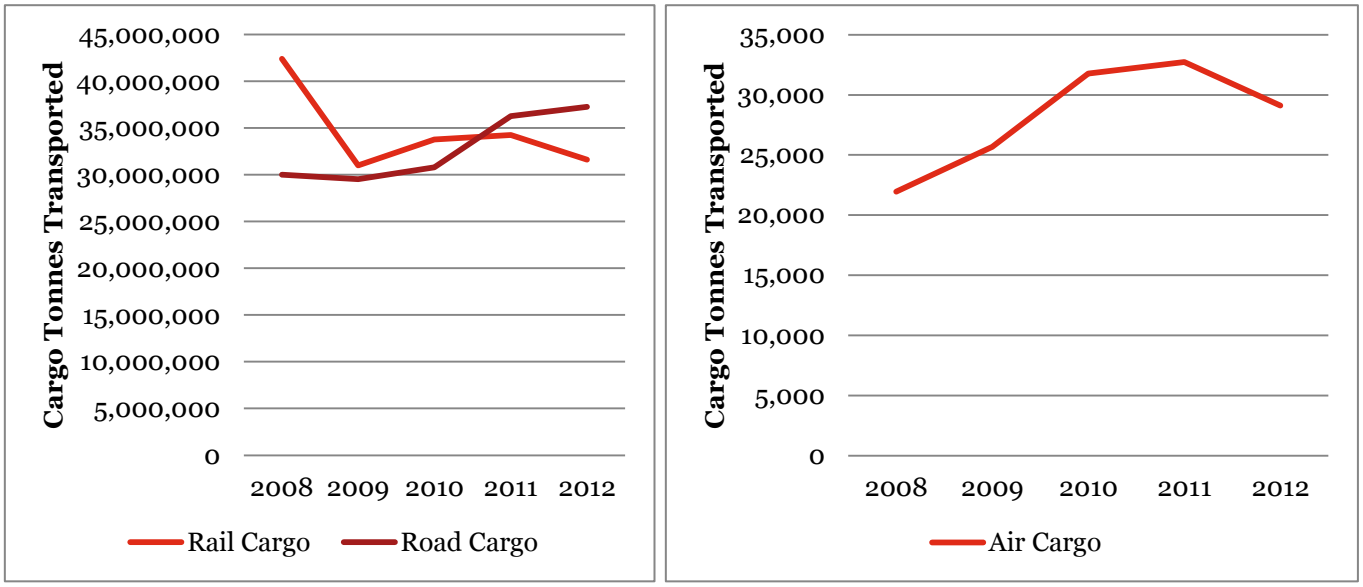
Over the 2008-2012 periods, the flow of cargo from the CESE region has been generally stable, with little major variation seen year to year within market segments. There are some significant differences seen in the volumes of cargo transported from the CESE region by different transport modes and destination zones. In order to more accurately determine the trends affecting cargo flows, we have analysed reported freight, mail and cargo

figures published by Eurostat from the 2008-2012 period. We have divided the destinations of CESE cargo into three categories, namely Intra-CESE cargo, CESE-EU cargo, and CESE-Non-EU cargo. A fourth category containing domestic cargo was considered, but ultimately rejected due to the limited data available from Eurostat regarding domestic cargo flows.

2.4.1.1. Intra-CESE Cargo Flows

The intra-CESE cargo market segment showed possibly the most distinct differences between the transport modes. As seen in Figure 2-33, the quantity of intra-CESE air cargo transported was several orders of magnitude lower than road and rail cargo. Initially, rail transport transported 41% more cargo by tonnage than road transport. From 2008 to 2009, rail cargo decreased dramatically between CESE countries, and then stayed largely stable at the new reduced rate. Conversely, road cargo transported remained stable from 2008 to 2009, and then increased sharply from 2010 to 2012. Road transport began carrying more cargo than rail in 2010 and 2011. Air cargo followed a similar trend to that of road cargo over the same period, although the scale of goods transported was much smaller. From 2008 to 2010 air cargo levels increased steadily year on year, and from 2011 to 2012 remained stable.

Figure 2-33: 2012 Intra-CESE Cargo Flow by Transport Type

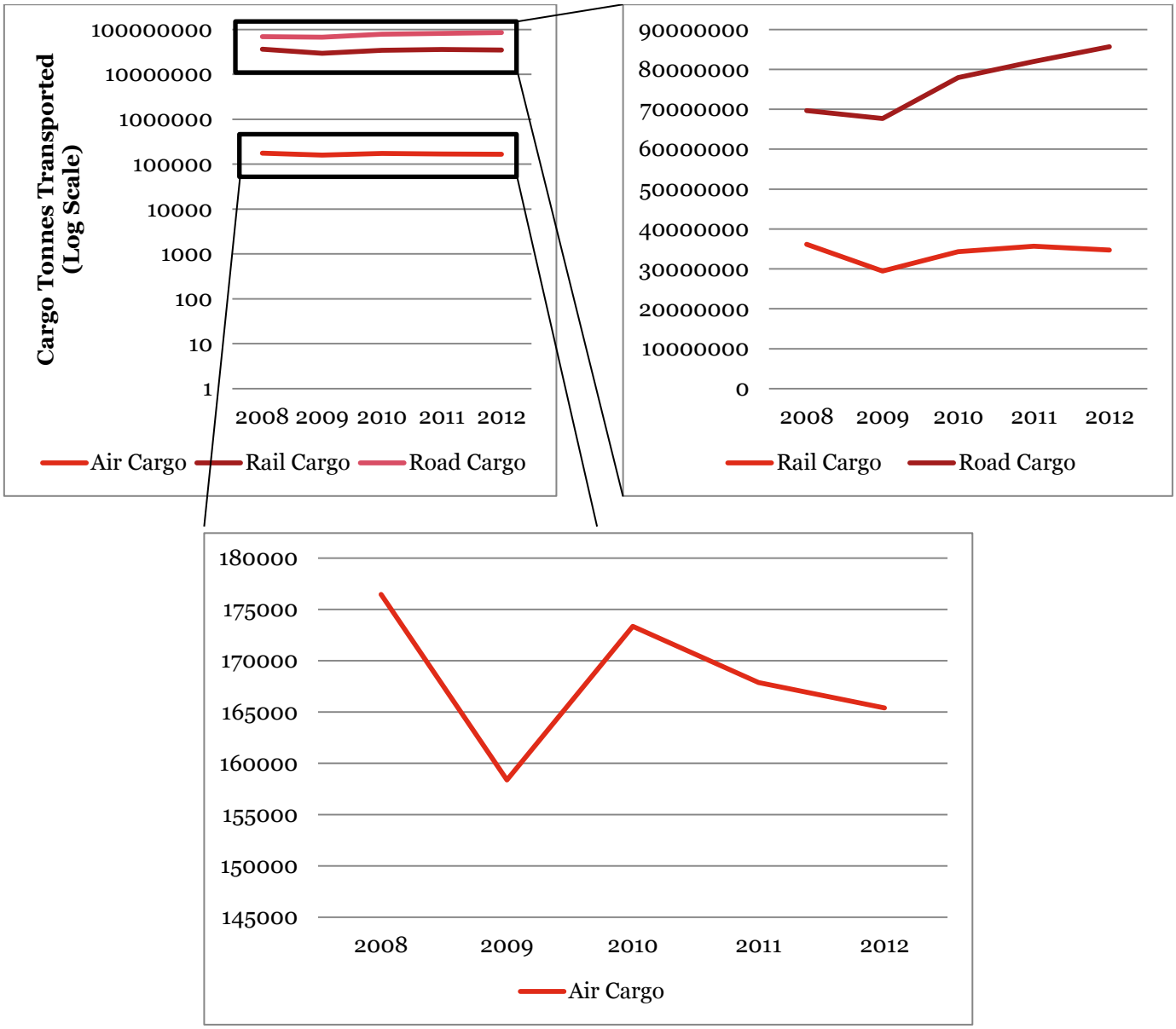


2.4.1.2. CESE-EU[16] Cargo Flows

The CESE-EU cargo transport market segments are significantly larger than the intra-CESE market, with the exception of the rail cargo market segment. The air cargo segment in particular is significantly larger, transporting almost 6 times as much cargo by tonnage year on year. Road cargo is also a larger market, transporting over twice as much cargo by tonnage year on year. Rail cargo is largely unaltered, which may be simply an issue of capacity, since the rail network between the EU and CESE states is less extensive than the European road network. As shown in Figure 2-34, the air cargo market is still several orders of magnitude smaller than the rail and road market segments. This is less likely to be a function of distance between origin and destination of the cargo, and more likely to be limited by the cargo capacity of planes operating between these regions.

[16] Not including intra-CESE countries.

Figure 2-34: CESE-EU Cargo Flow by Transport Type

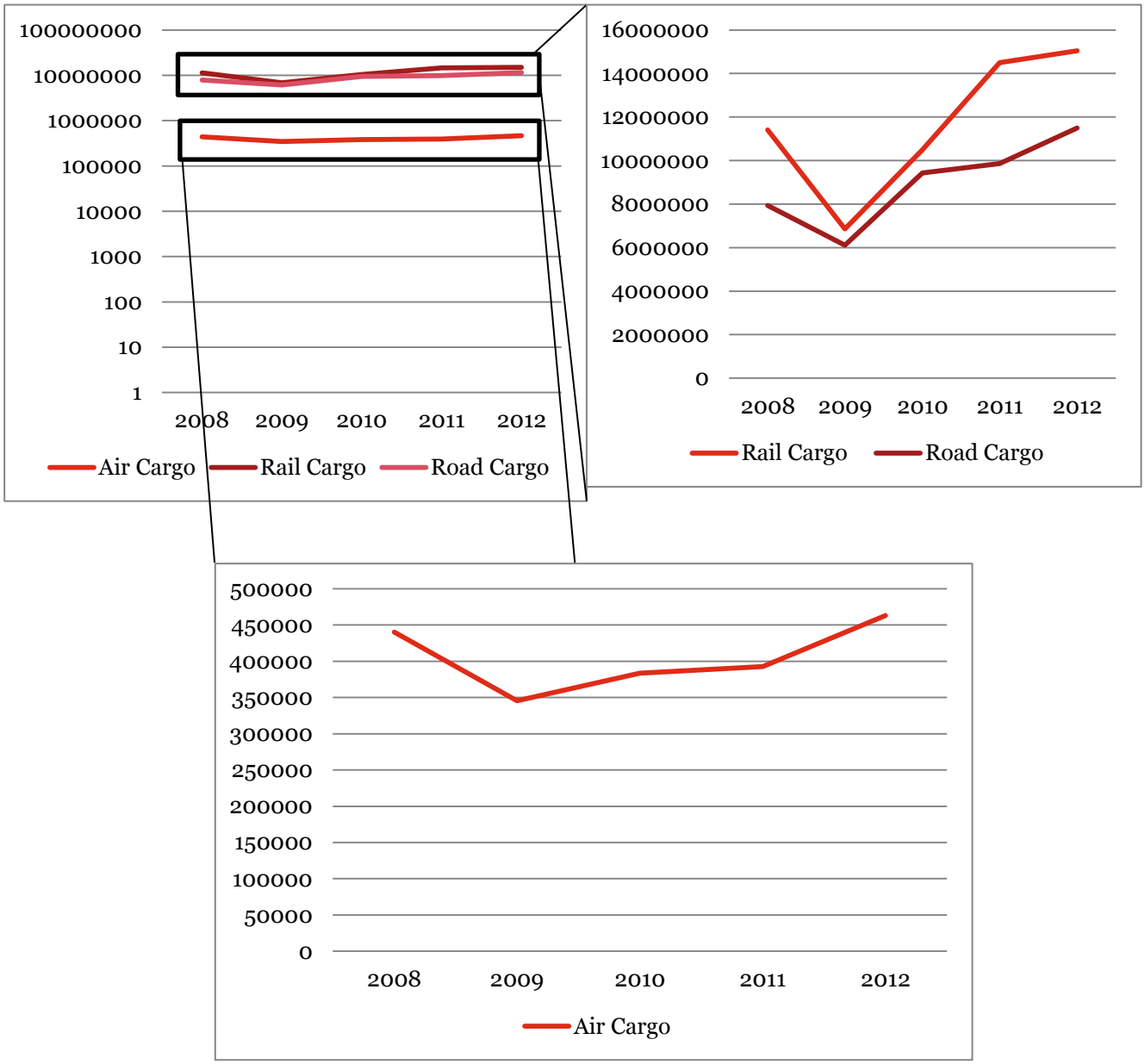


Source: Eurostat

2.4.1.3. CESE-Non-EU Cargo Flows

The CESE-Non-EU cargo market is the smallest market operating from the EU, and has a significantly different distribution of cargo by transport segment. A much larger proportion of the market is served by air transport, although still less than 3% of the total cargo transported was air cargo. Road cargo was the most reduced transport segment compared to CESE-EU cargo traffic, decreasing by a factor of over 8.5 on average year to year. Rail cargo quantities also decreased, by a factor of 3 on average year to year. The air cargo market increased significantly, likely due to the longer distance travel involved in shipping outside of the EU, and the concomitant reduction in reliable road and rail networks. As seen in Figure 2-35, all cargo segments transported fewer tonnes of cargo in 2009 following the global financial crisis, then showed steady year on year growth from 2010 to 2012.

Figure 2-35: CESE-Non-EU Cargo Flow by Transport Type



Source: Eurostat

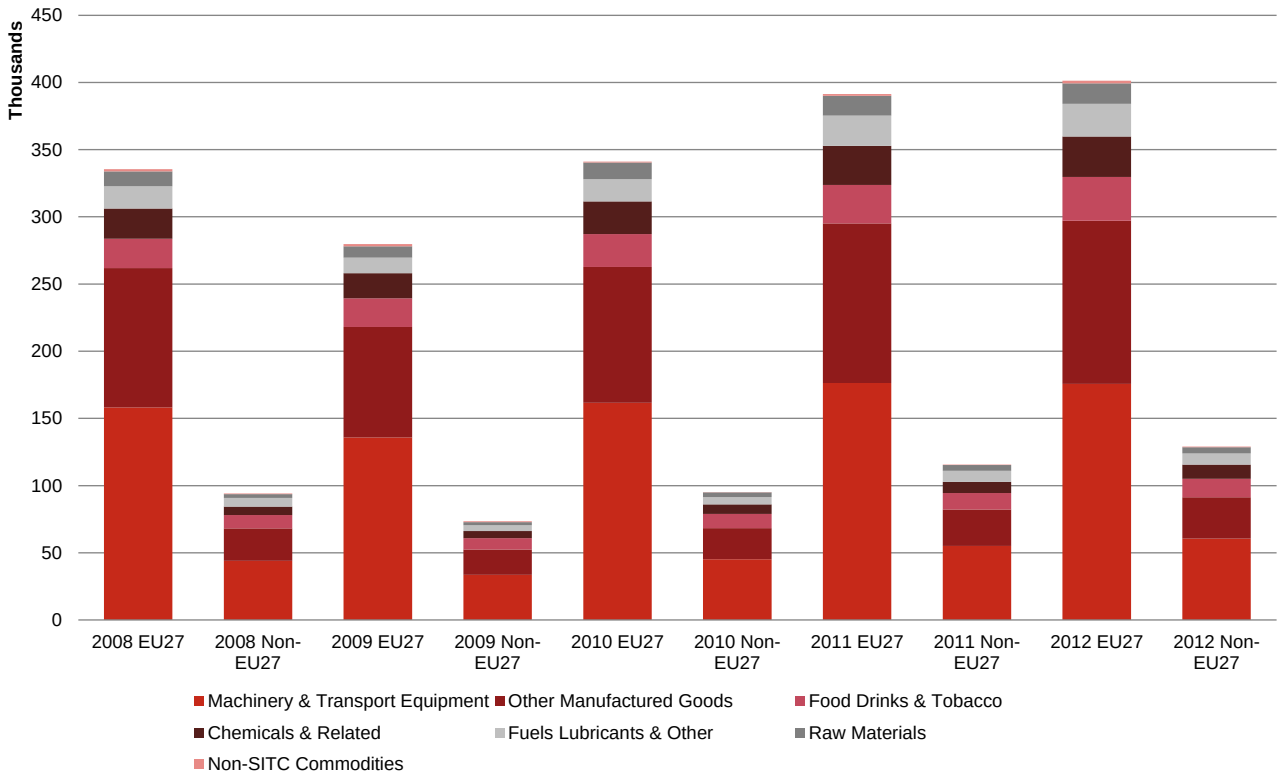
2.4.1.4. Breakdown of Goods Imported/Exported from the CESE region by SITC[17] category

In order to determine which types of goods (determined by SITC category) were distributed by different transport modes, we identified total exports of the CESE region over the period 2008-2012 by SITC category, and subsequently identified the tonnage of goods carried in each capacity. The trends which are apparent from the analysis of total CESE exports indicate that by value of goods transported, the most significant export of the

[17] Standard international trade classification: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Standard_international_trade_classification_(SITC)

CESE states is machinery and transport equipment, followed by other manufactured goods. As demonstrated in Figure 2-36, these two SITC categories comprised over 70% of all exports in 2012 for both EU exports and extra-EU exports by tonnage. Machinery and transport equipment cargo is unlikely to be a major component of air freight, as air freight generally comprises high value-to-weight goods and perishables. This is due to the high value-to-weight goods and the dependency on rapid transportation of perishables offsetting the increased price of transporting goods by air. Manufactured goods will likely comprise a significant portion of air freight, but due to the breadth of freight which can be classified as manufactured goods, the inverse is less likely to be true. Non-SITC commodities will also likely form a significant proportion of air freight, as mail and parcels are a significant factor in tonnage of goods moved by air and do not fall under any SITC categories.

Figure 2-36: Total CESE Cargo Exports by SITC Category

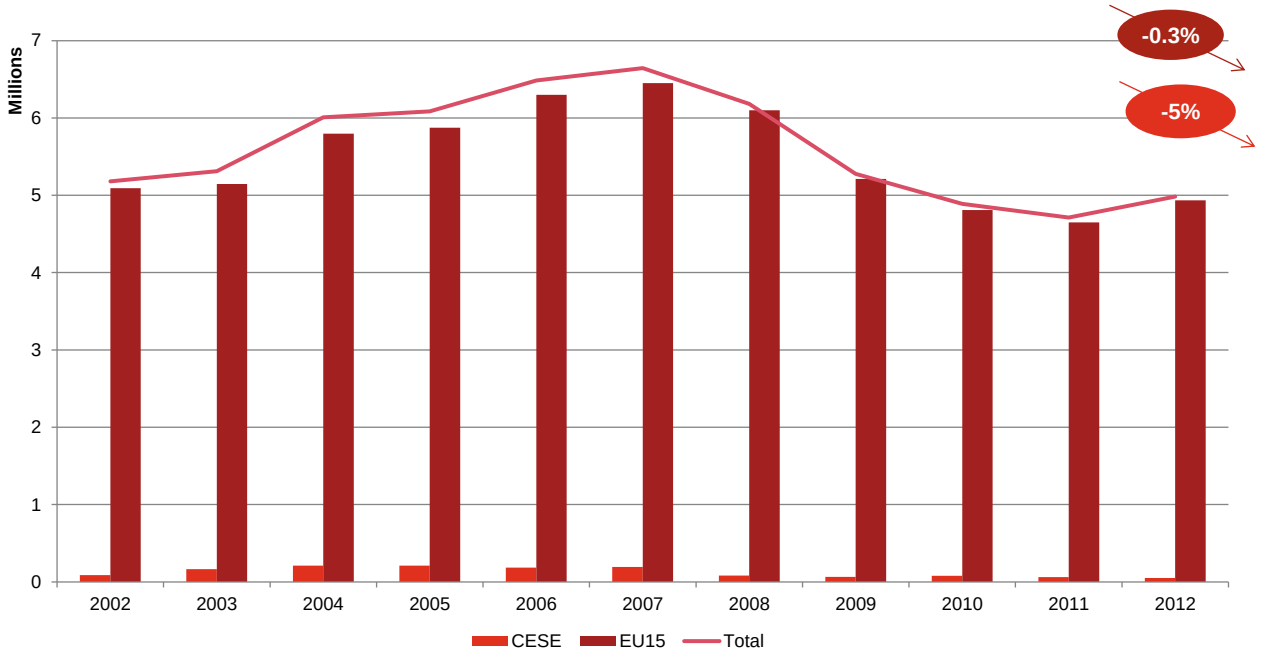


Source: Eurostat

2.5. Air Cargo

A decrease of 0.4% per annum in air cargo volumes was observed between 2002 and 2012 for cargo carried by CESE and EU15 airlines. The decrease was more pronounced for CESE airlines which recorded a reduction of 5% per annum as opposed to 0.3% by EU15 airlines. In 2013, the cargo handled by CESE flag airlines corresponded to about 1% of that carried by EU15 carriers.

Figure 2-37: Cargo Volumes (Tonne) carried by CESE and EU15 airlines, 2002 to 2012



Note: Only cargo volumes by airlines captured by the IATA WATS are being shown. Data only includes scheduled services.
Source: IATA WATS (2012 & 2013), PwC analysis

The reduction in volumes handled and the significant difference in how much cargo is carried by EU15 airlines is partially related to the collapse of a number of full service CESE carriers and to the size of the long-haul market in the region (which makes up for no more than 1% of all routes served). As illustrated in the previous sections, the majority of cargo in the region continues to be handled by road and rail, with road being the preferred mode to cover short-haul distances.

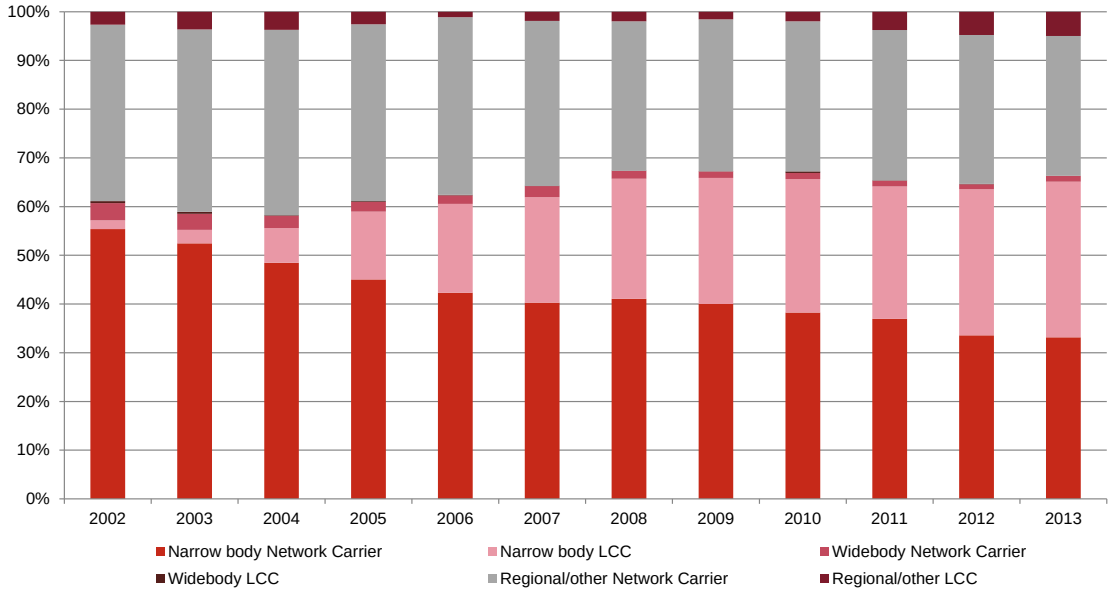
The effects which the collapse of Malév had on the Hungarian cargo market[18] include the inability to replace a large portion of the cargo capacity which was once offered by the Hungarian flag carrier. This is also due to the fact that the low cost carriers which took over Malév's most attractive routes - Wizz Air and Ryanair - do not provide cargo services. Most of the market share loss reportedly concerned Balkan and Middle-East destinations. As a result, network carriers up-gauged their aircraft allowing for a small amount of additional cargo capacity while further market share was gained by integrated service providers as TNT and DHL. Long-haul cargo was also affected by the withdrawal of long-haul operations from Budapest Airport by American and Delta and Hainan Airlines, who decided to leave the market after Malév's collapse, due to the lack of a local feeder airline. The changes in cargo supply at Budapest Airport resulted in clients moving their traffic to main European hubs, from which goods are delivered to Hungary by road. The main airports for cargo are now Vienna, Munich and Amsterdam from which trucks are then dispatched to Hungary.

LOT has reported that demand for cargo has increased since the introduction in its fleet of B787s, indicating that the issue is not a lack of demand but of belly hold capacity. Demand for air cargo to/from the country, however, is not yet sufficient to warrant frequent dedicated-freighters services, with most long-haul cargo from the country being trucked to Germany.

As it can be inferred from Figure 2-38 below, the market share of widebody aircraft (which are usually employed on long-haul flights) operating from the region has decreased from about 4% in 2002 to 1% in 2013.

[18] An in-depth analysis of the effects of Malév on the cargo market are presented in Paper B

Figure 2-38: CESE to All Markets Frequency by Aircraft Type, 2002 to 2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Cargo capacity, as shown in Figure 2-39, is dependent on the type and model of aircraft in use.

Figure 2-39: Passenger aircraft belly hold capacity

Boeing 747-400

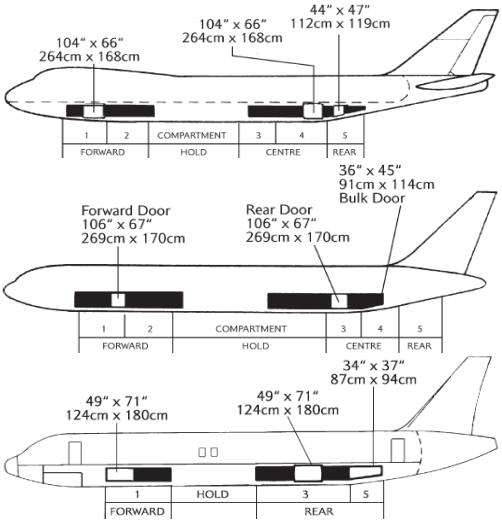
- Widebody long range passenger aircraft
- 20 tonnes of cargo in addition to a full passenger load (route dependant)
- Forward hold and centre holds are designed for the carriage of ULDs only. Compartment 5 is for the carriage of loose cargo

Boeing 777

- Widebody, medium to long range aircraft
- 14 tonnes (99.8 m³) of cargo and mail
- Five holds, four of which are designed to carry ULDs with compartment 5 available for bulk loaded cargo and mail

Airbus A320

- Narrowbody short-haul passenger aircraft
- Two tonnes of cargo and a full passenger load
- Three holds, two of which are designed to carry ULDs and the other hold for bulk-loaded cargo



Note: ULD stands for Unit Loading Device – a pallet or container used to load cargo onto aircraft
Source: Boeing, Airbus

Additional impact on the cargo capacity that can be carried is represented by newer passenger aircraft types such as the Airbus A380, Airbus A350 and Boeing 787 which generally have lower cargo carrying capacity compared with the aircraft they are likely to replace – not due to lack of space, but due to a reduction in the available weight. For example, the Airbus A380 can carry a lot more passengers than previous aircraft but there is a subsequent poor cargo uplift due to the additional weight of passengers, bags and also noise restrictions. The Boeing 787 has a very similar (if not slightly lower) cargo capacity to older variants due to lighter weight composite airframes and reduced overall lift capacity of the aircraft.

Table 2-4 shows a range of new aircraft types and their cargo capability. Note that the actual amount of cargo that can be carried will depend on a range of factors including the route distance and required amount of fuel to be carried, the load factor and weight of passengers and their baggage and the noise and weight restrictions at different airports.

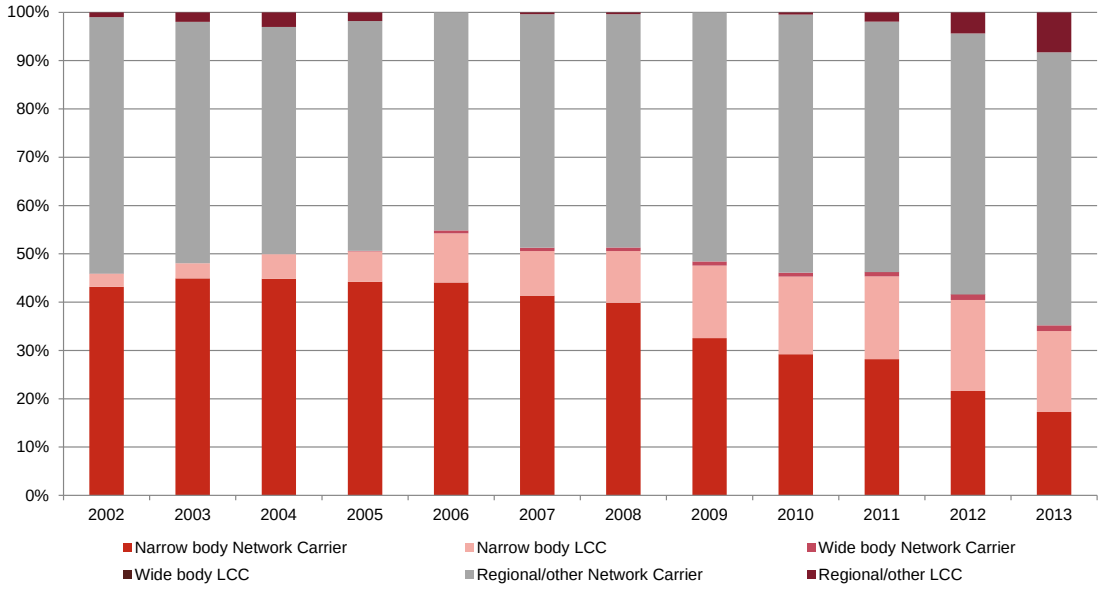
Table 2-4: Passenger aircraft belly hold capacity

	Measure	A380-800	B747-800	B777-300ER	B787-10	A340-600	A350-1000
Typical Seat Capacity	Seats	525 (3-class)	467 (3-class)	386 (3-class)	300-330	359 (2-class)	369
Maximum TakeOff Weight (MTOW)	Tonnes	560	448	352	251	368	308
Max ULD-Lower Deck	Pallets	13	7	8		14	14
	LD3s	38	16 (LD1)	20		42	44
Bulk hold volume	Metres²	14.3	18.1	17.0		19.7	11.3
Total Volume	Metres²	184	161.5	201.6	175	207.6	208.2

Source: Boeing, Airbus

If we examine the intra-CESE and CESE to EU15 market, the dominance of regional jets and narrow bodies is very accentuated. In addition, as shown in Figure 2-40 and as presented in section 2, the intra-CESE market has experienced a significant increase in the market share of LCC-operated narrow bodies which grew from 3% in 2002 to 17% in 2013.

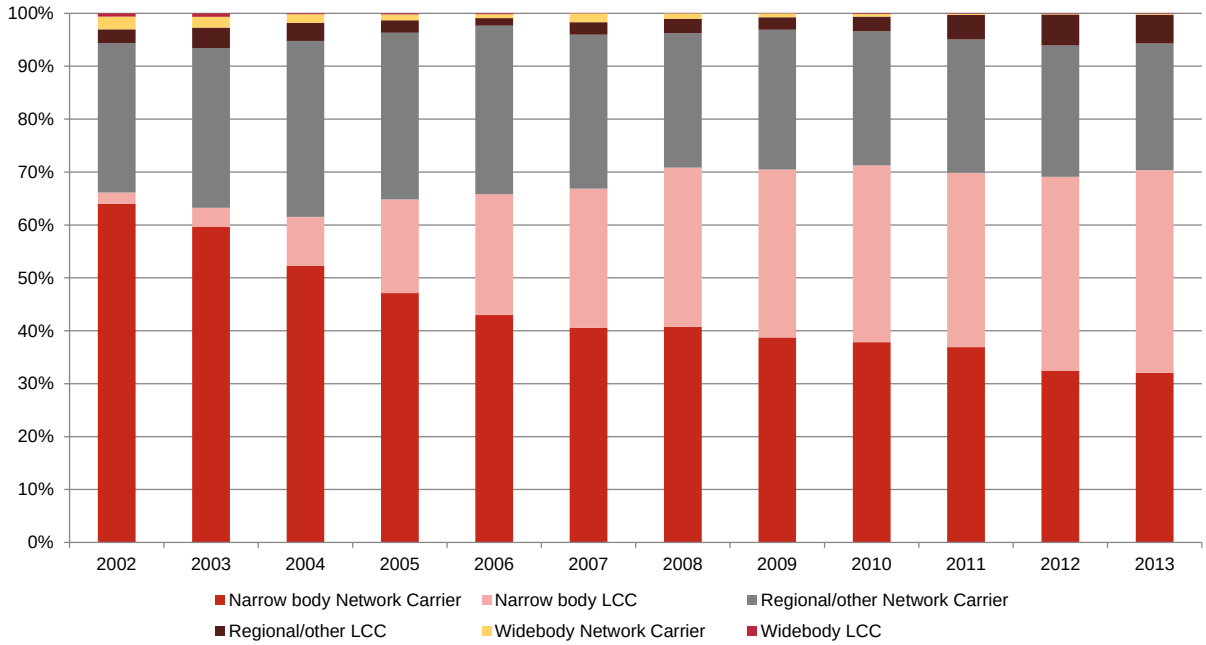
Figure 2-40: Intra-CESE Frequency by Aircraft Type, 2002 to 2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Narrow body aircraft dominate the CESE to EU15 market, with over 70% of all movements being operated by this type of aircraft in 2013. Figure 2-41 below shows changes in frequency provision, including the increase of LCCs' market share of frequency from 5% to 44% between 2002 and 2013.

Figure 2-41: CESE to EU15 Frequency by Aircraft and Carrier Type, 2002 to 2013



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

The relevance of changes in the business models of airline operation in respect of cargo capacity provision is that LCC business models generally exclude carriage of cargo. Thus, the replacement of network carrier services by LCCs, even if utilising the same aircraft type, indicates a reduction of available cargo capacity.

In other world regions, there are examples of LCC operators recently providing cargo capacity to take advantage of available capacity and increase bottom lines, such as Norwegian, AirAsia and Jetstar Japan. Southwest Airlines is a US-based low-cost carrier that has been running cargo operations for a number of years, and argue they can manage both freight and passenger aspects of their business model by being selective in what they carry, i.e. no livestock, mail or hazardous cargo. There is no containerisation and all shipments are loose-loaded, meaning cargo is handled in the same way as baggage. This allows Southwest to fully maximise their flight schedule. In contrast, easyJet carried out a six-month trial in 2012, but concluded that issues associated with cargo operations (e.g. time taken for security processes) were too great a risk to their operations.

2.6. Conclusions

A decrease of 0.4% per annum in cargo volumes was observed between 2002 and 2012 for cargo carried by CESE and EU15 airlines. The decrease was more pronounced for CESE airlines which recorded a reduction of 5% per annum as opposed to 0.3% by EU15 airlines. In 2013, the cargo handled by CESE flag airlines corresponded to about 1% of that carried by EU15 carriers. The reduction in volumes handled and the significant difference in how much cargo is carried by EU15 airlines is partially related to the collapse of a number of full service CESE carriers and to the size of the long-haul market in the region. This is also due to the fact that the low cost carriers which took over Malév's most attractive routes - Wizz Air and Ryanair - do not provide cargo services. Long-haul cargo was also affected by the withdrawal of long-haul operations from Budapest Airport by American and Delta and Hainan Airlines, who decided to leave the market after Malév's collapse, due to the lack of a local feeder airline.

Cargo is an area that is disproportionately impacted by changes in the types of airlines operating in the region, as LCCs typically do not carry cargo (doing so would greatly impact aircraft turn-around times, leading to less rotations daily, and erosion of the basis of the success of many carriers operating this model).

3. State of Connectivity in the CESE region

3.1. Introduction

This chapter focuses on the second pillar of the study which centres on evaluating the state of connectivity in the region. The issue of connectivity has important implications in determining the degree of integration of a country (or region) with the global air transport network. Increased connectivity leads to travel times falling and businesses gaining access to a wider marketplace. To assist the Commission with the evaluation of connectivity in the region, we assessed the level of connectivity based on a range of measures and developed an air connectivity indicator based on the Commission's criteria (presented in appendix D).

3.2. Status of Air Connectivity in the CESE region[19]

For the purpose of this study, two connectivity indices were developed as a tool which allows us to estimate the impacts of lost or new routes on the air networks of a city, country or region. These consist of:

- A **business index** – which focuses on factors such as:
  - importance of the destination city as a business destination,
  - convenience (location of airport in respect to the city centre) and
  - frequency of service

In order to capture these characteristics, we have created a combined measure which assesses the base level of connectivity based on annual flights – which better reflects convenience and frequency compared to total seat capacity. The base measure is then weighted by the Globalisation and World Cities (GaWC) business connectivity measure[20] for the destination to capture business importance of the destination city. To capture the secondary airport impact as well as onward connectivity, we have also included a component where the base measure (flights) is weighted by the IATA connectivity measure[21], which takes into account the number and economic importance of the destinations served from an airport based on the capacity and frequency of service to each destination weighted by the size of the destination airport in terms of total passengers. The index was calculated as follows:

Business Connectivity measure = *0.5*(Annual flights x GaWC city weighting)+0.5*(Annual flights x IATA measure)*

- A **leisure index** – for passengers travelling for leisure purposes low fares and available capacity to popular and well-connected destinations tend to be the key determinants. In order to capture connectivity for leisure passengers, we have taken total available seat capacity and weighted each route by the destination's measure of the IATA connectivity index. The leisure connectivity index takes into account an additional layer to the IATA connectivity index in that it weights the destination by the IATA connectivity index rather than the total passengers. The index was calculated as follows:

Leisure connectivity measures = *annual seat capacity by route * weighting based on IATA connectivity measure*

The following sections describe the outcomes.

[19] Note: examples of how the business and leisure indices have been calculated are presented in appendix D

[20] Weighting of the destination city is based on the distribution of the GaWC connectivity measure where a weighting of 1 is given to the highest ranked city with other city weightings being based on their measure of connectivity relative to the best-connected city based on the GaWC connectivity measure. See 1Appendix E. -Weightings.

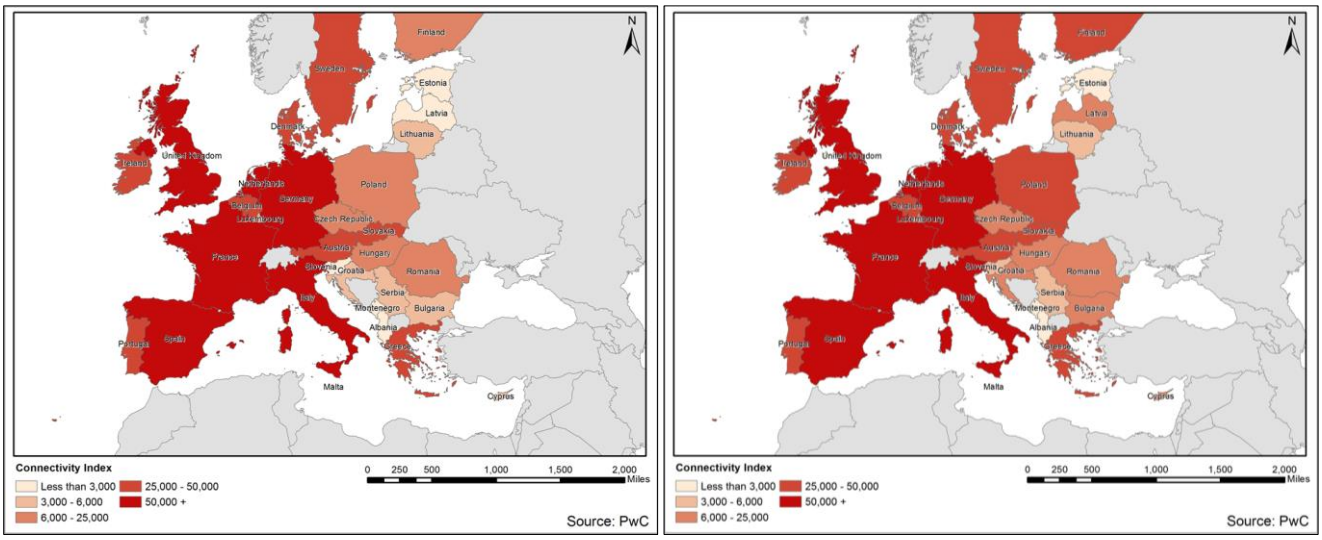
[21] Weighting of the destination airport is based on the distribution of the IATA connectivity measure, where a weighting of 1 is given to the highest ranked airport with other airport weightings based on their measure of connectivity relative to the best-connected airport based on the IATA connectivity measure. See Appendix E. -Weightings.

3.2.1. Total CESE

3.2.1.1. Business

Figure 3-1, illustrates the changes in business connectivity between 2004 and 2013 for CESE and-EU15 countries.

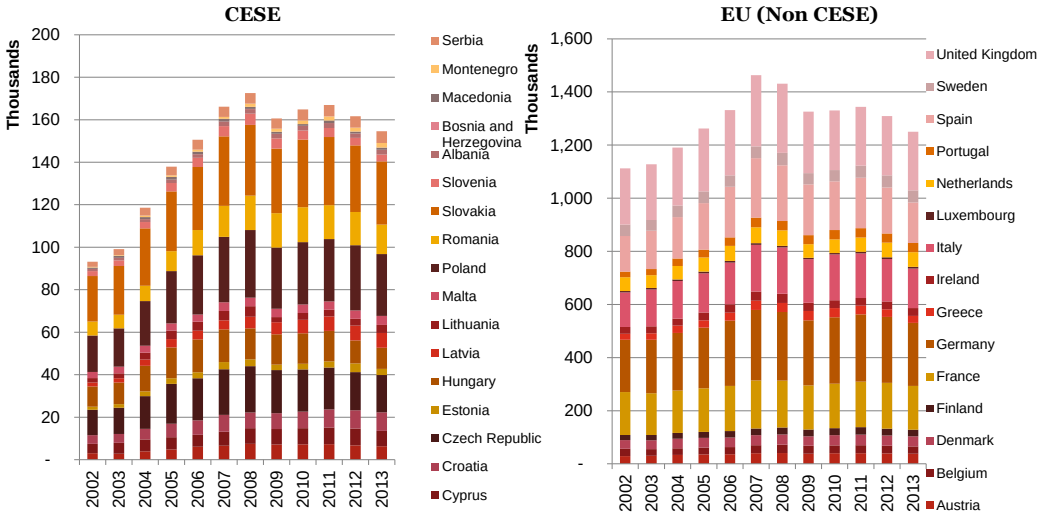
Figure 3-1: Business connectivity measure by State in 2004 & 2013



Note: Slovakia includes Vienna on the basis that the catchment of Vienna airport also captures a big portion of Bratislava airport's catchment given the close proximity of the two (Vienna airport is within a 50 minute drive from Bratislava).
Source: PwC analysis

Figure 3-2**,** shows the changes in business connectivity for the CESE and EU15 states in aggregate. The trends shown in the charts below, illustrate a similar pattern in connectivity growth between 2002 and 2013 for the CESE and EU regions. The peak in connectivity, for both regions, was achieved prior to the global financial crisis with a continuous decrease observed in the following years. Business connectivity in the CESE region has increased by 30% since 2004, from around 118,600 to approximately 154,600 in 2013. This compares to an increase of only 5% experienced in the EU15 states, perhaps indicating the maturity of the market. However, the difference in magnitude in connectivity between the two regions vastly differs with connectivity levels in the CESE region in 2013 representing around 12% of those registered in the EU region.

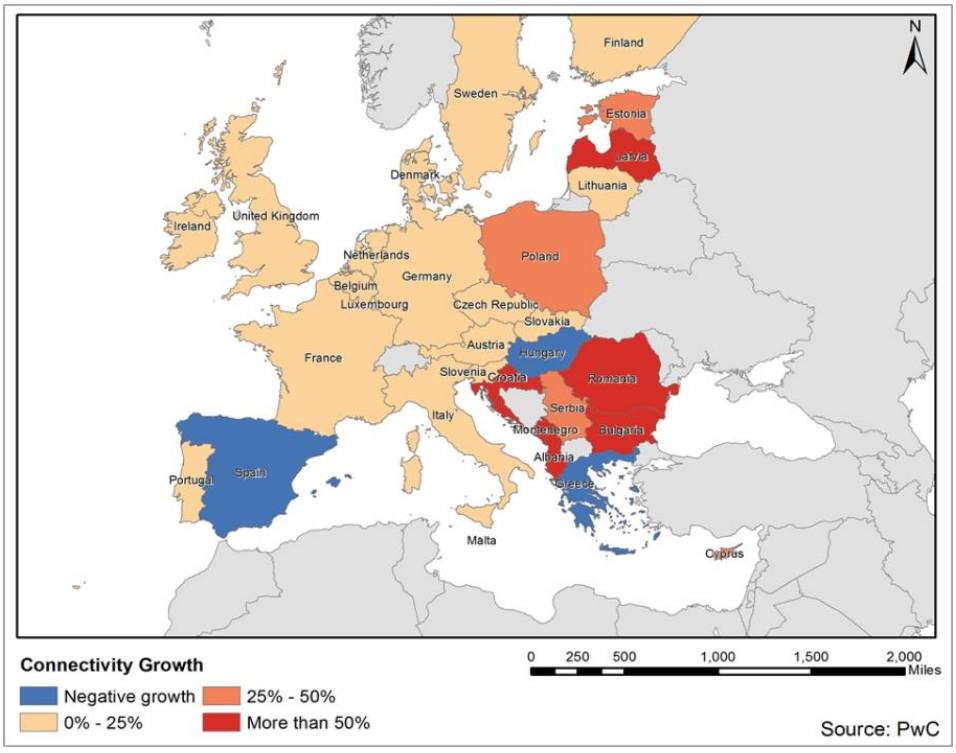
Figure 3-2: Business connectivity measure by State, 2002 to 2013



Note: Slovakia includes Vienna; Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

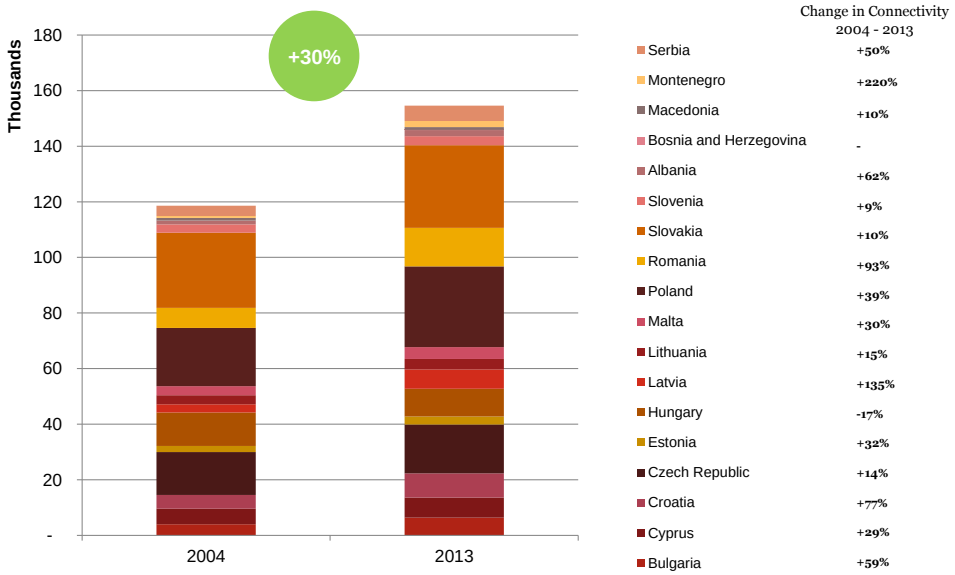
As illustrated in Figure 3-3 and Figure 3-4, business connectivity across the CESE has improved between 2004 and 2013 for all countries but Hungary which saw a decrease in connectivity of about 17%. This can be attributed to the collapse of Malév which resulted in fewer frequencies with higher capacity to less 'connected' destinations. Montenegro, Latvia and Bulgaria, on the other hand, experienced a significant growth in connectivity since 2004.

Figure 3-3: Percentage change in the business connectivity measure by State between 2004 and 2013



Note: Slovakia includes Vienna; Source: PwC analysis

Figure 3-4: Change in Business Connectivity between 2004 and 2013, CESE Region



Note: Slovakia includes Vienna; Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

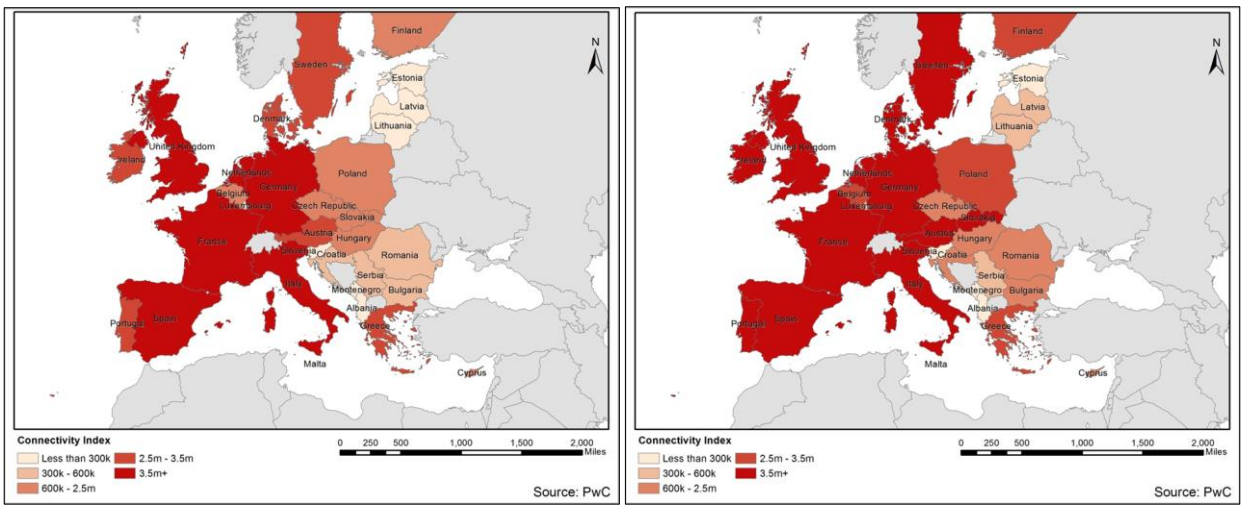
The countries within CESE which have experienced a growth of over 50% over the past decade are Serbia, Montenegro, Albania, Romania, Latvia, Croatia and Bulgaria. Hungary was the only country in CESE which saw a decrease in business connectivity as a result of the collapse of Malév. Amongst EU15 countries, Greece and Spain are showing negative growth. This is probably a result of the economic downturn which is affecting the two countries. Detailed trends in business connectivity for each country are contained in appendix D.

3.2.1.2. *Leisure*

3.2.1.3. Leisure connectivity measure

Figure 3-5 shows how leisure connectivity has changed between 2004 and 2013 for CESE airports by country compared with the same measure for EU15 countries.

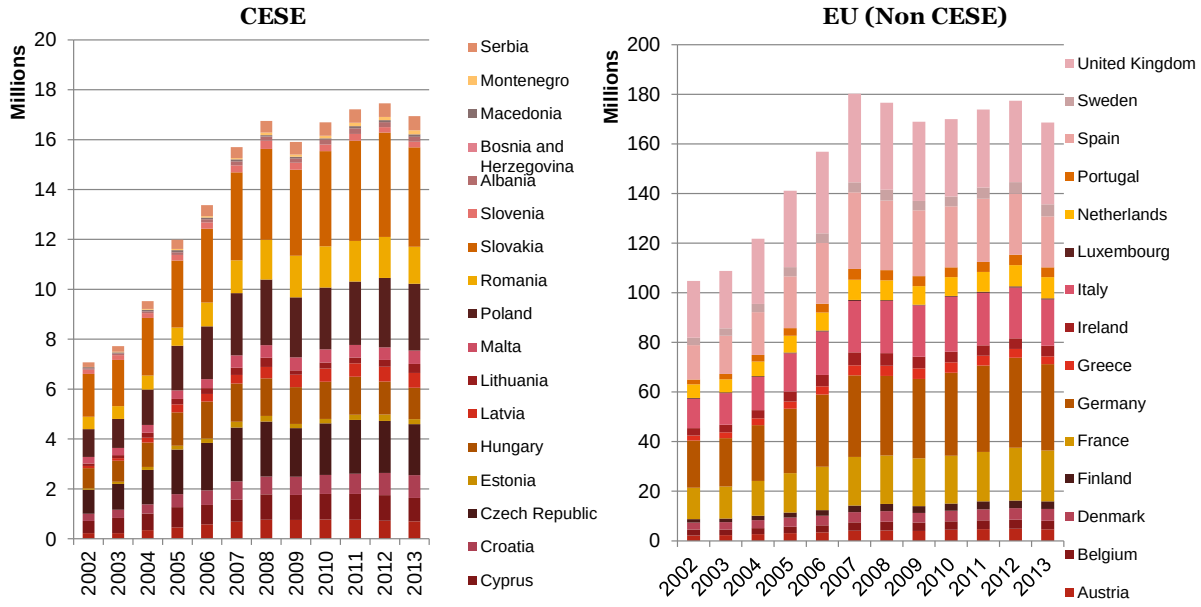
Figure 3-5: Leisure connectivity 2004 and 2013



Note: Slovakia includes Vienna; Source: PwC analysis

The trends for leisure connectivity observed in the CESE region and the EU15 states are very similar with magnitude representing the only real difference between the two. Leisure connectivity in CESE has increased by approximately 78% between 2004 and 2013 as opposed to an increase of 38% in the EU15 region. The growth in leisure connectivity has probably been driven by the penetration of LCCs in the two markets with a number of new routes being introduced.

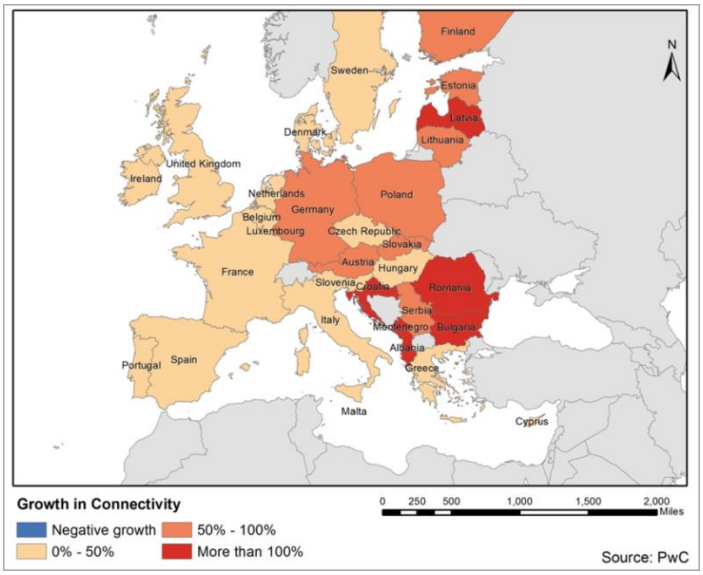
Figure 3-6: Leisure connectivity measure by State, 2002 to 2013



Note: Slovakia includes Vienna; Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Figure 3-7 and Figure 3-8 below, shows the percentage change in connectivity between 2004 and 2013 in the CESE countries. A positive increase has been observed across all CESE and EU15 countries, with Latvia, Romania, Bulgaria, Albania, Montenegro and Croatia showing remarkable growth of over 100%.

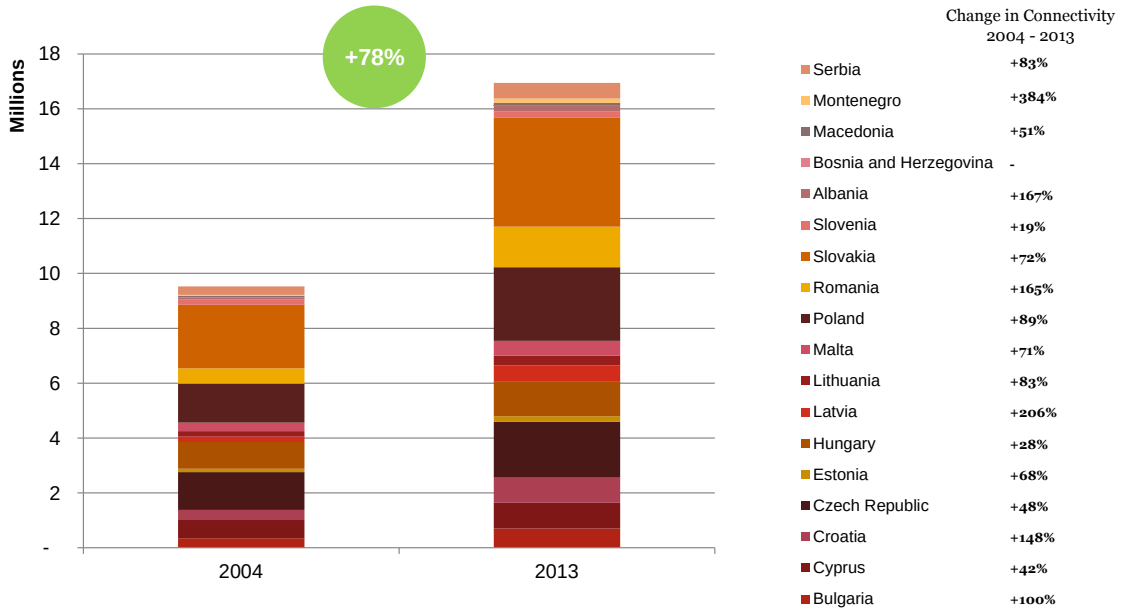
Figure 3-7: Percentage change in the leisure connectivity measure by State, 2004 and 2013



Note: Slovakia includes Vienna; Source: PwC analysis

A general improvement in leisure connectivity was observed for all countries but Slovakia which experienced a loss in connectivity of about 60%. Around 80% of the Slovakian market is served by LCCs. The former flag carrier Air Slovakia ceased operations in 2007 and Bratislava-based LCC SkyEurope Airlines launched operations in 2001 but shut down in 2009. The country has since seen other local carriers launch however most have since folded. However, since the majority of traffic uses Vienna as its main hub due to the close proximity to Slovakia, it has been calculated that the country has in fact registered an increase of 72% in connectivity

Figure 3-8: Change in Leisure Connectivity between 2004 and 2013, CESE Region

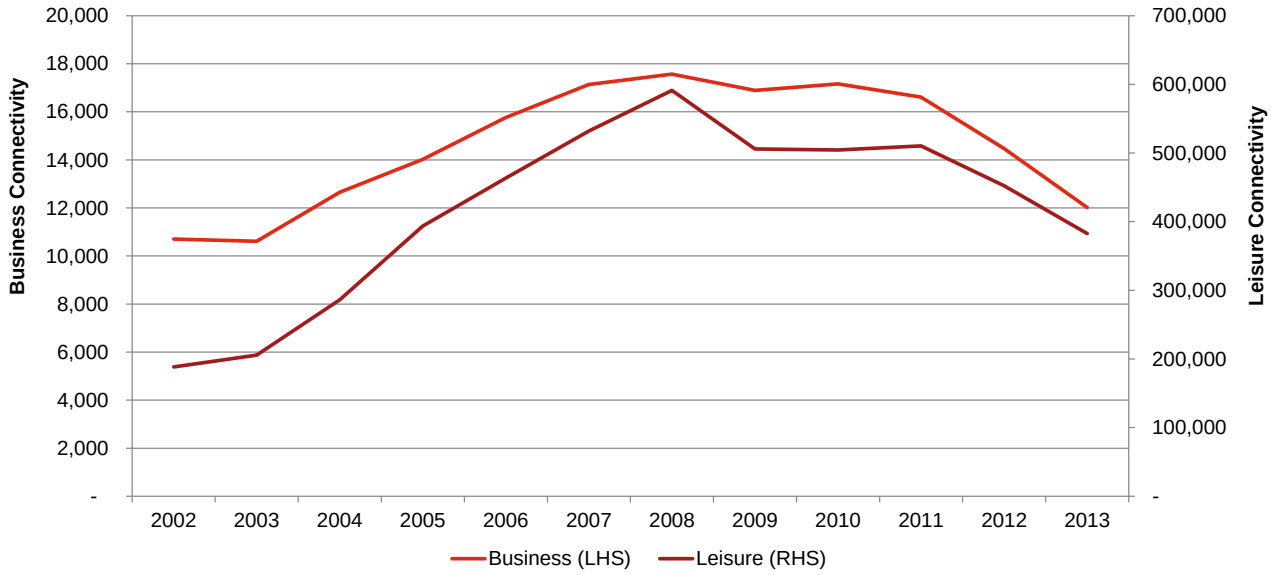


Note: Slovakia includes Vienna
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

3.2.2. Intra-CESE

Intra-CESE connectivity has deteriorated significantly since 2008, at both a leisure and business level based on the measures described in appendix D. The most considerable drop has occurred after 2011 when a number of flag carriers ceased operations (e.g. Malév, FlyLAL, etc). The collapse of national full service carriers has in fact meant that in a number of cases, routes from the countries affected to major hubs and key secondary hubs were lost. This can be seen in section 2 (see Figure 2-9), where despite an increase in the number of routes served, thanks to the entrance of LCCs in the market, network carriers' networks from the region have been reduced and consequently some of the linkages to important destinations have been lost and so has connectivity.

Figure 3-9: Connectivity measures for intra-CESE routes from 2002-2013



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

3.2.3. CESE-EU15

Connectivity from the CESE region to EU15 Member States has increased considerably since 2002, registering an increase of over 70% in business connectivity and over 120% in leisure connectivity. Growth in business connectivity can be attributed to the increasing interest in investing in the region which is developing economically. The increase in leisure connectivity, on the other hand, is attributable to the increasing penetration and expansion of LCCs such as Ryanair, Wizz Air and easyJet. However, despite an increase in the breadth of routes offered, a decrease in connectivity has been recorded between 2012 and 2013, probably driven by the withdrawal from service of a number of national legacy carriers which have meant the disappearance of several key routes.

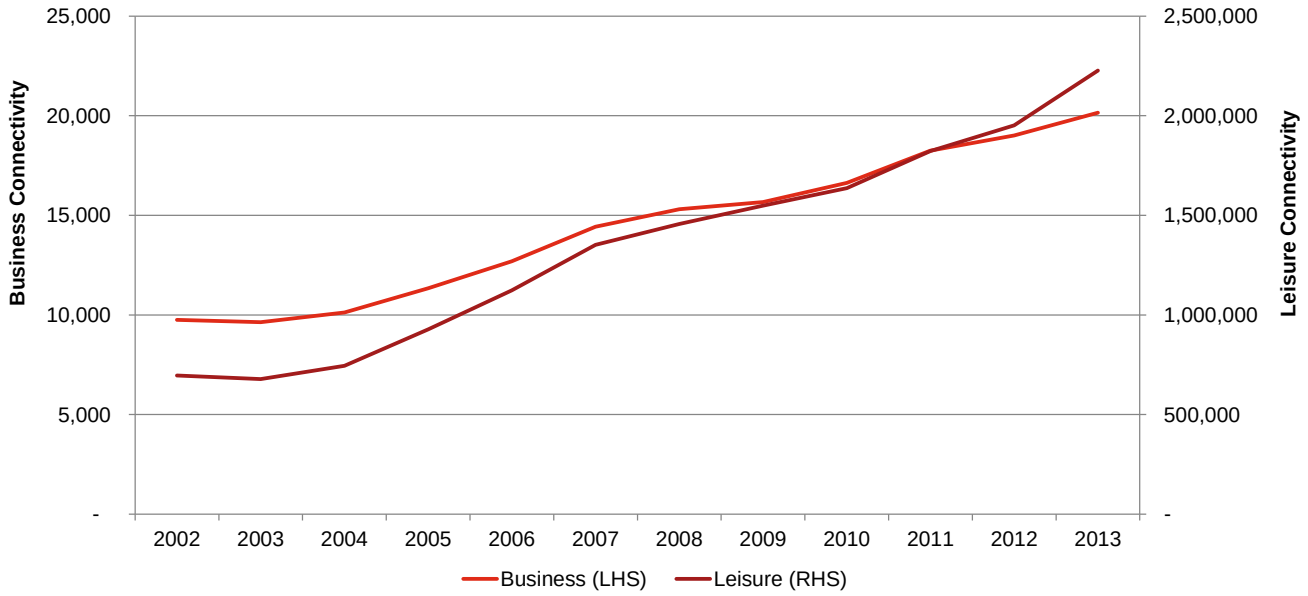
Figure 3-10: Connectivity measures for CESE-EU15 routes from 2002-2013

Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

3.2.4. CESE-Non-EU

As observed in section 2 (Figure 2-14), the number of links between CESE countries and Non-EU/CESE countries has doubled between 2003 and 2013. This growth has corresponded to a significant increase in both business and leisure connectivity which grew by 107% and 220% respectively between 2002 and 2013.

Figure 3-11 – Connectivity measures for CESE-Non-EU/Non-CESE routes from 2002-2013



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

3.2.5. Country level analysis

The charts contained in appendix D show an overview of the connectivity indicators for each country and key city/catchment from 2002 to 2013. For the 90 cities being considered in the CESE region, only 17 are ranked on the GaWC list.

Ranking	Definition[1)]	CESE Cities
Alpha-	'Very important world cities that link major economic regions and states into the world economy'	Prague, Warsaw
Beta+	'These are important world cities that are instrumental in linking their region or state into the world economy'	Budapest, Bucharest
Beta-		Belgrade, Bratislava, Riga, Sofia
Gamma+	'These can be world cities linking smaller regions or states into the world economy, or important world cities whose major global capacity is not in advanced producer services'	Zagreb
Gamma		Tallinn, Vilnius, Ljubljana
Gamma-		Krakow
High Sufficiency	'These are cities that are not world cities as defined here but they have sufficient services so as not to be overly dependent on world cities. Two specialised categories of city are common at this level of integration: smaller capital cities, and traditional centres of manufacturing regions'	Poznan, Skopje, Tirana, Wroclaw

Note: a definition of the city ranking used by GaWC is presented in appendix D
Source : GaWC

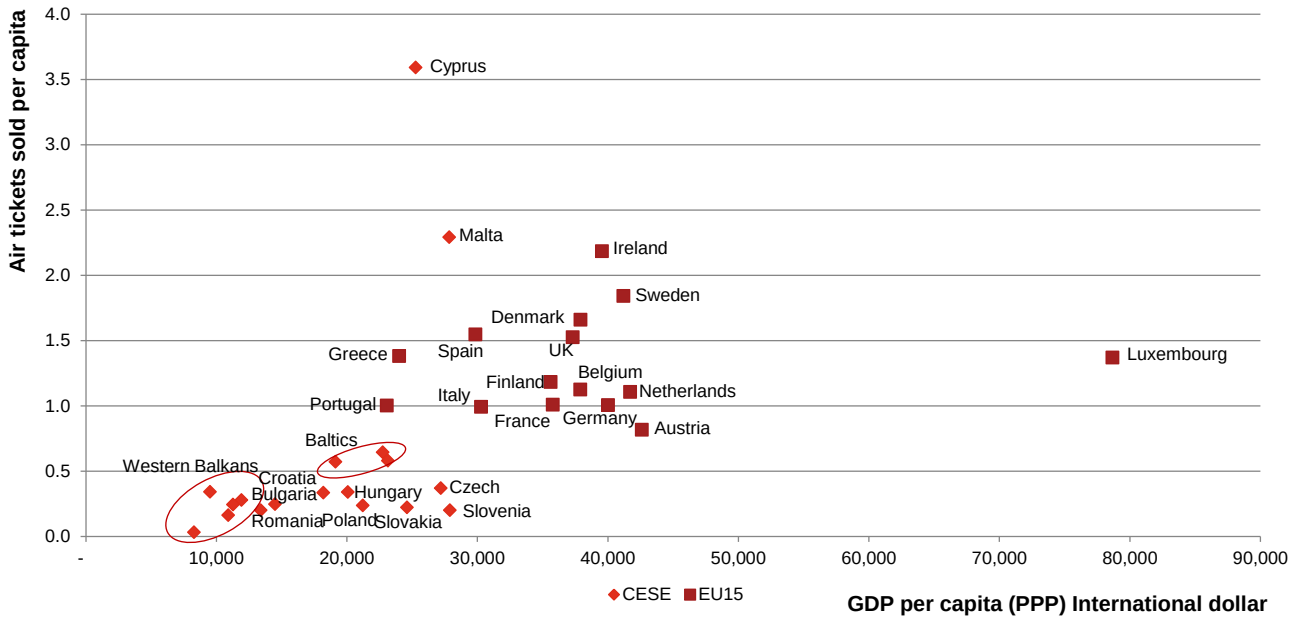
All CESE capitals with the exception of Montenegro (Podgorica) and Bosnia & Herzegovina (Sarajevo) rank in the list, along with large Polish cities Krakow, Poznan and Wroclaw. These cities are included in the city level analysis contained in Appendix E.

3.2.6. Key connectivity gaps

The existence of connectivity gaps will depend on the level of reliance on air services. We have tried to capture propensity to fly and relative geographic isolation and therefore reliance on air transport links by estimating the number of residents trips per capita based on air tickets sold in each country. We have compared this with GDP per capita adjusted for the purchasing power parity to assess how propensity to fly compares with income levels.

As shown in Figure 3-12, CESE propensity to fly is substantially lower than EU15 even despite the difference in income levels. However, trips from Cyprus and Malta (and the Baltics to a much lesser extent) are very high relative to the level of income given the geographic isolation of the countries and therefore heavier reliance on air transport relative to other modes.

Figure 3-12: Air tickets sold by country per capita vs GDP per capita (PPP) for 2013 – CESE and EU15[22]



Source: Sabre ADI/ Milanamos (PlanetOptim), IMF, PwC analysis

As highlighted by the analysis undertaken in this section, intra-CESE connectivity appears particularly vulnerable. Despite links to the West being relatively good, connectivity within CESE remains poor, which could be attributed to stage of development in which the CESE markets are. One of the main issues identified is the fact that several of the intra-CESE routes are too thin to operate, especially for LCCs given the size of the aircraft they use. However, this is also the case for some of the network carriers which are no longer able to

[22] In **Figure 3-12**, GDP has been adjusted based on Purchase Power Parity (PPP) and fares have been converted to the international dollar for each year to ensure comparability. Fares have been sourced from Sabre (which presents them in USD as converted from local currency at the time of booking). These were then converted from USD to national currency as at the time of booking. Finally, the IMF PPP exchange rate conversion factor was applied to convert these into international dollar terms.

afford to maintain unprofitable routes, also given the fleet development plans that some of them are undergoing. Yields which can be achieved on routes in the CESE region remain low in comparison to those in Western Europe and consequently the region suffers from limited connectivity not only to the main cities within Europe, but also between city pairs in the region itself. Airlines such as Adria Aiways, Air Serbia and Croatia Airlines, have established hub connectivity in the region with their bases, but there are still linkages missing between some of the capitals in the region due to the lack of strong economic activity and international trade which could justify a direct connection. The situation appears to be particularly critical for Balkan region passengers, which with the exception of some direct flights within the region of to the EU, have to fly either via a European hub (VIE, FRA, MUC, CDG, AMS) or the fast-growing Turkish Airlines hub in Istanbul. Even with Air Serbia increasing their presence in the region and improving connectivity through their hub in BEG with ongoing connections to Etihad's flights, this is far from establishing BEG as an alternative (long-haul) hub. The increase in activity by LCCs, which are replacing defunct and restructuring flag carriers, despite providing a wider access to some of the markets through new routes, does not equally translate in business connectivity gains. This is due to secondary airports typically being the focus of the low cost model (and therefore destinations which have a lower value from a business perspective), the lack of onward connections and the less frequent services which make it difficult for business travellers to take day trips. An example of the loss of business connectivity generated by the collapse of a flag airline can be observed in Hungary, which after the demise of Malév saw a reduction in business connectivity of approximately 30% between 2011 and 2013. The ability of taking day trips from Budapest has also decreased significantly as shown in appendix D. This is despite LCCs replacing most of the capacity offered at Budapest airport. LCCs, in fact, have strengthened the connections to the West, but have not reinstated services which were once operated by Malév to the south and east of the CESE region, probably due to the profitability and demand limitations posed by these routes.

Long-haul connectivity remains limited as well, with nearly 99% of flights from the CESE region being short-haul. The low profitability on these routes makes it difficult for local airlines to offer direct inter-continental services from the region. Connections through Middle Eastern hubs are however growing through the increased presence of the Gulf carriers in the region.

3.3. Discussion and conclusions

The analysis has shown that the CESE region has registered a significant increase of 30% in business connectivity between 2004 and 2013, which compares to an increase of only 5% by EU15 countries. LCCs have been driving growth to the region over the last decade, primarily from EU15 airports. However, despite significant growth, the CESE region connectivity still lags behind that of EU15 countries, across all modes of transport, even accounting for population and relative income levels.

The collapse of Malév, and that of other flag CESE carriers, has had a significant impact on the region's connectivity which has decreased at a domestic, intra-CESE and EU15 level. The most significant connectivity gaps which have been identified are intra-CESE and to EU15 destinations – however, it is believed by some stakeholders that the latter reached a point of overcapacity with the strong emergence of LCCs in the region over the last 5-10 years. Based on our defined measures of business and leisure connectivity, intra-CESE business connectivity reduced by approximately 28% between 2011 and 2013, whereas leisure connectivity reduced by around 25%. The impact on EU15 connectivity was smaller in scale (i.e. business -9% and leisure -6%); however, the repercussions on economy have probably been quite significant due to the loss of services to primary hubs. The intra-CESE market continues to be quite vulnerable and any growth appears to be hindered by the frail state of many of the region's carriers. LCCs continue to serve the EU15 market and have taken up a number of routes which were left unserved by defunct or restructuring airlines. However, these routes are more focused on serving secondary airports which do not have the same value in terms of connectivity. Long-haul connectivity remains limited, with nearly 99% of flights from the CESE region being short-haul. Some states noted the issue with lack of long haul services and the reliance of non-CESE hubs to access these destinations. Local carriers have in the past offered long-haul services, however these became unsustainable.

With Middle Eastern carriers starting to establish their presence in the region, we are seeing an increase in transfer traffic to the Middle Eastern hubs.

The analysis has highlighted the risks which the failure of flag carriers could have on the region with key links to primary hubs, which allow for onward connections and access to the wider market place, potentially being lost, as well as the difficulty for other network carriers and LCCs to operate routes within the region which are too thin and not as profitable as other routes to the rest of Europe.

4. The need for a regional hub

4.1.1. Overview

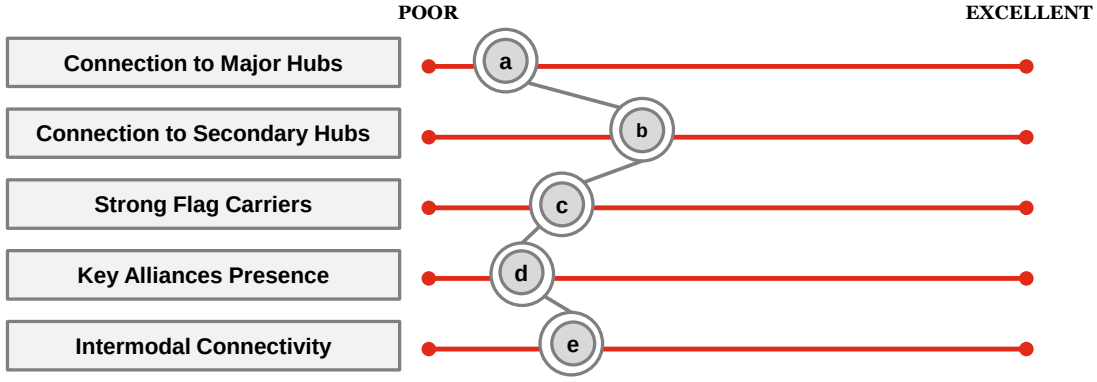
The lack of good air connectivity, as well as of viable intermodal options, and in some cases the geographical characteristics of the country, limit regional accessibility to the global economy. This makes it difficult for developing economies to fully develop their potential whilst having significant impacts on the quality of life. General accessibility and connections with other European regions are therefore important to attract businesses and increase the region's competitiveness.

As evidenced by the analysis conducted in section 3, countries such as Bosnia and Herzegovina, Estonia, Macedonia and Slovenia have a high percentage of indirect passenger traffic, ranging from 32% to 44% (refer to appendix F), which coupled with low connectivity (especially at an intra-CESE level), highlight the issues which are currently affecting the air networks of these countries, and potentially the need for a better regional network, the main hub airports for passengers originating from the region are Frankfurt and Munich followed by Vienna, which is probably a result of the expansion of the Lufthansa Group. Even though the number of transfer passengers has increased in 2013, the proportion of transfer traffic has slightly decreased since 2011, from approximately 25% to 20%, indicating an increase in the number of point-to-point routes served from the region, mainly driven by the significant growth of LCCs in the CESE market.

4.1.2. Connectivity Enablers

A number of key enablers for connectivity have been identified. Greater connectivity can be achieved in various ways. This could be through frequent services to major hubs, by offering connections to secondary hubs, with the establishment of a strong national carrier, through the presence in the market of key alliances and possibly through efficient intermodal connections. As shown in Figure 4-1, the CESE region currently scores quite low on all of the identified enablers.

Figure 4-1: Connectivity Enablers – CESE Region Assessment

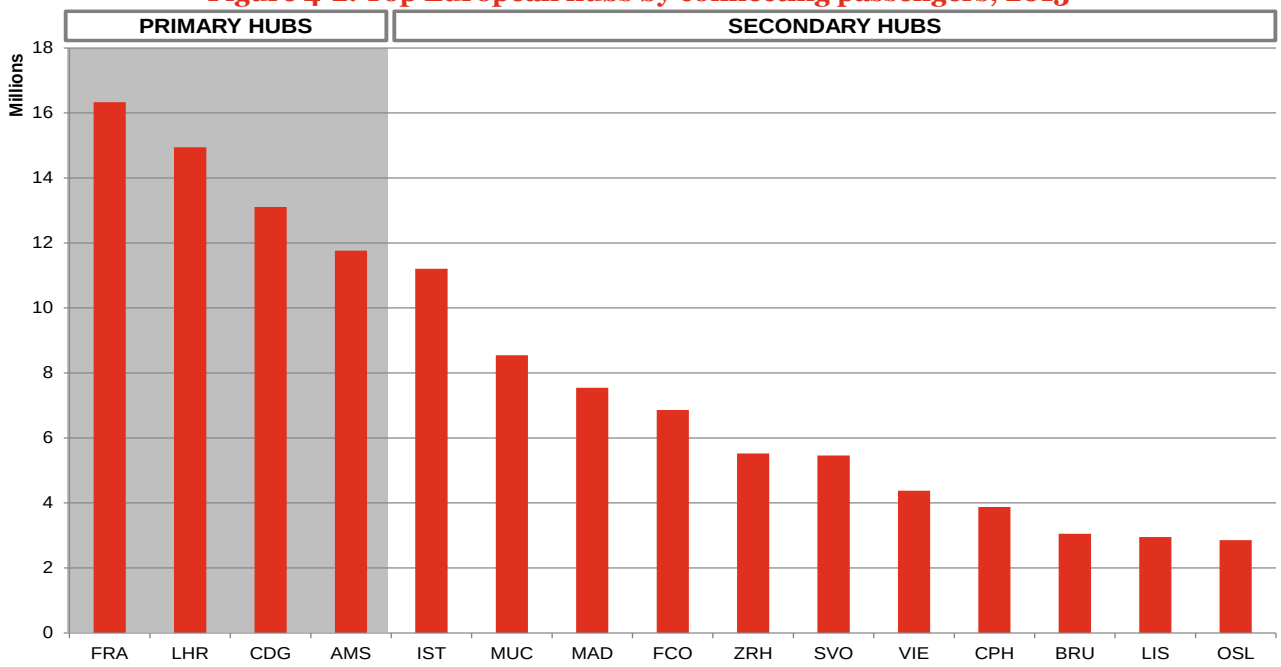


Note: the above assessment is purely illustrative and is based on a comparison with the EU15 region

Connection to Major Hubs (a)

The CESE region lacks of any major hub providing access to a wider global network. This is evidenced by Figure 4-2 which shows how the busiest European hubs are all located in Western Europe. The variety of connections and importance of the key hubs of London Heathrow, Frankfurt, Amsterdam and Paris Charles de Gaulle, is evidenced by the percentage of transfer traffic which they capture (i.e. 25% of all transfer traffic originating from Europe).

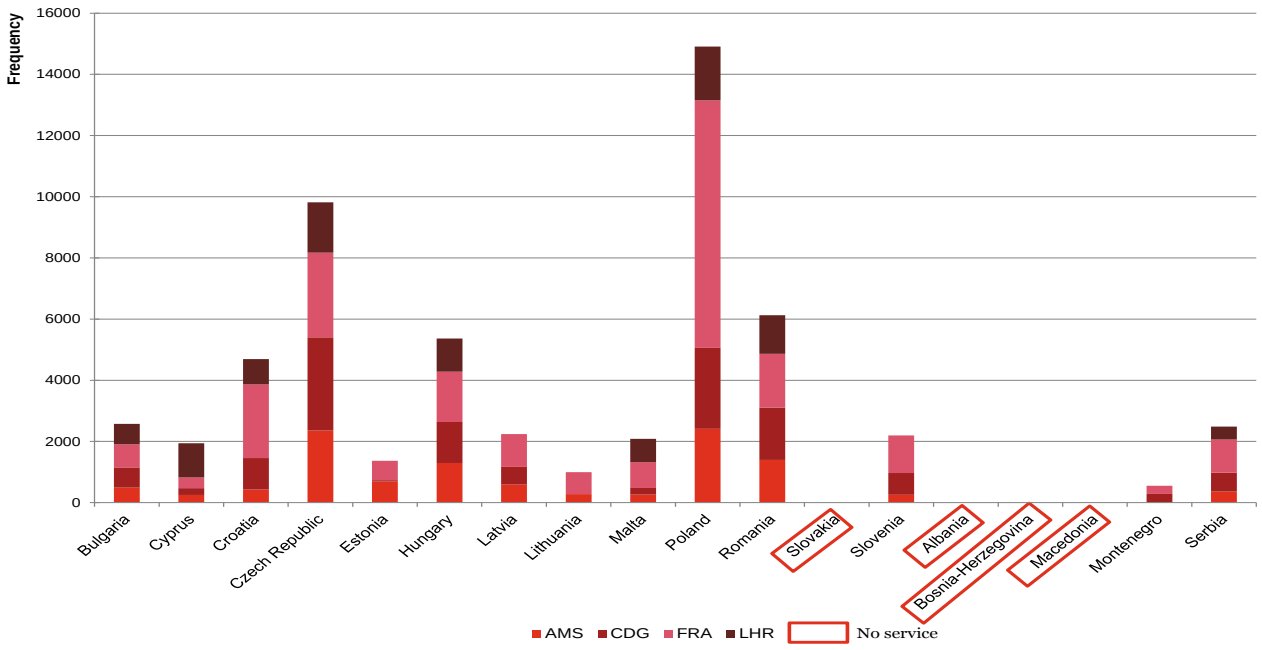
Figure 4-2: Top European hubs by connecting passengers, 2013



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Aside from the absence of a major hub, the region also lacks services to the primary airports, which would allow for greater connectivity and onward connections. As illustrated in Figure 4-3, whilst Poland, Czech Republic and Romania benefitted from the highest number of services, Macedonia, Bosnia-Herzegovina, Albania and Slovakia had no services to these hubs in 2013. Whilst most CESE countries are connected to Frankfurt, flights to London Heathrow are not available from 9 of the 18 CESE countries examined in the study.

Figure 4-3: Frequency of services from CESE to main hubs, 2013

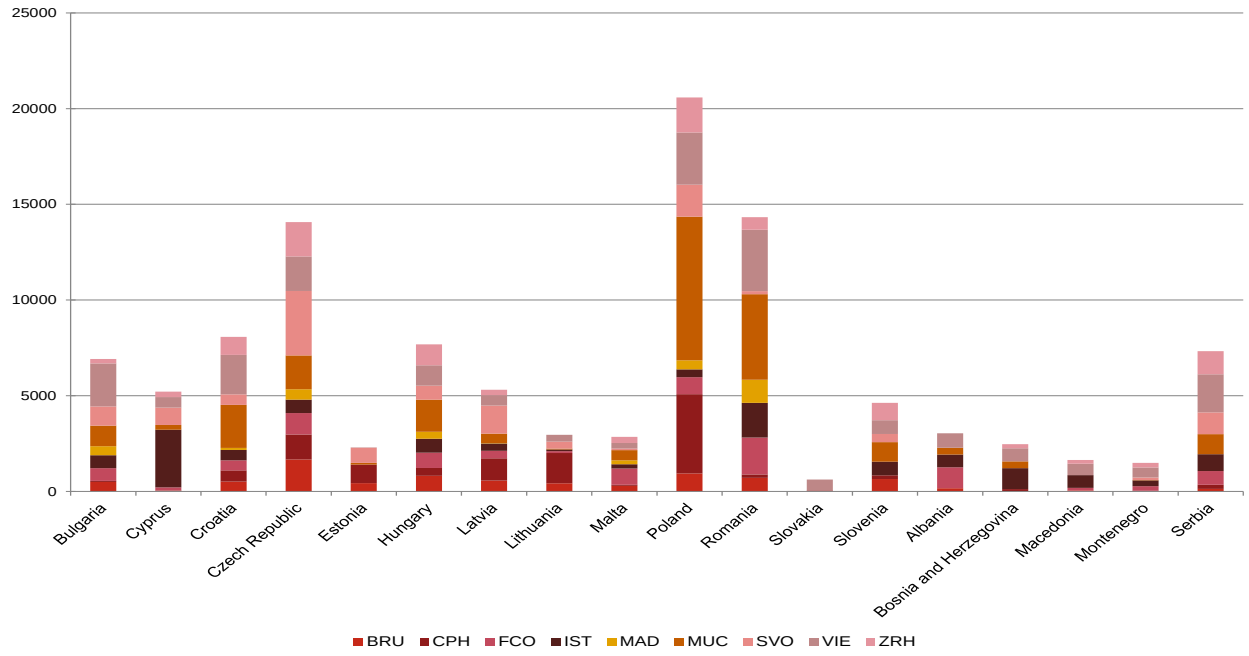


Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Available connections to secondary airports (b)

Access to secondary hubs (e.g. VIE, MAD, MUN, CPH, IST, ZHR, SVO), as well as destinations which represent important destinations from a social and economic perspective, such as Brussels and Rome, are either poorly served (i.e. the frequency of flights/seat capacity is very low) or not served (Figure 4-4).

Figure 4-4: Frequency of services to secondary hubs from CESE countries, 2013

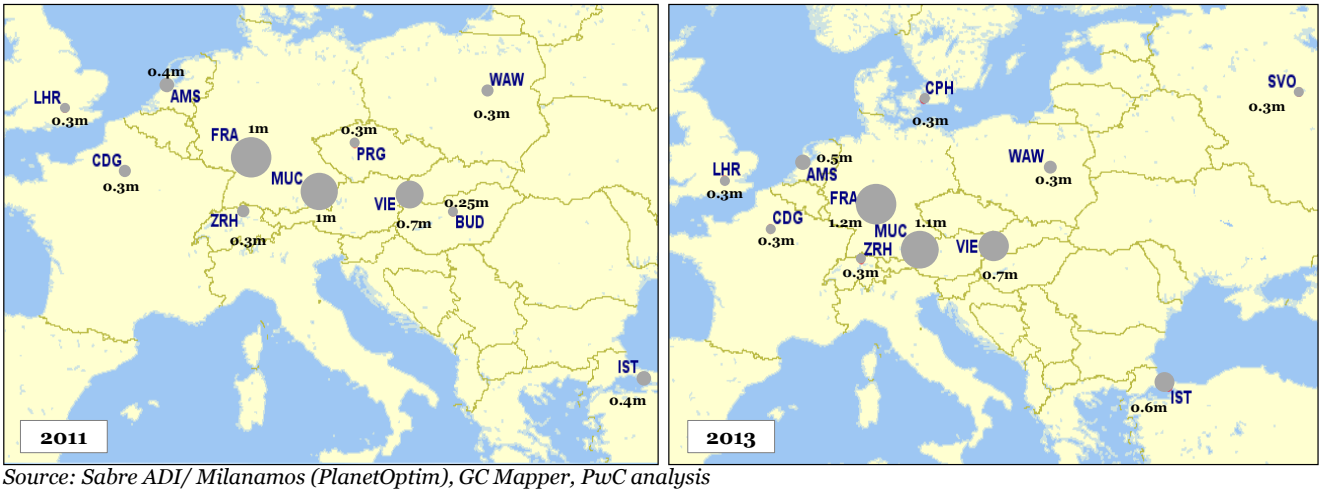


Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Despite all countries having access to at least one of the secondary hubs, Poland and Romania have the most access out of all the CESE countries. Munich is the secondary hub which offers the highest number of services to the region followed by Vienna.

As also shown by the frequency analysis, the main hub airports for passengers originating from the region are Frankfurt and Munich followed by Vienna, which is probably a result of the expansion of the Lufthansa Group. Even though the number of transfer passengers has increased in 2013, the proportion of transfer traffic has slightly decreased since 2011, from approximately 25% to 20%, indicating an increase in the number of point-to-point routes served from the region, mainly driven by the significant growth of LCCs in the CESE market.

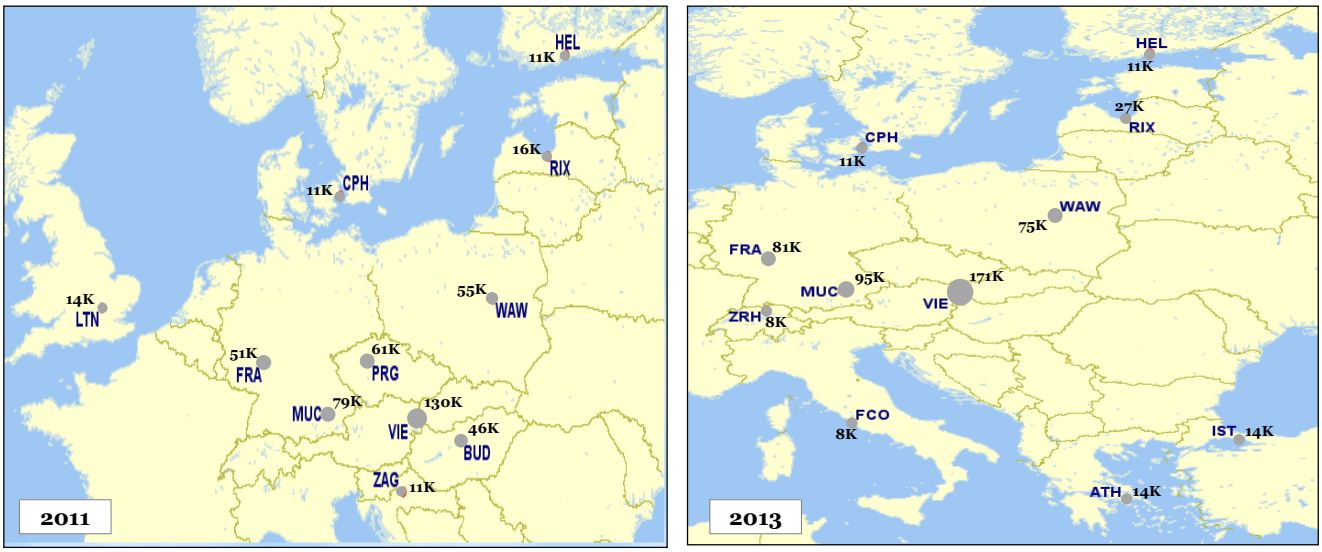
Figure 4-5: Key airports catering for transferring traffic from CESE region to all destinations, 2011 and 2013



Source: Sabre ADI/ Milanamos (PlanetOptim), GC Mapper, PwC analysis

The three dominating CESE hubs, up until 2011, were Warsaw, Prague and Budapest, which together captured about 10% of all transfer traffic originating from the region. At an intra-CESE level (not inclusive of domestic traffic) these airports captured almost 30% of all the transfers.

Figure 4-6: Key airports catering for intra-CESE transfer traffic (not inclusive of domestic), 2011 and 2013

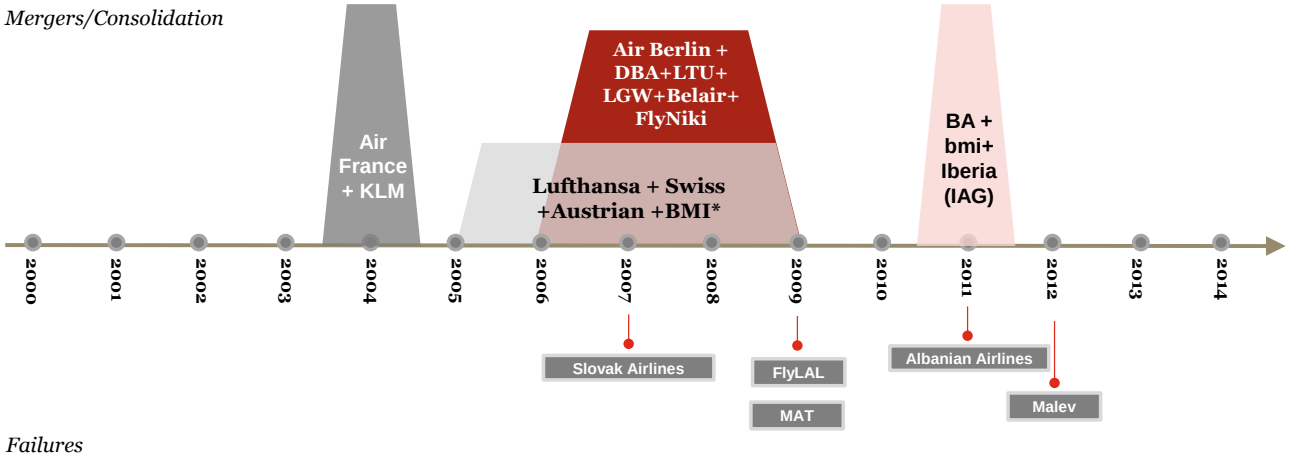


Source: Sabre ADI/ Milanamos (PlanetOptim), GC Mapper, PwC analysis

Strong network carriers (c)

Whilst in the CESE region a number of airline failures were observed, a different trend of consolidation occurred in Western Europe, where the major carriers adopted a different strategy and merged with other airlines to try and survive in the market amid the strong competition by LCCs and Middle Eastern carriers.

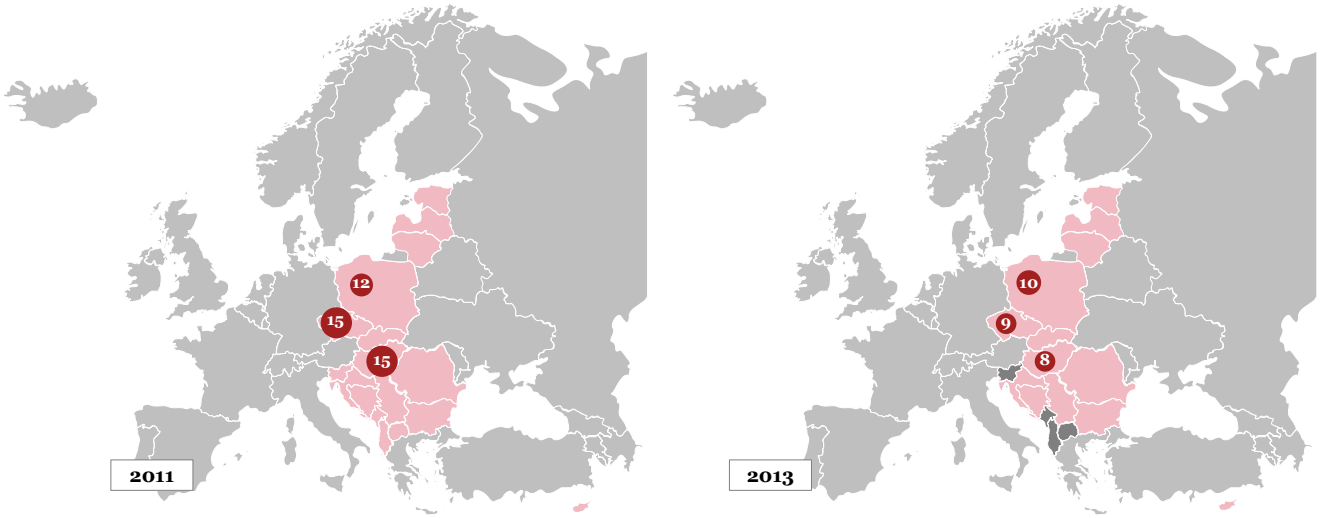
Figure 4-7: Timeline of consolidation and airline failures trends



*Note: *BMI was sold to British Airways in 2011*

In 2012, with a number of major airlines from the CESE region either launching restructuring processes or shutting down operations, airline networks across the region were reduced while multi-type fleets were also curtailed. Before 2012, Budapest and Prague airports captured traffic from 15 CESE countries, consolidating it into their hubs and redistributing it onto other destinations, thus functioning as the connection between the East and West of the region through Malév and Czech Airlines.

Figure 4-8: Change in CESE countries reached by the hubs of PRA, BUD and WAW



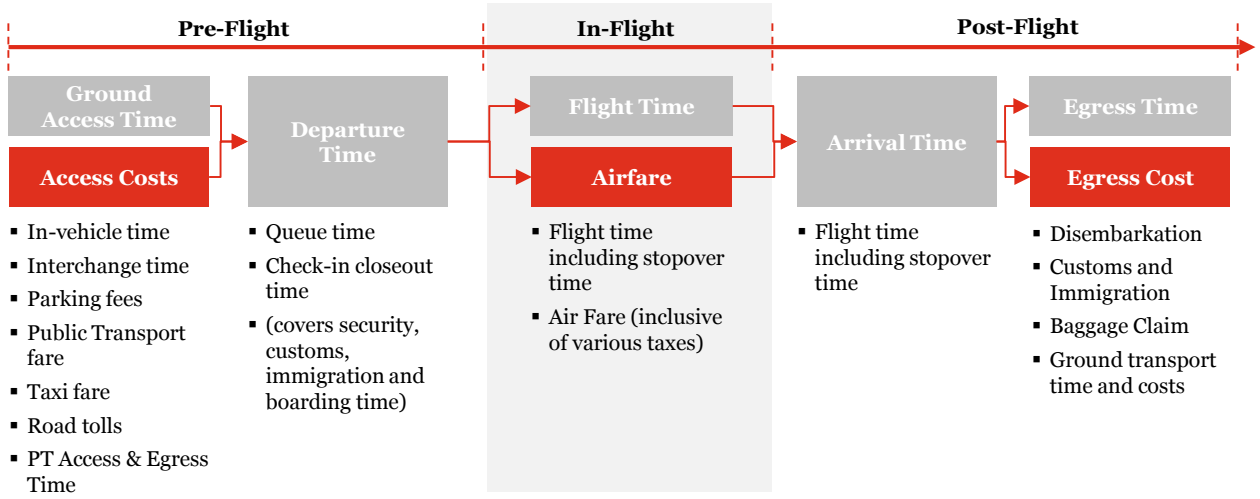
Note: red countries indicate those which are connected to the hubs of Budapest, Prague and Warsaw. Dark grey countries indicated CESE countries which have no connections to these hubs
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

With the collapse of Malév in 2012 and the restructuring of Czech Airlines in the same year, Prague and Budapest airports lost their hub status, impacting significantly on the connectivity of some of the countries in the CESE region, which relied on these hubs for onward connections to the West and other long-haul destinations. As a result, business connectivity across the region decreased by 7% between 2011 and 2013.

Currently, direct air connectivity across the region is patchy and national flag carriers have been struggling in the face of competition from low-cost carriers and big Western European airlines such as Lufthansa and Austrian. The penetration of LCCs in the CESE market has provided direct access to a number of destinations, however, at the same time; the possibility of connecting onto onward flights has decreased due to the lack of seamless connections. This has been particularly the case for Budapest, where not only the number of connecting passengers has decreased quite significantly between 2011 and 2013 (from 250,000 passengers to 23,000), but a decrease in the number of corporate leisure travellers was also observed, due in part to the impossibility of using frequent flyer points to travel on partner airlines. Countries which cannot rely on major hubs or airlines serving them are in fact heavily reliant on local airlines to connect them to major hubs which can then offer a number of onward connections.

The strengthening of the market position of airlines such as Lufthansa and Austrian is highlighted by the role their hubs are playing within the region as observed with Frankfurt and Munich airports as well as Vienna. The airport of Vienna has been able to maintain its function as a central hub for travel within the region as well as to the West and other long-haul destinations thanks to its strategic geographical location in the CESE market and a strong base flag carrier. The airport has been able to capture some of the market which remained unserved after Malév's collapse and Czech Airlines' restructuring. In 2013, Vienna was the main transfer hub for passengers from Albania, Bosnia and Herzegovina, Bulgaria and Macedonia. In addition, its close proximity to Budapest (which is within 2.30hrs driving), makes it a viable alternative for passengers on long-haul flights which may decide to drive directly to Vienna rather than fly and connect through another hub, as the generalised cost of travel would probably be lower. An increase in the number of tickets bought in Hungary by passengers travelling from Vienna from 65,000 in 2010 to 88,000 in 2013 was in fact registered. A high number of passengers originating from Slovakia also use Vienna as their main hub given the latter is located about 50 minutes drive from Bratislava.

Figure 4-9: Generalised Trip Cost Segments



Presence of key alliances in the region (d)

Alliances play an important role in enabling greater connectivity and in ensuring that competitive fares are offered. The collapse of Malév in 2012 has also meant that oneworld's presence in the region is minimal. For instance, American Airlines which was previously using Budapest airport as its consolidation hub for long-haul traffic to North America, with Malév acting as a feeder airline, stopped operations due to the loss of feeder traffic. Currently the region does not have significant access to any of the three key alliances (i.e. Star Alliance, oneworld, Skyteam), despite some of the national CESE carrier belonging to them. These airlines are in fact feeding traffic directly to other EU15 hubs (e.g. LOT, Adria Airways and Croatia Airlines feed transfer traffic to Frankfurt airport; Czech Airline and TAROM have frequent services to Paris Charles de Gaulle and Amsterdam

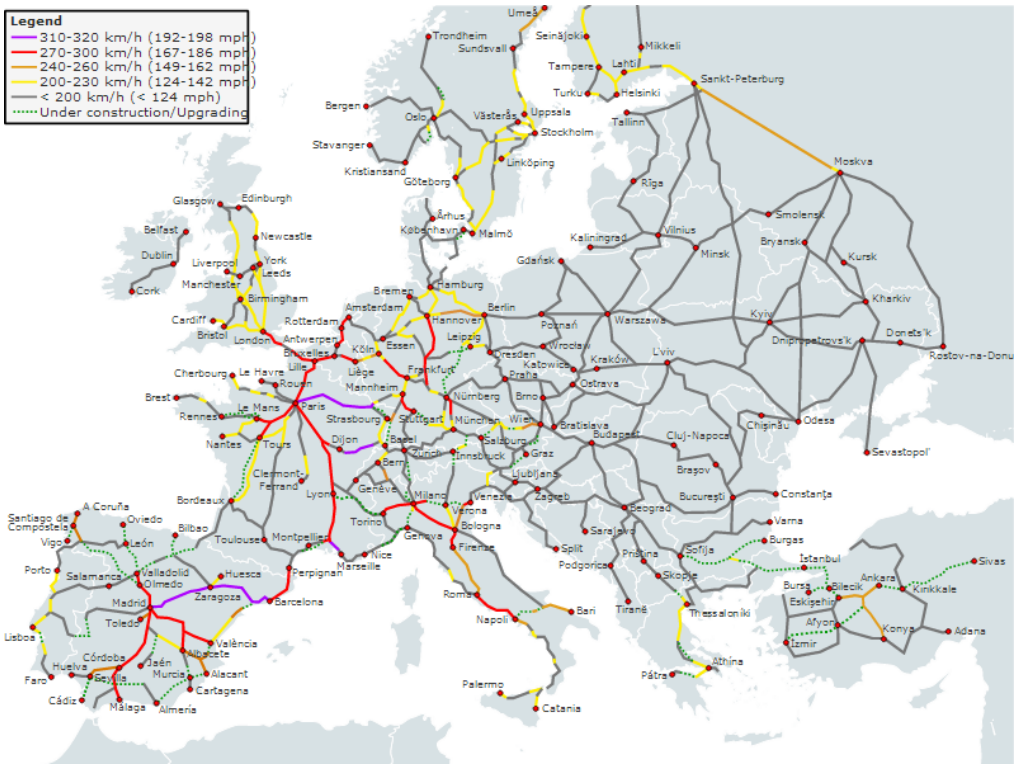
airports). This is a consequence of the market which is still developing and therefore more challenging to operate in.

Star Alliance	SkyTeam	oneworld
Adria Airways	Czech Airline	(none)
Croatia Airlines	TAROM	
LOT Polish Airlines		

Intermodal Connectivity (e)

The low connectivity in some of the CESE countries is further aggravated by the lack of transport infrastructure which renders the ability of travelling between states as well as to other European countries. For instance, there is currently no passenger rail service linking the capitals of the Baltic States and there are also no rail connections to other European States. As shown in Figure 4-10 below, the rail links in the region are mostly low speed train requiring numerous connections to travel within the region. However, despite an increase in the demand for travel, the infrastructure in these countries is still not able to fully support demand, with roads remaining the main focus of any development policy.

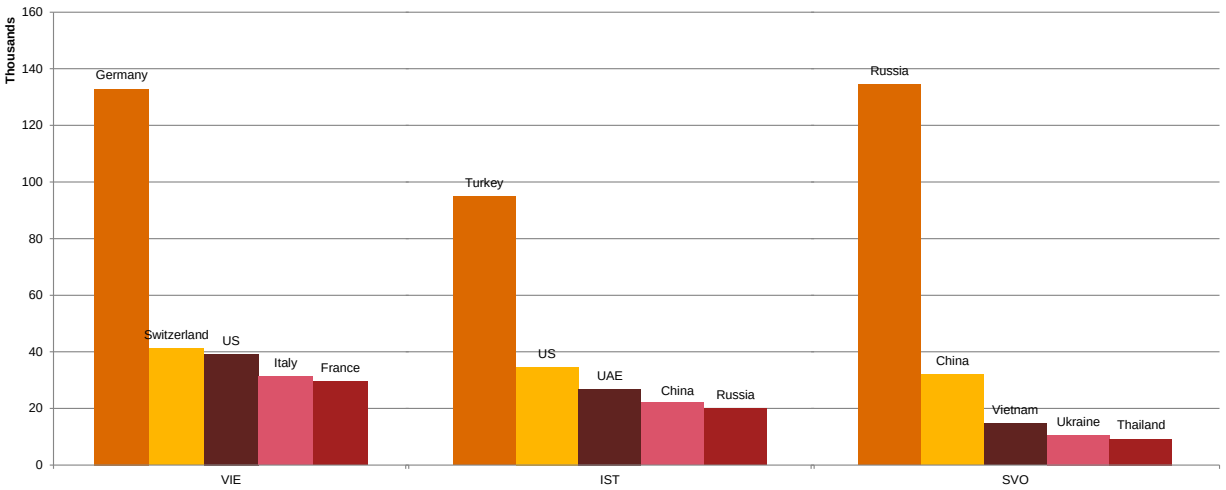
Figure 4-10: Rail Network across Europe



For some CESE countries, however, air traffic is the only viable option. This is the case for states such as Poland and Romania where due to the vastness of their territory, connectivity to low density cities can only be granted through air services as the distances to be covered would be too high and no other mode would be able to provide a sustainable service. In the case of Cyprus and Malta, air is also the only viable mode of transport to grant people access to the rest of Europe. Incentives to airlines may be considered under these circumstances so that critical services continue to be offered to people who are geographically disadvantaged.

Taking all the above observations into consideration we believe that a regional hub in the current market would not be sustainable. With the rise of the Gulf carriers and the strategy being adopted by airlines such as Etihad through the acquisition of struggling carriers, we are seeing a shift of global transfer traffic away from the major European hubs to the Middle East. At the same time, hubs such as Istanbul and Moscow Sheremetyevo airports have started playing a more important role in the region. Istanbul has seen an increase in the number of CESE passengers, from approximately 0.4m in 2011 to 0.6m in 2013. Istanbul appears to be used by CESE originating passengers to reach destinations such as the US and the UAE. Moscow Sheremetyevo, which has been establishing its hub status in the CESE market on the back of strong underlying growth from the Aeroflot Group, also appears to be used as a gateway to Asia.

Figure 4-11: Top 5 Destinations from the CESE region via Vienna, Istanbul and Moscow (2013)



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

4.1.3. Conclusions

As evidenced by the assessment of the identified connectivity enablers, the region is faced with a number of challenges, which include:

- The lack of connections to primary and secondary hubs, which is key to business connectivity and onward connections as it facilitates access to the global air network;
- The lack of strong flag carriers in the region which would allow for the development of a hub able to sustain traffic to/from and within the region. In addition, the vulnerable state of a number of CESE carriers, further exacerbate the connectivity issue to key hubs, as the existing links to these airports may be lost in the case of a flag airline failure;
- The absence of key alliances in the region which offer seamless connections to the wider air network and ensure competitive air fares; and
- The lack of intermodal options which would offer the region with an alternative to air traffic where possible.

It is anticipated that the establishment of a regional hub in the current market would not be sustainable. This is further supported by the recent trends which have been identified in the region and which show a shift of transfer traffic from the West to the East as driven by the rise in activity by the Gulf carriers and Turkish airlines.

5. Route Analysis and Simulation of an airline failure

5.1. Introduction

This chapter presents an analysis of the routes operated by flag carriers of the CESE region, as well as illustrates the effects which may be generated by the withdrawal from service of a flag carrier. The route analysis aims to provide a description of some of the key factors which an airline may consider when deciding to open or start operating a new route. This, combined with the connectivity index that has been developed for the study and which is presented in appendix D, should provide governments and Member States alike with a tool to assess the impacts which an airline failure may have on a specific country as well as the region it belongs to as a whole.

5.2. Approach

An analysis of the routes operated from the CESE region in 2013 by CESE states' flag carriers was performed by focusing on factors such as:

- Passenger Demand[23]
- Segment Revenue (total route revenue)
- Average Fares per passenger on a given route
- Profitability (defined as revenue per ASK[24])
- Competition (defined as number of carriers operating on the route)
- Type of route (defined as predominantly FSC (network carrier) or LCC and based on the market share by seat capacity)

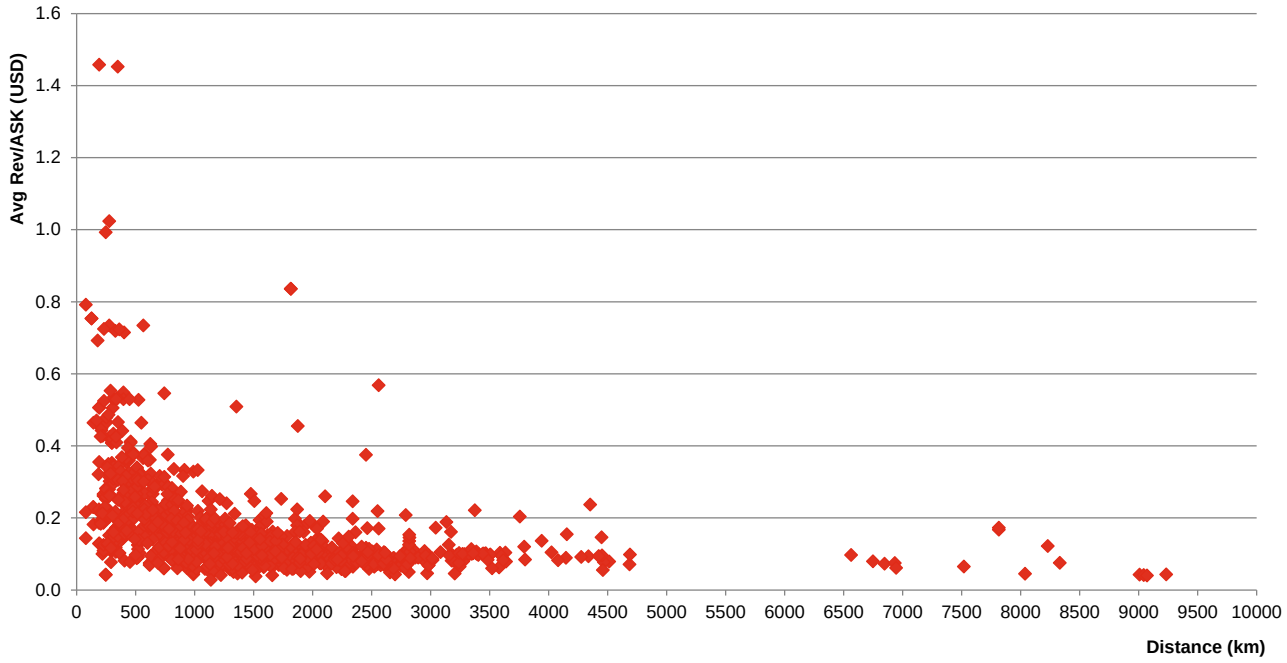
A simulation of the potential implications of an airline's withdrawal from service is also presented later in the chapter through a potential future scenario of Cyprus Airways' failure.

5.2.1. Data Limitations

Due to the lack of detailed data on cost, for the purpose of this analysis we have defined profitability as average revenue/ASK. Revenue/ASK by route has been estimated using origin & destination (O&D) passenger[25] average fares so as to avoid any skewing caused by passengers which may continue their trip to a different destination or which may have originated elsewhere. It should be noted that revenue per ASK tends to be higher on shorter routes, typically decreasing as average stage length increases. This is illustrated in Figure 5-1 below, which shows the relationship between distance and average revenue/ASK for CESE routes.

[23] Note: only significant routes have been examined. These are defined as routes with 52 or more flights per year and over 1000 passengers per year
[24] ASK: Available seat kilometres, a common measure of airline capacity
[25] Origin& Destination passengers are defined as passengers who reach their destination without having to connect

Figure 5-1: Distance vs Revenue per ASK



Note: The calculations are based on segment revenue generated by O&D passengers only
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

5.3. Route Analysis

New routes represent huge investments and risk for airlines. There are a number of key factors which airlines consider before opening up new routes. These include passenger demand, competition, market share potential, contribution of the new route to connectivity and route profitability. In order to assess which routes are most vulnerable, we propose using the following factors:

- **Passenger Demand** - in order to estimate the potential of a route, airlines will firstly look at **existing/ actual demand** as well as how much **induced demand** the new route may generate. Indirect demand (i.e. demand requiring a stop-over) may provide an indication of the potential for a direct route to be introduced.

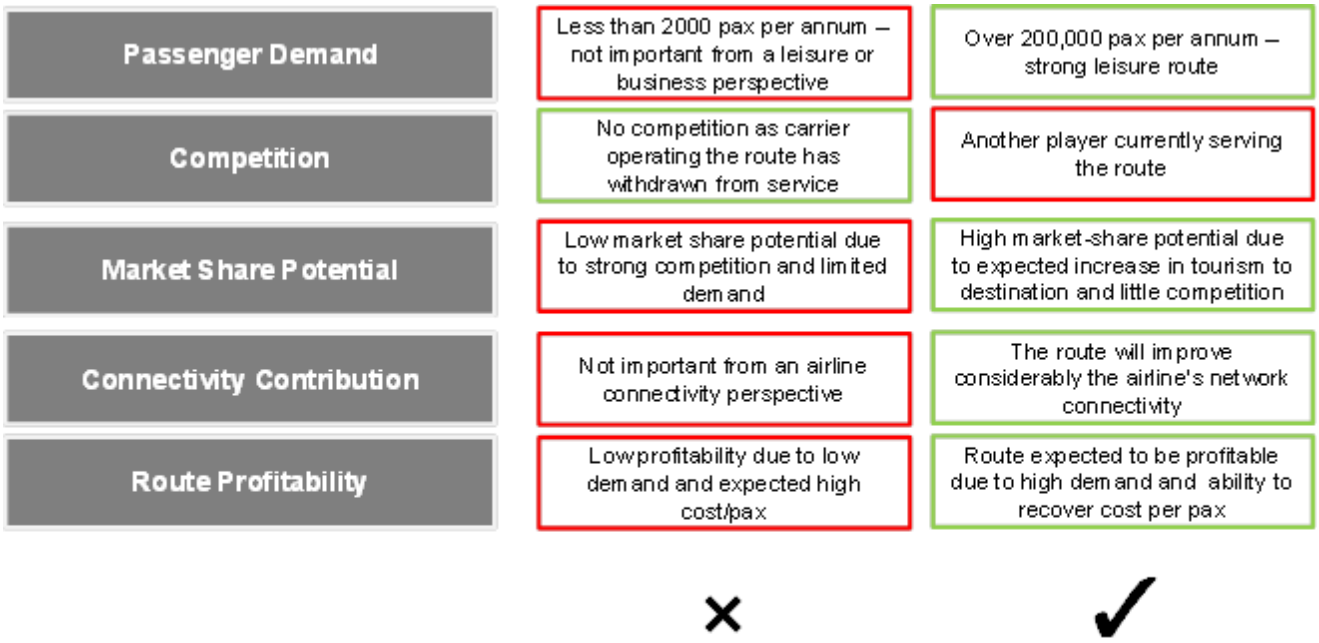
- **Competition** – the number of airlines competing on a route and the reaction of the competitors to a new player will constitute an important consideration for the carrier. The type of competition faced will be dependent on the type of route served which may be a leisure or business route. It is expected that short-haul leisure routes or routes to secondary airports will be more likely to attract LCCs, whilst full service carriers will be more interested in routes to major and/or primary hubs with higher connectivity potential.

- **Market Share potential** – the airline's view on the potential market share which they will be able to achieve.

- **Connectivity Contribution** – the contribution of a route to the overall connectivity of the airline network and the country will also form a key determinant in the decision of an airline to open up a new route.

- **Route Profitability** – whether the new route will be a financial success will most definitely represent a key element in the route decision making.

Figure 5-2: Illustrative example of a potential route vulnerability checklist



Note: the above is an illustrative example only. Any assessment conducted by an airline will be also dependent on a number of other factors which are key to the route which is being investigated

Based on the above, the routes which are most at risk are those which have low density, are operated by a single carrier (the region's carrier) and are not attractive to other airlines because they don't represent important leisure or business routes. If the airline operating these routes was to collapse, it is unlikely that the same level of service could be offered by other non-national airlines without incentives. Appropriate incentives in certain circumstances may in fact help airlines to commit to new air services.

The route analysis was conducted by looking at domestic, intra-CESE, EU15 and all other routes to Europe and the rest of the world. A route by route analysis is contained in appendix B.

5.3.1. Domestic Routes

We identified over 70 significant domestic routes operated by CESE carriers within the region (inbound and outbound). The largest domestic market is Poland which makes up for about 50% of all domestic travel in CESE. Poland and Romania are the two vastest countries in the region with significant distances between cities. As a result, the thickest routes are in the Polish market, namely between Warsaw and Krakow, Warsaw and Gdansk and Warsaw and Wroclaw.

5.3.2. Intra-CESE Routes

Within the CESE region, 148 CESE carrier operated routes (inbound and outbound) have been identified, with very limited presence of non-CESE carriers' activity. Demand appears to be highest on routes to/from the Balkan States, in particular Serbia and Montenegro which have two of the routes with the highest density (between Belgrade and Podgorica and Belgrade and Tivat). This is likely to be related to the relative closeness of areas of high population density within these states.

The difference in demand between the top routes and the rest of the intra-CESE network is quite significant, with a significant number of routes in the network having less than 10,000 passengers per annum (each way). Thin routes tend to be operated exclusively by local carriers due to most of these routes being unfeasible for the majority of carriers due to the high costs involved and the limitations posed by the aircraft type to be used on the route. Major LCCs would also be unable to provide service on these routes due to the fleet limitations typical of low cost carriers (e.g. Ryanair's fleet only include B737s, easyJet's fleet has A319s and A320s, etc.). The demand requirements for new routes by aircraft type are shown in Figure 5-3 below.

Figure 5-3: Demand requirements for new routes

Aircraft Type	Seats/Flight	Annual Pax Requirements
B747	400	219k
A340	280	153.3k
B767-300	220	120.45k
B737-700	140	76.65k
Regional Jet	100	54.75k

Note: It should be noted that a balance between frequency and size of aircraft needs to be determined on a route by route basis and that the above only provides a general example
Source: InterVISTAS

The routes with the highest revenue/ASK are those which operate over relatively short distances, and are predominantly between the Balkan states, as well as between Lithuania and Latvia and Poland.

5.3.3. CESE to EU15 Routes

With over 500 routes (outbound only) between CESE and EU15 states, these make up for over 50% of the CESE carrier network. Routes to the EU15 states are generally thicker and a higher number of non-CESE carriers is competing across the network. The top two routes by revenue/ASK originate from Slovenia and have Vienna and Munich as destination. The top routes by demand, on the other hand, have primary and secondary hubs as destinations, with the Prague to Paris Charles de Gaulle and Larnaca to Athens being the top two routes. It is interesting to note how services to London by CESE carriers are mainly served through Luton. This is likely as a result of Wizz Air's operations.

5.3.4. CESE to Non-EU15/Non-CESE Routes

In 2013, the highest passenger demand was recorded on services to Russia which registered a significant increase over the past years. Despite a high number of routes being operated to other European countries (i.e. not inclusive of EU15 and CESE countries), only a small number of long-haul routes (hereby defined as routes over 4000km) is operated by CESE carriers. In 2013, the only long-haul routes available were to North America, the United Arab Emirates, China and South Korea.

The most profitable long-haul routes are between Prague and Incheon (South Korea) as well as Prague and Dubai. Amongst the other routes, the highest revenue/ASK is observed on routes from Cyprus and Malta to other African and Middle Eastern destinations. The higher revenue might be a reflection of the higher fares paid

on these routes which represent popular tourism destinations and which are heavily reliant on air travel due to the absence of any intermodal competition, as well as of the shorter distance of the routes.

5.4. Potential effects of an airline failure

As explored throughout the paper, airline failures and restructuring in the CESE region have negatively impacted connectivity, which business connectivity decreasing by about 7% between 2011 and 2013, despite an initial recovery in 2011 after the global financial crisis. A detailed analysis of the effects and implications of an airline failure have been presented in Paper B which focuses on the withdrawal from service of Malév.

5.4.1. Effects of Previous Airlines Failures

By looking at various defunct airlines, including Malév, three general key themes can be observed:

- Operations are gradually reduced. In the case of flag carriers, routes to key hubs will be retained but those to other smaller destinations will be axed;
- Due to fleet constraints, frequency is usually most affected; and
- Once the carrier has withdrawn from service, the links to major key hubs may be lost as LCCs will tend to focus on secondary and regional airports. If network carrier starts operating routes to key hubs an increase in fares may be observed. However, in the case of LCCs, fares will first be reduced to build demand and gradually increase as demand stabilises.

An in-depth description of the impacts which the Malév's shutdown had on passengers and the region are presented in Paper B.

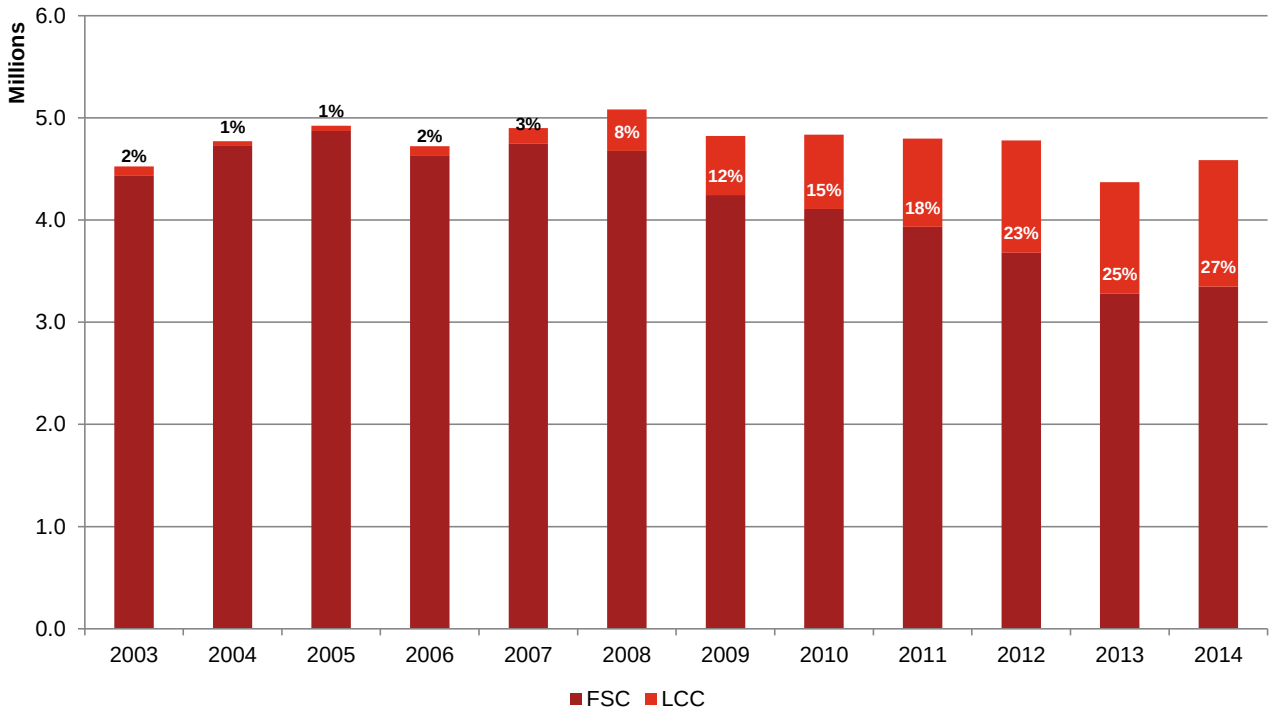
5.4.2. Simulation of a Flag Carrier Airline Failure

For the purpose of this analysis, we are considering a potential future scenario which assumes the failure of Cyprus Airways due to the current difficulties which the airline is facing.

CYPRUS AIR MARKET

The Cyprus air market has changed considerably over the past decade. In 2003, a total of 64 airlines served the airports of Larnaca and Paphos with a network allowing access to 99 destinations. In 2014, the number of airlines has grown to 70 and the number of routes to 104. As shown in Figure 5-4, the low cost market has grown significantly since 2003, from accounting for 2% of the total seat capacity to 27% in 2014.

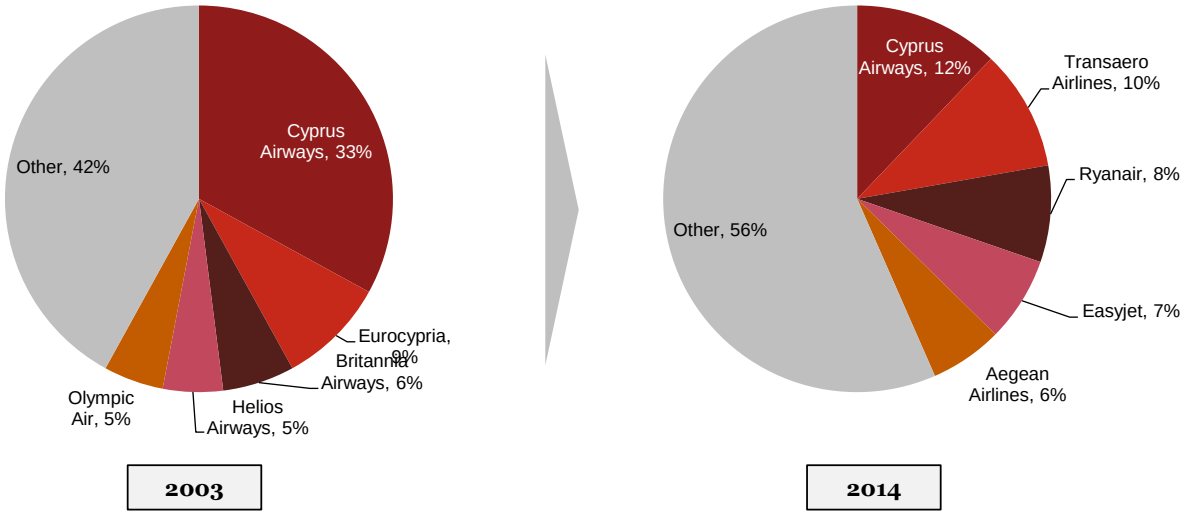
Figure 5-4: Cyprus Market (LCA & PFO) Seat Capacity by Carrier Type, 2003 to 2014



Source: Hermes Airports, PwC analysis

The key players in the market have also changed. Cyprus Airways' market share, which in 2003 made up for 33% of the total seat offering, has decreased considerably in 2014, with only 12% of all seat capacity being offered by the airline. Today, amongst the five largest carriers on the island, two are low cost carriers, namely easyJet and Ryanair.

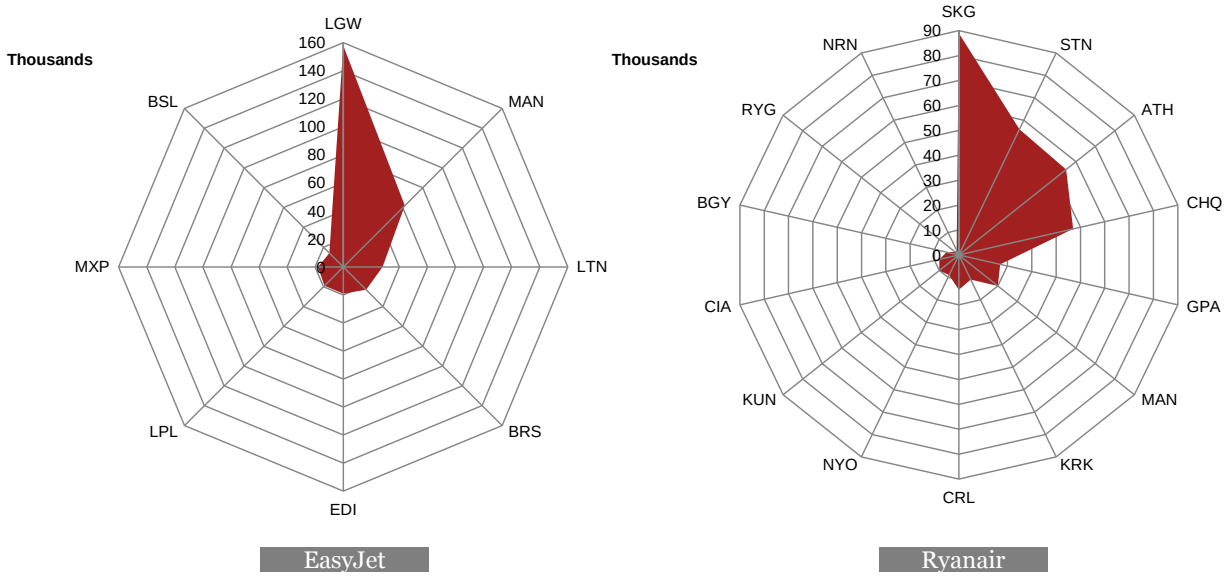
Figure 5-5: Seat Capacity by Airline, 2003 and 2014



Source: Hermes Airports, PwC analysis

EasyJet and Ryanair, which started operations from Cyprus in 2008 and 2010 respectively, have grown their market share rapidly and are today operating 19 routes from Cyprus. easyJet has concentrated its strategy on the UK market which represents 50% of all inbound tourists to the island. The two airlines operate most services from Paphos airport, however, easyJet has also been growing its presence at Larnaca airport since 2009. As illustrated in Figure 5-6, while easyJet's focus has been on the UK leisure market, Ryanair has been offering less seats but to a wider selection of destinations including to countries such as Poland and Lithuania, with Greece being a key focus country for the airline.

Figure 5-6: EasyJet and Ryanair route network and seat capacity, 2014



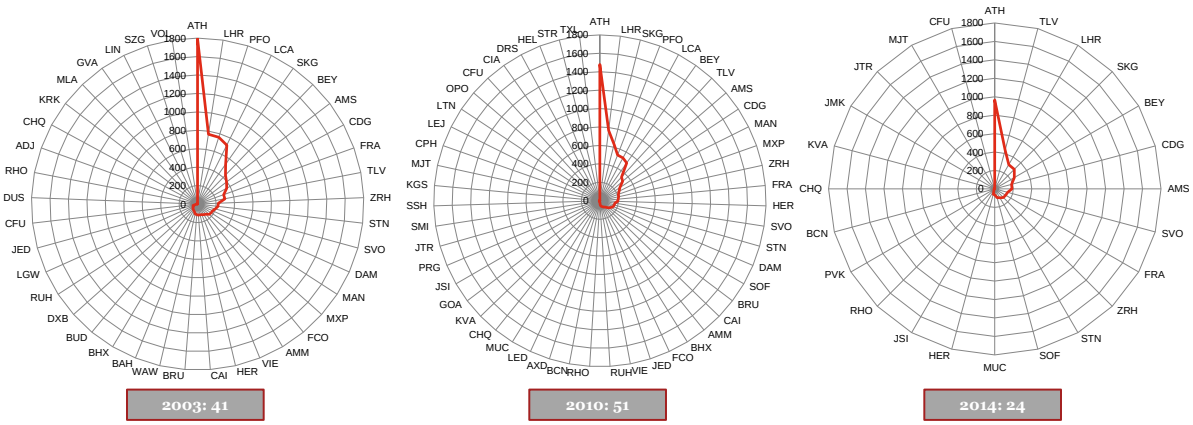
Source: Hermes Airports, PwC analysis

CYPRUS AIRWAYS

Cyprus Airways has been undergoing restructuring in adherence with its rescue plan. As part of the rescue plan the airline has reduced its fleet from ten aircraft to six, all of which are Airbus A320s. The Government is now seeking expression of interest for strategic or financial investors to acquire its 93.67% stake in the airline.

The struggles by the airline are evidenced by the significant loss in market share since 2003 (as shown in Figure 5-5) and by the downsizing of its air network, with the number of routes served decreasing from 41 in 2003 to only 24 in 2014 (see Figure 5-7). With the advent of LCCs and their deep penetration into the Cypriot market, Cyprus Airways has been experiencing strong competition by LCCs such as easyJet, Ryanair and Wizz Air, in particular on the popular routes to Greece and Britain. Aegean Airlines has also been growing the number of services offered from Larnaca to Athens. The competition that Cyprus Airways' is facing on its key routes to London, Athens and Thessaloniki, hinders its recovery. In addition, another factor which contributes to the competitive disadvantage of the airline is represented by its inability to fly through certain parts of the Cyprus and Turkish airspaces thus having to detour, increasing operating cost.

Figure 5-7: Changes in Cyprus Airways' route network (frequency), 2003 to 2014



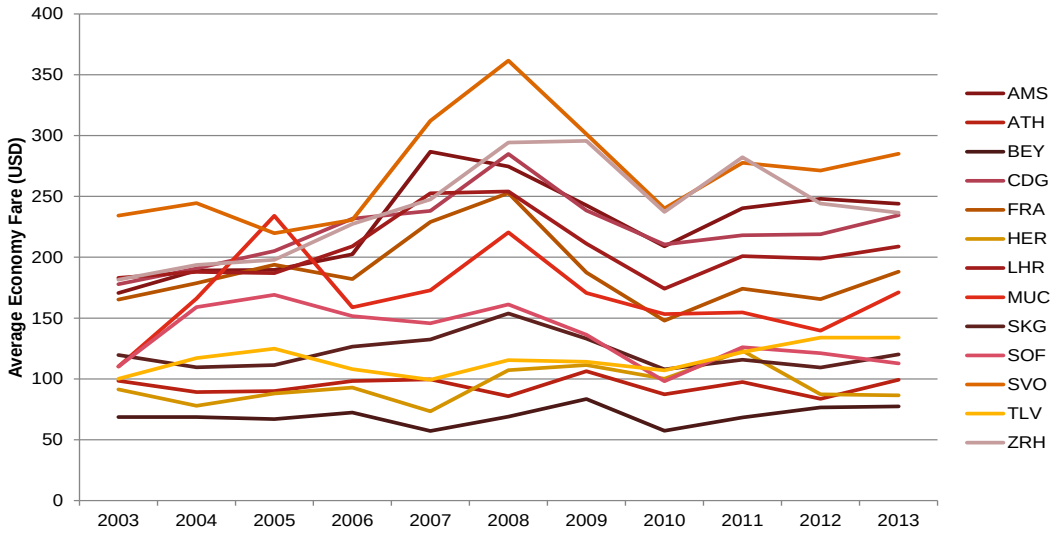
Note: routes above originate from Cyprus only
Source: Hermes Airports, PwC analysis

Most of the routes which were retained by the airline, and which include destinations of business importance, especially at a connectivity level, as they offer onward connections (e.g. LHR, FRA, MUC, AMS, CDG), experienced a decrease in the level of service offered, in terms of frequencies and consequently seat capacity.

Routes which have experienced a surge in capacity after the introduction of LCC services have shown close to no increase in economy fares since 2003, for instance:

- Fares on the Cyprus to Athens route increased by 1% between 2003 and 2013 (on a nominal basis);
- Fares on the route from Cyprus to Thessaloniki appear to have remained unchanged at $99 per way per passenger between 2003 and 2013. However, Cyprus Airways' economy fare on the LCA to SKG route has decreased by over 10% over the same period; and
- A decrease of approximately 5% on fares to Heraklion, which dropped from $91 to $86, was observed.

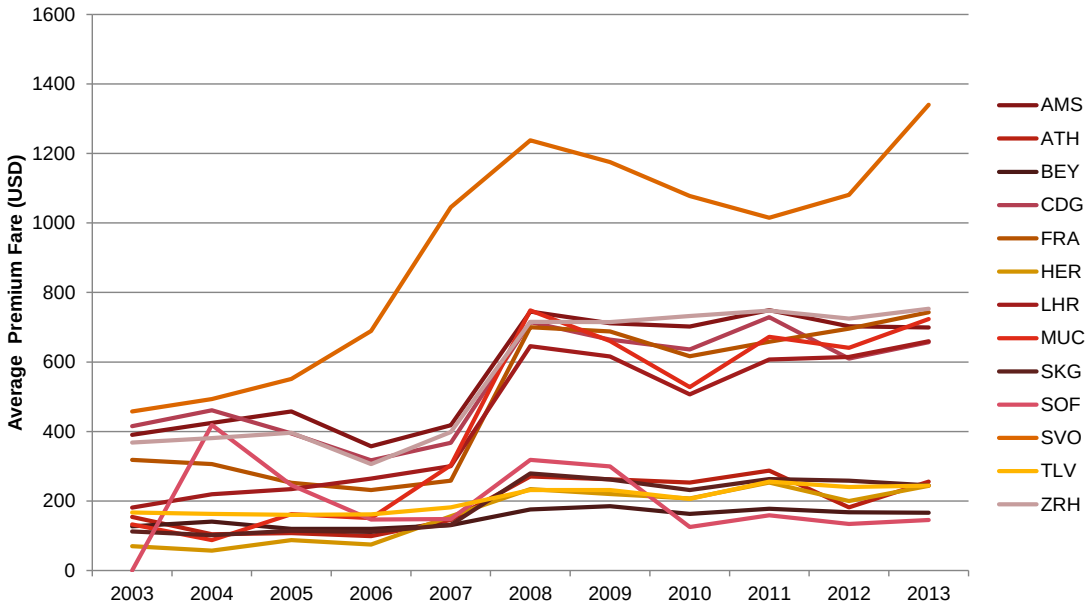
Figure 5-8: Historical Average Economy Fares, 2003 to 2013



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

On the other hand, premium fares, which increased quite significantly up until 2008 and then dropping considerably with the global financial crisis, have only just started climbing back to 2008 levels.

Figure 5-9: Historical Average Premium Fares, 2003 to 2013



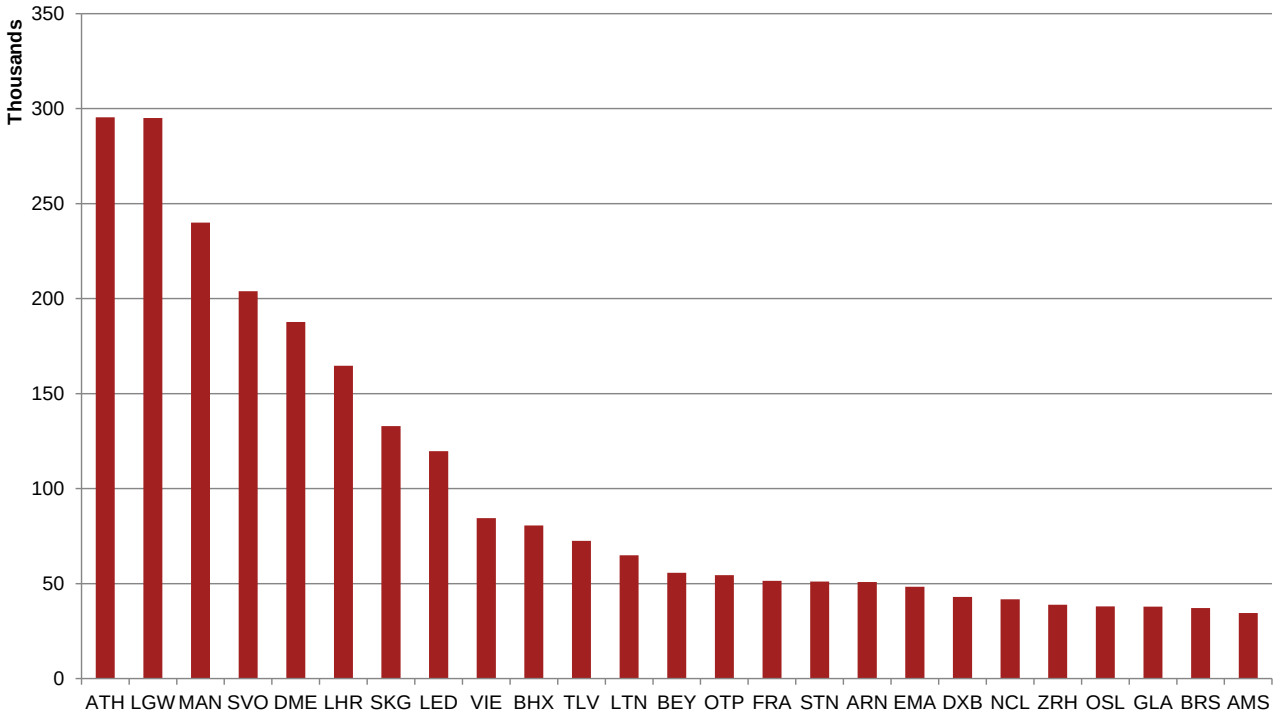
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

THE CONSEQUENCES OF A POTENTIAL CYPRUS AIRWAYS FAILURE

Cyprus, due to its geographical location, being an island at the southeast edge of Europe, is heavily reliant on air transport which represents its only connection to the rest of Europe and the world. This is evidenced by the number of air trips per capita registered in the country which in 2013 were estimated to be 2.6 per person.

Through Cyprus Airways, Cypriots have access to Europe's main primary hubs (i.e. LHR, AMS, CDG, FRA). However, should the airline be forced to withdraw from service due to its financial status, a number of these key direct connections may be lost. As a result, Athens and Vienna, which are currently the main hubs for transfer traffic from Cyprus (defined as all traffic from LCA and PFO), are expected to reinforce their position in the market following a withdrawal of operations by the airline.

Figure 5-10: Top 25 destinations from Cyprus (LCA & PFO, One Way) by passengers, 2013



Source: Hermes Airports, PwC analysis

As shown in Figure 5-10, in 2013, Athens, London and Manchester were the top destinations from the airports of Larnaca and Paphos, followed by significant and growing demand from the Russian market. Looking at the current demand levels, it is expected that service of the higher density routes operated by Cyprus Airways will be maintained by other carriers should the airline have to terminate its operations. In particular:

- The Athens route which is currently served by Cyprus Airways as well as Ryanair and Aegean Airlines, is expected to be maintained by the latter two, with Aegean potentially looking to reinforce its hub position attracting a larger proportion of connecting traffic;

- The safeguarding of the London Heathrow route is considered to be vital for connections with the West and to ensure important business links are maintained. British Airways will most likely offer additional capacity on the route to counter a potential ceasing of service by the Cypriot flag carrier;

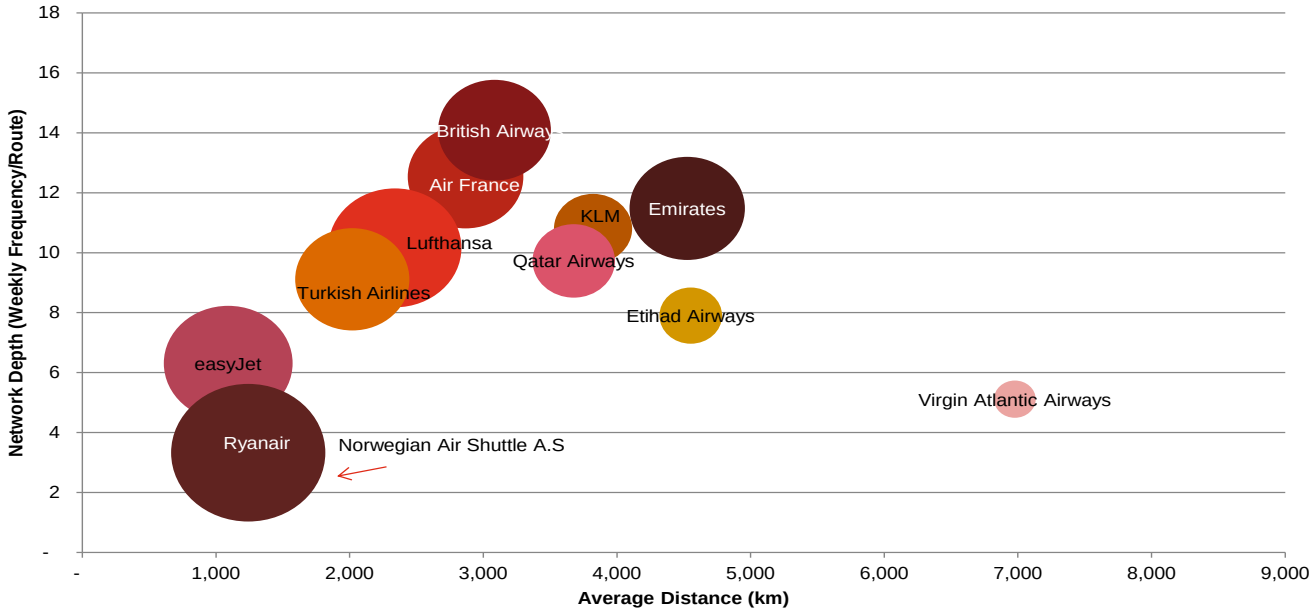
- The services to Amsterdam and Paris Charles de Gaulle airports, which are currently operated under a code-share agreement with KLM and Air France respectively, may be terminated, as demand on these routes seems quite low;

- Services to the Middle East, which has become a key target for Cyprus business market, will most likely be taken up by the Gulf Carriers. Qatar Airways in particular is continuing its expansion plan with new flights from Larnaca to Doha which commenced in April 2014. Emirates continues to be a strong presence in the market with the operation of a daily flight with a wide body aircraft. Additionally, but to a lesser extent, Etihad maintains a strong presence with direct flights from Larnaca to Abu Dhabi offering the Cyprus market very good connections to the Gulf and the Far East; and

- Another important market which has become a primary focus of Cyprus tourism is the Russian market, which is currently the second largest after the UK. Cyprus Airways is currently operating services to Moscow; however, Aeroflot and Transaero are also operating a significant number of services to Russia. It is believed that if demand warrants it, the two Russian carriers will be able to supply additional capacity as needed, especially since the Bilateral Agreement between Cyprus and the Russian Federation provides for that.

- Despite Cyprus seeing an increase in the number of routes served by LCCs in 2014 (e.g. Wizz Air introduction of two new routes from Larnaca to Belgrade, Kiev and Donetsk which started in April 2014 and the planned expansion of Norwegian Air Shuttle by the end of 2014), differently to what has been observed at Budapest Airport after Malév's collapse, it is not expected that the Cypriot air market will be flooded with capacity by LCCs, also any capacity that might be added is likely to be seasonal. This is due to the island's traffic seasonality, its geographical positioning and the fact that LCCs tend to serve shorter sector length than FSCs. This is illustrated in Figure 5-11, where it clearly shows that LCCs mainly operate routes which average just over 1000km in sector length. This compares to an average of 3000km to 4500km for European and Middle Eastern full service carriers.

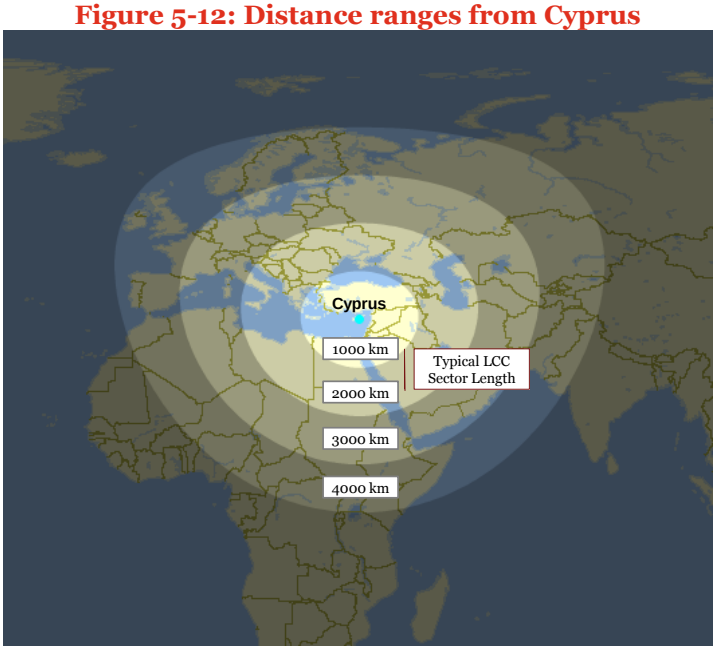
Figure 5-11: World Airlines Network Comparison, 2013



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Figure 5-12 shows what these ranges would correspond to using Cyprus as origin.

Figure 5-12: Distance ranges from Cyprus



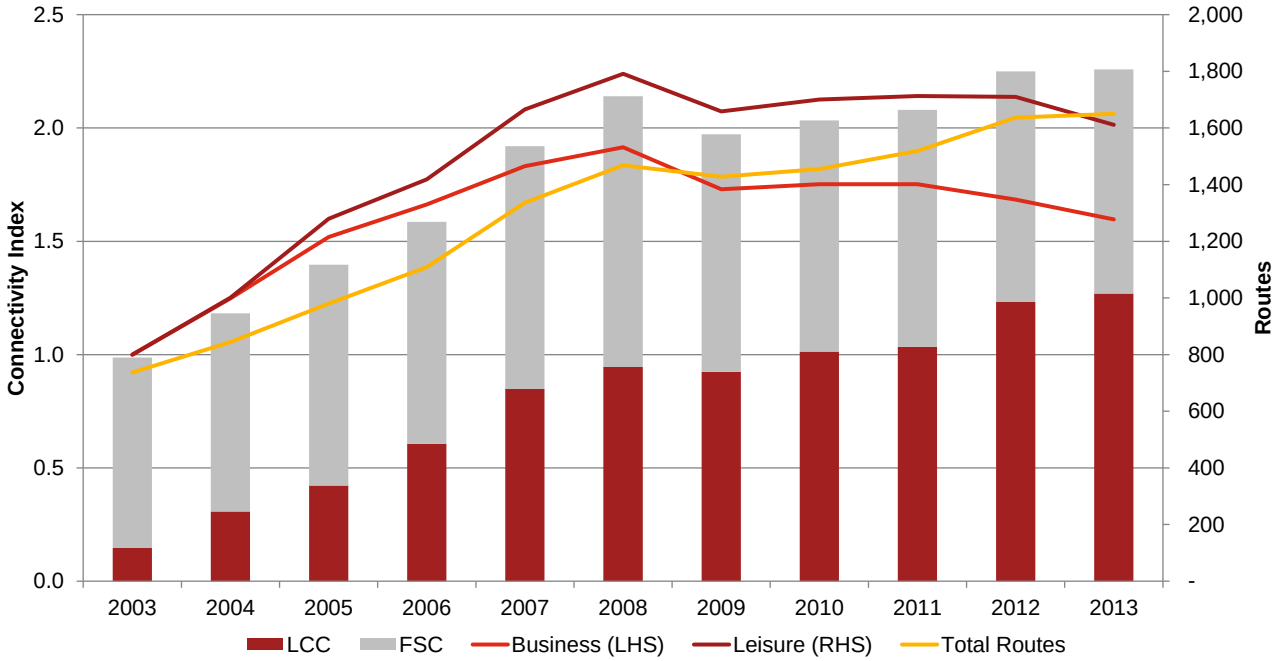
Source: PwC analysis, GC mapper

6. *Conclusions*

The CESE region has been experiencing strong growth over the past decade with air passenger traffic increasing by a significant 160% between 2003 and 2013. Growth in demand has been particularly strong to EU15 destinations as well as for other European and world countries which between 2003 and 2013 have grown at a rate of 11% and 12% per annum respectively. Over the same period, the route network from the region has also developed considerably, doubling for both EU15 destinations) and Non-CESE/Non-EU destinations. With the route network expanding and traffic passenger growing, leisure connectivity from CESE to EU15 and Non-CESE/Non-EU countries has grown considerably over the last decade, increasing by 120% for the former and by 220% for the latter. The same trend has been observed for business connectivity which has increased by over 70% between 2003 and 2013 for the CESE to EU15 market and by almost 110% for the CESE to Non-CESE/Non-EU market.

However, the CESE region is a developing aviation market which is still relatively 'immature' relative to the rest of the EU making it more challenging for airlines operating in the region given the scale of operations. Despite significant growth in connectivity in the CESE region over the last decade, connectivity still lags behind that of EU15 countries. This applies to all modes of transport, even accounting for population and relative income levels. This is due to the fact that the main drivers of availability of air transport are purchasing power and economic development, which in the CESE region are all below the Western Europe levels. In addition, between 2011 and 2013, connectivity from CESE to EU15 countries and intra-CESE has started weakening, mainly as a result of the loss of a number of network/flag carriers which previously operated in the region.

Figure 6-1: CESE to EU15 Connectivity vs Route Expansion, 2003 to 2013

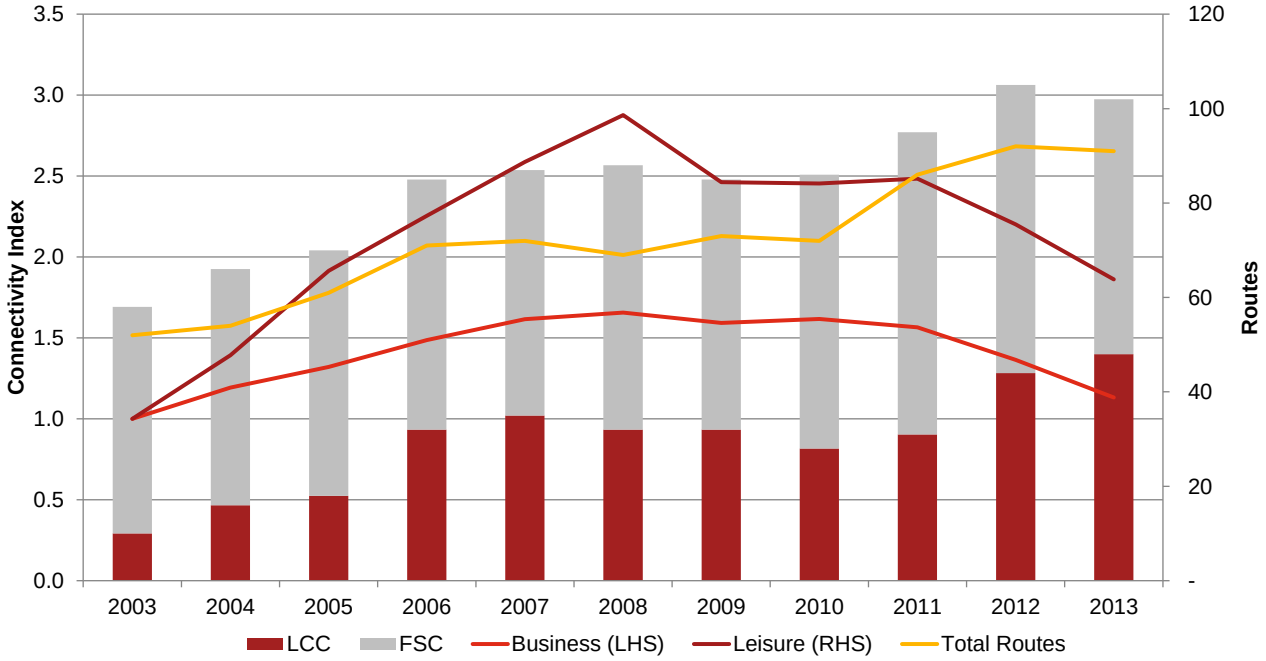


Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

A significant portion of the growth in the region has been driven by LCCs. Low cost carriers have increased their presence in the CESE market from 6% to 35% between 2003 and 2013, primarily by increasing considerably the services from the region to EU15 airports which some believe may have led to overcapacity in the market.

However, despite the increase in LCC activity in the region, which is taking market share from defunct or struggling flag carriers and offering a wider number of routes, the impact on connectivity has been minimal and not able to counter the loss of routes offered by flag carriers. This is shown in Figure 6-1 and Figure 6-2, where it is clear that despite an increase in the number of total routes served, the level of connectivity is still decreasing.

Figure 6-2: Intra-CESE Connectivity vs Route Expansion, 2003 to 2013

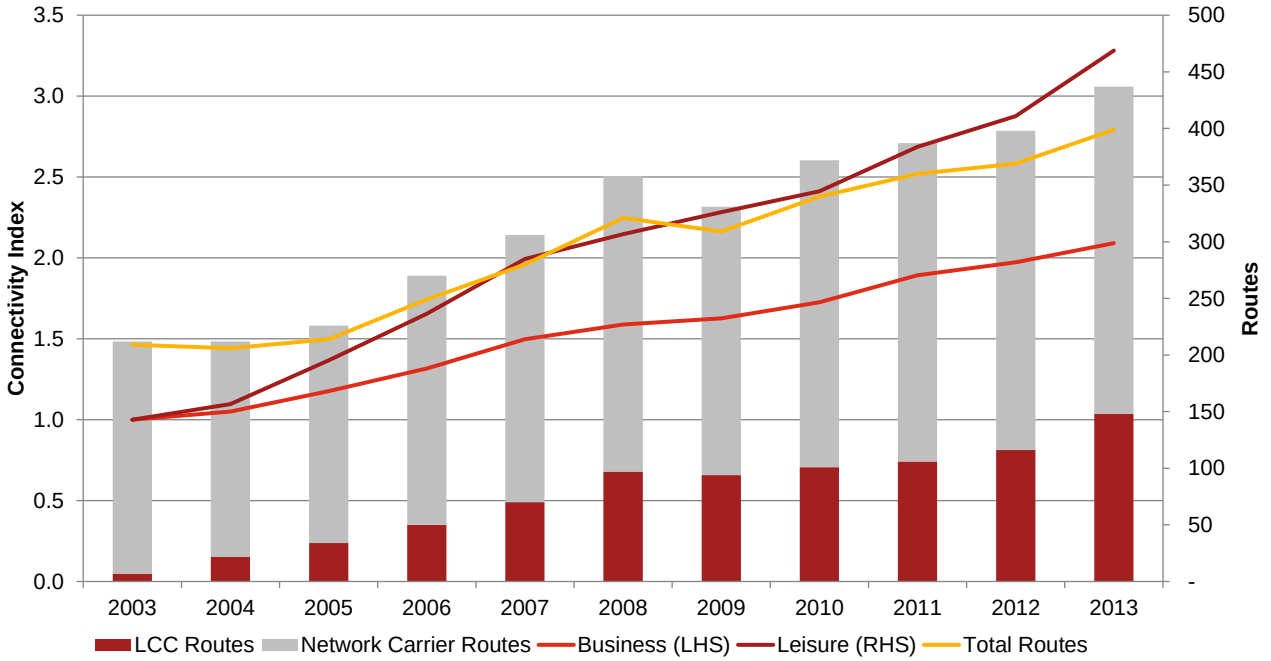


Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

The low impact of LCCs on connectivity is a result of the business model adopted by this carriers, which tend to focus on providing services to a wider number of routes but at a lower frequency and between secondary airports which do not usually provide for onward connections and consequently have lower beneficial effects on connectivity. The timing of the flights offered by LCCs, in addition, do not always cater for business traffic, which combined with a lower frequency had led to a decline in the number of possible destinations that can be reached to/from CESE for a day trip (e.g. business meetings). In addition, the airports reached by LCCs are often located at a significant distance from the city centre and often do not have the infrastructure to cater for good surface access, which makes it a less optimal solution for business travellers. Ryanair and Wizz Air, which are two of the key airlines in the CESE market, tend to follow this business model. EasyJet, which also has a significant market share in the region, deviated from this business model in some cases, serving some of the key hubs (e.g. Rome Fiumicino, Milan Linate and Malpensa, etc.). However, it does not provide the seamless connecting services which a full service carrier would offer to passengers which are transferring on to other flights.

As shown in Figure 6-3, connectivity to Non-CESE/Non-EU routes has grown considerably over the last decade. However, long haul connectivity remains very limited, with nearly 99% of flights from the region being short-haul.

Figure 6-3: CESE to Non-CESE/Non-EU Connectivity vs Route Expansion, 2003 to 2013



Note: the number of routes is only reflective of schedule services and does not include charter services due to data limitations. However, it is believed that charter services would not have a significant impact on connectivity due to the type of destinations they serve and the frequency with which they operate. FSC and LCC routes do not sum to total as some routes are operated by both.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

The loss of network/flag carriers has also reduced hub traffic within the region. Previously Budapest and Prague were the key hub airports in the CESE region; however Malév's collapse and CSA's change of strategy have resulted in the disappearance of these hubs. Indirect CESE traffic usually hubs through non-CESE airports. Warsaw Chopin is the only hub in the region with a substantial level of transfer traffic. The non-CESE hub usage varies by region based on geographic location and available services; however, the primary hubs now serving indirect traffic from CESE are Frankfurt, Munich and Vienna, with Vienna, Warsaw, Munich and Frankfurt being the key hubs for Intra-CESE traffic.

Given the current developments in the market, with connectivity moving to the East (Gulf and Turkey), it is believed that a local hub for the region would be unsustainable. The region, however, still requires support in the development of the intra-CESE market (both domestic and international), which is made of a number of thin routes, which would be unsustainable for LCCs to operate with the typical narrow body aircraft used by these carriers. For example, the demise of Malév saw many south and east Intra-CESE routes lost. Also, CSA has been downsizing their capacity due to a new strategy and focus on point-to-point services. In addition to thin routes, there are isolated markets which are heavily reliant on air connectivity. This is the case for Cyprus, the Baltics and Malta which have limited transport alternatives available. In addition, given their location at the edges of Europe, these markets are less attractive to LCCs as the sector lengths are typically too long to allow maximum aircraft utilisation. The flag carriers in these countries are relied on to provide connectivity. Therefore, some connections within the region may require support (e.g. through incentives and/or public service obligations) where it is not sustainable for a carrier to operate the route and there are limited surface transport alternatives for passengers.

Appendix A. - Outputs

Total CESE Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	16407	20123	24426	28711	36696	40064	37116	39719	36309	41868	43147
Capacity	27122	32430	40024	44100	51708	57205	53542	56250	57411	58751	60045
Load Factor	61%	62%	61%	65%	71%	70%	69%	71%	63%	71%	72%
Frequency	268	320	378	410	458	488	456	468	470	463	452

CESE Domestic Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	875	932	977	1,015	1,254	1,428	1,371	1,485	1,342	1,627	1,310
Capacity	1,835	1,934	2,019	2,082	2,288	2,600	2,561	2,605	2,259	2,709	2,102
Load Factor	48%	48%	48%	49%	55%	55%	54%	57%	59%	60%	62%
Frequency	30	31	33	34	36	37	36	34	32	36	28

Intra-CESE Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	1,227	1,465	1,609	1,978	2,235	2,421	2,319	2,344	2,134	1,783	1,624
Capacity	2,108	2,525	2,852	3,303	3,389	3,776	3,574	3,507	3,381	2,739	2,551
Load Factor	58%	58%	56%	60%	66%	64%	65%	67%	63%	65%	64%
Frequency	27	32	34	38	41	45	45	45	42	32	28

CESE-other EU Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	11,005	14,082	17,738	21,091	27,346	29,432	26,650	28,476	25,493	29,780	30,176
Capacity	17,301	21,957	28,482	31,219	36,986	40,637	37,200	39,232	39,938	40,685	41,022
Load Factor	64%	64%	62%	68%	74%	72%	72%	73%	64%	73%	74%
Frequency	162	206	256	277	309	327	297	306	307	301	295

CESE - Africa Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	243	251	219	175	173	203	176	187	122	95	146
Capacity	408	421	429	379	301	305	263	289	203	190	225
Load Factor	60%	60%	51%	46%	56%	67%	67%	63%	60%	50%	65%
Frequency	3.0	3.1	3.1	2.8	2.3	2.3	2.1	2.4	1.8	1.8	2.0

CESE - Asia Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	28	54	84	142	182	210	212	225	230	260	288
Capacity	71	141	181	225	253	316	250	347	355	344	378
Load Factor	40%	39%	46%	63%	72%	66%	85%	65%	65%	76%	76%
Frequency	0.5	0.8	0.9	1.2	1.3	1.7	1.6	2.1	2.3	2.3	2.3

CESE - Europe (Non-CESE, Non-EU) Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	1488	1649	1967	2352	3073	3662	3387	3916	4089	5115	5765
Capacity	2512	2649	3153	3642	4367	5021	5165	5673	6494	7123	8059

Load Factor	59%	62%	62%	65%	70%	73%	66%	69%	63%	72%	72%
Frequency	27.0	28.4	32.1	35.4	41.5	45.7	45.9	49.6	55.3	58.8	61.6

CESE - Middle East Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	1121	1240	1361	1433	1862	2222	2588	2721	2554	2928	3591
Capacity	2335	2254	2326	2613	3374	3835	3975	4048	4293	4630	5440
Load Factor	48%	55%	59%	55%	55%	58%	65%	67%	59%	63%	66%
Frequency	15.8	15.6	16.2	18.3	23.1	25.5	25.9	26.4	27.7	29.2	33.7

CESE - North America Traffic

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pax	420	450	471	525	571	486	413	365	345	280	247
Capacity	552	549	582	637	750	715	554	549	488	331	268
Load Factor	76%	82%	81%	82%	76%	68%	75%	66%	71%	85%	92%
Frequency	2.6	2.6	2.7	3.0	3.5	3.4	2.5	2.4	2.1	1.4	1.2

Appendix B. - List of Routes operated by CESE carriers

Domestic Routes

ROUTE	ROUTE COUNTRY	CESE CARRIERS	CESE CARRIERS PAX	NON-CESE CARRIERS	NON CESE PAX	INDIRECT PAX	ASK (millions)	AVG FARE	REV/ASK	RANK BY REV/ASK	SEGMENT REVENUE (USD M)	SEGMENT REVENUE (USD M)2	DISTANCE	NETWORK CARRIER	LCC
KRK-WAW	Poland-Poland	2	137,932				42	60	0.20	23	5.9	8.3	230	100%	0%
WAW-GDN	Poland-Poland	2	130,232				56	91	0.21	18	9.6	11.9	295	100%	0%
WAW-KRK	Poland-Poland	2	129,791				42	61	0.19	26	5.7	7.9	230	100%	0%
GDN-WAW	Poland-Poland	2	128,955				56	87	0.20	22	9.2	11.3	295	100%	0%
WRO-WAW	Poland-Poland	2	123,777				55	106	0.24	13	10.5	13.1	299	100%	0%
WAW-WRO	Poland-Poland	2	122,541				55	101	0.23	14	10.1	12.4	299	100%	0%
DBV-ZAG	Croatia-Croatia	1	112,399				58	67	0.13	42	6.6	7.5	394	100%	0%
ZAG-DBV	Croatia-Croatia	1	102,788				57	57	0.10	54	5.5	5.8	394	100%	0%
TSR-OTP	Romania-Romania	1	90,016				45	120	0.24	12	10.2	10.8	402	100%	0%
SPU-ZAG	Croatia-Croatia	1	86,687				31	53	0.15	34	3.8	4.6	246	100%	0%
OTP-TSR	Romania-Romania	1	84,755				42	121	0.24	11	9.6	10.3	402	100%	0%
ZAG-SPU	Croatia-Croatia	1	83,239				32	54	0.14	36	3.8	4.5	246	100%	0%
OTP-CLJ	Romania-Romania	2	77,405				39	106	0.21	19	7.0	8.2	315	100%	0%
RZE-WAW	Poland-Poland	2	75,150				28	63	0.17	30	3.4	4.7	249	100%	0%
CLJ-OTP	Romania-Romania	1	73,702				38	104	0.20	21	6.6	7.7	315	100%	0%
WAW-RZE	Poland-Poland	2	73,185				29	65	0.17	31	3.4	4.7	249	100%	0%
VAR-SOF	Bulgaria-Bulgaria	1	70,310				37	63	0.12	48	3.9	4.5	365	100%	0%
SOF-VAR	Bulgaria-Bulgaria	1	69,604				37	68	0.13	43	4.1	4.8	365	100%	0%
OTP-IAS	Romania-Romania	1	57,311				27	105	0.22	15	4.8	6.0	322	100%	0%
IAS-OTP	Romania-Romania	1	56,674				27	99	0.21	20	4.5	5.6	322	100%	0%
WAW-SZZ	Poland-Poland	2	41,783				27	80	0.12	46	3.2	3.3	438	100%	0%
SZZ-WAW	Poland-Poland	2	41,561				27	82	0.13	45	3.2	3.4	438	100%	0%
WAW-POZ	Poland-Poland	2	41,063				20	60	0.12	47	2.1	2.5	283	100%	0%
POZ-WAW	Poland-Poland	2	40,421				20	58	0.12	51	2.0	2.3	283	100%	0%
WAW-KTW	Poland-Poland	2	36,994				11	43	0.14	35	1.5	1.6	229	100%	0%
KTW-WAW	Poland-Poland	2	34,618				11	43	0.13	38	1.4	1.5	229	100%	0%
KRK-GDN	Poland-Poland	1	28,869			3,174	19	127	0.19	25	3.8	3.7	476	100%	0%
GDN-KRK	Poland-Poland	1	28,486			3,412	19	127	0.19	27	3.7	3.6	476	100%	0%
BOJ-SOF	Bulgaria-Bulgaria	1	21,630			2,204	14	58	0.09	57	1.1	1.3	336	100%	0%
ZAG-ZAD	Croatia-Croatia	1	21,261				8	36	0.10	56	0.6	0.8	192	100%	0%
SOF-BOJ	Bulgaria-Bulgaria	1	20,554			1,860	14	58	0.09	58	1.1	1.2	336	100%	0%
OTP-OMR	Romania-Romania	1	20,431				13	116	0.19	24	2.3	2.4	430	100%	0%
OMR-OTP	Romania-Romania	1	19,910				12	108	0.17	29	2.1	2.2	430	100%	0%
KSC-BTS	Slovakia-Slovakia	2	19,410				11	122	0.22	16	2.4	2.4	299	2%	98%
BTS-KSC	Slovakia-Slovakia	2	19,278				11	122	0.22	17	2.4	2.4	299	2%	98%
OTP-SBZ	Romania-Romania	2	19,001				11	94	0.16	32	1.1	1.8	212	81%	19%
ZAD-ZAG	Croatia-Croatia	1	17,800				6	35	0.11	52	0.4	0.6	192	100%	0%
SBZ-OTP	Romania-Romania	2	15,961				9	95	0.18	28	0.8	1.5	212	76%	24%
PRG-OSR	Czech Republic-Czech Republic	1	14,424				7	128	0.27	9	1.3	1.8	275	100%	0%
OSR-PRG	Czech Republic-Czech Republic	1	13,508				7	128	0.25	10	1.2	1.7	275	100%	0%
BRQ-OSR	Czech Republic-Czech Republic	1	13,154			n/a	n/a	n/a	n/a	n/a	0.2	n/a	n/a	n/a	n/a
ZAD-PUY	Croatia-Croatia	1	11,947				6	33	0.07	66	0.3	0.4	145	100%	0%
SJJ-BNX	Bosnia and Herzegovina-Bosnia and Herzegovina	1	10,344				2	118	0.65	1	0.6	1.2	142	100%	0%
BNX-SJJ	Bosnia and Herzegovina-Bosnia and Herzegovina	1	9,853				2	118	0.62	2	0.6	1.2	142	100%	0%
WAW-BZG	Poland-Poland	2	9,198				5	55	0.11	53	0.5	0.5	249	100%	0%
BZG-WAW	Poland-Poland	2	8,927				5	54	0.10	55	0.4	0.5	249	100%	0%
SUJ-OTP	Romania-Romania	1	8,897				6	89	0.13	41	0.8	0.8	433	100%	0%
OTP-SCV	Romania-Romania	1	8,615				5	87	0.14	37	0.6	0.8	349	100%	0%
OTP-SUJ	Romania-Romania	1	8,500				6	93	0.13	39	0.8	0.8	433	100%	0%
PUY-ZAD	Croatia-Croatia	1	8,425				4	32	0.07	67	0.2	0.3	145	100%	0%
OTP-BAY	Romania-Romania	1	7,811				5	96	0.15	33	0.7	0.7	401	100%	0%
SCV-OTP	Romania-Romania	1	7,773				5	80	0.12	49	0.5	0.6	349	100%	0%
KDL-TLL	Estonia-Estonia	1	7,753				1	96	0.56	3	0.7	0.7	127	100%	0%
TLL-KDL	Estonia-Estonia	1	7,753				1	96	0.56	3	0.7	0.7	127	100%	0%
BAY-OTP	Romania-Romania	1	7,213				5	86	0.13	44	0.6	0.6	401	100%	0%
TLL-URE	Estonia-Estonia	1	6,588				2	98	0.39	7	0.6	0.6	193	100%	0%
URE-TLL	Estonia-Estonia	1	6,559				2	98	0.39	8	0.6	0.6	193	100%	0%
IAS-TSR	Romania-Romania	1	6,369			1,187	4	48	0.08	61	0.3	0.3	510	100%	0%
TSR-IAS	Romania-Romania	1	6,357			1,280	4	47	0.08	60	0.3	0.3	510	100%	0%
PUY-ZAG	Croatia-Croatia	1	6,080			1,391	3	39	0.08	62	0.2	0.2	193	100%	0%
BOJ-VAR	Bulgaria-Bulgaria	1	4,229	1	1,070		1	115	0.43	6	0.2	0.6	79	99%	1%
VAR-BOJ	Bulgaria-Bulgaria	1	3,500	1	3,440		2	115	0.51	5	0.4	0.8	79	99%	1%
OTP-TGM	Romania-Romania	1	3,228				2	72	0.13	40	0.2	0.2	256	100%	0%
TGM-OTP	Romania-Romania	1	2,996				2	70	0.12	50	0.2	0.2	256	100%	0%
TSR-BCM	Romania-Romania	1	2,675				2	62	0.08	63	0.1	0.2	443	100%	0%
CRA-TSR	Romania-Romania	2	2,670				2	37	0.05	68	0.1	0.1	248	100%	0%
BCM-TSR	Romania-Romania	1	2,600				2	64	0.07	65	0.1	0.2	443	100%	0%
TSR-CRA	Romania-Romania	2	2,526				2	29	0.04	69	0.1	0.1	248	100%	0%
ZAG-PUY	Croatia-Croatia	1	1,706			2,144	1	42	0.09	59	0.1	0.1	193	100%	0%
GDN-WRO	Poland-Poland	1	1,644			2,237	7	106	0.02	70	0.2	0.2	380	100%	0%
WRO-GDN	Poland-Poland	1	1,610			2,265	7	106	0.02	71	0.2	0.2	380	100%	0%
SPU-DBV	Croatia-Croatia	1	1,054				1	63	0.07	64	0.1	0.1	193	100%	0%
PED-OSR	Czech Republic-Czech Republic	1	1,028			n/a	n/a	n/a	n/a	n/a	0.0	n/a	n/a	n/a	n/a

Note: data not available for BRQ-OSR and PED-OSR;
Only routes operated by CESE carriers with more than 1000 passengers have been included in the analysis; The Average Fare reported in the analysis is based on O&D passengers that are travelling non-stop between the listed origin and destination airports; Revenue/ASK has been 'artificially' estimated considering the total revenue which could be generated if all passengers on the route were O&D pax. Segment revenue is based on the total revenue on that particular route inclusive of passengers who may have a different Origin/Destination to what is listed. Indirect Pax only include passengers with one connection.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Intra-CESE Routes

ROUTE	ROUTE COUNTRY	CESE CARRIERS	CESE CARRIERS PAX	NON CESE CARRIERS	NON CESE CARRIERS PAX	INDIRECT PAX	ASK (millions)	AVG FARE (USD)	REV/ASK (USD)	REV/ASK RANKING	SEGMENT REVENUE (USD M)	DISTANCE (KM)	NETWORK CARRIER	LCC
BEG-TGD	Serbia-Montenegro	2	109,102		-		47	32	0.07	106	3.3	295	100%	0%
TGD-BEG	Montenegro-Serbia	2	108,336		-		46	32	0.08	103	3.4	295	100%	0%
TIV-BEG	Montenegro-Serbia	2	102,382		-		44	36	0.08	93	3.6	306	100%	0%
BEG-TIV	Serbia-Montenegro	2	97,873		-		44	35	0.08	102	3.3	306	100%	0%
TLL-RIX	Estonia-Latvia	1	91,148		-		44	85	0.18	30	4.0	282	0%	100%
RIX-VNO	Latvia-Lithuania	2	86,901		-		39	94	0.21	11	3.8	270	3%	97%
RIX-TLL	Latvia-Estonia	1	86,820		-		44	88	0.18	31	3.7	282	0%	100%
VNO-RIX	Lithuania-Latvia	2	83,894		-		39	87	0.19	26	3.6	270	3%	97%
PRG-WAW	Czech Republic-Poland	3	71,077		-		64	174	0.19	22	9.8	513	100%	0%
WAW-PRG	Poland-Czech Republic	3	70,830		-		63	173	0.19	18	10.0	513	100%	0%
BUD-WAW	Hungary-Poland	3	64,449	1	15,224		70	174	0.20	14	12.5	542	54%	46%
WAW-BUD	Poland-Hungary	3	61,886	1	15,139		70	176	0.19	20	12.3	542	54%	46%
VNO-WAW	Lithuania-Poland	1	46,264		-	1044	26	211	0.37	2	4.2	398	100%	0%
WAW-VNO	Poland-Lithuania	1	46,167		-	1287	26	218	0.39	1	4.6	398	100%	0%
OTP-PRG	Romania-Czech Republic	2	44,572		-	7053	65	148	0.10	73	5.3	1,073	100%	0%
PRG-OTP	Czech Republic-Romania	2	42,840		-	7093	65	148	0.10	76	5.3	1,073	100%	0%
WAW-OTP	Poland-Romania	1	42,316		-	3895	46	203	0.19	25	7.2	933	100%	0%
OTP-WAW	Romania-Poland	1	42,102		-	3976	46	213	0.19	17	7.3	933	100%	0%
OTP-LCA	Romania-Cyprus	3	38,678		-		88	140	0.06	121	5.4	1,249	60%	40%
LCA-OTP	Cyprus-Romania	3	35,471		-		87	139	0.06	129	5.0	1,249	60%	40%
RIX-WAW	Latvia-Poland	2	33,266		-		29	102	0.12	57	2.7	571	49%	51%
WAW-RIX	Poland-Latvia	2	32,382		-		29	97	0.11	65	2.5	571	49%	51%
BUD-PRG	Hungary-Czech Republic	1	29,542	1	2,820	2228	26	189	0.24	9	4.9	459	100%	0%
PRG-BUD	Czech Republic-Hungary	1	28,218	1	3,229	2287	27	188	0.22	10	4.6	459	100%	0%
SJJ-ZAG	Bosnia and Herzegovina-Croatia	1	27,355		-		14	73	0.14	37	1.5	280	100%	0%
ZAG-SKP	Croatia-Macedonia	1	27,344		-		27	94	0.10	78	2.3	612	100%	0%
ZAG-SJJ	Croatia-Bosnia and Herzegovina	1	27,254		-		14	74	0.15	35	1.5	280	100%	0%
SKP-ZAG	Macedonia-Croatia	1	26,852		-		27	93	0.09	83	2.2	612	100%	0%
BEG-SKP	Serbia-Macedonia	1	26,837		-		14	39	0.08	104	0.9	333	100%	0%
LCA-SOF	Cyprus-Bulgaria	3	26,018		-		47	119	0.07	114	3.1	1,241	78%	22%
SOF-LCA	Bulgaria-Cyprus	3	25,920		-		47	119	0.07	115	3.1	1,241	78%	22%
SKP-LJU	Macedonia-Slovenia	1	25,416		-		28	214	0.19	19	3.2	727	100%	0%
SKP-BEG	Macedonia-Serbia	1	25,385		-		15	35	0.06	122	0.8	333	100%	0%
LJU-SKP	Slovenia-Macedonia	1	25,223		-		28	212	0.19	24	3.2	727	100%	0%
KSC-PRG	Slovakia-Czech Republic	1	23,989		-		19	158	0.20	15	3.2	517	100%	0%
PRG-KSC	Czech Republic-Slovakia	1	23,908		-		19	160	0.20	13	3.2	517	100%	0%
BUD-OTP	Hungary-Romania	1	23,407		-	1952	22	171	0.18	29	3.9	623	100%	0%
BOJ-PRG	Bulgaria-Czech Republic	1	23,031		-		32	75	0.05	133	1.7	1,302	0%	100%
OTP-BUD	Romania-Hungary	1	22,904		-	1763	22	169	0.17	32	3.8	623	100%	0%
PRG-BOJ	Czech Republic-Bulgaria	1	22,801		-		32	74	0.05	134	1.7	1,302	0%	100%
LCA-BUD	Cyprus-Hungary	1	20,983		-	1206	45	110	0.05	136	2.3	1,839	0%	100%
BEG-SJJ	Serbia-Bosnia and Herzegovina	2	21,473		-		7	38	0.12	51	0.6	206	100%	0%
BUD-LCA	Hungary-Cyprus	1	20,452		-	1256	45	110	0.05	138	2.2	1,839	0%	100%
PRG-SPU	Czech Republic-Croatia	1	20,140		-		18	44	0.05	140	0.9	740	0%	100%
SPU-PRG	Croatia-Czech Republic	1	20,105		-		18	45	0.05	139	0.9	740	0%	100%
VNO-TLL	Lithuania-Estonia	2	19,448		-	6036	18	172	0.18	28	3.0	539	100%	0%
LJU-TIA	Slovenia-Albania	1	18,979		-		18	128	0.14	45	1.7	679	100%	0%
SOF-WAW	Bulgaria-Poland	1	18,961		-	2264	29	170	0.11	61	2.6	1,069	100%	0%
TIA-LJU	Albania-Slovenia	1	18,956		-		18	119	0.13	46	1.5	679	100%	0%
BUD-TGM	Hungary-Romania	2	18,935		-		10	125	0.24	7	2.4	414	1%	99%
TGM-BUD	Romania-Hungary	2	18,907		-		10	125	0.24	8	2.4	414	1%	99%
SJJ-BEG	Bosnia and Herzegovina-Serbia	2	19,286		-		7	38	0.11	64	0.5	206	100%	0%
TLL-VNO	Estonia-Lithuania	2	18,563	1	8,607	7135	25	171	0.18	27	3.3	539	100%	0%
WAW-SOF	Poland-Bulgaria	1	18,290		-	2392	29	168	0.11	68	2.5	1,069	100%	0%
OTP-SOF	Romania-Bulgaria	1	17,787	1	9,940		17	123	0.20	16	2.6	295	100%	0%
SOF-PRG	Bulgaria-Czech Republic	1	17,007		-	6078	23	110	0.08	94	1.9	1,069	100%	0%
SOF-OTP	Bulgaria-Romania	1	16,837	1	12,214		17	123	0.21	12	2.5	295	100%	0%
PRG-SOF	Czech Republic-Bulgaria	1	15,979		-	6245	23	106	0.07	107	1.7	1,069	100%	0%
RIX-PRG	Latvia-Czech Republic	2	14,866		-	2789	17	173	0.15	34	2.2	996	1%	99%
INI-TGD	Serbia-Montenegro	1	14,473		-		6	56	0.15	36	0.6	243	100%	0%
TGD-INI	Montenegro-Serbia	1	14,280		-		6	56	0.14	40	0.6	243	100%	0%
PRG-RIX	Czech Republic-Latvia	2	13,944		-	2757	17	169	0.14	44	2.0	996	1%	99%
BUD-MLA	Hungary-Malta	2	13,659		-	1505	28	130	0.06	118	1.8	1,345	41%	59%
WAW-LCA	Poland-Cyprus	1	13,644		-	1511	43	186	0.06	125	2.6	2,171	100%	0%
MLA-BUD	Malta-Hungary	2	13,596		-	1450	28	133	0.07	116	1.8	1,345	41%	59%
LCA-WAW	Cyprus-Poland	1	13,395		-	1398	43	189	0.06	126	2.6	2,171	100%	0%
RIX-PLQ	Latvia-Lithuania	1	12,237		-		4	125	0.37	3	0.6	220	0%	100%
PLQ-RIX	Lithuania-Latvia	1	12,092		-		4	112	0.32	4	0.6	220	0%	100%
TLL-WAW	Estonia-Poland	1	11,503		-	3070	15	169	0.13	47	1.5	847	100%	0%
BOJ-OSR	Bulgaria-Czech Republic	1	11,480		-		13	141	0.12	50	1.6	1,080	0%	100%
BEG-OTP	Serbia-Romania	2	10,874		-	2018	6	160	0.27	5	1.6	444	100%	0%
WAW-TLL	Poland-Estonia	1	10,709		-	3089	15	160	0.11	60	1.4	847	100%	0%
BEG-WAW	Serbia-Poland	1	10,525		-	2554	10	149	0.15	33	1.2	818	100%	0%
WAW-BEG	Poland-Serbia	1	10,358		-	2732	10	145	0.14	38	1.2	818	100%	0%
OTP-BEG	Romania-Serbia	2	10,326		-	2082	6	163	0.26	6	1.6	444	100%	0%
LCA-BEG	Cyprus-Serbia	1	10,256		-	1051	28	221	0.08	98	1.9	1,572	100%	0%
BOJ-BRQ	Bulgaria-Czech Republic	1	10,233		-		15	137	0.09	81	1.4	1,110	0%	100%
OSR-BOJ	Czech Republic-Bulgaria	1	10,205		-		15	141	0.10	77	1.4	1,080	0%	100%
PRG-LCA	Czech Republic-Cyprus	1	10,101		-	4166	25	164	0.07	111	1.7	2,297	0%	100%
LCA-PRG	Cyprus-Czech Republic	1	10,098		-	4137	25	164	0.07	112	1.7	2,297	0%	100%
BRQ-BOJ	Czech Republic-Bulgaria	1	9,732		-		13	138	0.10	75	1.3	1,110	0%	100%
TGD-LJU	Montenegro-Slovenia	2	9,687		-		11	78	0.07	110	0.7	558	100%	0%
BEG-LCA	Serbia-Cyprus	1	9,684		-		28	217	0.07	105	1.8	1,572	100%	0%
BUD-RIX	Hungary-Latvia	1	9,280		-	1259	17	150	0.08	99	1.1	1,110	0%	100%
RIX-BUD	Latvia-Hungary	1	9,203		-	1294	17	154	0.08	97	1.0	1,110	0%	100%
LJU-TGD	Slovenia-Montenegro	2	9,093		-		11	79	0.06	119	0.7	558	100%	0%
BOJ-KTW	Bulgaria-Poland	1	8,799		-		10	141	0.12	53	1.2	1,090	0%	100%
KTW-BOJ	Poland-Bulgaria	1	8,799		-		10	141	0.12	53	1.2	1,090	0%	100%
SJJ-LJU	Bosnia and Herzegovina-Slovenia	1	8,754		-		5	65	0.11	66	0.5	391	100%	0%
LJU-SJJ	Slovenia-Bosnia and Herzegovina	1	8,538		-		5	78	0.12	48	0.5	391	100%	0%
BEG-LJU	Serbia-Slovenia	2	7,599		-		7	80	0.09	86	0.6	486	100%	0%
LJU-BEG	Slovenia-Serbia	2	7,306		-		7	77	0.08	96	0.5	486	100%	0%
BOJ-BTS	Bulgaria-Slovakia	1	7,106		-		8	134	0.12	49	0.9	1,015	0%	100%
BOJ-WAW	Bulgaria-Poland	1	6,768		-		8	143	0.11	58	1.0	1,175	0%	100%
WAW-BOJ	Poland-Bulgaria	1	6,768		-		8	143	0.11	58	1.0	1,175	0%	100%
BOJ-BUD	Bulgaria-Hungary	1	6,511		-		6	134	0.14	39	0.9	845	0%	100%
BUD-BOJ	Hungary-Bulgaria	1	6,350		-		6	134	0.14	42	0.9	845	0%	100%
BTS-BOJ	Slovakia-Bulgaria	1	6,149		-		8	133	0.10	69	0.8	1,015	0%	100%

KUN-RIX	Lithuania-Latvia	1	6,083	-		3	45	0.10	74	0.2	230	0%	100%
RIX-KUN	Latvia-Lithuania	1	5,716	-		3	49	0.10	71	0.2	230	0%	100%
SPU-BEG	Croatia-Serbia	2	5,144	-		3	55	0.10	70	0.3	365	100%	0%
BEG-SPU	Serbia-Croatia	2	5,123	-		3	54	0.10	72	0.3	365	100%	0%
DBV-BEG	Croatia-Serbia	1	4,522	-		2	55	0.14	41	0.2	311	100%	0%
TLL-VAR	Estonia-Bulgaria	1	4,469	-		10	187	0.08	100	0.8	1,817	100%	0%
VAR-TLL	Bulgaria-Estonia	1	4,455	-		11	186	0.08	101	0.8	1,817	100%	0%
PFO-SOF	Cyprus-Bulgaria	2	4,086	-		8	110	0.06	127	0.5	1,180	100%	0%
VAR-BUD	Bulgaria-Hungary	2	3,642	-		4	133	0.12	52	0.5	818	4%	96%
SOF-PFO	Bulgaria-Cyprus	2	3,638	-		8	110	0.05	135	0.4	1,180	100%	0%
BEG-DBV	Serbia-Croatia	1	3,367	-		2	47	0.09	85	0.2	311	100%	0%
BEG-OHD	Serbia-Macedonia	1	3,359	-		2	69	0.12	55	0.2	407	100%	0%
BUD-VAR	Hungary-Bulgaria	2	3,256	-		4	133	0.11	63	0.4	818	4%	96%
MLA-PRG	Malta-Czech Republic	1	3,197	-	2309	12	202	0.06	131	0.7	1,580	100%	0%
PRG-MLA	Czech Republic-Malta	1	3,006	-	2204	12	193	0.05	137	0.6	1,580	100%	0%
SOF-BUD	Bulgaria-Hungary	1	2,953	-	5873	3	72	0.07	113	0.2	620	100%	0%
LCA-RIX	Cyprus-Latvia	1	2,952	-	1883	14	216	0.04	141	0.6	2,560	0%	100%
BUD-SOF	Hungary-Bulgaria	1	2,883	-	6199	3	72	0.07	117	0.2	620	100%	0%
PED-BOJ	Czech Republic-Bulgaria	1	2,860	-		4	143	0.09	80	0.4	1,223	0%	100%
BOJ-PED	Bulgaria-Czech Republic	1	2,860	-		4	143	0.09	79	0.4	1,223	0%	100%
RIX-BOJ	Latvia-Bulgaria	1	2,731	-		6	173	0.09	89	0.5	1,621	100%	0%
BOJ-RIX	Bulgaria-Latvia	1	2,730	-		6	173	0.09	90	0.5	1,621	100%	0%
RIX-LCA	Latvia-Cyprus	1	2,651	-	1839	14	209	0.04	144	0.5	2,560	0%	100%
PRG-DBV	Czech Republic-Croatia	1	2,603	-	1248	3	61	0.06	130	0.2	885	0%	100%
LCA-KTW	Cyprus-Poland	1	2,592	-		7	156	0.06	123	0.4	2,095	0%	100%
KTW-LCA	Poland-Cyprus	1	2,592	-		7	156	0.06	123	0.4	2,095	0%	100%
DBV-PRG	Croatia-Czech Republic	1	2,555	-	1314	3	60	0.05	132	0.2	885	0%	100%
RIX-MLA	Latvia-Malta	1	2,378	-	1315	8	219	0.06	120	0.5	2,454	0%	100%
BOJ-TLL	Bulgaria-Estonia	1	2,336	-		6	189	0.07	108	0.4	1,889	100%	0%
TLL-BOJ	Estonia-Bulgaria	1	2,310	-		6	189	0.07	109	0.4	1,889	100%	0%
OHD-BEG	Macedonia-Serbia	1	2,122	-		1	60	0.11	67	0.1	407	100%	0%
MLA-RIX	Malta-Latvia	1	2,076	-	1346	8	232	0.06	128	0.4	2,454	0%	100%
PUY-BEG	Croatia-Serbia	1	2,030	-		2	50	0.04	142	0.1	520	100%	0%
BOJ-POZ	Bulgaria-Poland	1	2,025	-		3	148	0.09	87	0.3	1,355	0%	100%
POZ-BOJ	Poland-Bulgaria	1	2,015	-		3	148	0.09	88	0.3	1,355	0%	100%
SPU-OSR	Croatia-Czech Republic	1	1,853	-		2	126	0.14	43	0.2	723	0%	100%
VAR-RIX	Bulgaria-Latvia	1	1,727	-		4	174	0.08	91	0.3	1,551	100%	0%
RIX-VAR	Latvia-Bulgaria	1	1,724	-		4	174	0.08	92	0.3	1,551	100%	0%
BEG-PUY	Serbia-Croatia	1	1,706	-		2	47	0.04	146	0.1	520	100%	0%
RIX-RJK	Latvia-Croatia	1	1,675	-		7	166	0.04	143	0.2	1,450	0%	100%
OSR-SPU	Czech Republic-Croatia	1	1,649	-		2	122	0.12	56	0.2	723	0%	100%
PRG-BEG	Czech Republic-Serbia	1	1,598	-	5611	2	32	0.03	148	0.1	740	100%	0%
RJK-RIX	Croatia-Latvia	1	1,583	-		7	148	0.03	147	0.2	1,450	0%	100%
BEG-PRG	Serbia-Czech Republic	1	1,557	-	5484	2	35	0.04	145	0.1	740	100%	0%
PRG-VAR	Czech Republic-Bulgaria	1	1,321	-		2	149	0.09	82	0.2	1,271	0%	100%
VAR-PRG	Bulgaria-Czech Republic	1	1,311	-		2	149	0.09	84	0.2	1,271	0%	100%
SPU-BTS	Croatia-Slovakia	1	1,264	-		1	126	0.19	23	0.2	521	0%	100%
BTS-SPU	Slovakia-Croatia	1	1,263	-		1	126	0.19	21	0.2	521	0%	100%
CLJ-PRG	Romania-Czech Republic	1	1,078	-		2	172	0.08	95	0.2	774	100%	0%
VAR-BTS	Bulgaria-Slovakia	1	1,008	-		1	136	0.11	62	0.1	990	0%	100%

CESE to EU15 Routes (outbound only i.e. CESE to EU15)

ROUTE	ROUTE COUNTRY	CESE CARRIERS	CESE CARRIERS PAX	NON CESE CARRIERS	NON CESE CARRIERS PAX	INDIRECT PAX	ASK (millions)	AVG FARE (USD)	REV/ASK (USD)	REV/ASK RANKING	SEGMENT REVENUE (USD M)	DISTANCE (KM)	NETWORK CARRIER	LCC
PRG-CDG	Czech Republic-France	2	191,693	2	158,097	2,709	424	80	0.07	423	27.8	866	71%	29%
BUD-LTN	Hungary-United Kingdom	1	164,546	1	34,184		341	150	0.09	259	29.9	1,490	0%	100%
OTP-LTN	Romania-United Kingdom	2	125,991		-		289	169	0.07	368	21.3	2,111	0%	100%
PRG-FCO	Czech Republic-Italy	3	120,869	3	11,138	3,795	158	57	0.05	496	7.7	935	52%	48%
WAW-LTN	Poland-United Kingdom	1	120,618		-		209	149	0.09	273	18.0	1,456	0%	100%
WAW-LHR	Poland-United Kingdom	1	115,026	1	79,938	2,416	400	206	0.10	185	34.9	1,469	100%	0%
OTP-MAD	Romania-Spain	3	110,258	1	4,321	8,787	355	164	0.05	476	19.4	2,459	46%	54%
LCA-ATH	Cyprus-Greece	1	104,424	3	166,885		365	104	0.08	338	28.6	932	100%	0%
KTW-DTM	Poland-Germany	1	102,645		-		105	135	0.13	70	13.8	821	0%	100%
KTW-LTN	Poland-United Kingdom	1	102,334		-		170	147	0.09	251	15.1	1,362	0%	100%
ZAG-FRA	Croatia-Germany	1	102,115	2	26,122		151	171	0.14	56	13.6	735	100%	0%
LCA-LHR	Cyprus-United Kingdom	1	101,578	2	66,263	4,879	712	260	0.06	447	44.8	3,278	100%	0%
GDN-LTN	Poland-United Kingdom	1	101,163		-		159	146	0.09	218	14.7	1,292	0%	100%
MLA-LHR	Malta-United Kingdom	1	94,101		-	1,660	239	212	0.08	294	20.7	2,102	100%	0%
WAW-FRA	Poland-Germany	1	91,810	2	129,265	1,276	295	171	0.13	79	27.8	898	100%	0%
BUD-EIN	Hungary-Netherlands	1	83,878	1	21,520		141	141	0.11	151	14.9	1,094	0%	100%
BUD-CRL	Hungary-Belgium	1	77,212	1	80,540		219	142	0.10	173	22.4	1,130	0%	100%
OTP-BGY	Romania-Italy	2	76,120		-		105	146	0.11	148	11.1	1,291	0%	100%
TIA-MXP	Albania-Italy	1	74,125	2	65,128	1,280	193	97	0.07	397	13.4	1,014	100%	0%
OTP-CIA	Romania-Italy	1	73,805		-		114	142	0.09	229	10.5	1,135	0%	100%
WAW-CDG	Poland-France	1	73,436	1	138,080	5,477	407	204	0.11	149	36.0	1,344	100%	0%
RIX-HEL	Latvia-Finland	1	70,904	1	47,890		74	67	0.11	140	5.8	360	0%	100%
VNO-LTN	Lithuania-United Kingdom	1	70,214	1	21,255		186	174	0.09	276	15.9	1,725	0%	100%
WAW-BRU	Poland-Belgium	1	68,747		-	4,657	122	300	0.17	38	17.2	1,147	100%	0%
BUD-MXP	Hungary-Italy	1	65,969		-	5,930	84	131	0.10	164	8.6	827	0%	100%
OTP-BCN	Romania-Spain	3	65,694	1	18,269	5,036	230	138	0.05	487	11.8	1,979	33%	67%
WAW-AMS	Poland-Netherlands	1	65,579	2	112,456	2,297	269	175	0.12	112	23.6	1,101	100%	0%
PRG-AMS	Czech Republic-Netherlands	1	64,898	3	144,429	2,313	190	108	0.12	104	19.0	718	82%	18%
RIX-ARN	Latvia-Sweden	1	64,236	1	15,869	1,034	63	149	0.19	25	8.0	467	0%	100%
LJU-FRA	Slovenia-Germany	1	61,851		-		58	254	0.27	9	8.4	626	100%	0%
RIX-CDG	Latvia-France	1	60,178		-	3,101	133	243	0.11	130	11.1	1,680	0%	100%
SOF-MAD	Bulgaria-Spain	2	58,087		-	2,261	161	130	0.05	498	8.0	2,247	67%	33%
WAW-MUC	Poland-Germany	1	57,639	3	76,480	2,335	160	182	0.15	50	18.2	779	100%	0%
SOF-LTN	Bulgaria-United Kingdom	1	57,216		-		138	167	0.07	404	9.6	2,049	0%	100%
PRG-LTN	Czech Republic-United Kingdom	1	56,517		-		78	140	0.10	180	7.9	1,054	0%	100%
PRG-CPH	Czech Republic-Denmark	1	54,923	4	61,178	3,022	102	92	0.11	154	9.9	629	66%	34%
RIX-AMS	Latvia-Netherlands	1	54,664		-	1,783	98	205	0.11	114	9.3	1,339	0%	100%
TLL-CPH	Estonia-Denmark	1	54,650		-	1,836	69	153	0.12	94	7.4	842	100%	0%
OTP-CDG	Romania-France	1	54,291	1	111,531	7,238	462	218	0.08	331	32.0	1,854	100%	0%
PRG-BRU	Czech Republic-Belgium	1	53,027	3	67,480	2,412	145	135	0.11	118	13.9	710	97%	3%
MLA-FCO	Malta-Italy	1	52,981	4	50,890		87	136	0.16	44	12.2	689	96%	4%
MLA-CTA	Malta-Italy	1	51,165		-		13	60	0.24	13	2.9	187	100%	0%
RIX-LTN	Latvia-United Kingdom	1	51,110		-		102	169	0.08	283	8.6	1,669	0%	100%
BUD-FCO	Hungary-Italy	1	50,524	2	40,671	2,399	104	65	0.06	467	5.7	835	49%	51%
CLJ-LTN	Romania-United Kingdom	1	50,443		-		110	161	0.07	362	8.1	1,823	0%	100%
PRG-BCN	Czech Republic-Spain	3	50,000	1	87,233	4,557	219	62	0.04	516	9.2	1,365	34%	66%
RIX-LGW	Latvia-United Kingdom	1	49,442		-		111	204	0.09	239	8.7	1,699	0%	100%
POZ-LTN	Poland-United Kingdom	1	48,772		-		70	143	0.10	189	7.0	1,173	0%	100%
OTP-BRU	Romania-Belgium	2	48,582	1	521	8,125	149	222	0.07	374	10.6	1,759	78%	22%
OTP-TSF	Romania-Italy	1	48,450		-		68	141	0.10	188	6.8	1,106	0%	100%
PRG-MXP	Czech Republic-Italy	1	48,381	3	101,917	1,961	130	66	0.08	351	9.7	652	49%	51%
WAW-VIE	Poland-Austria	1	48,362	1	51,140	1,714	87	256	0.29	8	16.5	550	100%	0%
SOF-BGY	Bulgaria-Italy	1	48,131		-		68	142	0.10	184	6.8	1,141	0%	100%
RIX-TXL	Latvia-Germany	1	47,684		-		63	145	0.11	134	5.5	847	0%	100%
OTP-DTM	Romania-Germany	1	47,211		-		86	153	0.08	285	7.2	1,584	0%	100%
RIX-CPH	Latvia-Denmark	1	47,042	1	24,087		84	142	0.12	97	8.5	721	0%	100%
OTP-BVA	Romania-France	2	46,898		-		99	162	0.08	344	7.6	1,891	0%	100%
BEG-CDG	Serbia-France	1	46,643	1	4,528	8,725	113	142	0.06	432	6.6	1,437	100%	0%
WAW-FCO	Poland-Italy	2	46,403	2	29,227	4,813	134	88	0.05	489	6.6	1,328	57%	43%
WAW-MXP	Poland-Italy	1	46,180	1	520	3,112	81	220	0.13	82	9.1	1,151	100%	0%
BUD-DTM	Hungary-Germany	1	46,075		-		53	138	0.12	98	6.4	962	0%	100%
OTP-AMS	Romania-Netherlands	1	45,682	1	119,721	5,485	364	195	0.09	253	26.0	1,788	100%	0%
TLL-AMS	Estonia-Netherlands	1	45,664		-	3,642	90	221	0.11	119	8.2	1,471	100%	0%
PRG-HER	Czech Republic-Greece	1	45,543		-		102	138	0.06	448	6.3	1,856	0%	100%
OTP-VIE	Romania-Austria	1	44,602	2	144,957		261	127	0.09	221	22.3	855	98%	2%
PRG-FRA	Czech Republic-Germany	1	44,580	4	186,476		169	153	0.21	17	17.0	420	100%	0%
TIA-VCE	Albania-Italy	1	44,489	2	28,736		73	122	0.12	88	8.9	756	100%	0%
GDN-NYO	Poland-Sweden	1	44,060		-		29	127	0.19	23	5.6	494	0%	100%
MLA-MUC	Malta-Germany	1	44,006	2	19,056	2,266	113	177	0.10	195	10.6	1,407	100%	0%
WAW-CPH	Poland-Denmark	1	43,637	3	47,384	1,532	83	152	0.17	41	11.4	666	100%	0%
OTP-CRL	Romania-Belgium	1	43,050		-		94	160	0.07	371	6.9	1,748	0%	100%
ZAG-LHR	Croatia-United Kingdom	1	43,034	1	30,960	3,484	144	117	0.06	453	8.1	1,368	100%	0%
ZAG-MUC	Croatia-Germany	1	41,294	3	46,536		56	172	0.27	10	7.8	436	100%	0%
PRG-MAD	Czech Republic-Spain	1	41,089	1	31,508	11,312	151	124	0.06	455	9.5	1,761	100%	0%
TLL-ARN	Estonia-Sweden	1	40,569		-	1,918	26	171	0.26	11	5.1	388	100%	0%
RIX-FCO	Latvia-Italy	1	40,526		-		104	175	0.07	410	6.0	1,886	0%	100%
LJU-MUC	Slovenia-Germany	1	40,351		-		21	237	0.46	2	4.0	330	100%	0%
WRO-LTN	Poland-United Kingdom	1	39,356		-		58	144	0.10	199	5.7	1,201	0%	100%
RIX-BCN	Latvia-Spain	1	39,121		-	2,706	114	180	0.06	446	6.2	2,345	0%	100%
BEG-LHR	Serbia-United Kingdom	1	39,057		-	6,236	91	152	0.06	428	5.4	1,714	100%	0%
OTP-FCO	Romania-Italy	2	38,791	2	49,234		189	92	0.04	509	8.0	1,162	80%	20%
GDN-DTM	Poland-Germany	1	38,474		-		40	135	0.13	76	5.2	811	0%	100%
SOF-AMS	Bulgaria-Netherlands	1	38,467		-	4,363	96	151	0.06	452	5.3	1,753	100%	0%
OTP-FRA	Romania-Germany	1	38,297	3	97,485	4,538	305	200	0.09	249	22.7	1,453	100%	0%
RIX-MUC	Latvia-Germany	1	38,123		-	2,116	72	141	0.08	355	5.0	1,263	0%	100%
WAW-MAD	Poland-Spain	1	38,092		-	15,061	106	246	0.09	258	8.9	2,272	100%	0%
WAW-CRL	Poland-Belgium	1	37,849	1	33,650		101	144	0.10	175	10.3	1,164	0%	100%
OTP-CTA	Romania-Italy	2	37,846		-	2,280	58	144	0.09	209	5.4	1,210	0%	100%
PRG-DUS	Czech Republic-Germany	1	37,515	3	40,202	1,293	73	115	0.12	89	7.7	558	45%	55%
OTP-LHR	Romania-United Kingdom	1	37,515	1	82,740	7,020	361	243	0.08	307	26.0	2,108	100%	0%
TIA-FCO	Albania-Italy	1	37,215	4	66,489		92	59	0.07	417	5.2	631	100%	0%
WAW-BCN	Poland-Spain	2	37,155	1	13,449	10,510	125	153	0.06	445	7.8	1,870	50%	50%
BEG-AMS	Serbia-Netherlands	1	36,992		-	4,678	65	130	0.07	367	4.3	1,421	100%	0%
WAW-ARN	Poland-Sweden	1	36,673		-	3,141	48	225	0.17	36	6.5	855	100%	0%
BUD-MMX	Hungary-Sweden	1	36,426		-		44	139	0.11	115	5.1	990	0%	100%
TIA-PSA	Albania-Italy	1	36,416	1	23,784		67	130	0.12	110	7.8	814	100%	0%
MLA-FRA	Malta-Germany	1	36,083	2	84,957		245	186	0.09	224	20.9	1,646	96%	4%

WRO-FRA	Poland-Germany	2	35,926	1	14,591		44	186	0.21	16	6.1	607	100%	0%
TSR-BGY	Romania-Italy	2	35,809	1	411		40	132	0.12	103	4.5	900	32%	68%
OTP-MXP	Romania-Italy	1	35,417		-	4,067	58	144	0.09	250	5.1	1,366	0%	100%
BEG-VIE	Serbia-Austria	1	35,368	2	70,551		83	73	0.09	215	7.4	494	97%	3%
SOF-FCO	Bulgaria-Italy	2	35,327	2	22,828		79	69	0.05	485	4.2	924	68%	32%
DEB-LTN	Hungary-United Kingdom	1	35,027		-		67	157	0.08	299	5.5	1,640	0%	100%
KTW-EIN	Poland-Netherlands	1	34,826		-		41	138	0.12	109	4.8	964	0%	100%
PRG-ARN	Czech Republic-Sweden	1	34,820	4	64,141	6,680	138	96	0.07	408	9.3	1,090	62%	38%
GDN-FRA	Poland-Germany	2	34,674	2	17,208		63	177	0.14	57	6.9	838	100%	0%
SOF-DTM	Bulgaria-Germany	1	34,546		-		63	152	0.08	292	5.2	1,550	0%	100%
TIA-BGY	Albania-Italy	1	34,471	1	1,547		49	137	0.10	182	4.9	948	100%	0%
SOF-LHR	Bulgaria-United Kingdom	1	34,424	1	43,975	4,767	211	174	0.06	430	13.1	2,041	100%	0%
RIX-VIE	Latvia-Austria	1	34,089		-	1,652	54	169	0.11	146	5.0	1,104	0%	100%
OTP-BLQ	Romania-Italy	2	33,963		-	2,718	49	142	0.10	192	4.9	1,172	0%	100%
CLJ-BVA	Romania-France	1	33,899		-		69	156	0.08	347	5.3	1,624	0%	100%
BOJ-LTN	Bulgaria-United Kingdom	1	33,177		-		85	177	0.07	407	5.9	2,325	0%	100%
TIA-STN	Albania-United Kingdom	1	33,164	1	1,675		86	164	0.07	422	5.6	1,893	100%	0%
MLA-VIE	Malta-Austria	1	33,158		-	1,663	60	175	0.10	201	5.6	1,382	100%	0%
ZAG-CDG	Croatia-France	1	32,558	2	26,934	3,339	92	142	0.09	237	7.4	1,080	100%	0%
MLA-BRU	Malta-Belgium	1	32,362		-	4,563	82	245	0.10	200	7.8	1,854	100%	0%
ZAG-AMS	Croatia-Netherlands	1	32,019		-	5,417	57	212	0.12	102	4.9	1,099	100%	0%
SOF-BCN	Bulgaria-Spain	2	31,981	1	3,699	5,050	76	109	0.05	484	3.9	1,764	11%	89%
SPU-FRA	Croatia-Germany	2	31,873	3	21,184	2,489	76	146	0.10	172	6.6	932	87%	13%
TIA-VRN	Albania-Italy	1	31,835	1	8,113		55	129	0.09	211	5.2	853	100%	0%
TIA-BLQ	Albania-Italy	1	31,793		-		44	130	0.09	207	4.2	781	100%	0%
MLA-ORY	Malta-France	1	31,774	1	7,503		104	192	0.07	373	7.8	1,738	100%	0%
OTP-VLC	Romania-Spain	2	31,738		-	1,418	87	172	0.06	437	5.5	2,255	0%	100%
SOF-CDG	Bulgaria-France	1	31,109	1	26,752	5,207	160	179	0.06	431	9.1	1,754	100%	0%
PRG-KGS	Czech Republic-Greece	1	31,105		-		71	164	0.07	387	5.1	1,791	0%	100%
BUD-MAD	Hungary-Spain	1	30,979	1	26,507	13,945	130	100	0.04	506	5.7	1,973	0%	100%
LCA-SKG	Cyprus-Greece	1	30,905	1	32,278	2,946	98	103	0.07	420	6.5	1,128	100%	0%
CLJ-BGY	Romania-Italy	1	30,724		-		42	140	0.10	174	4.3	1,081	0%	100%
SKP-LTN	Macedonia-United Kingdom	1	30,441		-		77	166	0.07	424	5.1	1,989	0%	100%
BEG-FRA	Serbia-Germany	1	30,366	2	58,537	1,848	146	114	0.07	401	9.0	1,067	100%	0%
WAW-NYO	Poland-Sweden	1	30,174	1	32,202		61	134	0.14	65	8.4	774	0%	100%
PRG-RHO	Czech Republic-Greece	1	30,153		-		60	167	0.08	290	5.0	1,876	0%	100%
WRO-MUC	Poland-Germany	2	30,091	2	30,303		49	147	0.18	29	6.2	484	100%	0%
BEG-MMX	Serbia-Sweden	1	30,000		-		51	146	0.09	279	4.4	1,294	0%	100%
CLJ-DTM	Romania-Germany	1	29,958		-		48	146	0.09	240	4.4	1,289	0%	100%
ZAG-VIE	Croatia-Austria	1	29,588	1	47,933		35	204	0.45	3	6.3	278	100%	0%
GDN-TKU	Poland-Finland	1	29,011		-		29	132	0.13	69	3.8	715	0%	100%
GDN-LBC	Poland-Germany	1	28,910		-		20	128	0.19	26	3.7	518	0%	100%
TIA-BRI	Albania-Italy	1	28,752		-		9	121	0.38	5	3.5	253	100%	0%
MLA-LGW	Malta-United Kingdom	1	28,739	1	76,845		277	153	0.06	458	16.3	2,063	39%	61%
GDN-MMX	Poland-Sweden	1	28,576		-		15	124	0.24	12	3.5	359	0%	100%
BUD-BCN	Hungary-Spain	1	28,559	1	34,236	11,089	110	101	0.06	465	6.4	1,521	0%	100%
WAW-DUS	Poland-Germany	1	28,472	1	42,067	2,580	109	160	0.10	158	10.2	983	34%	66%
SOF-EIN	Bulgaria-Netherlands	1	28,202		-		57	157	0.08	330	4.4	1,669	0%	100%
OTP-ATH	Romania-Greece	1	27,877	2	26,362		63	166	0.14	60	8.7	753	100%	0%
RIX-BRU	Latvia-Belgium	1	27,805		-	2,480	65	244	0.10	155	5.8	1,442	0%	100%
MLA-DUS	Malta-Germany	1	27,489	1	5,732	2,827	80	191	0.08	321	7.0	1,822	86%	14%
TGM-LTN	Romania-United Kingdom	1	27,422		-		66	163	0.07	415	4.5	1,893	0%	100%
KRK-FRA	Poland-Germany	1	27,108	2	73,510	1,291	113	187	0.17	40	12.3	814	100%	0%
KTW-CIA	Poland-Italy	1	27,106		-		37	141	0.10	168	3.8	1,088	0%	100%
CLJ-BCN	Romania-Spain	1	26,730		-		59	162	0.07	377	4.3	1,825	0%	100%
BEG-DUS	Serbia-Germany	1	26,717	1	4,754	2,805	53	84	0.05	488	2.7	1,246	100%	0%
SOF-BRU	Bulgaria-Belgium	1	26,615		-	6,016	83	173	0.06	472	4.4	1,698	100%	0%
LCA-CDG	Cyprus-France	1	26,548		-	5,967	103	256	0.07	421	6.9	2,982	100%	0%
RIX-MXP	Latvia-Italy	1	26,357		-		61	148	0.06	433	3.5	1,643	0%	100%
BUD-NYO	Hungary-Sweden	1	26,146	1	31,250		93	145	0.09	247	8.3	1,268	0%	100%
LJU-BRU	Slovenia-Belgium	1	26,127		-		43	305	0.19	27	5.8	914	100%	0%
OTP-BRI	Romania-Italy	1	25,913		-	1,147	27	135	0.13	81	3.5	847	0%	100%
LJU-VIE	Slovenia-Austria	1	25,636		-		11	285	0.64	1	3.2	278	100%	0%
CLJ-MAD	Romania-Spain	1	25,396		-	1,518	74	165	0.06	468	4.2	2,290	0%	100%
MLA-CDG	Malta-France	1	25,127		-	4,272	56	203	0.09	230	5.2	1,756	100%	0%
OTP-NAP	Romania-Italy	2	25,125		-	2,042	32	140	0.11	133	3.5	1,044	0%	100%
BEG-GSE	Serbia-Sweden	1	24,869		-		47	152	0.08	310	3.8	1,555	0%	100%
SOF-FRA	Bulgaria-Germany	1	24,832	1	48,637	4,561	145	168	0.09	280	10.1	1,397	100%	0%
GDN-DSA	Poland-United Kingdom	1	24,658		-		39	145	0.09	231	3.6	1,284	0%	100%
WAW-HAM	Poland-Germany	1	24,628		-	2,820	32	179	0.14	63	3.7	755	100%	0%
BEG-LTN	Serbia-United Kingdom	1	24,470		-		56	159	0.07	398	3.9	1,722	0%	100%
SKP-MMX	Macedonia-Sweden	1	24,398		-		50	157	0.08	348	3.8	1,625	0%	100%
KRK-VIE	Poland-Austria	2	24,392	1	17,240		24	184	0.33	7	3.5	346	100%	0%
KTW-DSA	Poland-United Kingdom	1	24,192		-		42	149	0.09	275	3.6	1,411	0%	100%
KTW-BCN	Poland-Spain	1	23,969		-	1,493	46	158	0.08	304	3.8	1,659	0%	100%
RIX-FRA	Latvia-Germany	1	23,946	1	80,460		185	160	0.09	245	13.1	1,279	74%	26%
BEG-NYO	Serbia-Sweden	1	23,808		-		43	152	0.08	286	3.6	1,566	0%	100%
SOF-VLC	Bulgaria-Spain	1	23,796		-		57	167	0.07	400	4.0	2,026	0%	100%
BEG-EIN	Serbia-Netherlands	1	23,754		-		40	146	0.09	260	3.5	1,337	0%	100%
BCM-FCO	Romania-Italy	2	23,366	1	1,346		36	133	0.09	227	3.3	1,281	26%	74%
CLJ-BLQ	Romania-Italy	1	23,324		-		29	137	0.11	126	3.2	995	0%	100%
TSR-LTN	Romania-United Kingdom	1	23,184		-		48	159	0.08	349	3.7	1,717	0%	100%
VNO-EIN	Lithuania-Netherlands	1	23,155		-		39	159	0.10	206	3.7	1,371	0%	100%
MLA-AMS	Malta-Netherlands	1	23,095	1	7,736	4,164	88	193	0.07	414	6.3	1,983	82%	18%
PRG-HAM	Czech Republic-Germany	1	23,093		-	3,818	19	143	0.18	32	2.5	502	100%	0%
TLL-BRU	Estonia-Belgium	1	22,881		-	5,435	60	327	0.13	84	6.0	1,593	100%	0%
VAR-LTN	Bulgaria-United Kingdom	1	22,863		-		63	176	0.06	436	4.0	2,305	0%	100%
MLA-LIN	Malta-Italy	1	22,694		-	2,712	37	127	0.08	332	2.9	1,152	100%	0%
OTP-PSA	Romania-Italy	1	22,603		-		35	145	0.09	223	3.3	1,255	0%	100%
VNO-BGY	Lithuania-Italy	1	22,487	2	24,884		88	164	0.09	255	7.8	1,487	3%	97%
TSR-FCO	Romania-Italy	3	22,473	1	399		24	94	0.09	238	2.1	848	70%	30%
TIA-FLR	Albania-Italy	1	22,393		-		28	133	0.11	142	3.0	756	100%	0%
OTP-MUC	Romania-Germany	1	22,384	3	140,505	9,864	271	186	0.11	120	24.3	1,175	100%	0%
KTW-BGY	Poland-Italy	1	22,288		-		25	136	0.12	92	3.0	879	0%	100%
WMI-LTN	Poland-United Kingdom	1	22,100		-		43	148	0.08	352	3.3	1,431	0%	100%
SOF-CRL	Bulgaria-Belgium	1	22,099		-		45	158	0.08	339	3.5	1,679	0%	100%
SOF-TXL	Bulgaria-Germany	1	21,930	1	40,361	1,736	112	66	0.04	521	4.2	1,331	100%	0%
BRQ-LTN	Czech Republic-United Kingdom	1	21,918		-		36	145	0.09	264	3.2	1,241	0%	100%
DBV-FRA	Croatia-Germany	1	21,916	3	9,099	3,962	53	189	0.11	127	4.8	1,115	89%	11%
RIX-HAM	Latvia-Germany	1	21,796		-	1,380	33	136	0.09	248	2.6	964	0%	100%

BEG-FCO	Serbia-Italy	2	21,735	3	30,162		62	76	0.06	440	3.9	748	98%	2%
BUD-GSE	Hungary-Sweden	1	21,690	1	19,441		66	145	0.09	241	6.0	1,249	0%	100%
TGM-DTM	Romania-Germany	1	21,662		-		35	147	0.09	243	3.2	1,358	0%	100%
ZAG-BRU	Croatia-Belgium	1	21,609		-	4,980	38	226	0.13	73	3.8	1,030	100%	0%
SKP-MLH	Macedonia-France	1	21,599		-		35	146	0.09	244	3.1	1,296	0%	100%
PRG-NAP	Czech Republic-Italy	2	21,441		-	2,909	24	128	0.12	113	2.7	1,022	0%	100%
BEG-DTM	Serbia-Germany	1	21,430		-		33	144	0.09	212	3.1	1,217	0%	100%
PRG-BGY	Czech Republic-Italy	1	21,194		-		21	129	0.13	74	2.7	604	0%	100%
MLA-MAN	Malta-United Kingdom	1	20,900	1	45,312		193	150	0.05	482	10.0	2,342	41%	59%
CLJ-VLC	Romania-Spain	1	20,876		-		53	169	0.07	418	3.5	2,111	0%	100%
LUZ-LTN	Poland-United Kingdom	1	20,721		-		213	374	0.04	523	7.8	9,043	0%	100%
POZ-MUC	Poland-Germany	2	20,690	2	36,243		55	155	0.16	45	6.5	578	100%	0%
SBZ-MUC	Romania-Germany	1	20,586	1	31,227		92	148	0.08	293	6.6	975	100%	0%
PRG-NCE	Czech Republic-France	2	20,118		-	5,549	23	84	0.07	360	1.6	898	98%	2%
KTW-CGN	Poland-Germany	1	20,054		-		21	135	0.13	71	2.7	842	0%	100%
POZ-DSA	Poland-United Kingdom	1	20,005		-		30	144	0.10	197	2.9	1,199	0%	100%
LCA-AMS	Cyprus-Netherlands	1	19,878		-	2,680	86	239	0.06	473	5.0	2,992	100%	0%
BUD-NAP	Hungary-Italy	1	19,725		-	1,727	20	135	0.13	72	2.7	829	0%	100%
KTW-BVA	Poland-France	1	19,644		-		31	144	0.09	226	2.8	1,217	0%	100%
BEG-ATH	Serbia-Greece	1	19,473	1	15,702		43	119	0.10	196	4.1	819	100%	0%
ZAG-CPH	Croatia-Denmark	1	19,208	1	9,694	2,877	47	116	0.07	392	3.3	1,125	71%	29%
TGD-CDG	Montenegro-France	1	19,172		-	1,646	40	103	0.05	491	1.9	1,490	100%	0%
TIA-AOI	Albania-Italy	1	19,079	1	4,105		17	129	0.18	31	3.0	578	100%	0%
BEG-MLH	Serbia-France	1	19,007		-		25	140	0.11	153	2.7	1,062	0%	100%
TIA-GOA	Albania-Italy	1	18,827		-		23	138	0.11	125	2.6	958	100%	0%
WAW-BVA	Poland-France	1	18,650	1	14,030		55	148	0.09	257	4.8	1,355	0%	100%
SOF-ATH	Bulgaria-Greece	2	18,482	2	25,111		36	137	0.16	42	5.5	533	100%	0%
OTP-CUF	Romania-Italy	1	18,433		-		34	150	0.08	303	2.8	1,461	0%	100%
LJU-LTN	Slovenia-United Kingdom	1	18,246		-		35	145	0.08	356	2.6	1,262	0%	100%
GDN-EIN	Poland-Netherlands	1	18,237	1	3,694		27	138	0.11	123	3.0	943	0%	100%
GDN-LPL	Poland-United Kingdom	1	18,220		-		31	149	0.09	274	2.7	1,408	0%	100%
WRO-DSA	Poland-United Kingdom	1	18,186		-		29	144	0.09	225	2.6	1,247	0%	100%
PRG-ZTH	Czech Republic-Greece	1	18,024		-		35	150	0.08	334	2.7	1,464	0%	100%
MLA-TXL	Malta-Germany	1	17,989		-	4,778	42	222	0.09	210	4.4	1,860	100%	0%
KTW-MUC	Poland-Germany	2	17,973		-		19	131	0.13	83	2.1	579	100%	0%
OTP-EIN	Romania-Netherlands	1	17,859		-		38	159	0.07	363	2.8	1,716	0%	100%
TGD-FRA	Montenegro-Germany	1	17,752		-	1,091	33	101	0.05	475	1.9	1,183	100%	0%
BEG-FMM	Serbia-Germany	1	17,708		-		20	135	0.12	93	2.4	861	0%	100%
BEG-TXL	Serbia-Germany	1	17,466	1	948	5,075	31	87	0.05	483	1.6	1,009	100%	0%
VNO-BCN	Lithuania-Spain	1	17,389	3	21,583	3,288	95	192	0.08	328	7.5	2,258	7%	93%
CLJ-ZAZ	Romania-Spain	1	17,381		-		44	168	0.07	426	2.9	2,041	0%	100%
TGM-MAD	Romania-Spain	1	17,336		-		49	176	0.06	443	3.1	2,350	0%	100%
PRG-AGP	Czech Republic-Spain	1	17,172		-	4,674	49	98	0.03	526	1.7	2,124	0%	100%
WRO-EIN	Poland-Netherlands	1	17,152		-		19	134	0.12	100	2.3	806	0%	100%
BUD-HHN	Hungary-Germany	1	17,151	1	602		22	137	0.11	124	2.4	922	0%	100%
SOF-BVA	Bulgaria-France	1	17,131		-		39	161	0.07	389	2.8	1,798	0%	100%
WAW-BGY	Poland-Italy	1	17,130	1	18,630		49	142	0.10	163	5.1	1,094	0%	100%
SPU-MUC	Croatia-Germany	1	17,129	2	17,162	1,587	29	156	0.19	28	3.6	641	100%	0%
OTP-ZAZ	Romania-Spain	1	17,119		-		53	172	0.06	470	2.9	2,214	0%	100%
SPU-FCO	Croatia-Italy	1	17,030	1	6,544		15	142	0.23	14	2.9	385	79%	21%
WAW-MMX	Poland-Sweden	1	16,974		-		14	130	0.16	46	2.2	624	0%	100%
KTW-MMX	Poland-Sweden	1	16,822				16	131	0.14	61	2.2	681	0%	100%
TGD-VIE	Montenegro-Austria	1	16,814	1	17,323		31	142	0.16	48	4.2	690	100%	0%
BRQ-EIN	Czech Republic-Netherlands	1	16,695				18	135	0.13	80	2.3	843	0%	100%
WAW-ATH	Poland-Greece	1	16,681	1	14,063	3,851	68	162	0.07	376	4.9	1,600	100%	0%
TSR-TSF	Romania-Italy	1	16,471		-		13	132	0.16	43	2.2	715	0%	100%
BCM-LTN	Romania-United Kingdom	1	16,441		-		36	165	0.08	353	2.7	2,050	0%	100%
RIX-EIN	Latvia-Netherlands	1	16,413		-		28	158	0.09	216	2.6	1,355	0%	100%
TSR-BVA	Romania-France	1	16,266		-		28	150	0.09	267	2.4	1,492	0%	100%
SKP-DTM	Macedonia-Germany	1	16,264		-		31	150	0.08	320	2.4	1,510	0%	100%
BEG-MXP	Serbia-Italy	1	16,245	2	14,928	3,067	44	63	0.04	502	2.0	925	61%	39%
BCM-BGY	Romania-Italy	2	16,152	1	910		27	115	0.07	375	2.0	1,326	38%	62%
PRG-PMI	Czech Republic-Spain	1	16,019		-	1,974	41	132	0.05	480	2.1	1,487	0%	100%
PRG-CFU	Czech Republic-Greece	1	15,990		-		21	144	0.11	136	2.3	1,241	0%	100%
LJU-CDG	Slovenia-France	1	15,718	3	20,585	1,655	48	170	0.13	75	5.2	956	97%	3%
BUD-BRI	Hungary-Italy	1	15,700		-	1,103	14	126	0.14	64	2.0	727	0%	100%
RIX-TKU	Latvia-Finland	1	15,698		-		9	64	0.11	138	0.7	409	0%	100%
KTW-HHN	Poland-Germany	1	15,397		-		17	135	0.12	91	2.1	843	0%	100%
TSR-DTM	Romania-Germany	1	15,338		-		24	143	0.09	220	2.2	1,199	0%	100%
VNO-DTM	Lithuania-Germany	1	15,324		-		23	153	0.10	169	2.3	1,236	0%	100%
VNO-BVA	Lithuania-France	1	15,286	1	23,999		81	170	0.08	297	6.7	1,677	0%	100%
OTP-VRN	Romania-Italy	1	15,259		-	1,128	23	143	0.10	204	2.2	1,196	0%	100%
ARW-BGY	Romania-Italy	2	15,237		-		17	136	0.12	96	2.1	895	3%	97%
SOF-MXP	Bulgaria-Italy	1	15,191		-	3,132	28	78	0.04	510	1.2	1,213	100%	0%
RIX-DUS	Latvia-Germany	1	15,185		-	1,887	31	130	0.06	438	1.8	1,289	0%	100%
BEG-BVA	Serbia-France	1	15,119		-		28	148	0.08	311	2.2	1,479	0%	100%
PRG-BRI	Czech Republic-Italy	1	15,115		-	1,226	19	139	0.11	129	2.1	1,011	0%	100%
SKP-EIN	Macedonia-Netherlands	1	15,113		-		31	156	0.08	342	2.4	1,621	0%	100%
BEG-CRL	Serbia-Belgium	1	15,108		-		26	147	0.09	265	2.2	1,352	0%	100%
DEB-EIN	Hungary-Netherlands	1	15,089		-		23	144	0.09	219	2.2	1,242	0%	100%
SKP-TSF	Macedonia-Italy	1	14,976		-		16	136	0.12	86	2.0	869	0%	100%
TGM-BVA	Romania-France	1	14,972		-		32	158	0.07	359	2.4	1,693	0%	100%
VNO-DSA	Lithuania-United Kingdom	1	14,929		-		32	172	0.08	314	2.6	1,711	0%	100%
TSR-CIA	Romania-Italy	1	14,832		-		15	133	0.13	77	2.0	824	0%	100%
SKP-FMM	Macedonia-Germany	1	14,831		-		21	142	0.10	178	2.1	1,117	0%	100%
SKP-BGY	Macedonia-Italy	1	14,827		-		19	140	0.11	141	2.1	1,041	0%	100%
KTW-NYO	Poland-Sweden	1	14,731		-		19	137	0.11	137	2.0	930	0%	100%
LCA-FCO	Cyprus-Italy	1	14,731		-	1,857	49	159	0.05	495	2.6	2,012	100%	0%
TGM-BGY	Romania-Italy	1	14,683		-		21	142	0.10	190	2.1	1,146	0%	100%
GDN-CGN	Poland-Germany	1	14,643		-	1,163	16	136	0.12	90	2.0	866	0%	100%
SOF-HHN	Bulgaria-Germany	1	14,558		-		27	150	0.08	316	2.2	1,474	0%	100%
TSR-MAD	Romania-Spain	1	14,507		-		36	169	0.07	413	2.4	2,092	0%	100%
LJU-CRL	Slovenia-Belgium	1	14,494		-		17	136	0.12	105	2.0	890	0%	100%
VNO-AMS	Lithuania-Netherlands	1	14,122		-	6,692	29	151	0.07	379	2.0	1,376	100%	0%
OTP-DUB	Romania-Ireland	2	14,112	1	4,751	3,473	72	175	0.05	499	3.3	2,535	68%	32%
GDN-BGY	Poland-Italy	1	14,002		-		22	142	0.09	228	2.0	1,159	0%	100%
DBV-CDG	Croatia-France	1	13,974		-	7,604	21	165	0.11	132	2.3	1,411	100%	0%
TSR-BCN	Romania-Spain	1	13,970		-		27	156	0.08	317	2.2	1,621	0%	100%
CLJ-CIA	Romania-Italy	1	13,963		-		18	138	0.11	145	1.9	1,041	0%	100%
SOF-VIE	Bulgaria-Austria	1	13,936	2	130,913		195	114	0.08	282	15.4	824	97%	3%

CLJ-TSF	Romania-Italy	1	13,899		-		17	136	0.11	122	1.9	901	0% 100%
WRO-DTM	Poland-Germany	1	13,891		-		13	131	0.15	55	1.8	661	0% 100%
BEG-CPH	Serbia-Denmark	1	13,723	2	6,557	4,471	37	79	0.04	508	1.7	1,321	76% 24%
LCA-FRA	Cyprus-Germany	1	13,721	2	37,372	8,259	165	204	0.06	439	10.7	2,638	94% 6%
BCM-CUF	Romania-Italy	1	13,715		-		22	150	0.09	233	2.1	1,514	0% 100%
POZ-BVA	Poland-France	1	13,697		-		20	141	0.10	203	1.9	1,081	0% 100%
WRO-BVA	Poland-France	1	13,647	1	21,689		52	140	0.10	205	5.0	1,070	0% 100%
GDN-BCN	Poland-Spain	1	13,429		-	2,323	29	161	0.07	361	2.2	1,899	0% 100%
PRG-TSF	Czech Republic-Italy	1	13,367		-		10	128	0.17	37	1.7	518	0% 100%
WAW-HEL	Poland-Finland	1	13,337	2	51,548	2,264	96	104	0.07	396	6.4	924	23% 77%
IAS-FCO	Romania-Italy	1	13,242		-		29	96	0.04	503	1.3	1,355	100% 0%
OTP-AGP	Romania-Spain	1	13,179		-	3,349	38	180	0.06	442	2.4	2,707	0% 100%
PRG-TXL	Czech Republic-Germany	1	13,174		-	1,453	8	96	0.15	49	0.9	290	100% 0%
WAW-LPL	Poland-United Kingdom	1	13,164	1	14,255		53	154	0.08	322	4.2	1,603	0% 100%
WAW-DSA	Poland-United Kingdom	1	13,094		-		23	150	0.08	287	2.0	1,479	0% 100%
PRG-MUC	Czech Republic-Germany	1	12,886	3	112,071		51	132	0.33	6	7.1	272	100% 0%
TSR-VLC	Romania-Spain	1	12,874		-		29	164	0.07	388	2.1	1,905	0% 100%
OTP-NCE	Romania-France	2	12,682		-	5,271	26	129	0.06	434	1.6	1,508	45% 55%
WAW-NCE	Poland-France	1	12,657		-	5,492	23	186	0.10	181	2.2	1,390	100% 0%
GDN-GLA	Poland-United Kingdom	1	12,624		-		23	149	0.08	291	1.9	1,455	0% 100%
GDN-GSE	Poland-Sweden	1	12,620		-		11	128	0.15	52	1.6	557	0% 100%
WAW-EIN	Poland-Netherlands	1	12,398	1	13,307		36	141	0.10	177	3.6	1,072	0% 100%
MLA-HAM	Malta-Germany	1	12,376	1	2,787	4,135	44	160	0.06	471	2.6	2,007	82% 18%
TIA-RMI	Albania-Italy	1	12,345		-		9	131	0.17	35	1.6	661	100% 0%
VNO-FCO	Lithuania-Italy	1	12,261		-	2,957	32	151	0.06	457	1.8	1,719	0% 100%
GDN-BVA	Poland-France	1	12,222		-		21	145	0.08	284	1.8	1,254	0% 100%
BEG-ARN	Serbia-Sweden	1	12,032	1	6,966	3,324	51	105	0.04	517	2.1	1,658	72% 28%
TZL-MMX	Bosnia and Herzegovina-Sweden	1	11,859		-		19	144	0.09	256	1.7	1,296	0% 100%
CLJ-CRL	Romania-Belgium	1	11,662		-		21	148	0.08	308	1.7	1,468	0% 100%
SPU-CDG	Croatia-France	1	11,596	1	9,972	6,255	29	160	0.12	101	3.4	1,218	55% 45%
TGD-FCO	Montenegro-Italy	1	11,563	1	4,339		13	86	0.10	165	1.3	583	100% 0%
WAW-GSE	Poland-Sweden	1	11,563		-		13	135	0.12	107	1.6	847	0% 100%
OTP-SKG	Romania-Greece	1	11,333		-		8	136	0.19	24	1.5	512	100% 0%
MLA-ATH	Malta-Greece	1	11,266		-	1,561	14	139	0.11	135	1.4	872	100% 0%
TGM-FMM	Romania-Germany	1	11,227		-		15	140	0.10	166	1.6	1,090	0% 100%
POZ-NYO	Poland-Sweden	1	10,919		-		14	132	0.10	171	1.4	705	0% 100%
RIX-LPP	Latvia-Finland	1	10,895		-		9	45	0.05	478	0.4	512	0% 100%
RIX-LIN	Latvia-Italy	1	10,814		-		21	139	0.07	390	1.4	1,637	0% 100%
TIA-PEG	Albania-Italy	1	10,794		-		9	130	0.15	53	1.4	632	100% 0%
TIA-ATH	Albania-Greece	1	10,651	1	18,323		25	126	0.15	54	3.6	517	100% 0%
TIA-PMF	Albania-Italy	1	10,573		-		11	136	0.13	85	1.4	863	100% 0%
BEG-STR	Serbia-Germany	1	10,570	1	17,694	1,497	42	66	0.04	504	1.9	961	51% 49%
LJU-AMS	Slovenia-Netherlands	1	10,507		-	2,720	15	128	0.09	246	1.3	991	100% 0%
RIX-BLL	Latvia-Denmark	1	10,430		-		20	157	0.08	295	1.3	929	0% 100%
SBZ-STR	Romania-Germany	1	10,413		-	3,108	16	132	0.09	270	1.4	1,168	0% 100%
PRG-VLC	Czech Republic-Spain	1	10,268		-	3,864	22	68	0.03	529	0.7	1,659	0% 100%
WAW-TXL	Poland-Germany	2	10,259	1	39,252		50	84	0.08	296	3.0	523	100% 0%
SKP-NYO	Macedonia-Sweden	1	10,077		-		24	164	0.07	403	1.7	1,894	0% 100%
SOF-BLQ	Bulgaria-Italy	1	10,077		-	1,801	13	137	0.11	128	1.4	995	0% 100%
TIA-CUF	Albania-Italy	1	9,970		-		17	140	0.08	301	1.4	1,054	100% 0%
TSR-BLQ	Romania-Italy	1	9,936		-		10	132	0.13	68	1.3	795	0% 100%
WAW-GLA	Poland-United Kingdom	1	9,881		-	1,008	27	157	0.06	460	1.6	1,688	0% 100%
TGM-BCN	Romania-Spain	1	9,866		-		23	164	0.07	395	1.6	1,881	0% 100%
TGM-CIA	Romania-Italy	1	9,792		-		13	139	0.10	167	1.4	1,085	0% 100%
CLJ-FRL	Romania-Italy	1	9,780		-		12	141	0.12	108	1.4	950	0% 100%
TGM-HHN	Romania-Germany	1	9,648		-		16	145	0.09	262	1.4	1,331	0% 100%
CRA-BGY	Romania-Italy	1	9,644		-		13	140	0.10	186	1.3	1,117	0% 100%
CLJ-EIN	Romania-Netherlands	1	9,498		-		17	148	0.08	298	1.4	1,426	0% 100%
PRG-TFS	Czech Republic-Spain	1	9,388		-		41	224	0.05	486	2.1	3,581	0% 100%
BUD-CTA	Hungary-Italy	1	9,354		-	3,045	14	58	0.04	514	0.5	1,160	0% 100%
TIA-BRU	Albania-Belgium	1	9,303	2	8,863	6,084	38	100	0.05	494	1.8	1,587	100% 0%
KTW-NAP	Poland-Italy	1	9,215		-		13	140	0.10	191	1.3	1,131	0% 100%
PRG-STR	Czech Republic-Germany	1	9,015		-	2,581	7	82	0.11	152	0.6	409	100% 0%
SKP-GSE	Macedonia-Sweden	1	8,925		-		21	164	0.07	399	1.5	1,886	0% 100%
OSR-HER	Czech Republic-Greece	1	8,913		-		20	166	0.07	369	1.4	1,714	0% 100%
MLA-MXP	Malta-Italy	1	8,847	1	5,200		25	114	0.06	435	1.6	1,189	74% 26%
KTW-LPL	Poland-United Kingdom	1	8,808		-		17	153	0.08	306	1.3	1,534	0% 100%
PRG-LPA	Czech Republic-Spain	1	8,703		-		33	212	0.06	469	1.8	3,521	0% 100%
TIA-HER	Albania-Greece	1	8,665		-		10	134	0.12	99	1.2	813	100% 0%
TZL-MLH	Bosnia and Herzegovina-France	1	8,640		-		10	135	0.11	116	1.2	953	0% 100%
OTP-PEG	Romania-Italy	1	8,640		-		12	139	0.10	179	1.2	1,099	0% 100%
POZ-BCN	Poland-Spain	1	8,540	1	12,347	1,782	46	158	0.07	386	3.3	1,662	0% 100%
WMI-CRL	Poland-Belgium	1	8,496	1	22,510		44	140	0.10	194	4.4	1,144	0% 100%
LCA-HER	Cyprus-Greece	1	8,392	1	1,049	2,861	11	87	0.07	370	0.8	771	100% 0%
OSR-VIE	Czech Republic-Austria	1	8,372		-		2	122	0.42	4	1.0	233	0% 100%
OSR-CDG	Czech Republic-France	1	8,329		-		12	32	0.02	534	0.3	1,138	0% 100%
WAW-STR	Poland-Germany	1	8,323		-	5,149	13	165	0.10	157	1.2	919	100% 0%
TIA-PSR	Albania-Italy	1	8,212		-		5	126	0.21	18	1.0	480	100% 0%
TZL-GSE	Bosnia and Herzegovina-Sweden	1	8,206		-		16	150	0.08	341	1.2	1,558	0% 100%
LJU-CPH	Slovenia-Denmark	1	8,100		-	2,540	14	136	0.08	312	1.0	1,072	100% 0%
BEG-SKG	Serbia-Greece	1	7,935	1	1,063		7	59	0.08	333	0.5	521	100% 0%
OTP-AHO	Romania-Italy	1	7,919		-		15	151	0.08	323	1.2	1,516	0% 100%
KTW-ORK	Poland-Ireland	1	7,809		-		18	162	0.07	393	1.3	1,917	0% 100%
BUD-SKG	Hungary-Greece	1	7,793	1	581	1,021	10	135	0.12	106	1.1	826	0% 100%
TIA-TRS	Albania-Italy	1	7,722		-		7	131	0.15	51	1.0	689	100% 0%
BEG-BRU	Serbia-Belgium	1	7,697	1	942	8,283	23	99	0.04	520	0.8	1,368	100% 0%
BRQ-RHO	Czech Republic-Greece	1	7,562		-	1,492	16	162	0.08	350	1.2	1,695	0% 100%
BRQ-HER	Czech Republic-Greece	1	7,523		-	2,219	16	163	0.07	357	1.2	1,687	0% 100%
KSC-LTN	Slovakia-United Kingdom	1	7,390		-		15	147	0.07	366	1.1	1,571	0% 100%
SOF-PMI	Bulgaria-Spain	1	7,300		-		16	162	0.07	380	1.2	1,762	100% 0%
PRG-SXB	Czech Republic-France	1	7,278		-		8	114	0.11	139	0.7	521	100% 0%
SOF-AGP	Bulgaria-Spain	1	7,225		-	1,811	21	170	0.06	464	1.2	2,467	100% 0%
PRG-SKG	Czech Republic-Greece	1	7,106		-	2,079	9	106	0.08	324	0.7	1,254	0% 100%
GDN-CIA	Poland-Italy	1	7,056		-		13	151	0.08	302	1.1	1,469	0% 100%
PRG-CHQ	Czech Republic-Greece	1	6,759		-		13	164	0.09	278	1.1	1,798	0% 100%
ZAG-BCN	Croatia-Spain	1	6,722	1	7,454	3,544	26	114	0.06	449	1.6	1,230	62% 38%
IAS-TRN	Romania-Italy	1	6,664		-		20	100	0.03	528	0.7	1,551	100% 0%
OSR-RHO	Czech Republic-Greece	1	6,630		-		15	162	0.07	391	1.1	1,698	0% 100%
DEB-DTM	Hungary-Germany	1	6,620		-		9	142	0.10	170	0.9	1,107	0% 100%
DBV-ATH	Croatia-Greece	1	6,480		-		7	223	0.22	15	1.2	705	100% 0%

RIX-TMP	Latvia-Finland	1	6,409		-		5	49	0.06	459	0.3	502	0% 100%
PRG-BIO	Czech Republic-Spain	1	6,386		-	6,230	10	57	0.04	524	0.4	1,518	0% 100%
BCM-BLQ	Romania-Italy	1	6,371		-		10	144	0.09	208	0.9	1,233	0% 100%
CLJ-VIE	Romania-Austria	1	6,370		-	1,196	7	215	0.20	21	0.9	575	100% 0%
LCJ-LTN	Poland-United Kingdom	1	6,324		-		11	149	0.09	242	0.9	1,357	0% 100%
OTP-PMI	Romania-Spain	1	6,260		-	1,420	13	171	0.08	313	1.1	1,999	0% 100%
LCA-MUC	Cyprus-Germany	1	6,193	2	27,602	5,087	101	181	0.06	450	6.3	2,340	91% 9%
OTP-GRO	Romania-Spain	1	6,173		-		14	168	0.07	384	1.0	1,902	0% 100%
RIX-NCE	Latvia-France	1	6,101		-	1,912	25	340	0.08	300	1.6	1,893	0% 100%
CLJ-FCO	Romania-Italy	1	6,085		-		9	143	0.10	193	0.9	1,065	0% 100%
BUD-AGP	Hungary-Spain	1	6,084		-	3,922	16	120	0.05	500	0.7	2,282	0% 100%
WMI-FCO	Poland-Italy	1	6,051		-		10	146	0.09	263	0.9	1,344	0% 100%
TGM-BLQ	Romania-Italy	1	5,904		-		8	140	0.11	144	0.8	1,053	0% 100%
CLJ-BRI	Romania-Italy	1	5,904		-		6	135	0.13	78	0.8	837	0% 100%
SPU-LTN	Croatia-United Kingdom	1	5,649		-		11	153	0.08	337	0.9	1,548	0% 100%
OTP-FRL	Romania-Italy	1	5,570		-		12	144	0.07	406	0.8	1,114	0% 100%
RIX-VCE	Latvia-Italy	1	5,504		-	1,672	11	217	0.11	131	0.8	1,514	0% 100%
DBV-FCO	Croatia-Italy	1	5,471	1	5,582		9	143	0.17	34	1.4	504	56% 44%
OTP-ALC	Romania-Spain	1	5,432		-		15	180	0.07	425	1.0	2,306	0% 100%
IAS-BLQ	Romania-Italy	1	5,401		-		16	91	0.03	530	0.5	1,294	100% 0%
RIX-ATH	Latvia-Greece	1	5,333		-	2,166	14	198	0.08	354	0.9	2,118	0% 100%
PRG-SUF	Czech Republic-Italy	1	5,297		-		8	146	0.09	236	0.8	1,278	0% 100%
RIX-TFS	Latvia-Spain	1	5,296		-		27	356	0.07	394	1.9	4,514	100% 0%
TIA-RHO	Albania-Greece	1	5,286		-		6	137	0.12	95	0.7	904	100% 0%
TGM-FCO	Romania-Italy	1	5,183		-		7	144	0.10	160	0.7	1,110	0% 100%
TSR-VCE	Romania-Italy	1	5,098	1	1,355		7	122	0.12	111	0.7	694	100% 0%
SPU-VIE	Croatia-Austria	1	5,057	1	13,744	1,572	15	158	0.20	19	1.8	521	100% 0%
GDN-ORK	Poland-Ireland	1	5,046	1	14,914		45	161	0.07	385	3.2	1,819	0% 100%
BRQ-KGS	Czech Republic-Greece	1	5,044		-	1,077	10	159	0.08	326	0.8	1,611	0% 100%
BRQ-ZTH	Czech Republic-Greece	1	5,027		-		8	146	0.09	252	0.7	1,313	0% 100%
OTP-VCE	Romania-Italy	1	4,951		-	3,702	6	117	0.10	202	0.6	1,081	0% 100%
MLA-LYS	Malta-France	1	4,936		-	2,713	13	153	0.06	466	0.8	1,358	100% 0%
PRG-CAG	Czech Republic-Italy	1	4,927		-		8	129	0.08	318	0.6	1,276	0% 100%
TSR-STR	Romania-Germany	1	4,804	1	2,813	1,772	12	89	0.06	462	0.7	969	100% 0%
PRG-IBZ	Czech Republic-Spain	1	4,773		-		8	159	0.09	232	0.8	1,617	0% 100%
WMI-NYO	Poland-Sweden	1	4,751	1	22,353		25	132	0.14	58	3.6	737	0% 100%
TSR-FRL	Romania-Italy	1	4,731		-		5	136	0.14	62	0.6	745	0% 100%
ZAD-FRA	Croatia-Germany	1	4,681		-	1,417	6	106	0.08	315	0.4	837	100% 0%
DEB-MXP	Hungary-Italy	1	4,606		-		6	141	0.11	117	0.7	996	0% 100%
TLL-HER	Estonia-Greece	1	4,597		-		16	237	0.07	411	1.1	2,684	100% 0%
BUD-PMI	Hungary-Spain	1	4,569		-	1,343	8	154	0.09	235	0.7	1,588	0% 100%
SOF-FRL	Bulgaria-Italy	1	4,534		-		6	140	0.11	121	0.6	930	0% 100%
TIA-VIE	Albania-Austria	1	4,523	2	67,874	1,702	85	199	0.17	39	8.1	818	100% 0%
VNO-LPL	Lithuania-United Kingdom	1	4,516	1	14,810		47	181	0.07	365	3.5	1,835	0% 100%
RIX-HER	Latvia-Greece	1	4,380		-		14	219	0.07	402	1.0	2,408	100% 0%
OSR-PMI	Czech Republic-Spain	1	4,380		-		8	161	0.08	281	0.7	1,674	0% 100%
POZ-DTM	Poland-Germany	1	4,137		-		4	134	0.14	66	0.6	650	0% 100%
MLA-MRS	Malta-France	1	4,094	1	16,415		34	121	0.07	383	2.5	1,156	34% 66%
VNO-BRU	Lithuania-Belgium	1	3,924	2	27,966	7,602	73	186	0.08	305	5.2	1,455	100% 0%
BUD-CFU	Hungary-Greece	1	3,881		-		4	135	0.12	87	0.5	874	0% 100%
WMI-MMX	Poland-Sweden	1	3,744		-		3	131	0.18	30	0.5	587	0% 100%
WMI-BGY	Poland-Italy	1	3,743	1	13,516		24	139	0.10	176	2.4	1,096	0% 100%
PRG-CTA	Czech Republic-Italy	1	3,743		-	3,479	7	67	0.04	519	0.3	1,403	0% 100%
SPU-LHR	Croatia-United Kingdom	1	3,631		-	5,364	7	190	0.09	214	0.7	1,532	100% 0%
TIV-LGW	Montenegro-United Kingdom	1	3,629		-		9	130	0.05	479	0.5	1,730	100% 0%
BUD-TKU	Hungary-Finland	1	3,609		-		7	151	0.08	325	0.5	1,469	0% 100%
WMI-BVA	Poland-France	1	3,601	1	9,580		22	144	0.09	268	1.9	1,337	0% 100%
BRQ-PMI	Czech Republic-Spain	1	3,586		-		8	153	0.07	381	0.6	1,537	0% 100%
BEG-GOT	Serbia-Sweden	1	3,532		-	1,199	10	131	0.05	493	0.4	1,548	100% 0%
OTP-STR	Romania-Germany	1	3,493		-	7,908	5	142	0.10	198	0.5	1,370	0% 100%
POZ-ORK	Poland-Ireland	1	3,412		-		7	158	0.07	382	0.5	1,722	0% 100%
SOF-TSF	Bulgaria-Italy	2	3,341		-		4	141	0.11	147	0.5	961	2% 98%
CRA-FCO	Romania-Italy	1	3,226		-		9	67	0.02	533	0.2	983	100% 0%
TLL-TFS	Estonia-Spain	1	3,221		-		19	333	0.06	461	1.1	4,686	100% 0%
PUY-FRA	Croatia-Germany	1	3,198		-		5	83	0.05	477	0.3	700	100% 0%
CLJ-PMI	Romania-Spain	1	3,128		-		7	166	0.08	340	0.5	1,872	0% 100%
IAS-LHR	Romania-United Kingdom	1	3,119		-	1,844	12	196	0.05	490	0.6	2,074	100% 0%
SPU-LGW	Croatia-United Kingdom	1	2,994	2	43,979		87	115	0.06	444	5.4	1,498	14% 86%
OSR-KGS	Czech Republic-Greece	1	2,973		-		11	159	0.04	511	0.4	1,617	0% 100%
TSR-DUS	Romania-Germany	1	2,876		-	3,799	7	193	0.08	319	0.5	1,233	100% 0%
TIV-CDG	Montenegro-France	1	2,867		-		6	130	0.06	451	0.4	1,452	100% 0%
DBV-VIE	Croatia-Austria	1	2,860	1	29,831	1,604	29	172	0.20	22	3.8	647	100% 0%
TIA-TRN	Albania-Italy	1	2,769		-	1,076	4	139	0.10	159	0.4	1,067	100% 0%
WMI-BCN	Poland-Spain	1	2,702	1	8,702		29	162	0.06	441	1.8	1,870	0% 100%
TLL-CDG	Estonia-France	1	2,694		-	12,812	6	164	0.07	412	0.4	1,841	100% 0%
PRG-DUB	Czech Republic-Ireland	1	2,678	1	50,544	2,279	97	144	0.08	327	7.6	1,468	95% 5%
KRK-AMS	Poland-Netherlands	1	2,618		-	7,970	18	172	0.02	532	0.4	1,081	100% 0%
WMI-LPL	Poland-United Kingdom	1	2,602	1	5,209		27	150	0.04	507	1.2	1,574	0% 100%
VNO-PMI	Lithuania-Spain	1	2,593	1	1,585		12	220	0.08	329	0.9	2,374	100% 0%
WMI-EIN	Poland-Netherlands	1	2,591	1	9,574		16	138	0.11	150	1.7	1,051	0% 100%
VAR-LGW	Bulgaria-United Kingdom	1	2,573		-		7	119	0.04	512	0.3	2,276	100% 0%
TSR-MUC	Romania-Germany	1	2,506	1	79,441		79	193	0.20	20	12.3	776	100% 0%
WMI-GSE	Poland-Sweden	1	2,448		-		2	136	0.13	67	0.3	809	0% 100%
PRG-FNC	Czech Republic-Portugal	1	2,414		-	1,471	10	147	0.04	522	0.4	3,206	0% 100%
TGD-CPH	Montenegro-Denmark	1	2,398		-	1,397	6	156	0.07	416	0.4	1,550	100% 0%
SPU-DUS	Croatia-Germany	1	2,374	1	2,992	1,113	13	94	0.04	518	0.5	1,120	63% 37%
BTS-HER	Slovakia-Greece	1	2,368		-		5	148	0.07	427	0.3	1,571	0% 100%
RIX-OLB	Latvia-Italy	1	2,367		-		12	192	0.04	515	0.4	2,074	0% 100%
SPU-TXL	Croatia-Germany	1	2,338	1	9,486	3,855	17	124	0.09	277	1.4	1,030	100% 0%
RIX-BRI	Latvia-Italy	1	2,316		-		10	151	0.04	525	0.3	1,838	0% 100%
WMI-DSA	Poland-United Kingdom	1	2,289		-		4	148	0.08	346	0.3	1,450	0% 100%
GDN-AMS	Poland-Netherlands	1	2,286		-	9,017	12	184	0.03	527	0.4	945	100% 0%
OTP-LYS	Romania-France	1	2,233		-	9,249	8	161	0.04	501	0.4	1,661	100% 0%
OTP-FMM	Romania-Germany	1	2,202		-		4	145	0.09	266	0.3	1,276	0% 100%
BCM-BRU	Romania-Belgium	1	2,175		-		5	154	0.07	372	0.4	1,704	0% 100%
VNO-TXL	Lithuania-Germany	1	2,159	1	579	6,184	6	98	0.04	505	0.3	824	100% 0%
WAW-KVA	Poland-Greece	1	2,102		-		4	148	0.08	309	0.3	1,273	100% 0%
LJU-MAN	Slovenia-United Kingdom	1	2,083		-		4	125	0.06	456	0.3	1,450	100% 0%
GDN-FCO	Poland-Italy	1	2,067		-	1,840	4	169	0.09	261	0.4	1,477	0% 100%
WMI-PIK	Poland-United Kingdom	1	2,036	1	7,714		26	157	0.06	454	1.5	1,675	0% 100%

CRA-LTN	Romania-United Kingdom	1	2,032		-		6	162	0.05	481	0.3	1,963	0% 100%
BUD-RHO	Hungary-Greece	1	2,016		-		4	150	0.08	288	0.3	1,431	0% 100%
BUD-HER	Hungary-Greece	1	2,016		-		4	150	0.08	289	0.3	1,434	0% 100%
BEG-RHO	Serbia-Greece	1	2,016		-		3	142	0.10	187	0.3	1,138	0% 100%
MLA-CWL	Malta-United Kingdom	1	1,924		-		12	181	0.03	531	0.3	2,234	100% 0%
BEG-CFU	Serbia-Greece	1	1,872		-		1	127	0.17	33	0.2	584	0% 100%
PRG-AOK	Czech Republic-Greece	1	1,871		-		5	168	0.07	405	0.3	1,922	0% 100%
BUD-ZTH	Hungary-Greece	1	1,870		-		3	141	0.10	161	0.3	1,086	0% 100%
LCA-VIE	Cyprus-Austria	1	1,849	1	82,658		211	231	0.09	222	17.4	2,058	100% 0%
BEG-GRO	Serbia-Spain	1	1,840		-		5	123	0.05	492	0.2	1,464	100% 0%
TIV-FRA	Montenegro-Germany	1	1,811		-		3	134	0.09	217	0.2	1,152	100% 0%
PRG-MJT	Czech Republic-Greece	1	1,766		-		3	153	0.08	335	0.3	1,555	0% 100%
KRK-CDG	Poland-France	1	1,678	1	46,350	10,734	71	152	0.10	162	7.3	1,262	5% 95%
DBV-VCE	Croatia-Italy	1	1,664		-		2	171	0.14	59	0.3	570	100% 0%
OSR-KVA	Czech Republic-Greece	1	1,587		-		2	138	0.10	183	0.2	1,099	0% 100%
OSR-ZTH	Czech Republic-Greece	1	1,583		-		3	148	0.09	271	0.2	1,366	0% 100%
DBV-TXL	Croatia-Germany	1	1,572	1	2,981	3,292	9	128	0.06	429	0.6	1,173	100% 0%
PED-RHO	Czech Republic-Greece	1	1,506		-		3	166	0.07	378	0.2	1,814	0% 100%
DBV-DUS	Croatia-Germany	1	1,480	2	2,751	1,306	9	150	0.07	409	0.6	1,304	57% 43%
BRQ-KVA	Czech Republic-Greece	1	1,470		-		2	138	0.09	213	0.2	1,091	0% 100%
WAW-GNB	Poland-France	1	1,440		-		2	147	0.09	269	0.2	1,360	0% 100%
PRG-GRO	Czech Republic-Spain	1	1,388		-		2	145	0.11	143	0.2	1,271	0% 100%
GDN-PIK	Poland-United Kingdom	1	1,376		-		3	149	0.08	343	0.2	1,479	0% 100%
BEG-LGW	Serbia-United Kingdom	1	1,362		-		4	153	0.06	463	0.2	1,685	100% 0%
ZAD-MUC	Croatia-Germany	1	1,360	2	3,750		4	127	0.16	47	0.4	547	100% 0%
TLL-NCE	Estonia-France	1	1,356		-	2,596	7	194	0.04	513	0.3	2,123	100% 0%
PRG-KVA	Czech Republic-Greece	1	1,344		-	1,045	3	143	0.07	419	0.2	1,271	0% 100%
SPU-AMS	Croatia-Netherlands	1	1,303	1	3,189	3,669	8	156	0.09	234	0.7	1,297	31% 69%
PRG-JSI	Czech Republic-Greece	1	1,301		-		2	130	0.07	364	0.2	1,405	0% 100%
RIX-BGY	Latvia-Italy	1	1,239	1	34,935		69	169	0.09	254	6.1	1,600	3% 97%
RJK-LHR	Croatia-United Kingdom	1	1,237		-		5	176	0.05	497	0.2	1,300	100% 0%
BCM-DUB	Romania-Ireland	1	1,204		-		4	170	0.06	474	0.2	2,461	0% 100%
PRG-OLB	Czech Republic-Italy	1	1,198		-	1,048	2	141	0.10	156	0.2	1,093	0% 100%
SPU-LYS	Croatia-France	1	1,190		-		2	111	0.07	358	0.1	932	100% 0%
BCM-BVA	Romania-France	1	1,190		-		2	158	0.08	336	0.2	1,860	0% 100%
WMI-GNB	Poland-France	1	1,152		-		2	147	0.09	272	0.2	1,357	0% 100%
ZAG-LGW	Croatia-United Kingdom	1	1,010	1	27,677		54	145	0.08	345	4.1	1,339	7% 93%

CESE to Europe (Non CESE/Non EU) and Rest of the World (outbound only i.e. from CESE to others)[26]

ROUTE	ROUTE COUNTRY	CESE CARRIERS	CESE CARRIERS PAX	NON CESE CARRIERS	NON CESE CARRIERS PAX	INDIRECT PAX	AVG FARE	ASK (millions)	REV/ASK (USD)	REV/ASK RANKING	DISTANCE	SEGMENT REVENUE (USD) M	NETWORK CARRIER	LCC
PRG-SVO	Czech Republic-Russian Federation	1	99,798	1	141,370	4,805	269	701	0.09	82	1,662	51	100%	0%
OTP-TLV	Romania-Israel	2	71,950	1	38,807	1,448	232	235	0.11	57	1,585	26	90%	10%
WAW-ORD	Poland-United States	1	68,891	1	6,886	11,370	486	593	0.06	136	7,519	41	100%	0%
RIX-SVO	Latvia-Russian Federation	1	68,114	1	68,547		182	171	0.15	25	827	18	48%	52%
WAW-JFK	Poland-United States	1	66,923	2	4,387	24,474	497	558	0.06	130	6,848	35	100%	0%
PRG-TLV	Czech Republic-Israel	2	66,223	1	32,362	3,156	193	336	0.06	144	2,623	19	72%	28%
RIX-OSL	Latvia-Norway	1	59,059	1	30,162	1,045	122	111	0.10	70	847	9	0%	100%
MLA-TIP	Malta-Libya	1	55,953	2	19,885		163	33	0.37	1	351	10	100%	0%
LCA-TLV	Cyprus-Israel	2	54,691	2	13,492		139	31	0.31	4	340	9	100%	0%
BEG-ZRH	Serbia-Switzerland	1	52,168	4	82,069	1,989	110	170	0.09	91	966	13	99%	1%
BOJ-SVO	Bulgaria-Russian Federation	1	50,703		-		246	80	0.16	21	1,651	12	100%	0%
BEG-SVO	Serbia-Russian Federation	1	50,675	1	73,047		199	271	0.09	88	1,716	22	100%	0%
WAW-YYZ	Poland-Canada	1	49,861	1	5,746	8,449	518	410	0.07	123	6,935	29	100%	0%
RIX-KBP	Latvia-Ukraine	1	49,640		-		215	61	0.17	17	863	7	0%	100%
BUD-TLV	Hungary-Israel	1	49,575	1	38,892	2,432	227	218	0.09	84	2,168	20	47%	53%
BUD-IEV	Hungary-Ukraine	1	47,243		-		138	52	0.12	41	884	7	0%	100%
WAW-KBP	Poland-Ukraine	1	41,210	2	25,507	1,436	135	69	0.13	35	721	7	100%	0%
WAW-SVO	Poland-Russian Federation	1	41,187	1	61,474	1,078	216	195	0.11	49	1,151	16	100%	0%
RIX-LED	Latvia-Russian Federation	1	40,214	1	122		183	30	0.25	6	481	5	0%	100%
WAW-TLV	Poland-Israel	2	40,094	1	23,830	4,664	267	197	0.09	92	2,509	16	97%	3%
LJU-ZRH	Slovenia-Switzerland	1	39,271		-		181	30	0.24	11	481	5	100%	0%
KTW-TRF	Poland-Norway	1	38,326		-		142	55	0.10	66	1,118	5	0%	100%
GDN-TRF	Poland-Norway	1	36,282		-		133	37	0.13	36	735	5	0%	100%
GDN-BGO	Poland-Norway	1	35,312		-	4,374	149	47	0.11	52	1,035	5	0%	100%
ZAG-ZRH	Croatia-Switzerland	1	35,016		-	1,310	217	32	0.24	12	605	5	100%	0%
OTP-IST	Romania-Turkey	1	34,671	1	115,889		96	108	0.13	30	452	11	100%	0%
PRG-AYT	Czech Republic-Turkey	1	31,078		-	1,956	126	79	0.05	151	1,962	4	0%	100%
TIV-DME	Montenegro-Russian Federation	1	30,897	7	117,106		256	380	0.10	65	2,000	37	100%	0%
MLA-ZRH	Malta-Switzerland	1	30,688		-	1,253	233	62	0.11	47	1,379	7	100%	0%
LJU-SVO	Slovenia-Russian Federation	1	29,258		-		343	91	0.11	56	1,931	10	100%	0%
GDN-SVG	Poland-Norway	1	28,283		-	3,425	144	34	0.12	45	935	4	0%	100%
RIX-BGO	Latvia-Norway	2	28,202		-	2,174	124	49	0.07	121	1,147	3	0%	100%
WAW-LWO	Poland-Ukraine	1	27,593		-		142	12	0.33	2	335	2	100%	0%
TLL-OSL	Estonia-Norway	1	26,032	1	28,186	3,034	122	55	0.12	44	797	6	55%	45%
OTP-KIV	Romania-Moldova	1	25,750	1	21,344		107	21	0.24	10	351	4	100%	0%
WAW-TRF	Poland-Norway	1	25,269		-		140	34	0.10	60	1,027	4	0%	100%
WAW-PEK	Poland-China	1	25,240		-	12,207	426	229	0.05	156	6,946	10	100%	0%
RIX-ZRH	Latvia-Switzerland	1	25,163		-	2,873	173	54	0.08	102	1,490	4	0%	100%
PRG-KBP	Czech Republic-Ukraine	1	25,109	2	28,687	3,546	232	106	0.12	46	1,172	9	100%	0%
WAW-ZRH	Poland-Switzerland	1	24,619	4	85,282	1,684	182	153	0.13	33	1,033	15	90%	10%
WAW-ODS	Poland-Ukraine	1	24,264		-		147	26	0.13	29	940	3	100%	0%
WAW-GVA	Poland-Switzerland	1	24,239		-	9,519	229	36	0.16	22	1,262	5	100%	0%
LCA-SVO	Cyprus-Russian Federation	1	23,692	1	113,976	1,863	378	414	0.13	39	2,364	49	100%	0%
PRG-LED	Czech Republic-Russian Federation	1	23,463	1	37,184	7,497	222	140	0.10	73	1,476	12	100%	0%
WAW-TBS	Poland-Georgia	1	23,438		-	2,138	186	58	0.07	112	2,148	4	100%	0%
RIX-DME	Latvia-Russian Federation	1	22,974	1	16,626		108	59	0.07	116	872	4	29%	71%
PRG-EVN	Czech Republic-Armenia	1	22,754	1	28,318		199	175	0.06	142	2,575	10	100%	0%
RIX-TLV	Latvia-Israel	1	22,121		-	2,924	283	88	0.07	120	2,897	5	0%	100%
LCA-ZRH	Cyprus-Switzerland	1	21,101	3	19,496	4,731	259	116	0.09	89	2,506	10	99%	1%
GDN-HAU	Poland-Norway	1	21,067		-	1,268	138	26	0.11	50	980	3	0%	100%
GDN-TRD	Poland-Norway	1	21,034		-	1,195	142	29	0.10	62	1,106	3	0%	100%
VAR-SVO	Bulgaria-Russian Federation	1	20,390		-		207	31	0.14	27	1,574	4	100%	0%
PRG-ICN	Czech Republic-South Korea	1	20,226	1	52,786	20,589	1,004	688	0.11	59	8,230	66	100%	0%
WAW-LED	Poland-Russian Federation	1	19,877		-	2,975	173	25	0.14	28	1,027	3	100%	0%
LCA-BEY	Cyprus-Lebanon	1	19,599	1	36,341		88	20	0.24	9	206	5	100%	0%
VNO-SVG	Lithuania-Norway	1	19,580		-	1,213	155	31	0.10	72	1,283	3	0%	100%
TLL-SVO	Estonia-Russian Federation	1	19,515	1	28,440	1,149	120	67	0.09	94	843	5	100%	0%
POZ-TRF	Poland-Norway	1	19,325		-		135	21	0.12	42	856	3	0%	100%
KTW-SVG	Poland-Norway	1	19,171		-		145	30	0.09	86	1,268	3	0%	100%
TGD-ZRH	Montenegro-Switzerland	1	19,125		-		113	26	0.08	98	1,014	2	100%	0%
LJU-PRN	Slovenia-Serbia	1	18,917		-		91	18	0.10	74	649	2	100%	0%
GDN-AES	Poland-Norway	1	18,048		-	1,738	142	26	0.10	71	1,159	3	0%	100%
VNO-BGO	Lithuania-Norway	1	17,707		-	1,626	158	30	0.09	77	1,349	3	0%	100%
SOF-SVO	Bulgaria-Russian Federation	1	17,474	1	34,414		267	150	0.09	83	1,785	11	100%	0%
WAW-IST	Poland-Turkey	1	16,930	1	31,444	7,719	218	84	0.13	40	1,381	10	100%	0%
SOF-ZRH	Bulgaria-Switzerland	1	16,924		-	5,907	146	32	0.08	104	1,278	2	100%	0%
BRQ-AYT	Czech Republic-Turkey	1	16,568		-		110	37	0.05	150	1,773	2	0%	100%
RIX-SAW	Latvia-Turkey	1	16,488		-		107	57	0.03	164	1,827	2	0%	100%
TLL-AYT	Estonia-Turkey	1	16,342		-		285	53	0.09	90	2,544	5	100%	0%
PRG-ALA	Czech Republic-Kazakhstan	1	16,322		-	3,213	460	104	0.07	118	4,690	8	100%	0%
TLL-KBP	Estonia-Ukraine	1	16,094		-	2,050	174	30	0.09	79	1,086	2	100%	0%
VNO-TRF	Lithuania-Norway	1	15,824		-		144	21	0.11	55	1,040	2	0%	100%
TGD-DME	Montenegro-Russian Federation	1	15,798	3	9,021		252	67	0.09	80	1,978	6	100%	0%
LUZ-TRF	Poland-Norway	n/a	n/a	n/a	n/a	n/a	361	n/a	0	n/a	n/a	6	n/a	n/a
RIX-SVG	Latvia-Norway	1	14,901		-	2,176	137	28	0.07	115	1,106	2	0%	100%
BUD-SAW	Hungary-Turkey	1	14,548		-		150	20	0.11	54	1,083	2	0%	100%
PRG-AUH	Czech Republic-United Arab Emirates	1	14,301		-		425	125	0.05	153	4,453	5	100%	0%
PRG-KUF	Czech Republic-Russian Federation	1	14,277		-	1,302	422	80	0.08	109	2,464	5	100%	0%
TLL-LED	Estonia-Russian Federation	1	14,099		-		135	8	0.24	8	312	1	100%	0%
MLA-DME	Malta-Russian Federation	1	13,803		-	1,100	311	77	0.06	145	2,807	4	100%	0%
PRG-ZRH	Czech Republic-Switzerland	1	13,506	3	115,742	1,760	120	87	0.18	15	521	12	81%	19%
WAW-MSQ	Poland-Belarus	1	13,343	1	14,565		104	17	0.17	18	478	2	100%	0%
RIX-KGD	Latvia-Russian Federation	1	13,228		-		178	7	0.32	3	336	1	0%	100%
RIX-TRF	Latvia-Norway	1	13,204		-		136	16	0.11	53	847	2	0%	100%
BUD-GVA	Hungary-Switzerland	1	13,005	1	62,520	5,993	152	91	0.13	38	1,006	11	0%	100%
BUD-VKO	Hungary-Russian Federation	1	12,825		-		154	25	0.08	101	1,535	2	0%	100%
RIX-TBS	Latvia-Georgia	1	12,669		-	1,817	293	53	0.07	124	2,260	3	0%	100%
OSR-AYT	Czech Republic-Turkey	1	12,662		-		107	28	0.05	155	1,759	1	0%	100%
MLA-IST	Malta-Turkey	1	12,251	1	7,773		147	42	0.07	122	1,370	3	100%	0%
SZZ-SVG	Poland-Norway	1	12,089		-		134	12	0.13	34	821	2	0%	100%
SZZ-TRF	Poland-Norway	1	12,086		-		131	10	0.15	23	686	2	0%	100%
KLV-SVO	Czech Republic-Russian Federation	1	11,567	1	11,932		439	72	0.14	26	1,735	10	100%	0%
KTW-BGO	Poland-Norway	1	11,325		-		148	20	0.08	96	1,394	2	0%	100%
OTP-DXB	Romania-United Arab Emirates	1	11,109	1	24,417	4,388	362	160	0.08	100	3,389	13	100%	0%
WRO-TRF	Poland-Norway	1	11,035		-		139	16	0.10	67	991	2	0%	100%
SOF-TLV	Bulgaria-Israel	1	10,947	1	20,341	2,648	215	70	0.10	75	1,561	7	100%	0%
PRG-SVX	Czech Republic-Russian Federation	1	10,946	1	17,445	7,434	324	173	0.05	146	3,085	9	100%	0%

[26] Note: For the purpose of this analysis Turkey has been defined as Europe (Non-EU15/Non-CESE)

POZ-BGO	Poland-Norway	1	10,794		-		142	15	0.10	64	1,128	2	0%	100%
RIX-AYT	Latvia-Turkey	1	10,286		-	2,317	267	30	0.09	87	2,285	3	100%	0%
WAW-KUT	Poland-Georgia	1	9,936		-		187	24	0.08	107	1,967	2	0%	100%
OTP-GVA	Romania-Switzerland	2	9,704		-	12,260	133	20	0.06	133	1,567	1	10%	90%
KTW-KUT	Poland-Georgia	1	9,503		-		189	24	0.08	111	2,018	2	0%	100%
GDN-KRS	Poland-Norway	1	9,499		-	2,004	205	9	0.21	13	772	2	0%	100%
PRG-ODS	Czech Republic-Ukraine	1	9,324		-	1,217	249	18	0.13	32	1,259	1	100%	0%
MLA-BEN	Malta-Libya	1	9,103		-		190	10	0.18	16	663	2	100%	0%
WAW-EVN	Poland-Armenia	1	9,103		-	2,945	231	22	0.09	76	2,229	2	100%	0%
OTP-TRF	Romania-Norway	1	9,063		-		166	22	0.07	126	1,951	2	0%	100%
RIX-MSQ	Latvia-Belarus	1	8,900	1	7,896		100	11	0.16	20	409	1	39%	61%
BUD-GYD	Hungary-Azerbaijan	1	8,067		-	2,127	203	26	0.06	135	2,559	2	0%	100%
BTS-TLV	Slovakia-Israel	2	8,029		-		193	24	0.06	131	2,330	2	48%	52%
PRG-TBS	Czech Republic-Georgia	1	8,011		-	4,128	182	32	0.05	157	2,520	1	100%	0%
BEG-IST	Serbia-Turkey	1	7,984	1	68,174		91	93	0.07	114	803	7	100%	0%
PRG-MSQ	Czech Republic-Belarus	1	7,644	1	17,687		158	37	0.11	58	991	3	100%	0%
SPU-ZRH	Croatia-Switzerland	1	7,498	2	2,047	3,171	234	9	0.25	7	745	2	100%	0%
TIA-AYT	Albania-Turkey	1	7,463		-		138	10	0.10	61	1,067	1	100%	0%
LJU-IST	Slovenia-Turkey	1	7,238	1	42,133		133	106	0.06	137	1,283	6	100%	0%
PRG-ROV	Czech Republic-Russian Federation	1	7,199		-	3,084	418	45	0.07	128	1,870	2	100%	0%
TSR-CWC	Romania-Ukraine	1	6,912	1	1,414		70	5	0.13	37	452	0	100%	0%
ZAG-PRN	Croatia-Serbia	1	6,696		-		73	7	0.07	117	531	0	100%	0%
DBV-ZRH	Croatia-Switzerland	1	6,525		-	2,119	219	8	0.19	14	937	1	100%	0%
PRG-GVA	Czech Republic-Switzerland	1	6,402	2	33,134	5,611	102	47	0.09	95	750	4	75%	25%
BEG-TRF	Serbia-Norway	1	6,337		-		162	14	0.07	113	1,738	1	0%	100%
VNO-AES	Lithuania-Norway	1	6,178		-		163	11	0.09	85	1,410	1	0%	100%
PRG-TAS	Czech Republic-Uzbekistan	1	5,975		-	1,100	391	39	0.06	140	4,278	2	100%	0%
RIX-KIV	Latvia-Moldova	1	5,958		-		119	11	0.06	132	1,165	1	0%	100%
OTP-CAI	Romania-Egypt	1	5,784		-	1,974	187	22	0.05	152	1,670	1	100%	0%
OTP-BEY	Romania-Lebanon	1	5,736		-	3,701	257	16	0.09	81	1,436	1	100%	0%
OTP-AMM	Romania-Jordan	1	5,621		-	1,448	219	16	0.08	108	1,638	1	100%	0%
RIX-TAS	Latvia-Uzbekistan	1	5,495	1	13,931		287	110	0.05	149	3,640	5	71%	29%
WAW-CAI	Poland-Egypt	1	5,306		-	2,247	189	21	0.05	154	2,601	1	100%	0%
BUD-DWC	Hungary-United Arab Emirates	1	5,196		-		420	26	0.08	97	4,025	2	0%	100%
PRG-UFA	Czech Republic-Russian Federation	1	5,181		-	1,382	410	63	0.03	163	2,821	2	100%	0%
MLA-SVO	Malta-Russian Federation	1	5,170		-	1,646	299	30	0.05	148	2,826	2	100%	0%
RIX-IST	Latvia-Turkey	1	5,131	1	33,614		116	102	0.04	159	1,812	5	82%	18%
RIX-AES	Latvia-Norway	1	4,906		-		141	12	0.06	143	1,176	1	0%	100%
WMI-TRF	Poland-Norway	1	4,741		-		139	6	0.11	51	990	1	0%	100%
MLA-GVA	Malta-Switzerland	1	4,575		-	3,209	214	7	0.13	31	1,349	1	100%	0%
RIX-SIP	Latvia-Ukraine	1	4,271		-		170	12	0.06	141	1,502	1	0%	100%
PRG-DXB	Czech Republic-United Arab Emirates	1	4,139	1	103,341	1,813	650	610	0.11	48	4,450	51	96%	4%
KLV-LED	Czech Republic-Russian Federation	1	4,078	1	2,013		372	14	0.16	19	1,508	2	100%	0%
KTW-TLV	Poland-Israel	1	4,032		-		183	12	0.06	139	2,432	1	0%	100%
ZAG-IST	Croatia-Turkey	1	3,894	1	40,879		133	90	0.07	129	1,157	6	100%	0%
RIX-ODS	Latvia-Ukraine	1	3,892		-	1,142	201	6	0.12	43	1,247	1	0%	100%
VNO-TRD	Lithuania-Norway	1	3,889		-		159	6	0.10	68	1,289	1	0%	100%
WAW-BEY	Poland-Lebanon	1	3,811		-	1,399	221	13	0.06	134	2,346	1	100%	0%
OTP-DWC	Romania-United Arab Emirates	1	3,744		-		329	16	0.08	105	3,405	1	0%	100%
SOF-DWC	Bulgaria-United Arab Emirates	1	3,741		-		344	16	0.08	103	3,507	1	0%	100%
PRG-GOJ	Czech Republic-Russian Federation	1	3,650	1	6,826	2,932	289	42	0.07	119	2,071	3	100%	0%
MLA-LED	Malta-Russian Federation	1	3,642		-		259	33	0.03	165	2,895	1	100%	0%
WAW-HRK	Poland-Ukraine	1	3,599		-		140	5	0.10	63	1,093	1	0%	100%
TIA-PRN	Albania-Serbia	1	2,951	2	574		124	2	0.26	5	179	0	100%	0%
KRK-ZRH	Poland-Switzerland	1	2,852		-	6,304	126	18	0.02	167	890	0	100%	0%
TLL-TRD	Estonia-Norway	1	2,659		-	2,059	101	7	0.04	162	880	0	100%	0%
PRG-PEE	Czech Republic-Russian Federation	1	2,631	1	2,680		353	48	0.04	161	2,818	2	100%	0%
VNO-TLV	Lithuania-Israel	1	2,582		-	8,418	201	9	0.06	138	2,628	1	0%	100%
VAR-VKO	Bulgaria-Russian Federation	1	2,567		-		147	6	0.07	125	1,532	0	100%	0%
RIX-GYD	Latvia-Azerbaijan	1	2,491		-	2,931	270	10	0.07	127	2,615	1	0%	100%
LCA-LED	Cyprus-Russian Federation	1	2,483	1	57,003	5,440	296	188	0.09	78	2,783	18	100%	0%
BEG-TLV	Serbia-Israel	1	2,184		-	5,487	143	11	0.03	166	1,893	0	100%	0%
TSR-LWO	Romania-Ukraine	1	2,177		-		70	1	0.15	24	494	0	100%	0%
WAW-DOK	Poland-Ukraine	1	2,098		-	1,019	117	3	0.08	106	1,276	0	100%	0%
BEG-SAW	Serbia-Turkey	1	2,033	1	33,113		107	38	0.10	69	840	3	11%	89%
PRG-MIR	Czech Republic-Tunisia	1	1,932		-		175	4	0.09	93	1,621	0	0%	100%
PRG-DOK	Czech Republic-Ukraine	1	1,878		-	5,596	270	6	0.08	99	1,706	0	100%	0%
MLA-ALG	Malta-Algeria	1	1,646		-		132	5	0.05	158	1,030	0	100%	0%
PFO-SVO	Cyprus-Russian Federation	1	1,496	1	10,979		198	33	0.08	110	2,391	2	100%	0%
SOF-BEY	Bulgaria-Lebanon	1	1,441		-	2,024	125	3	0.05	147	1,442	0	100%	0%
CLJ-TLV	Romania-Israel	1	1,437		-	1,270	99	3	0.04	160	1,901	0	0%	100%

Appendix C. - List of CESE Countries

CESE State	Flag Carrier	Flag Carrier Status
Albania	Albanian Airlines	Ceased Operations November 2011
Bosnia & Herzegovina	B&H Airlines	Active
Bulgaria	Bulgaria Air	Active
Croatia	Croatia Airlines	Active
Cyprus	Cyprus Airways	Active
Czech Republic	Czech Airlines	Active
Estonia	Estonian Air	Active
Hungary	Malév Hungarian Airlines	Ceased Operations February 2012
Latvia	AirBaltic	Active
Lithuania	FlyLAL	Ceased Operations January 2009
Macedonia	MAT Macedonian Airlines	Ceased Operations September 2009
Malta	Air Malta	Active
Montenegro	Montenegro Airlines	Active
Poland	LOT Polish Airlines	Active
Romania	TAROM	Active
Serbia	Air Serbia	Active (Formerly Jat Airways)
Slovakia	Slovak Airlines	Ceased Operations February 2007
Slovenia	Adria Airways	Active

Appendix D. - Connectivity indicators

Connectivity indicators

Connectivity can be measured in a variety of ways at various levels of granularity. We are considering connectivity for city-level catchments, Member States and the whole region and will compare measures of connectivity with Non-CESE/Non-EU countries and the EU15 region. The following table provides a summary of measures of connectivity. The indicators are segmented based on the following:

- Origin (CESE): by airport, city (catchment), country, region
- Destination: Total, CESE, CESE to EU15, Non-CESE/Non-EU
- Airline: CESE flag carrier, other network carrier, LCC
- Yearly: 2002-2013

Measure	Description	Data source
Passenger numbers	Total number of passengers per year	Sabre ADI/ Milanamos (PlanetOptim) segment report
Direct seat capacity	Annual direct scheduled available seats	Sabre ADI/ Milanamos (PlanetOptim) capacity report
Direct flights	Annual direct scheduled flights	Sabre ADI/ Milanamos (PlanetOptim)capacity report
Average seats per movement	Average aircraft size	Sabre ADI/ Milanamos (PlanetOptim)capacity report
Direct destinations	Annual direct scheduled destinations	Sabre ADI/ Milanamos (PlanetOptim)capacity report
Indirect one-stop destinations	One-stop destinations with reasonable connections	Sabre ADI/ Milanamos (PlanetOptim)O&D report
Average daily frequency per route	Average number of daily flights (one way) per route	Sabre ADI/ Milanamos (PlanetOptim)capacity report
Country GDP and GDP per capita	Historical and forecast GDP and GDP per capita (PPP)	IMF
Average fare	Weighted average fare adjusted for PPP.	Sabre ADI/ Milanamos (PlanetOptim) segment report, IMF
Route network concentration	Similar to HHI	Sabre ADI/ Milanamos (PlanetOptim) capacity report
Airline concentration	Dominant airline /alliance share of capacity	Sabre ADI/ Milanamos (PlanetOptim) capacity report
Convenience of schedule	Number of destinations that can be reached in a feasible day trip (primarily for business purposes) for summer and winter schedules	Sabre ADI/ Milanamos (PlanetOptim) schedule report
Access to flexible fares	Number of fares sold in discount economy vs flexible fare classes	Sabre ADI/ Milanamos (PlanetOptim) segment report

Other considerations that are not measured explicitly across the entire region:

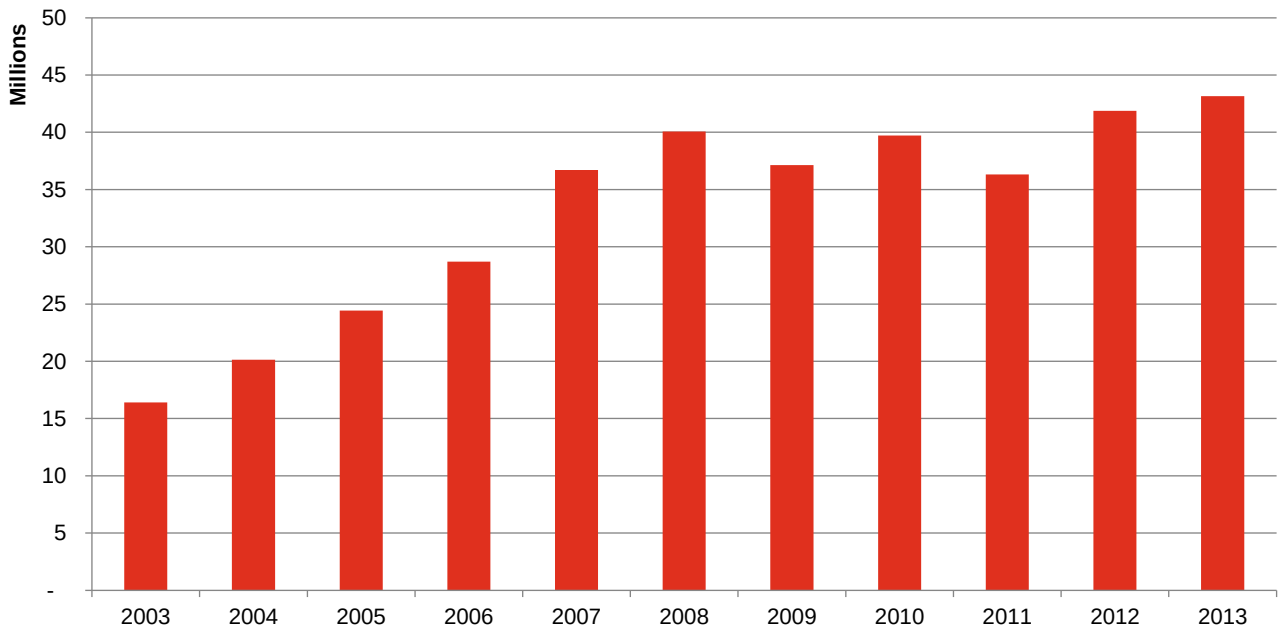
Measure	Description	Data source
Distance to city centre	Capture variation between	Various

	primary and secondary airports	
Access to sales channels	Discussion of trends in sales channels for airline tickets for different service types	Various
Route Stability	How consistent is the route network for the airports in the region and the airlines operating in the region year on year and throughout the year	Sabre ADI/ Milanamos (PlanetOptim) capacity report

Number of passengers

The number of passengers travelling by air from CESE airports is a key indicator of connectivity and connectivity growth. As shown in section 2.2, total segment passenger travelling from CESE airports grew rapidly between 2003 and 2008 at a CAGR of 19.5%. Traffic then stagnated during the economic downturn with some recovery observed over the last 2 years.

Annual segment passengers from airports in CESE (one-way)

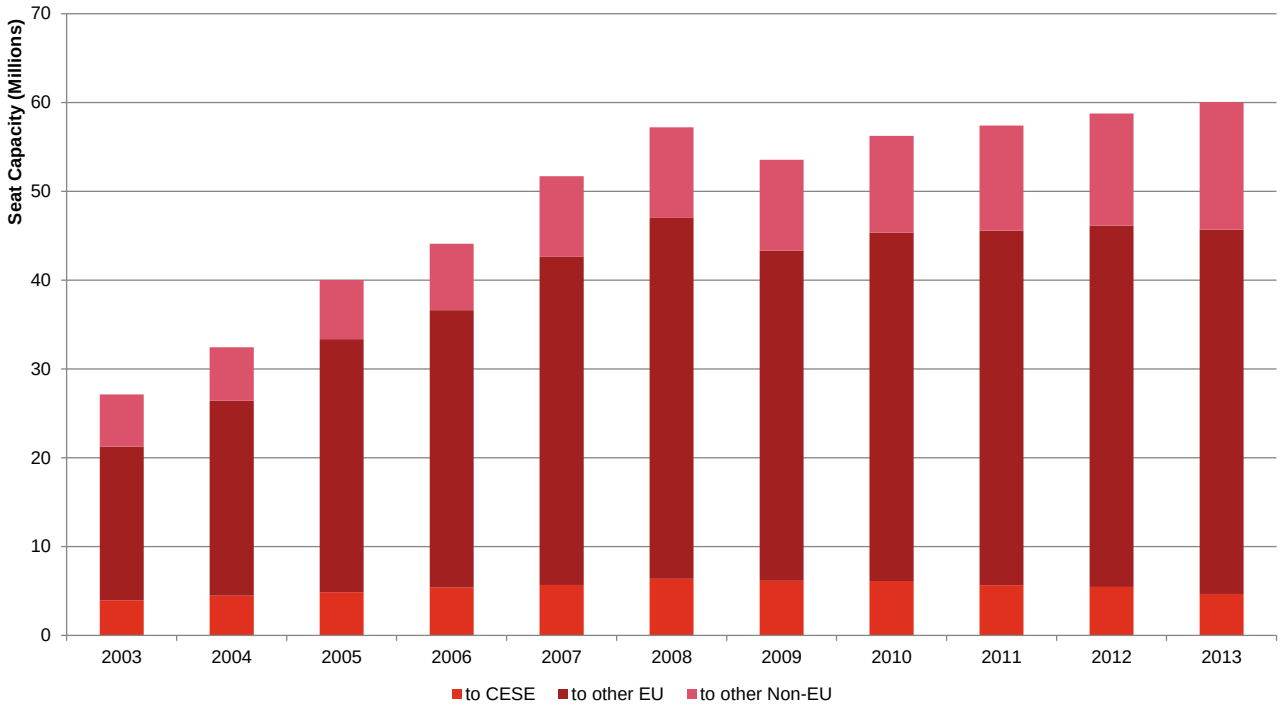


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Number of seats

Similarly to segment passengers, the supply of services is a key indicator of connectivity, however, it is also one-dimensional and doesn't capture the value of the destinations passengers are able to connect to. The observed trend is in line with that observed in the number of segment passengers described above. The vast majority (and one of the strongest growth) of seat capacity from CESE airports is to Non-CESE EU airports. There is very limited direct seat capacity to long haul destinations, with the majority of other non-EU traffic being to European destinations such as Russia and Ukraine. Intra-CESE seat capacity has not seen significant growth and has declined over the last 3 years.

Annual available seat capacity from airports in CESE

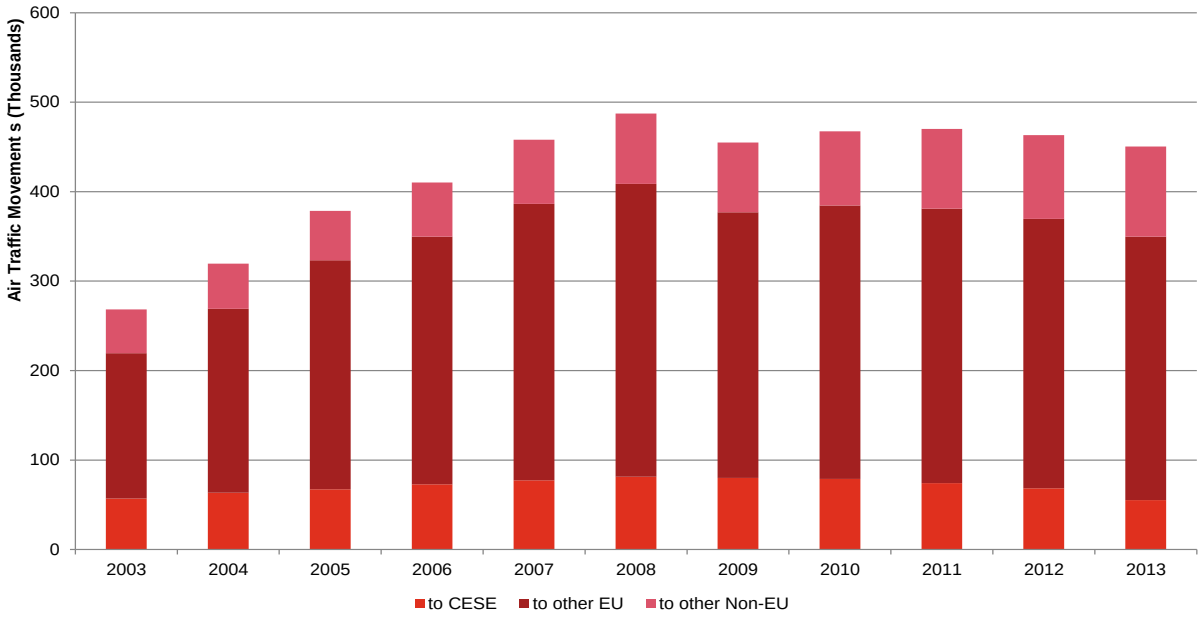


Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Number of flights

The number of flights available is highly correlated with available seats and passengers. The number of flights is an important factor in measuring the convenience of connections by the frequency offered.

Annual flights from airports in CESE

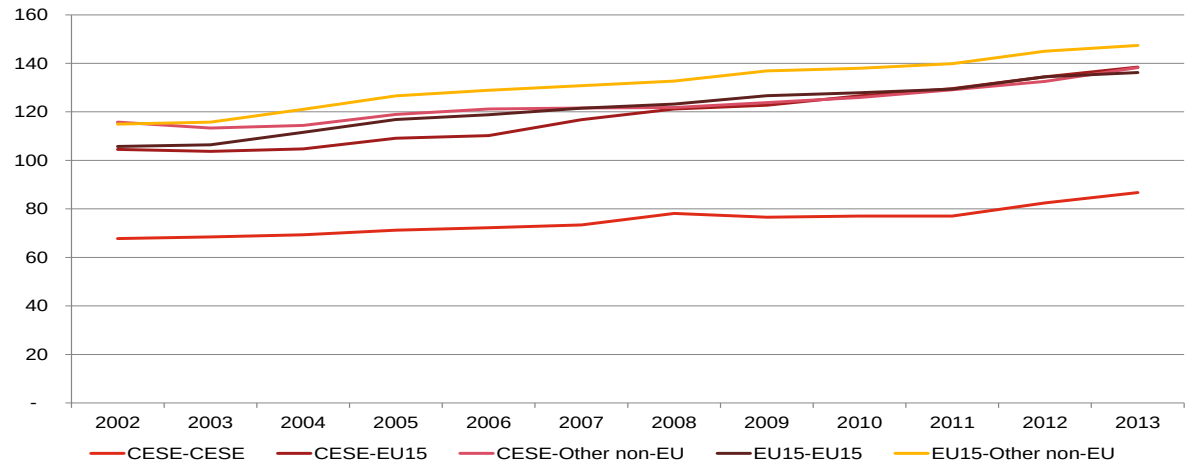


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Average seats per movement

Average seat capacity per aircraft movement has been increasing across all markets as a result of airlines up-gauging and the increased penetration of LCCs on short haul routes with high capacity aircraft pushing out regional carriers with smaller aircraft. The average seat capacity per movement for intra-CESE traffic is significantly lower than other routes as a result of lower population and demand between cities and therefore limited viability of operating larger aircraft while maintaining a certain level of frequency.

Average seat capacity per aircraft movement

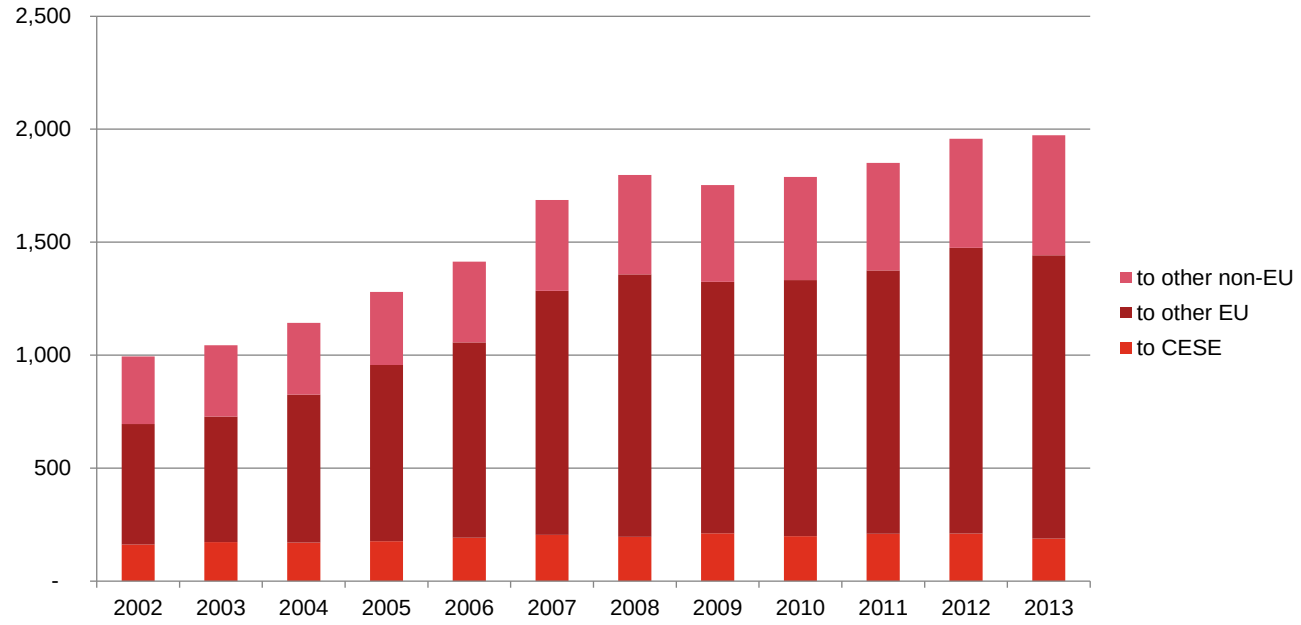


Source: SABRE ADI/ Milanamos (PlanetOptim) capacity report, PwC analysis

Number of direct destinations

The chart below shows the number of scheduled destinations routes offered from airports in the CESE region. There has been significant growth in the number of routes to Non-CESE EU airports, however, the number of routes served within the CESE region has stagnated and even declined in 2013. Some of the increase in the number of routes can be attributed to the lack of charter airline data. Many charter routes were replaced with scheduled LCC routes with charter shifting focus to medium-haul destinations. LCCs have been a key driver of the number of routes offered, particularly to Non-CESE EU destinations.

Number of routes offered from airports in the CESE region



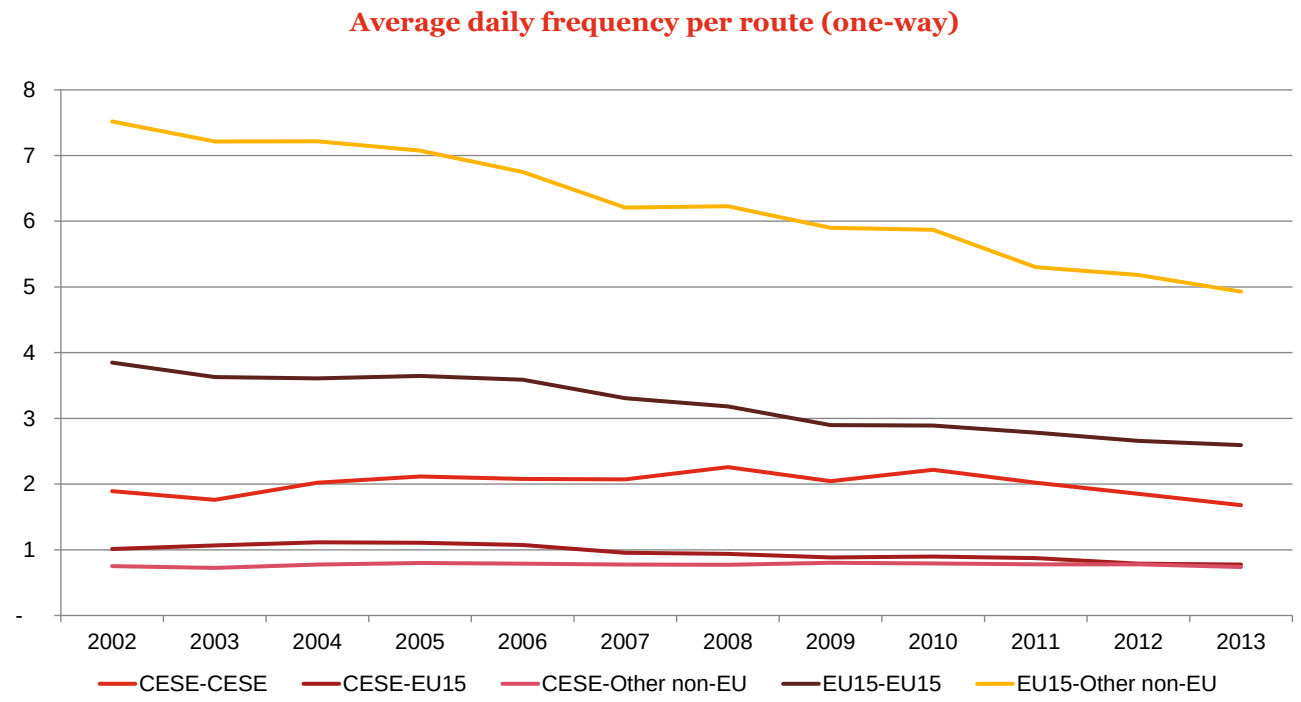
Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Indirect one-stop destinations

Indirect one-stop destinations have been calculated based on a threshold level of passengers reaching the ultimate destination via other airports. The threshold applied to calculate the number of destinations that can be reached indirectly was 3000 one-way. This is assumed to be a proxy for how reasonable the connections are to the final destination. The output of this analysis is shown in the country and city level charts at the end of this appendix.

Average daily frequency

With the rise of low cost carriers, there has been an increase in the breadth of destinations and routes. However, LCCs typically serve a wide range of routes at lower weekly frequency compared with legacy or network carriers. This effect is particularly visible in flows to/from EU15 countries where the market share of LCCs is considerable. One must bear in mind the chart below shows only scheduled services, therefore the decline of charter services and the replacement of many charter routes may mean that this decline is not as pronounced as it appears. However, given limitations on data for the charter market, we have only been able to conduct this analysis on scheduled services. The chart below shows the average daily one-way frequency per route. Intra-CESE and CESE-non-EU routes have been less impacted by the rise of LCCs and therefore average frequency per destination has remained relatively constant.



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

GDP

GDP is a key driver of traffic and an indicator of the strength of an economy. GDP was considered as a potential weighting for connectivity, however, detailed catchment area income was not available and applying GDP weightings at a national level does not capture some of the key factors in terms of connectivity such as the attractiveness of the city or catchment for business or leisure and the availability of onward connectivity.

Average Fares

Analysis has been conducted on fares for each market for 2002 to 2014. We have included local segment fares only to avoid dilution due to transferring passengers. The fares are split into two categories: premium (First, Business, Premium Economy and Full Economy) and discount economy. The fare data was obtained from Sabre ADI/ Milanamos (PlanetOptim), with fares being converted from local currency to USD at the time of booking. We have made adjustments based on the Purchase Power Parity (PPP) and converted all fares to the international dollar for each year to ensure comparability.

Route Network Concentration[27]

The route network concentration can be quantified through an index similar to an HHI (Herfindahl-Hirschman Index). This index is calculated based on the share of seat capacity from CESE airports by destination (at various levels such as destination, country or region) to form a measure of geographic spread.

At a country level, we have calculated the route network concentration for each CESE country and for the CESE region. The analysis shows varied results for different CESE countries, with the overall network concentration

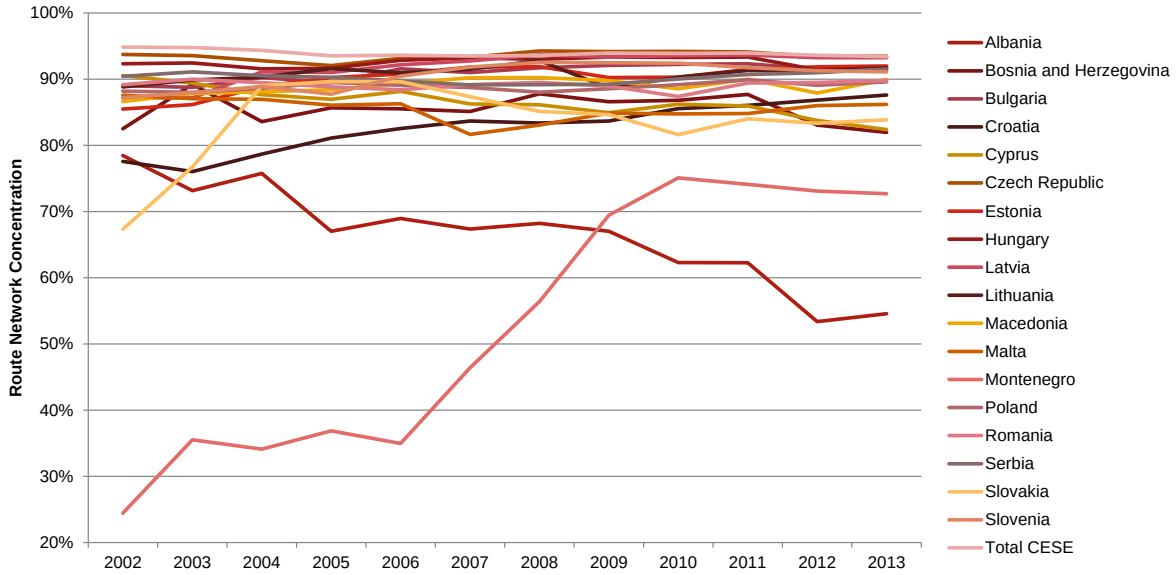
[27] This is calculated as the sum of the squares of the share of seat capacity to each destination country, e.g.

$$1-\sum_{i=1}^{N} s_i^2$$

Where si is the share of seat capacity to destination country i for the origin region, and N is the number of destination countries. For instance, an origin with all its capacity to a single destination will have an index of 0, whereas an airport with a wide range of destinations will have an index of closer to 1. Route network concentration is shown by country and catchment in appendix D.

fluctuating between 93-95% showing a slight decline in recent years indicating a small decrease in geographic spread of destinations. The index is close to 1 overall, primarily due to the large number of different European countries served from CESE airports.

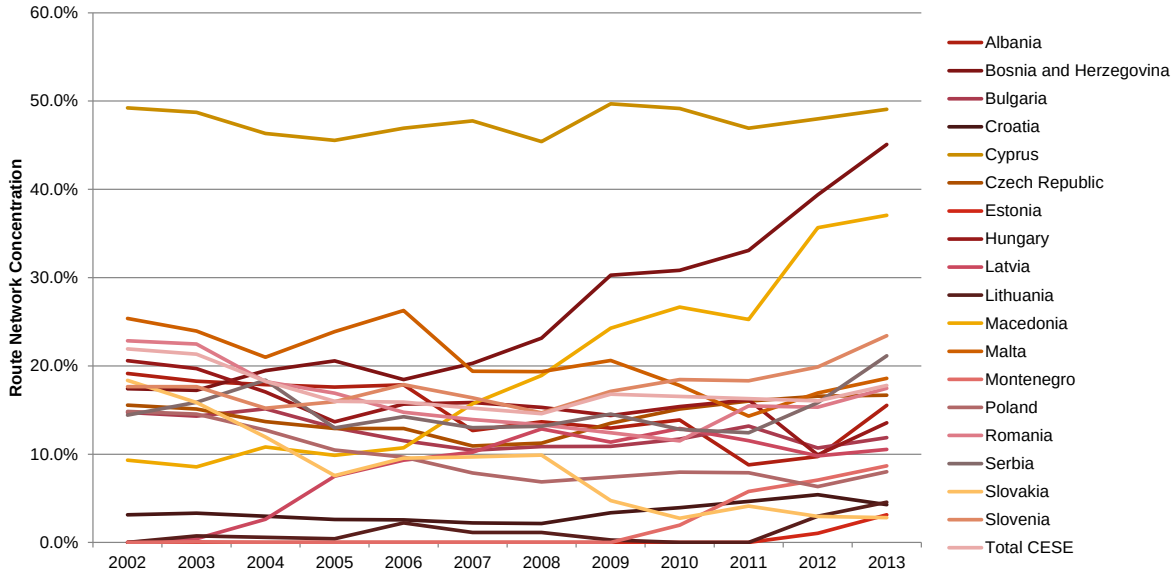
Route network concentration (country level)



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Similar analysis was conducted at the region level, where we consider the share of destinations from CESE airports by continent (e.g. Europe, Middle East, Asia, Central America, North America, Africa). Given the vast majority of CESE traffic is within Europe, most CESE countries have a low geographic spread based on this measure with the only exception being Cyprus given its position between Europe and the Middle East. The countries seeing the largest declines in network concentration are Slovakia, Hungary, Malta and Poland; with Bosnia and Herzegovina, Macedonia, Latvia, Montenegro, Serbia and Slovenia seeing the largest increase since 2002.

Route network concentration (region level)

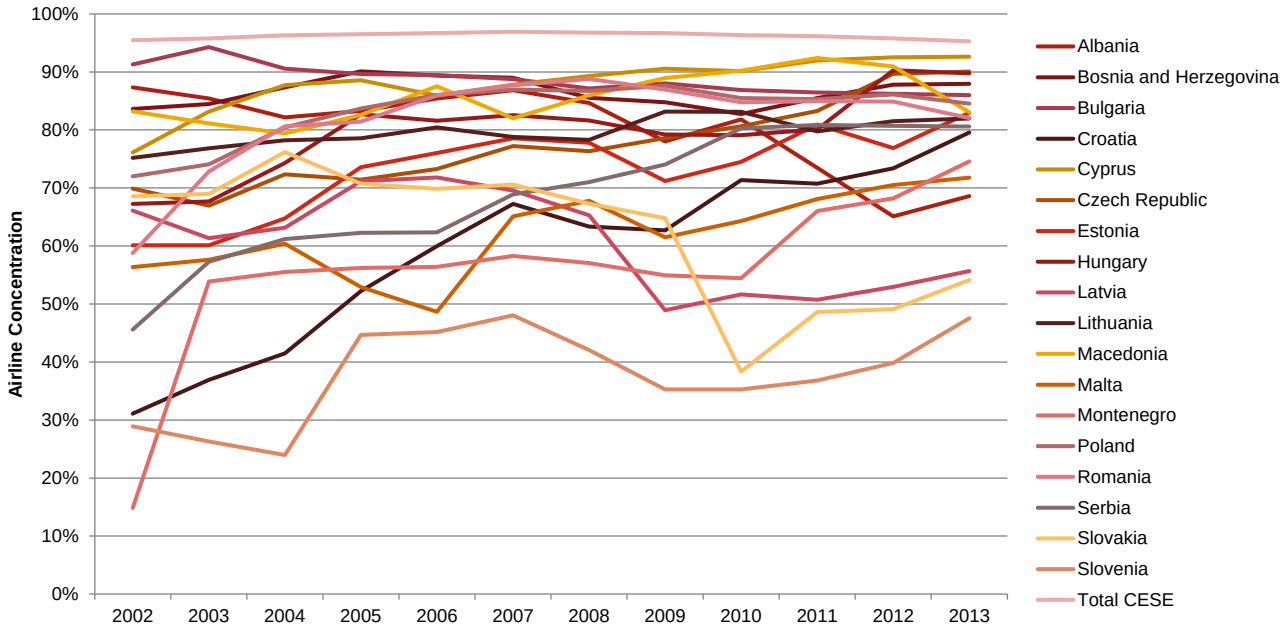


Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

Airline concentration

Airline concentration is an indicator of the level of competitive intensity in the market[28]. Typically, the dominant airline has been the flag carrier for each country, however, with the demise or downscaling of some of these carriers, LCCs such as Wizz Air, EasyJet and Ryanair are becoming more dominant in the CESE markets. Across most of the CESE countries, there has been an increase in airline concentration as a result of increased competition and new entrants in the market.

Airline concentration



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

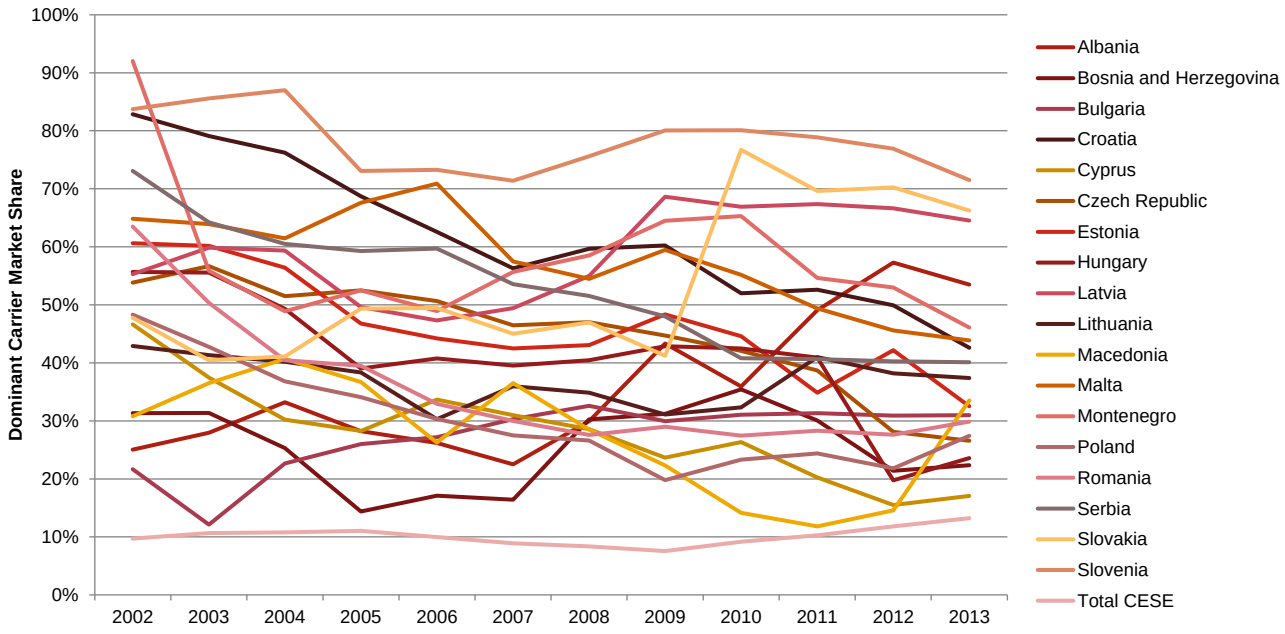
[28] For consistency purposes, we have assumed that the airline concentration measure is estimated similarly to the route network concentration measure – i.e. this is calculated as the sum of the squares of the share of airline seat capacity from each origin country, i.e.:

$$1-\sum_{i=1}^{N} s_i^2$$

Where s is the share of airline seat capacity for airline i from the origin country, and N is the number of airlines. For the purpose of this analysis, a higher index indicates a market with more competition than a market with a lower index.

We have also considered the dominant carrier's share of each market. This has been declining across most markets with the collapse of a number of flag carriers in the region and downsizing of others, along with the increased competition from LCCs and non-CESE network carriers.

Dominant Carrier Market Share



Source: SABRE ADI/ Milanamos (PlanetOptim), PwC analysis

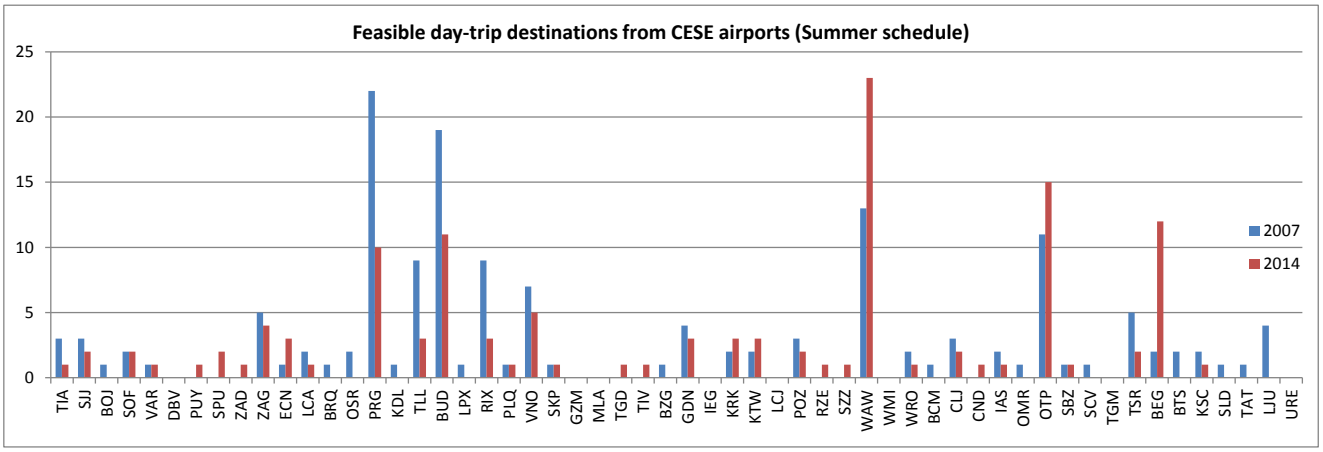
Convenience of schedule

The convenience of the airline schedule is of key importance for passengers travelling for business purposes in particular. Analysis was conducted to assess the number of destinations that can feasibly be reached in a day trip to and from CESE cities. The analysis was conducted based on a week during the summer schedule for 2007 and 2014 with the following criteria:

- There are available flights departing from the origin and returning the same day;
- Flights are available from Monday to Friday; and
- Schedule allows passenger at least 4 hours at the destination during business hours (9am-5pm local time).

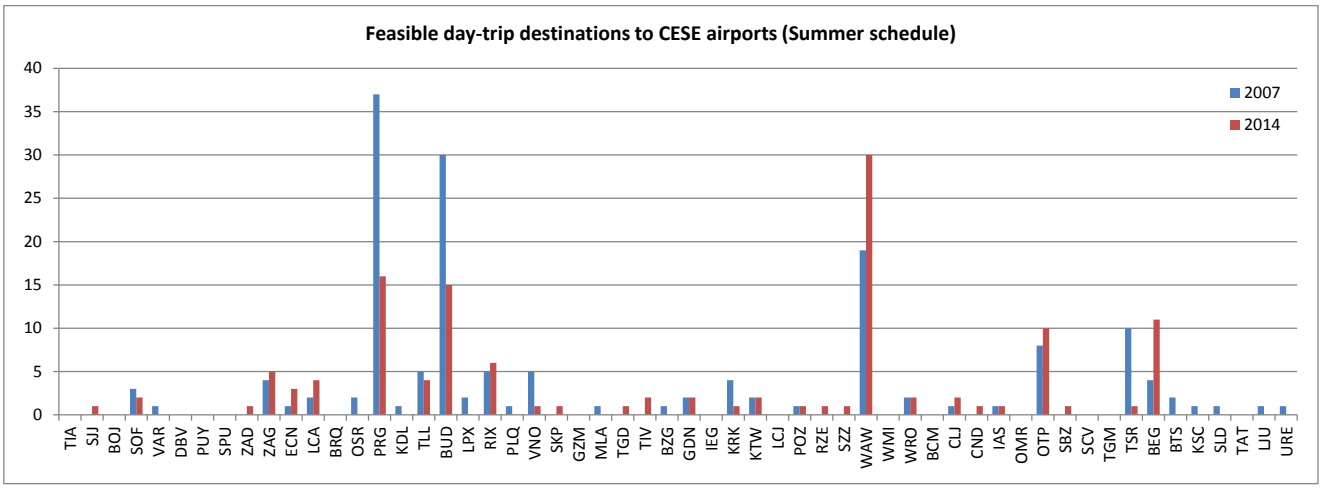
Note that some trips might be feasible in one direction only. The outputs of the analysis are presented below.

Number of feasible day-trip destinations from CESE airports (Summer Schedule)



Note: Based on schedules for the first full week in August for 2007 and 2014
Source: PwC analysis of scheduled data from Sabre ADI/Milanamos (PlanetOptim)

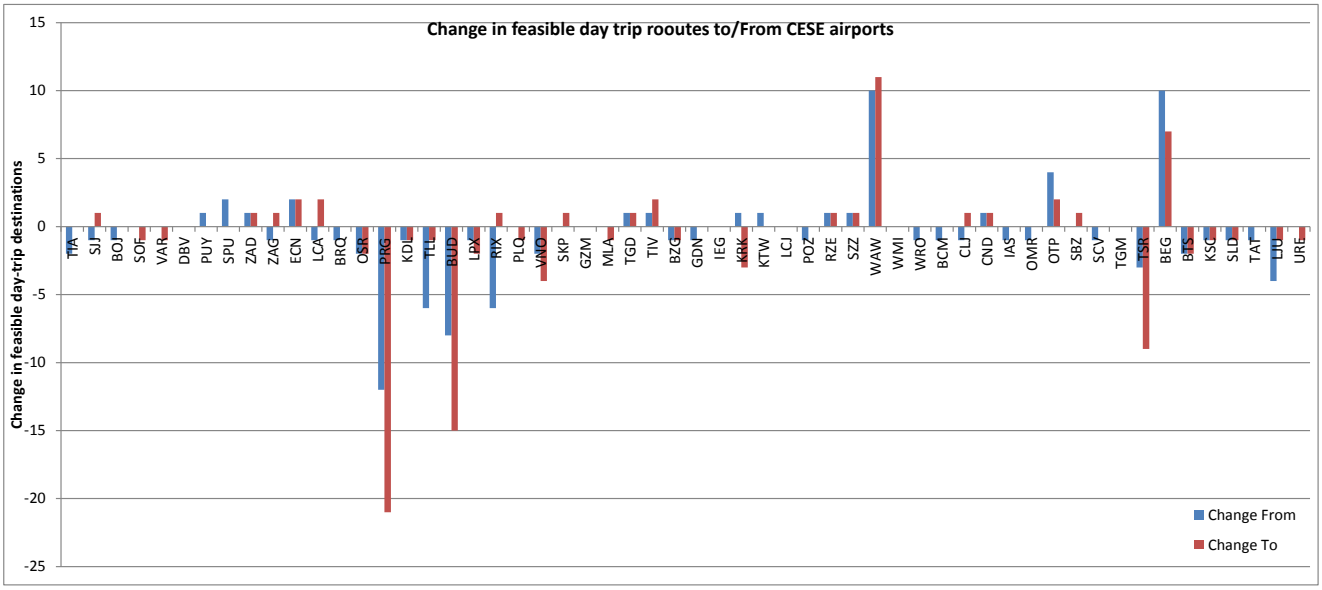
Number of feasible day-trip destinations to CESE airports (Summer Schedule)



Note: Based on schedules for the first full week in August for 2007 and 2014
Source: PwC analysis of scheduled data from Sabre ADI/Milanamos (PlanetOptim)

There are few airports in CESE that offer a wide range of destinations that could be reached in a day. The airports with more than 5 possible day trip destinations in 2014 are Prague, Budapest, Riga, Warsaw, Bucharest, Vilnius and Belgrade. Looking at possible day trips from CESE airports, Vilnius also has more than 5 possible origins. Both Prague and Budapest have seen a significant decline in the number of feasible day trip destinations between 2007 and 2014 driven by the collapse of Malév and the downscaling of CSA's operations respectively. The number of feasible day trips to/from Prague fell by 21 and 12 destinations respectively between 2007 and 2014, similarly trips to/from Budapest airport dropped by 15 and 8 destinations. Also Timişoara airport in Romania experienced a decrease of about 9 (to) and 3 (from) destinations in the number of destinations which allow day trips. Belgrade has seen a significant increase of 7 (to) and 10 (from) destinations as driven by Air Serbia. Warsaw has also seen a significant increase in the number of possible destinations, which have increased by 11 (to) and 10 (from). Warsaw is the airport with the greatest number of destinations which allow day trips. Poland can in fact rely on connections offered by the countries' flag carriers (LOT).

Change in number of feasible day trip routes to and from CESE airports, 2007 and 2014 (Summer Schedule)



Note: Based on schedules for the first full week in August for 2007 and 2014
Source: PwC analysis of scheduled data from Sabre ADI/Milanamos (PlanetOptim)

As mentioned earlier, whilst LCCs have increased the number of destinations which can be reached from the CESE region, frequencies have instead dropped. The convenience of schedule analysis shows how flag carriers are important to ensure that a certain level of service is granted to passengers, especially business travelers who often necessitate taking day trips.

Access to flexible fares

The availability of flexible fare classes has reduced with the increased penetration of LCCs as LCCs offer discount economy fares only (even though for late bookings these fares can rise as high as those on legacy carriers). Although discount economy has historically made up the vast majority of fare classes, the reduction in network carrier services and therefore in more flexible fare classes has decreased (if not eliminated) business travelers' ability to flexibly change flights to meet their changing schedule.

The ticketing data from Sabre ADI/ Milanamos (PlanetOptim) allows some level of analysis of this trend; however, it is difficult to determine the level of flexibility within each of the cabin classes as the more detailed booking class information is not always consistent across airlines. Local segment passengers have been analysed by discount economy and premium (full economy, business, first) classes for each catchment and country and the analysis is contained in appendix D.

Secondary airports

There are a limited number of catchments in the CESE region with multiple airports serving. Secondary airports are typically further from the city centre and focus on point-to-point, low cost traffic. One example is Warsaw (Poland), where both Warsaw Chopin and Warsaw Modlin serve the Warsaw catchment area. Chopin Airport is located 9km from the city centre and is the base for LOT Polish airlines, while Modlin airport is located 40km from the city centre and primarily serves Ryanair and point-to-point leisure passengers.

The adopted connectivity measures, to some extent, capture the value of secondary airports through the overall contribution to the indices through both the capacity offered and the strength of the destinations served (e.g. size of the airport and business importance of the destination).

This can be seen in the example below where we are comparing connectivity from Warsaw to London from the main hub of Warsaw to London Heathrow and from the secondary airport of Modlin Mazovia to London Stansted, highlighting the difference in connectivity between the two routes. Connectivity is higher on the route between the two main hubs (i.e. an index of 1,637 for business connectivity and 265,893 for leisure connectivity) and much lower for the secondary airports despite connecting the same two cities (i.e. an index of 20 for business connectivity and 4,188 for leisure connectivity).

Table 6-1: Measures of connectivity Warsaw airports and the Warsaw– London routes for 2013 (one-way)

Airport/Route	Seat Capacity	Business Measure	Leisure Measure
WAW	6,228,872	15,453	1,650,884
WMI	481,086	225	26,702
WAW-LHR	270,587	1,637	265,893
WMI - STN	82,404	20	4,188

Source: PwC analysis

Access to sales channels

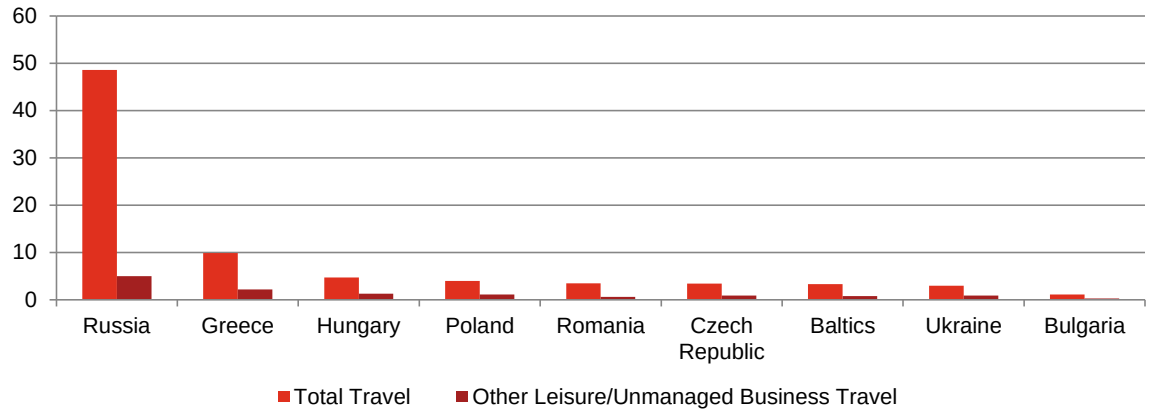
Over the past decade the distribution world has changed significantly. Up until the late 1990s, tickets were mostly sold by travel agents using global distribution systems (GDS) to make and manage the bookings. To reduce costs, airlines have since moved away from the traditional booking system to online bookings. The main difference in sales strategy between LCCs and network carriers used to be the high dependency on travel agents for the latter versus a dependency by LCCs on direct bookings. LCCs today are still heavily reliant on direct bookings, even though some carriers have started considering the possibility of using the GDS system to try and capture some of the business traffic. On the other hand, network carriers are still heavily dependent on the GDS system.

According to a study by Atmosphere for IATA (2012)[29], travel is today the largest e-commerce category, led by airline ticket sales with airline websites producing booking volumes of 35% in 2012. By 2017, Atmosphere expects 50% of online direct bookings will be made on mobile devices - with even more ancillary purchases made through mobile, given the devices' portability and ease of use.

As shown below, despite the penetration of online bookings is still below the world average of 35% in a number of CESE countries, a shift in the reliance on travel agencies, also driven by the increased activity by LCCs, is becoming apparent in this market. As access and use of online tools spread, travellers will gain additional flexibility to book and manage their trips.

[29] Atmosphere Research Group for IATA (2012), The Future Of Airline Distribution- A Look Ahead to 2017

Online Market Penetration in Airline Distribution



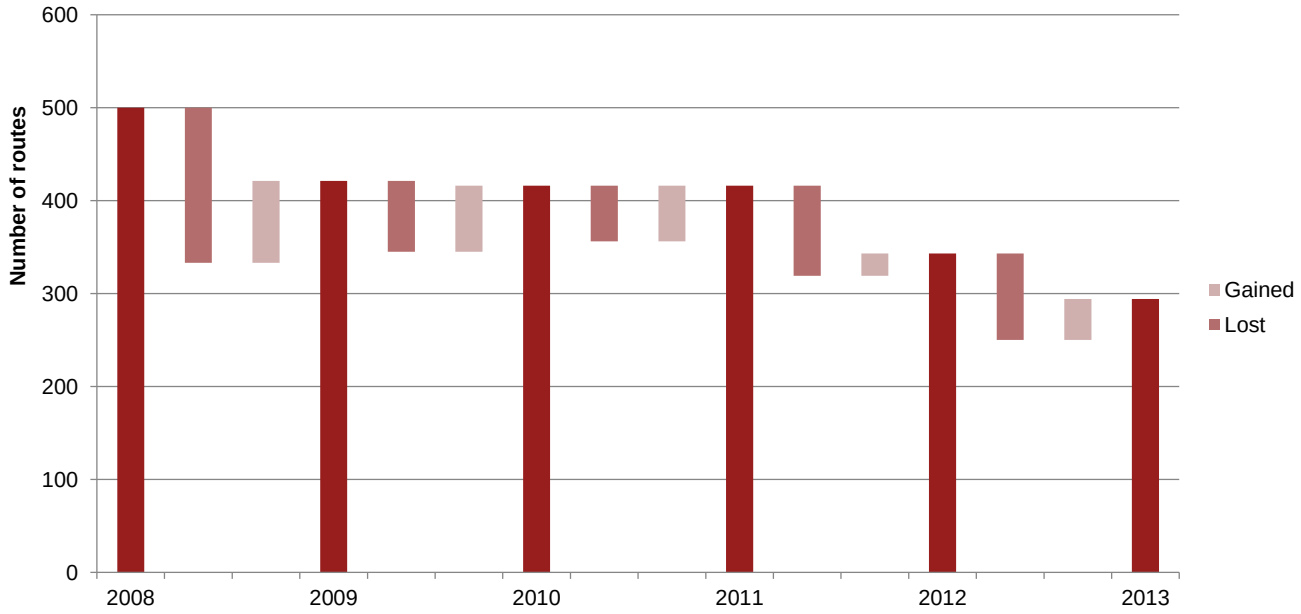
Online Market	5.0	2.2	1.3	1.1	0.6	0.9	0.8	0.9	0.3
Online Penetration	10%	22%	28%	29%	17%	28%	24%	29%	28%

Source: recreated from phocuswrighteurope (2012)

Route stability

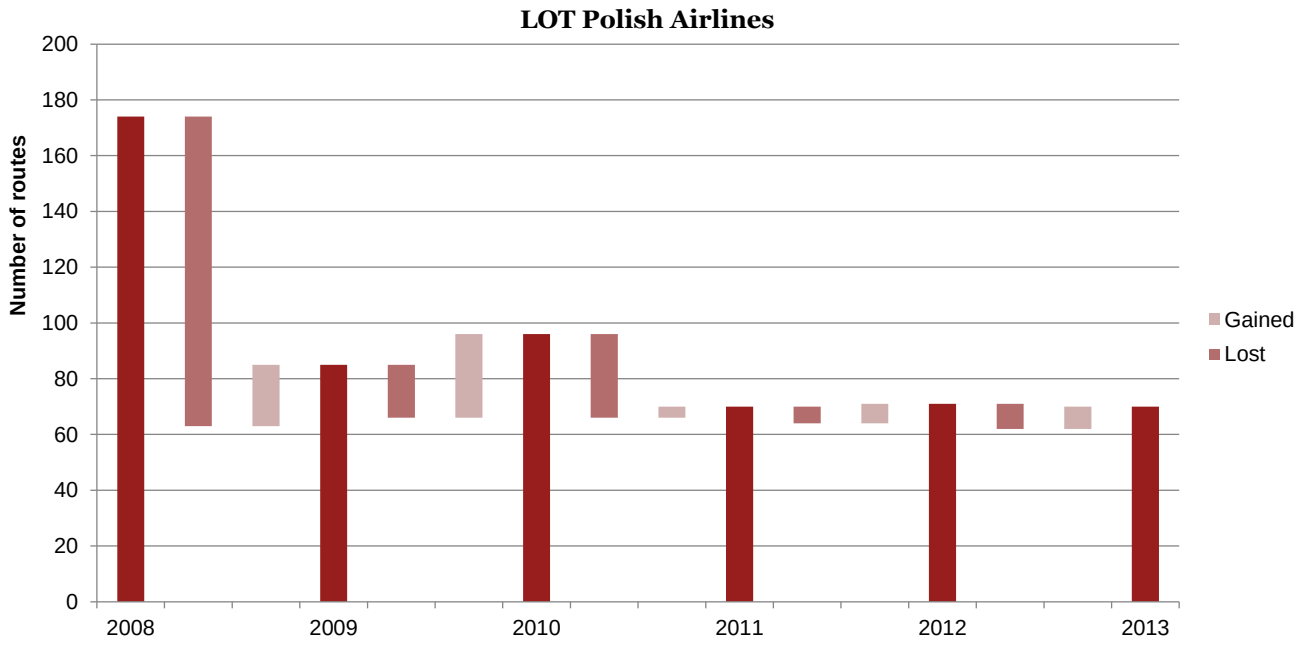
Reliability and stability of route networks is an important factor in assessing connectivity. The number of scheduled routes offered and number of routes gained and lost across the whole network of the top 10 airlines operating in the CESE has been analysed to indicate the level of route stability. The analysis shows that CESE flag carriers have been struggling to maintain and grow their route networks, especially compared to the rapidly expanding low cost carriers in particular Ryanair, easyJet and Wizz Air. The key non-CESE network carrier operating to/from the region is Lufthansa with its vast network and increased presence with the acquisition of other Star Alliance carriers (such as Swiss and Austrian airlines).

Route Stability of Main CESE Flag Carriers

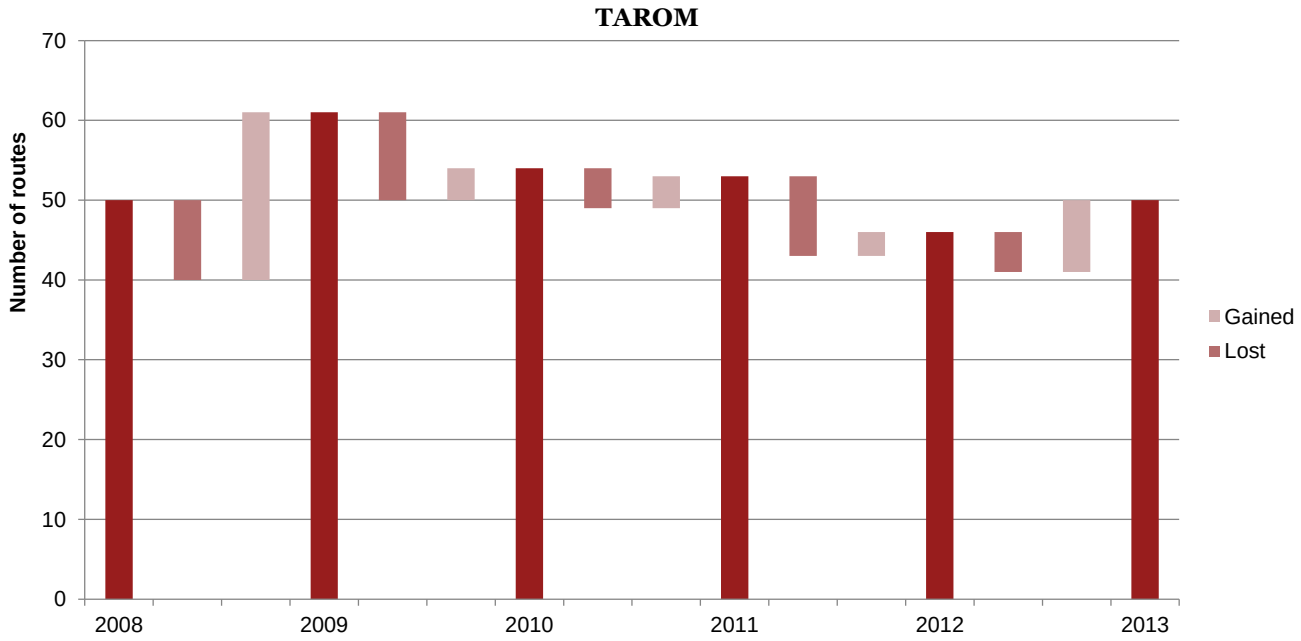


Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

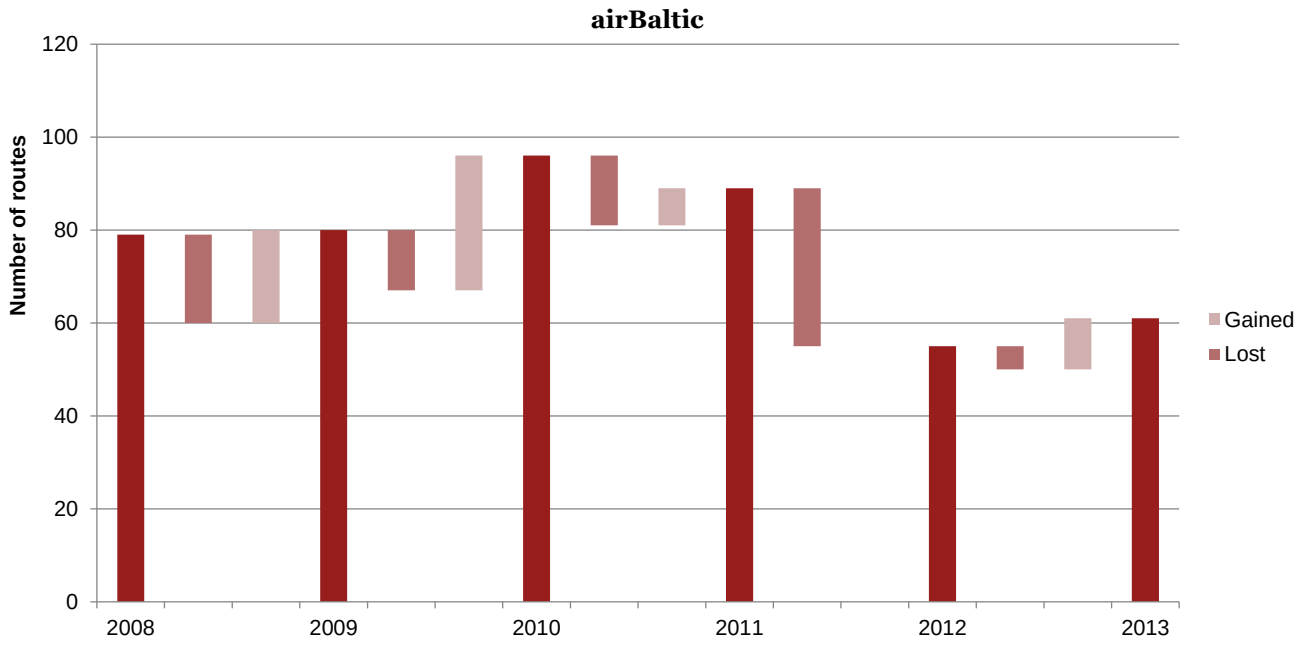
Route Stability of LOT Polish Airlines



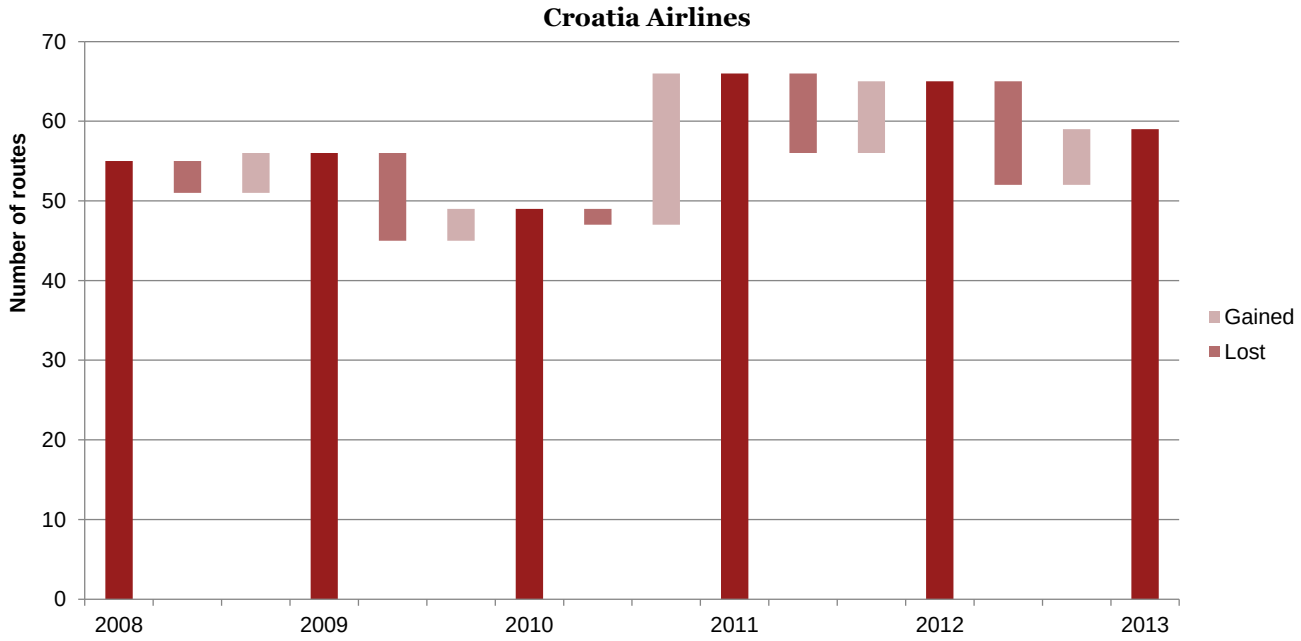
Route Stability of TAROM



Route Stability of airBaltic

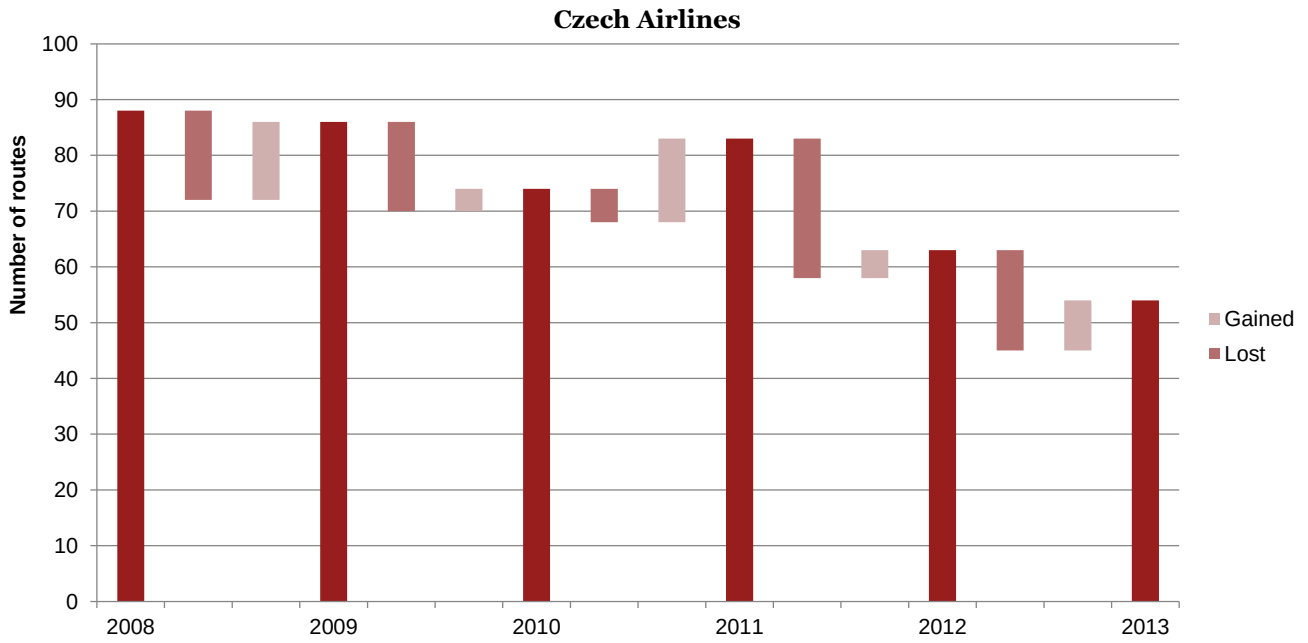


Route Stability of Croatian Airlines

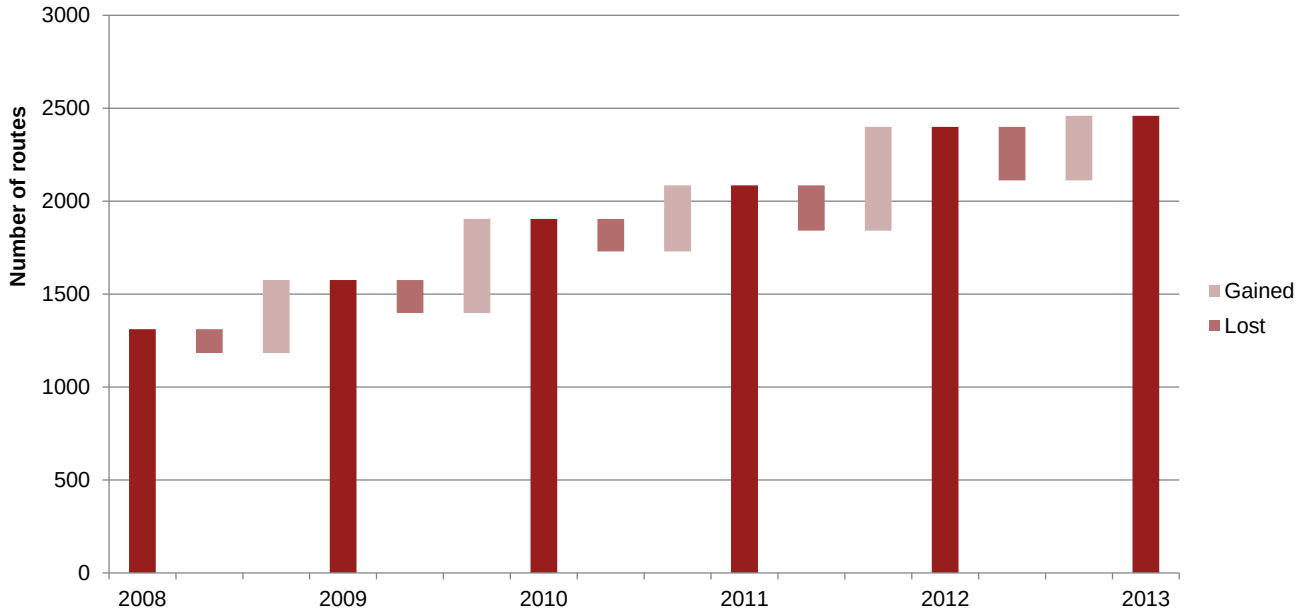


Route Stability of Malév

Route Stability of Czech Airlines

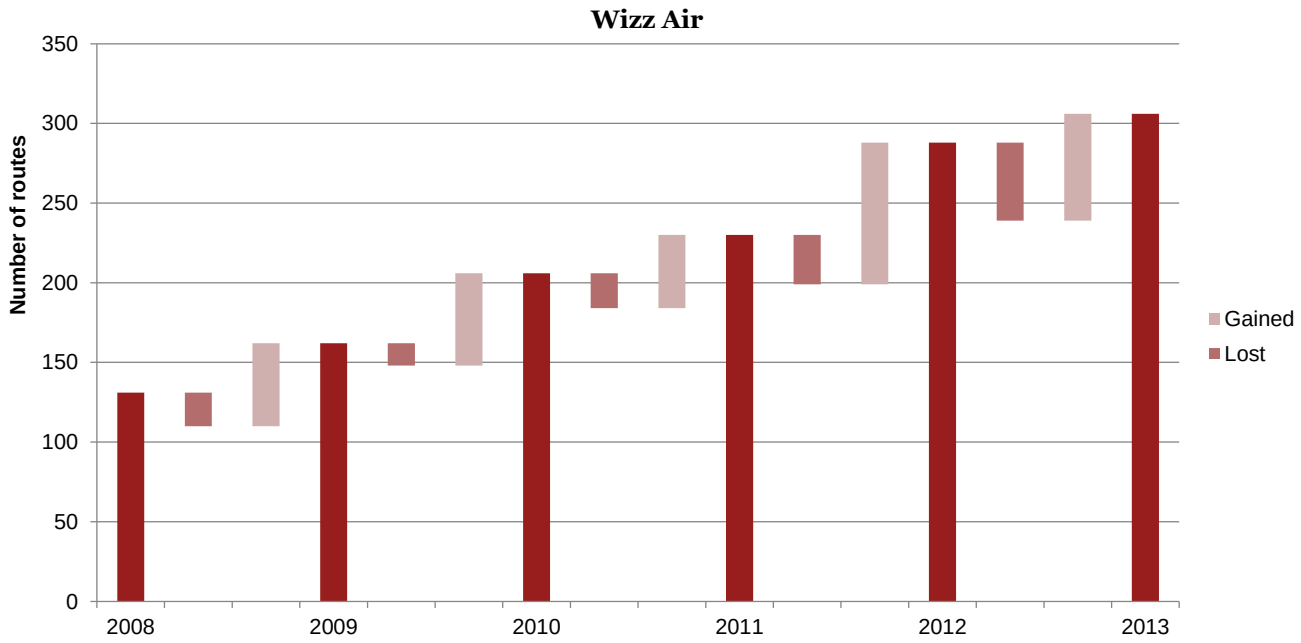


Route Stability of Main LCC Carriers in the Region

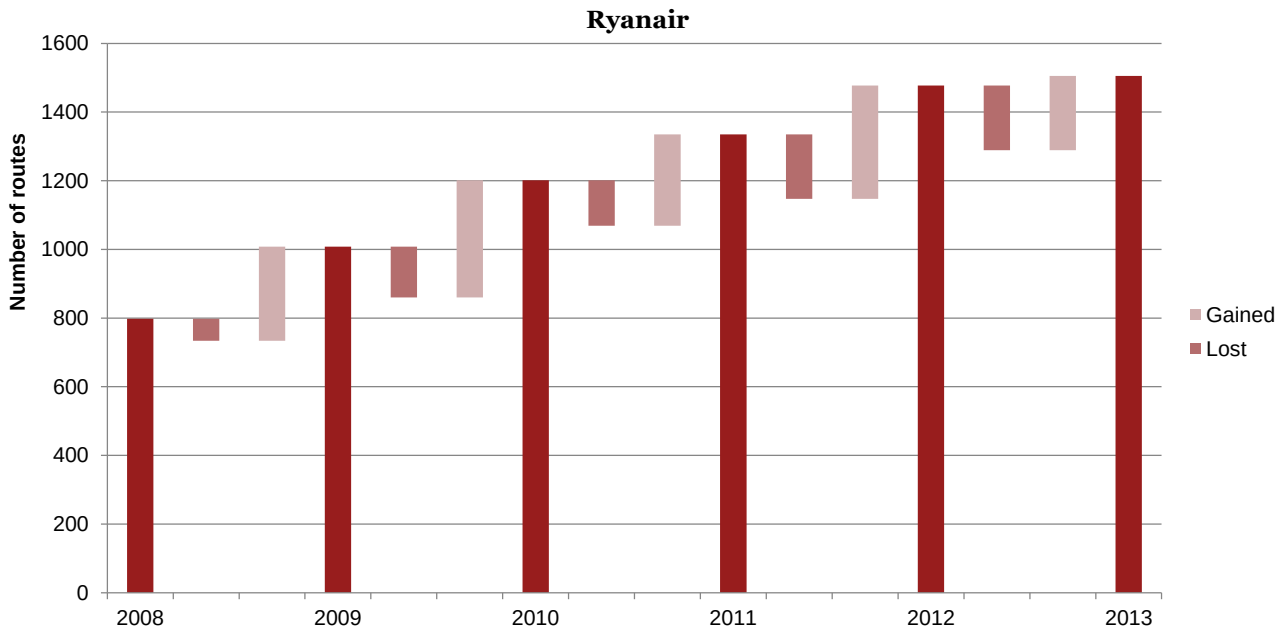


Note: the charts are showing the number of routes in aggregate for the top carriers in each category. Route stability analysis by airline can be found in appendix D.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

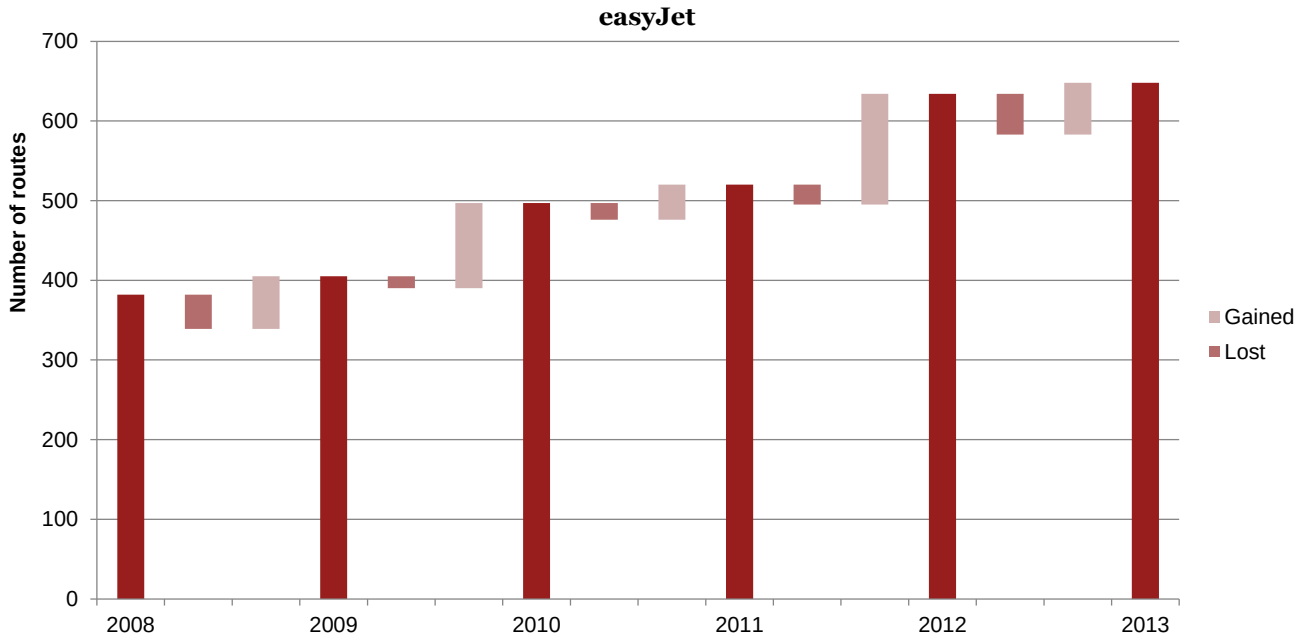
Route Stability of Wizz Air



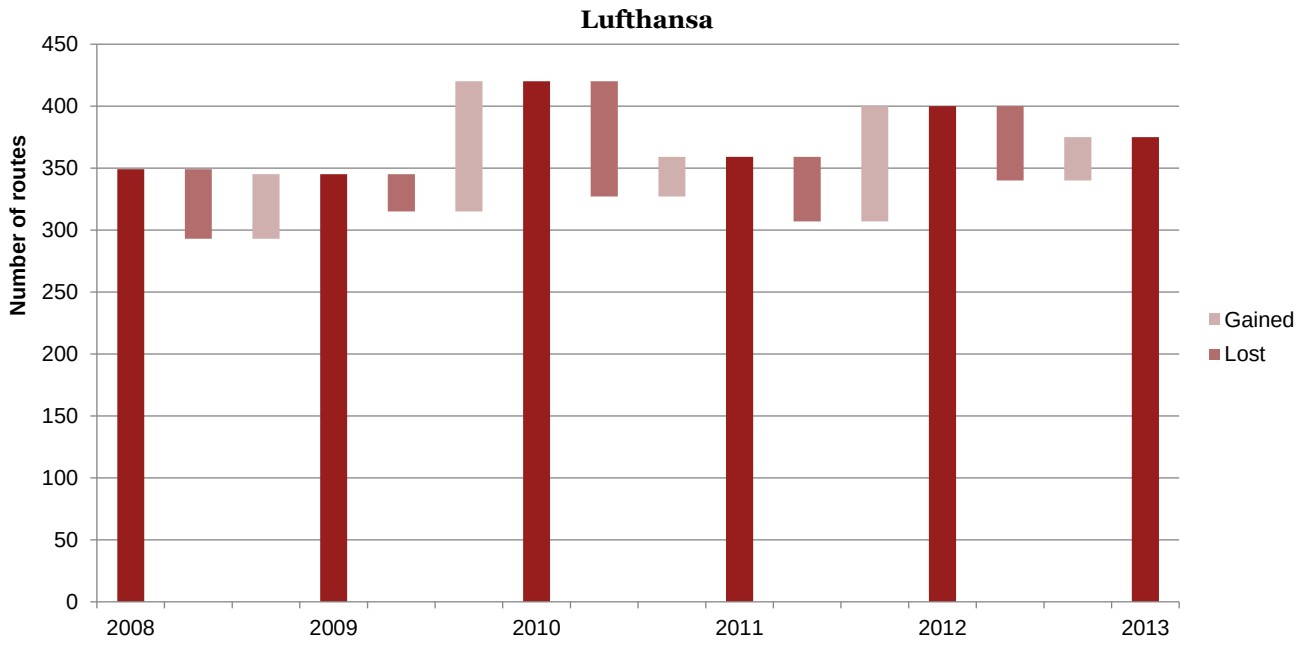
Route Stability of Ryanair



Route Stability of easyJet



Route Stability of Lufthansa



Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Connectivity measures in academic literature

A number of air connectivity indicators are available in aviation economics literature; these aim to capture a range of factors which influence connectivity.

Measure	Description	Limitations
York Aviation Business Connectivity Index	Captures economic importance of destinations, measures value of connectivity to businesses	Not directly reflective of aviation services; data for destination weighting is not available for all years
Netscan Connectivity Index	Captures seat capacity, accounts for both direct and indirect connections and for transfer time as well as potential delay time when connecting	Limited available data; it is not transparent how it is calculated
IATA Connectivity Index	Captures the importance of destinations based on the size of the final destination airport	There is the question of whether the size of the destination airport truly indicates the level of connectivity
World Bank Air Connectivity Index	Weights value of a route based on the number of onward connections available reflecting benefits of hubs	The declining value of routes as the distance to destination increases makes it difficult to interpret; it is also complex and data-intensive to calculate
World Economic Forum Connectivity Index	Presents data on scheduled available seat kilometres per week in 2012 for a sample of 144 countries	Does not weight routes on the basis of frequency, or economic importance of destinations

The World Bank, IATA connectivity and York Aviation indices are discussed further below.

World Bank Connectivity Index

The paper by Arvis and Shepherd (2012)[30] for the World Bank defines connectivity as the importance of a country as a node within the global air transport system. The more overall "pull" it can exert on the rest of the network, the better its connectivity score. A key issue they raise is the importance of capturing hub and spoke relationships as well as distance. The index takes into account the connectivity of the nodes that the airport / region is connected to and is a normalised figure so enables grouping and encompasses the additional factor of the connectivity of the nodes.

York Aviation Business Connectivity Index (BCI)

The BCI scores an airport's destinations based on their ranking from the Globalisation and World Cities (GaWC) network. These scores are then weighted by the frequency offered to these destinations. The world according to GaWC assesses cities based on a detailed analysis of the location decisions of services firms around the world and therefore is a measure of a city's integration into the world city network. The connectivity measures are used to classify cities into levels of world city network integration. These levels are interpreted as follows:

[30] Arvis, J-F and Shepherd, B. "The Air Connectivity Index: Measuring Integration in the Global Air Transport Network" World Bank, Policy Research Working Paper 5722

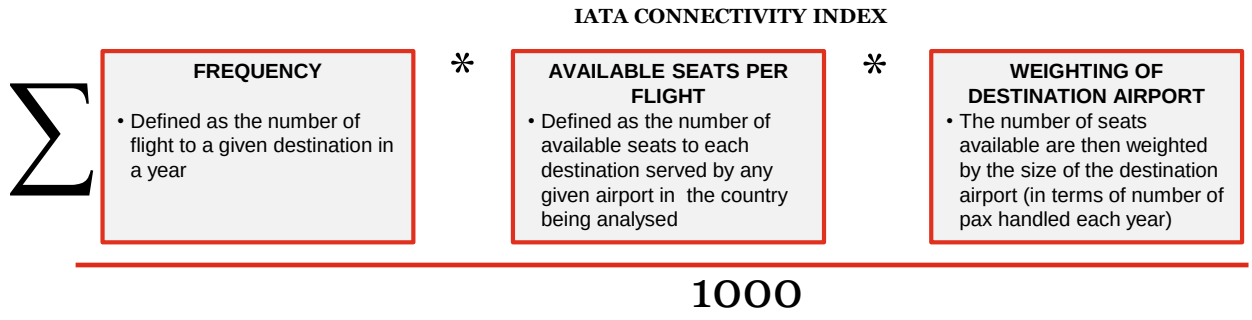
Rating	Description
Alpha++	In all analyses, London and New York stand out as clearly more integrated than all other cities and constitute their own high level of integration
Alpha+	Other highly integrated cities that complement London and New York , largely filling in advanced service needs for the Pacific Asia
Alpha & alpha-	Very important world cities that link major economic regions and states into the world economy
Beta	These are important world cities that are instrumental in linking their region or state into the world economy
Gamma	These can be world cities linking smaller regions or states into the world economy, or important world cities whose major global capacity is not in advanced producer services
Sufficiency	These are cities that are not world cities as defined here but they have sufficient services so as not to be overly dependent on world cities. Two specialised categories of city are common at this level of integration: smaller capital cities, and traditional centres of manufacturing regions

The ratings and rankings have been produced in 2000, 2004, 2008, 2010 and 2012. Appendix E contains the rankings and ratings for cities in 2012.

IATA Connectivity Index

According to IATA, connectivity measures the access available from a country's major airports to the global air transport network. IATA developed a connectivity indicator to measure the degree of integration a country has within the global air transport network. It is a measure which takes into account the number and economic importance of the destinations served from a country's major airports and the frequency of service to each destination weighted by the size of the destination airport. The IATA Connectivity Index increases as:

- the range of destinations increases
- the frequency of service increases; and/or
- large "hub" airport destinations are served



The IATA formula has been adapted to calculate connectivity using annual data for the period from 2002 to 2013 as a basis, i.e.:

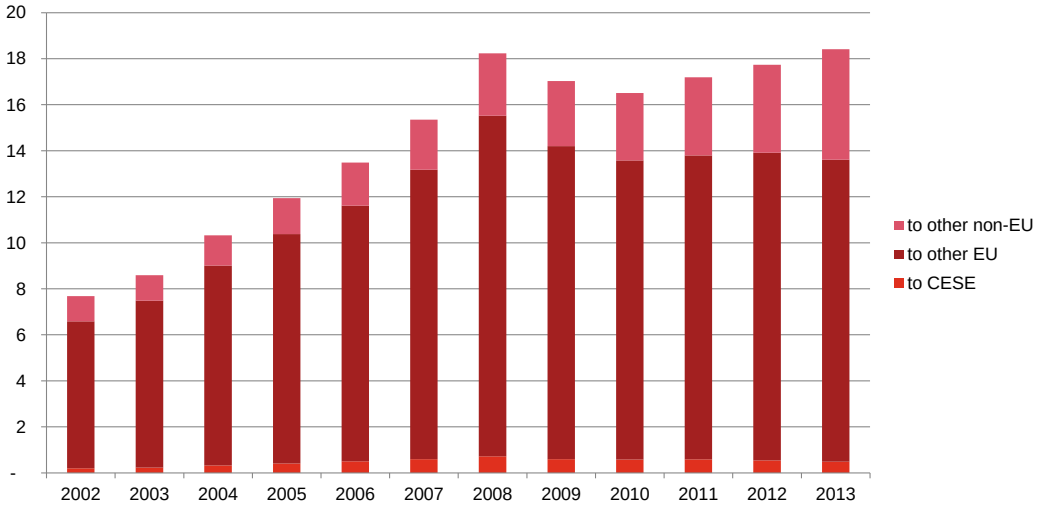
1. We collected data on the direct annual seat capacity offered from CESE to all destinations served;
2. We determined destination airports' size for the period from 2002 to 2013 looking at the yearly passenger throughput and assigning a weighting of 1 to the largest airport (by total passengers) in any given year and all other years relative to the largest airport (linear);
3. The total seats offered from CESE have then been weighted by applying the airport weightings estimated in Step 2; and

4. A scalar factor of 1,000,000 has been utilised to make the size of the index more manageable. This number differs from the IATA scalar factor of 1000 due to the use in their analysis of weekly data (i.e. data for the first week in July was used for the study period from 1996 to 2005).

The index is additive and therefore allows for the grouping of regions and comparison of absolute level of connectivity.

The chart below illustrates the changes in air connectivity for air services from CESE (grouped by destination region). It shows that connectivity within CESE is very weak relative to the rest of the EU, this is a combination of limited capacity on the routes and a lower weighting assigned to the destination airports in the region relative to airports outside the region.

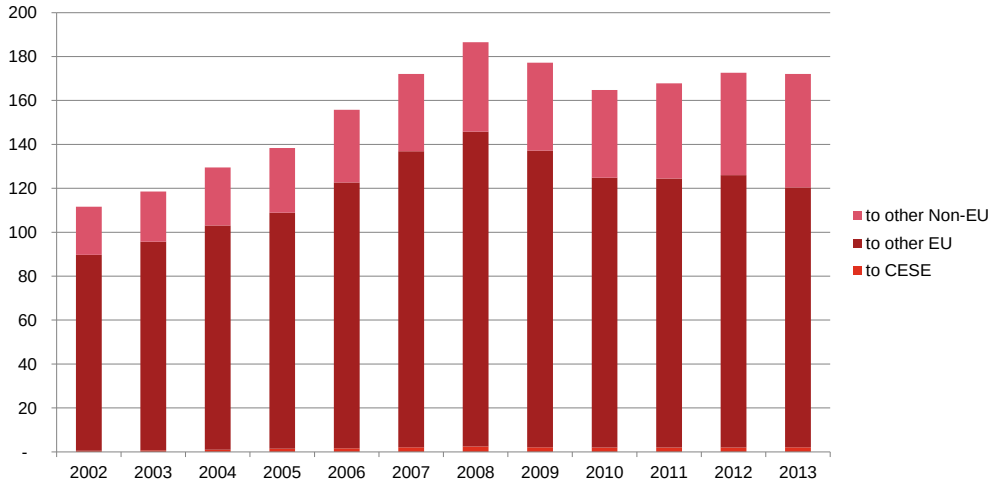
Adapted IATA connectivity measure for air services from the CESE Region



Note: CESE airports include VIE given that it captures passengers from Hungary and Slovakia (particularly Bratislava)
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

The chart below shows the same measure for services departing from EU countries. This indicates that the level of connectivity based on this measure is around 10 times that of the CESE region. Connectivity across all categories is much stronger compared to CESE.

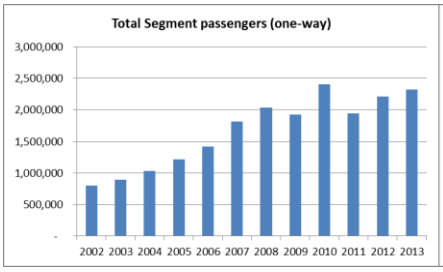
Adapted IATA connectivity measure for air services from the Non-CESE EU Countries (i.e. EU15)

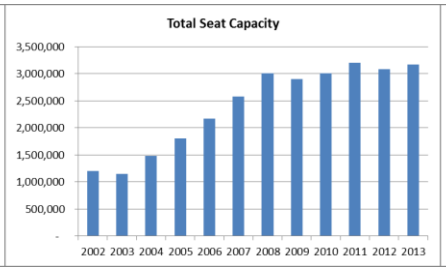


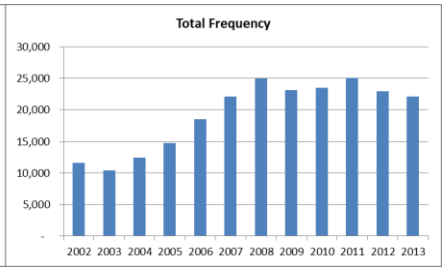
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

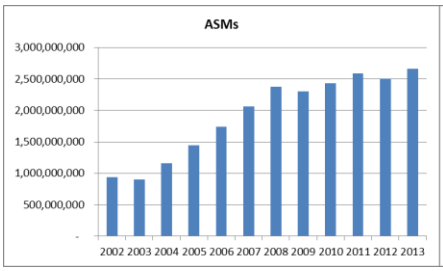
The remaining section of this appendix contains a set of indicators for each CESE country and the key city (ies) in each country[31].

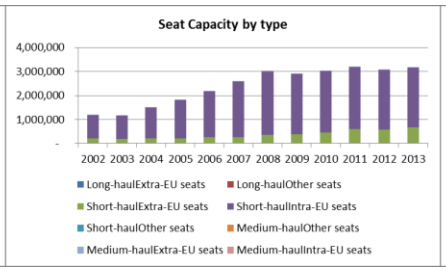
EU
Bulgaria

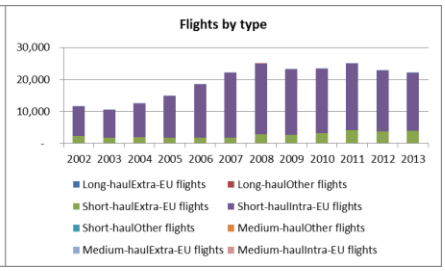


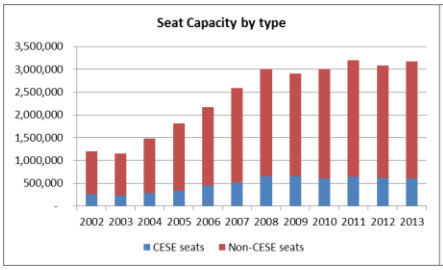


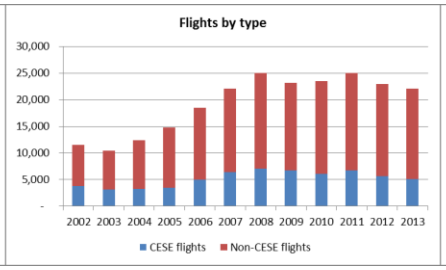


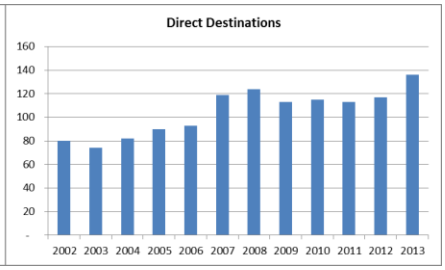


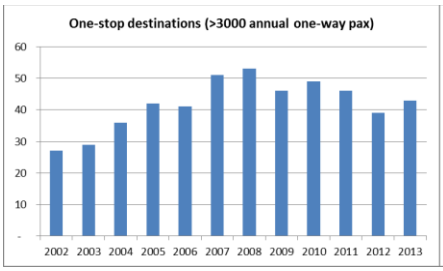


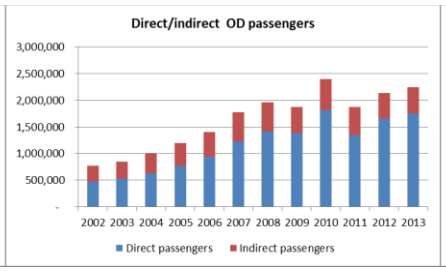


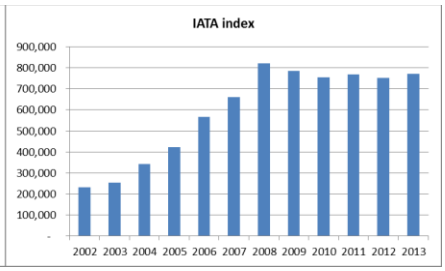




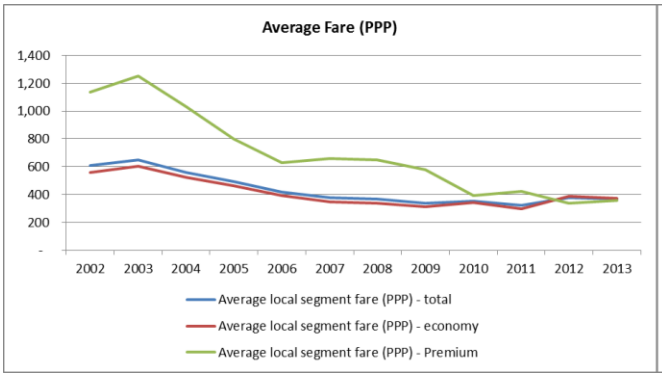


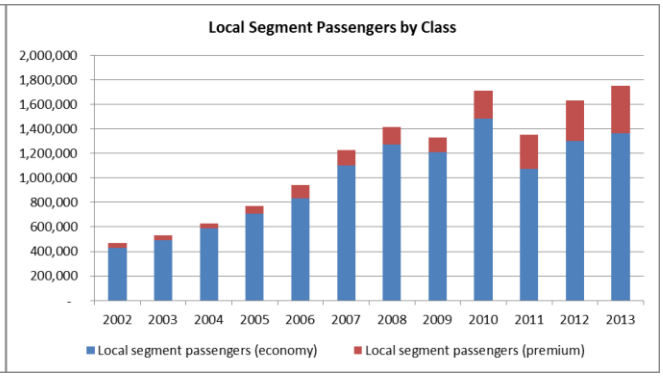


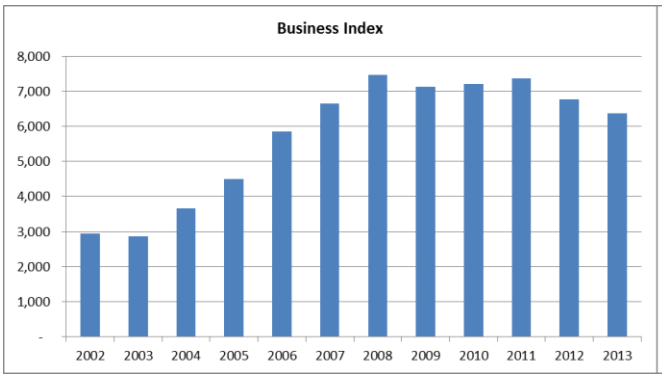


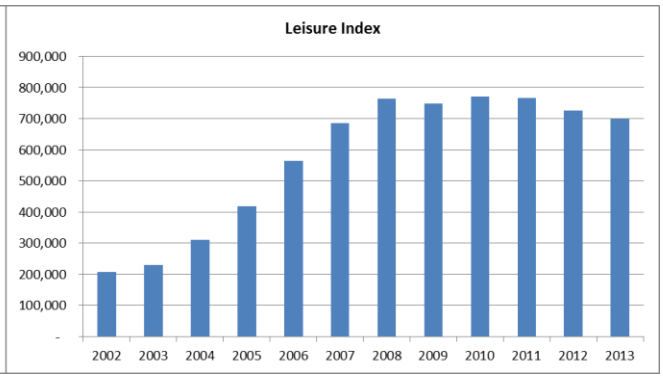


[31] Note: what is referred to as "Total Frequency" in this section corresponds to total number of flights

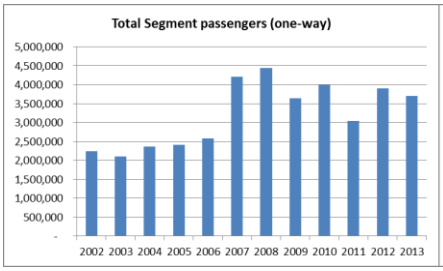

Average Fare (PPP)
1,400
1,200
1,000
800
600
400
200
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

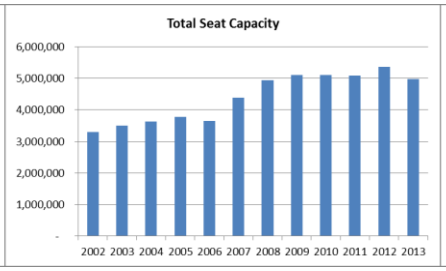

Local Segment Passengers by Class
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

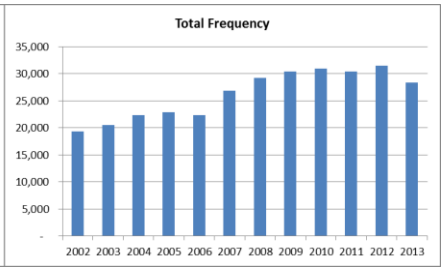

Business Index
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

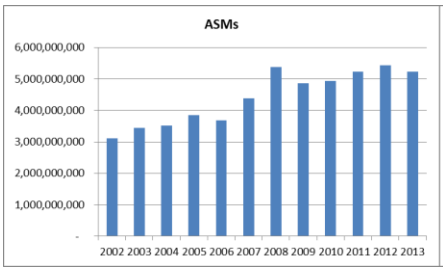

Leisure Index
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

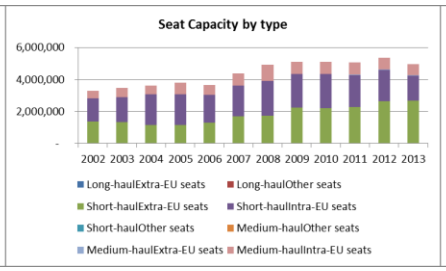
Cyprus

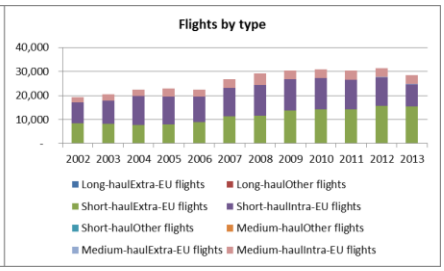

Total Segment passengers (one-way)
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

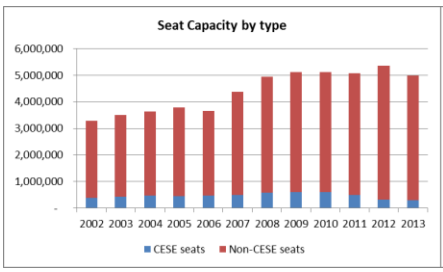

Total Seat Capacity
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

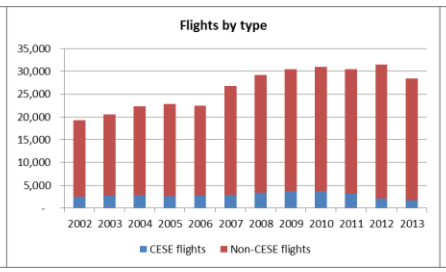

Total Frequency
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

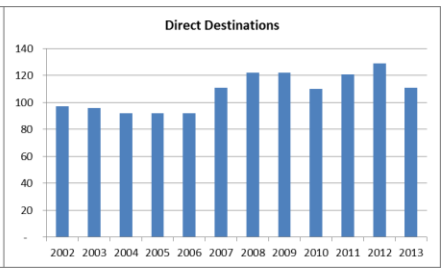

ASMs
6,000,000,000
5,000,000,000
4,000,000,000
3,000,000,000
2,000,000,000
1,000,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

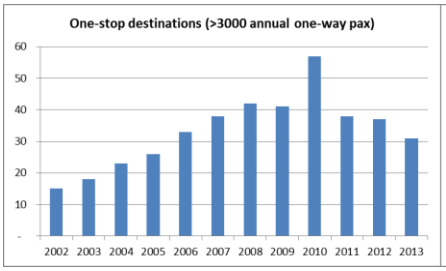

Seat Capacity by type
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

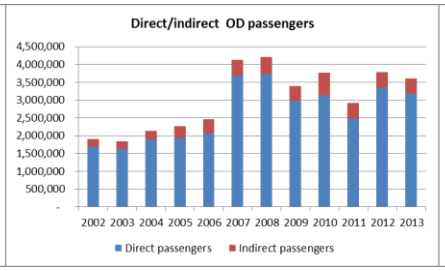

Flights by type
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

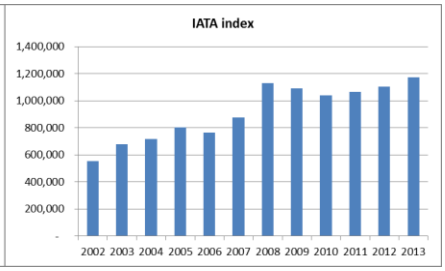

Seat Capacity by type
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats

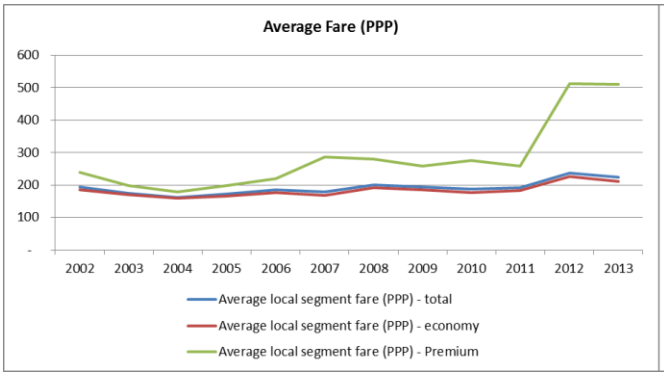

Flights by type
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights

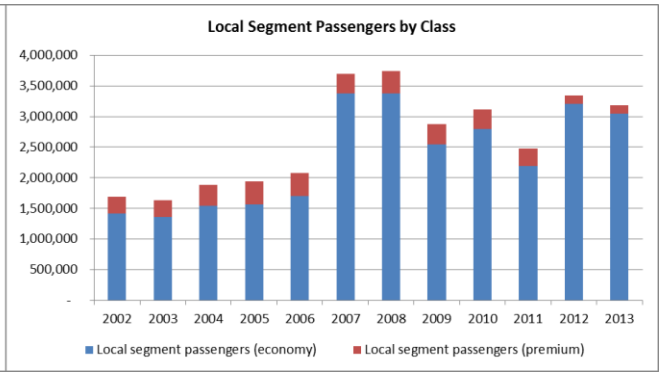

Direct Destinations
140
120
100
80
60
40
20
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

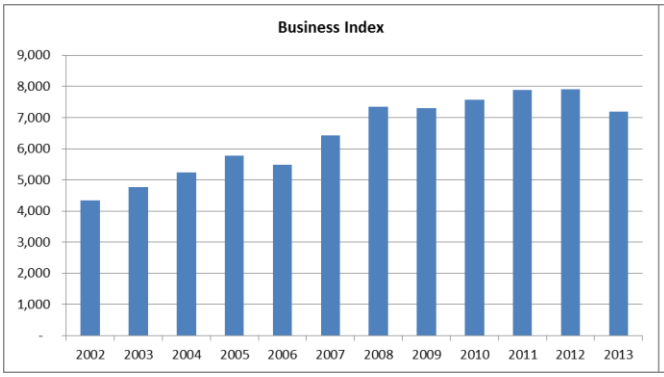

One-stop destinations (>3000 annual one-way pax)
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

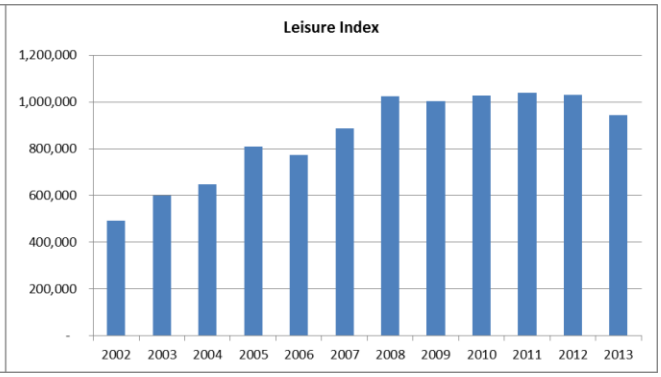

Direct/indirect OD passengers
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers


IATA index
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

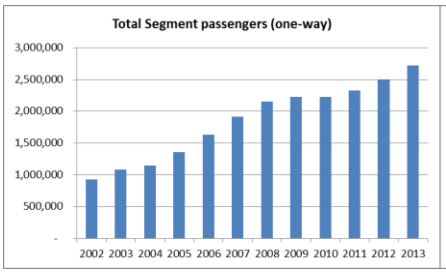

Average Fare (PPP)
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

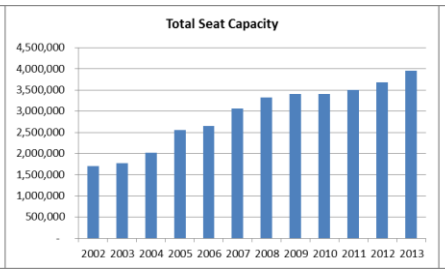

Local Segment Passengers by Class
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

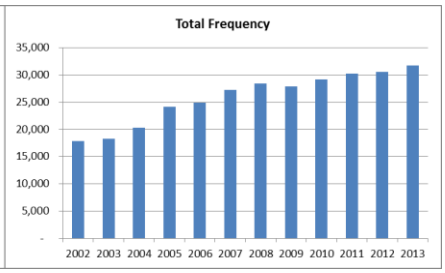

Business Index
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

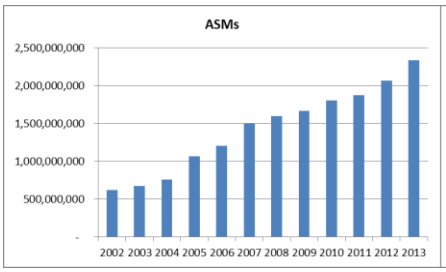

Leisure Index
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

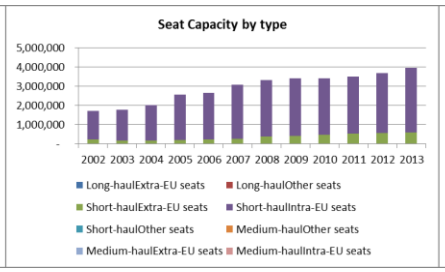
Croatia

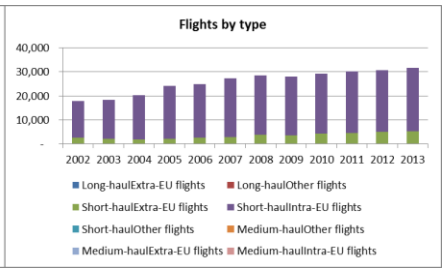

Total Segment passengers (one-way)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

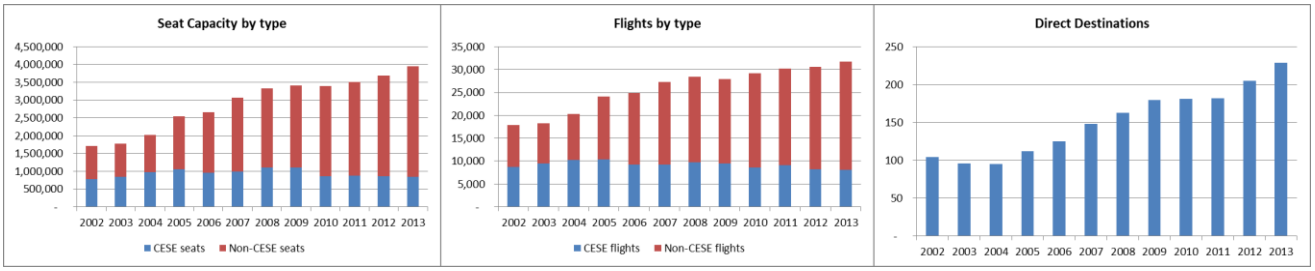

Total Seat Capacity
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

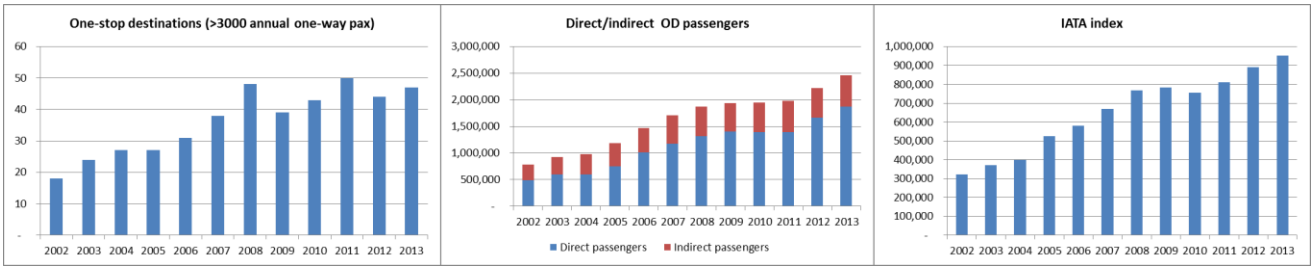

Total Frequency
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

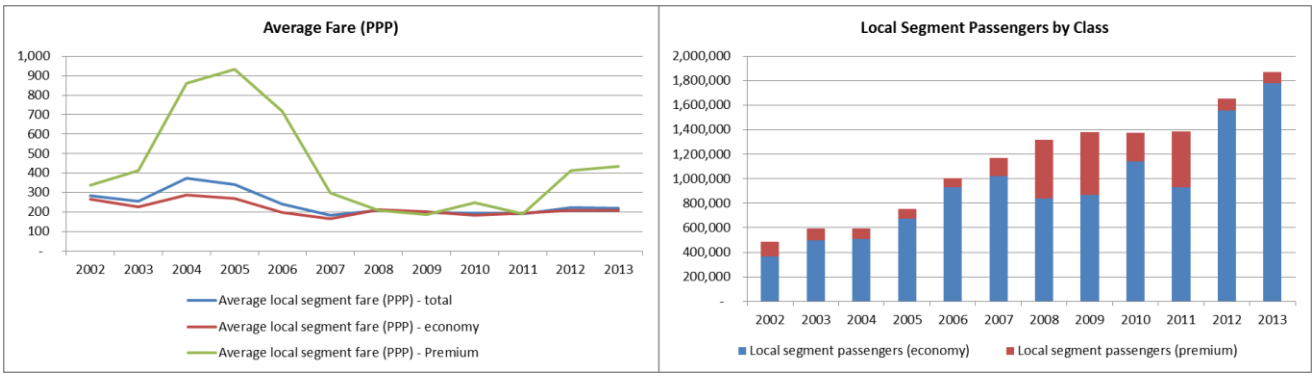

ASMs
2,500,000,000
2,000,000,000
1,500,000,000
1,000,000,000
500,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

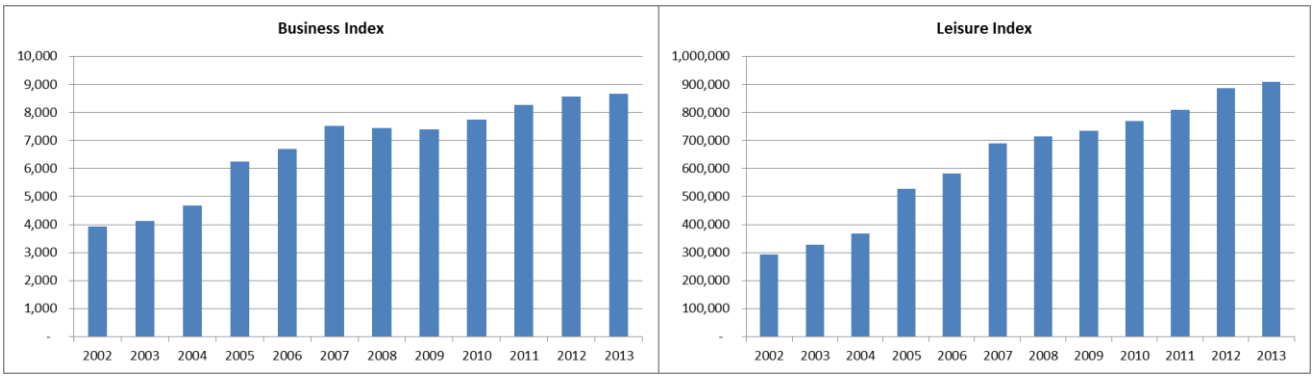

Seat Capacity by type
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats


Flights by type
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

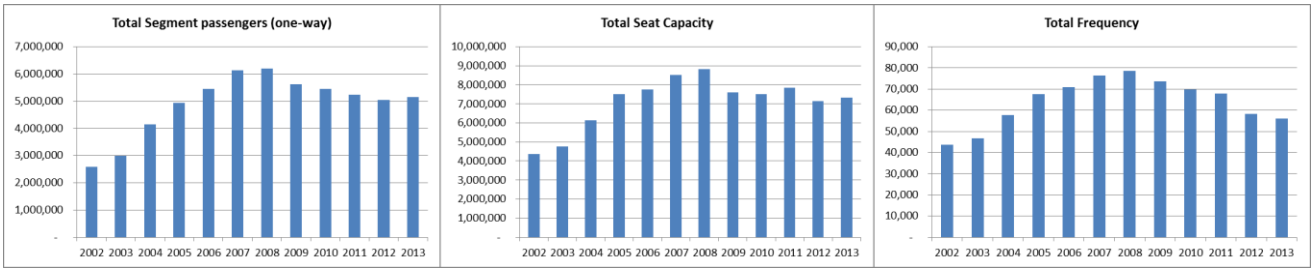


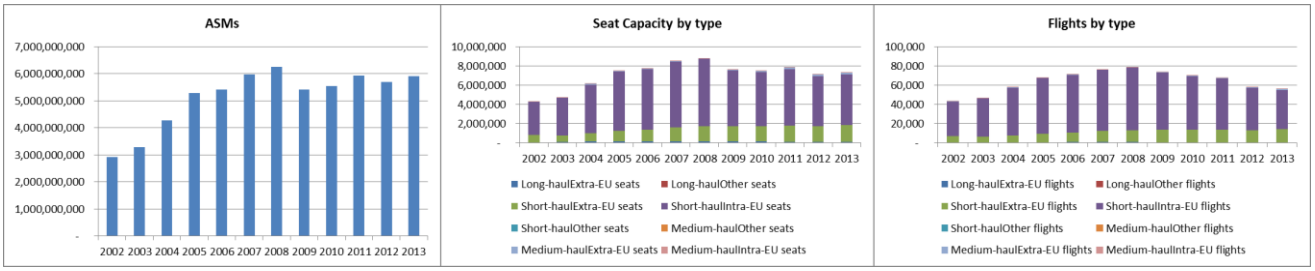


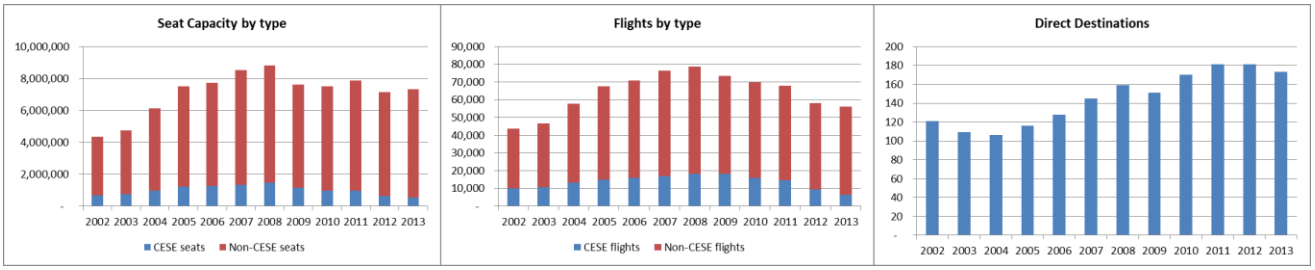


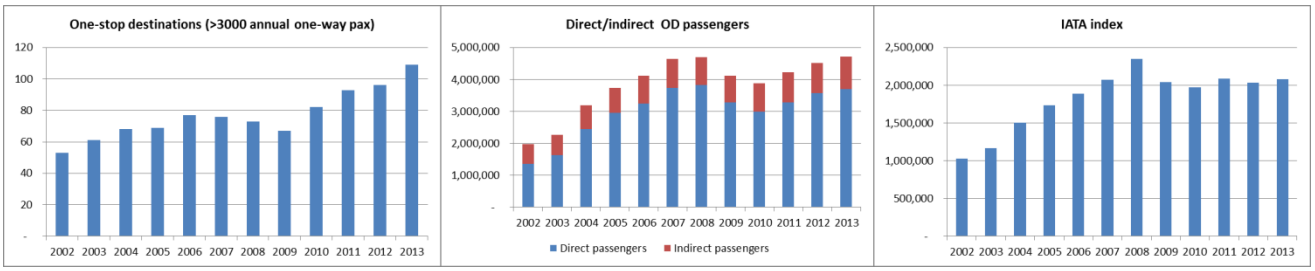


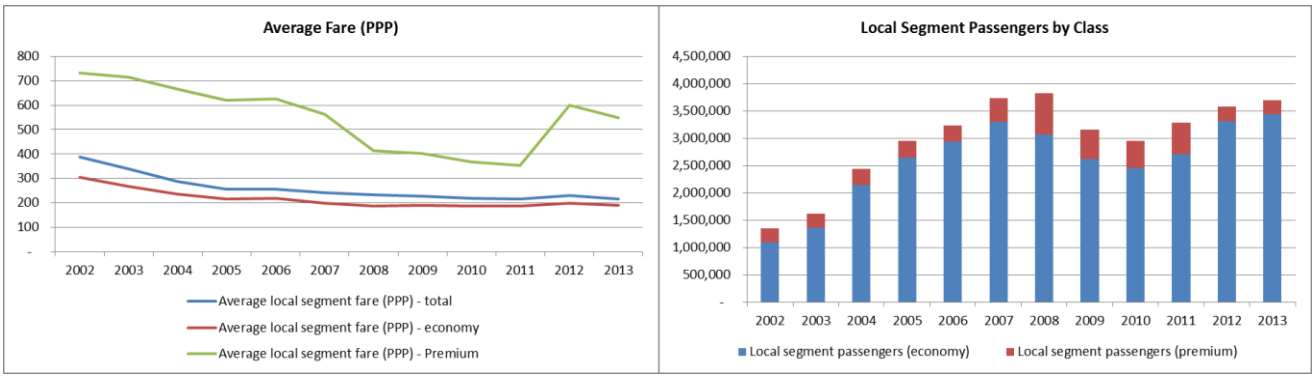
Czech Republic

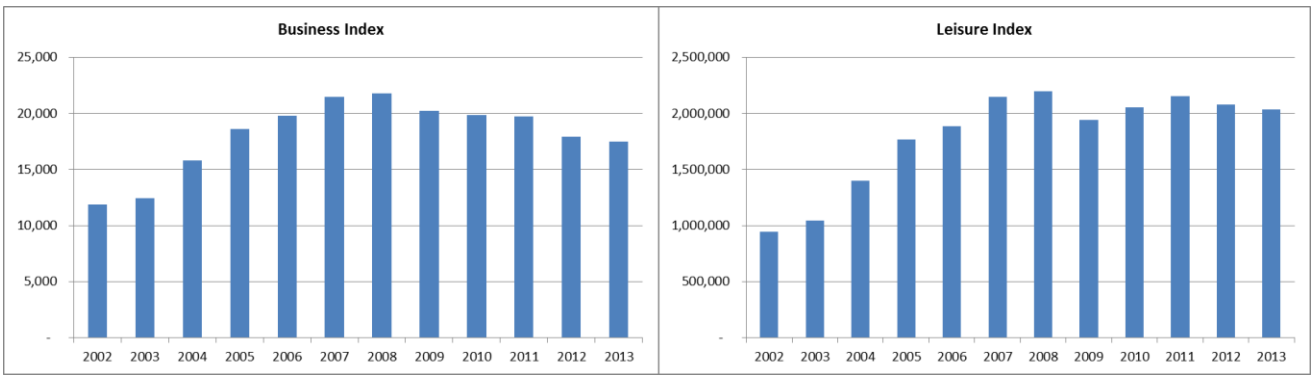



ASMs
7,000,000,000
6,000,000,000
5,000,000,000
4,000,000,000
3,000,000,000
2,000,000,000
1,000,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Seat Capacity by type
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

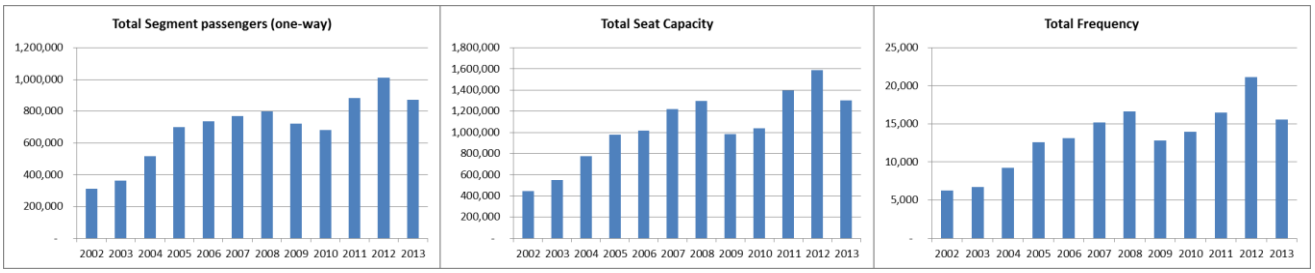

Seat Capacity by type
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats
Flights by type
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights
Direct Destinations
200
180
160
140
120
100
80
60
40
20
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

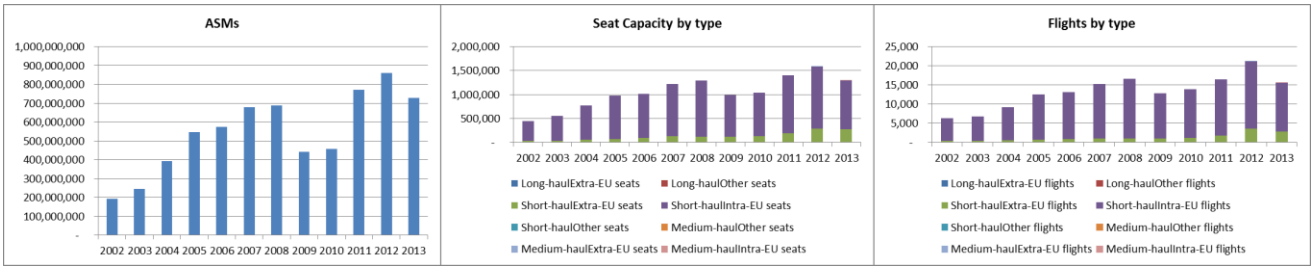

One-stop destinations (>3000 annual one-way pax)
120
100
80
60
40
20
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct/indirect OD passengers
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers
IATA index
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

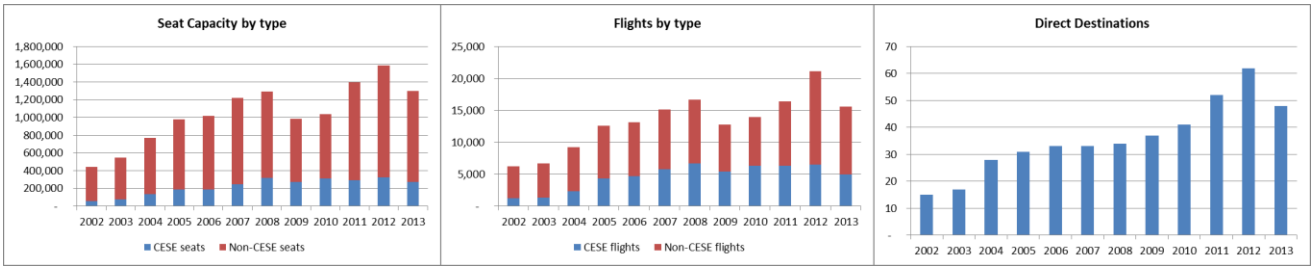

Average Fare (PPP)
800
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium
Local Segment Passengers by Class
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

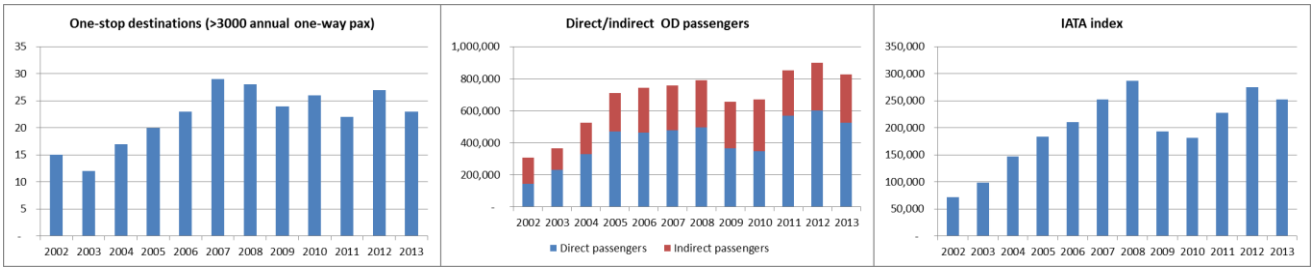

Business Index
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Leisure Index
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

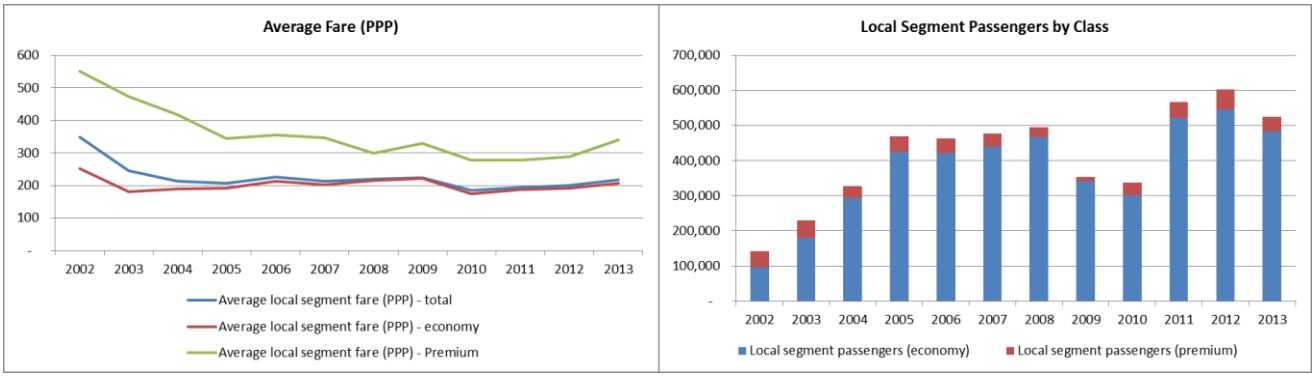
Estonia

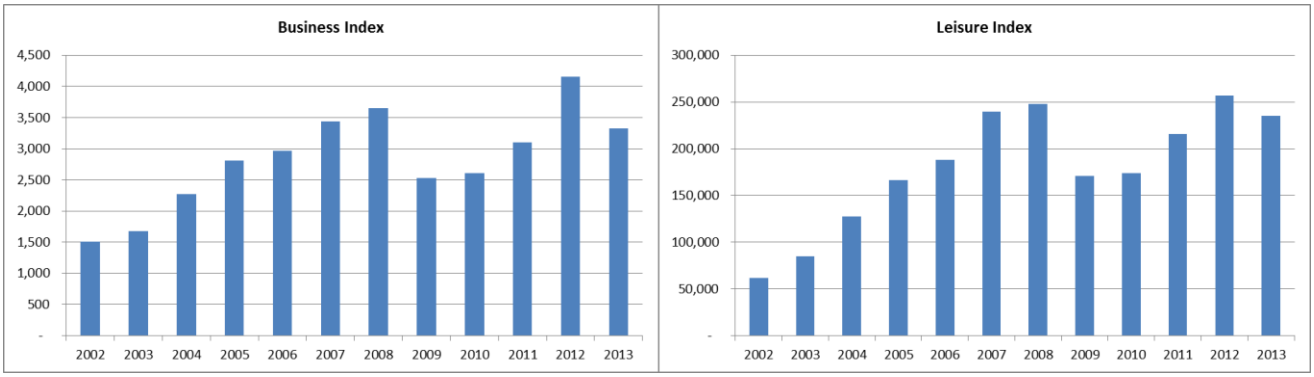

Total Segment passengers (one-way)
Total Seat Capacity
Total Frequency


ASMs
Seat Capacity by type
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

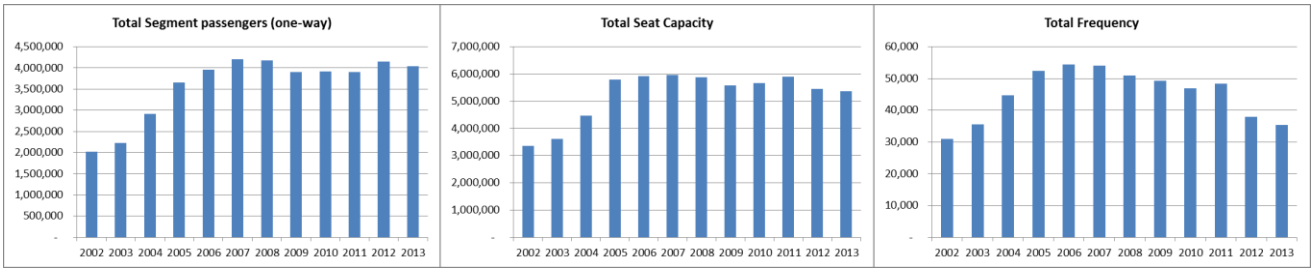

Seat Capacity by type
CESE seats
Non-CESE seats
Flights by type
CESE flights
Non-CESE flights
Direct Destinations

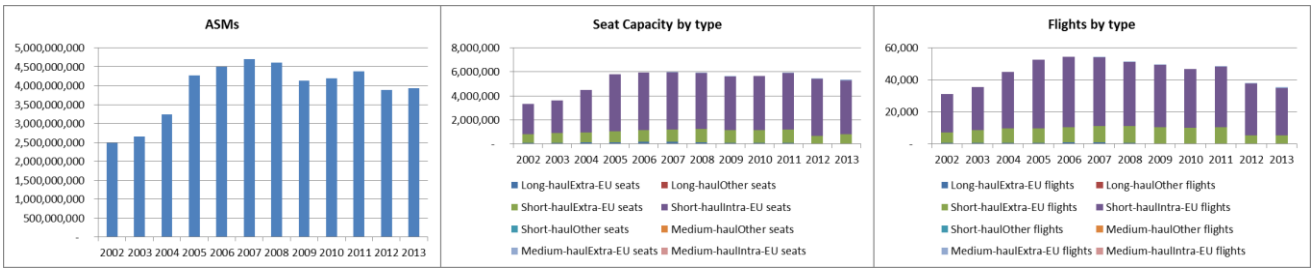

One-stop destinations (>3000 annual one-way pax)
Direct/indirect OD passengers
Direct passengers
Indirect passengers
IATA index

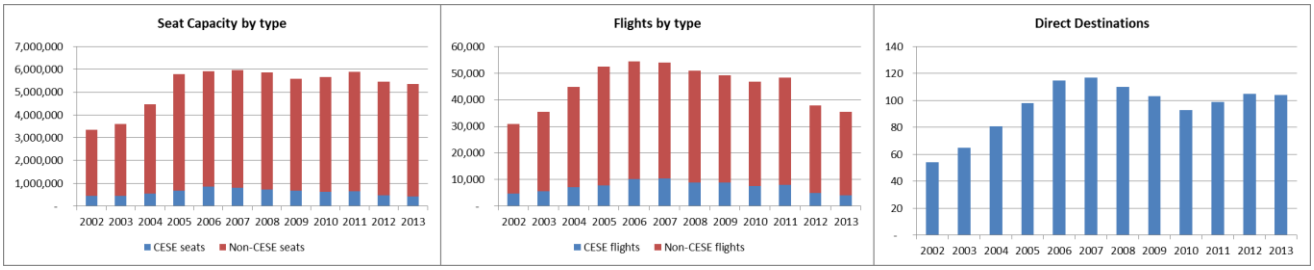

Average Fare (PPP)
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium
Local Segment Passengers by Class
Local segment passengers (economy)
Local segment passengers (premium)

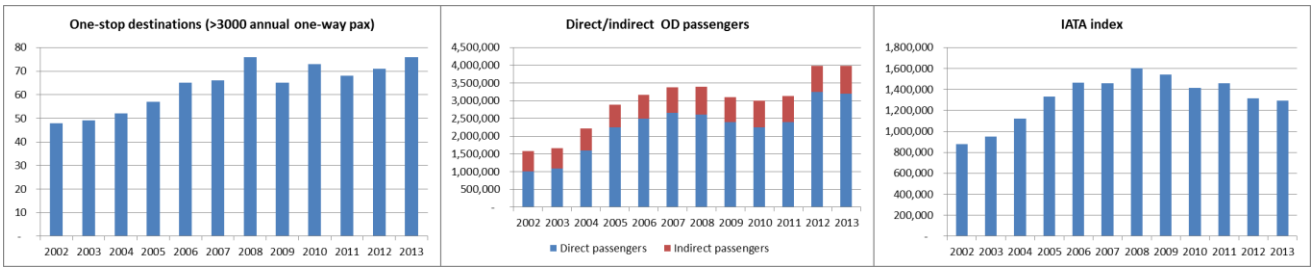

Business Index
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Leisure Index
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

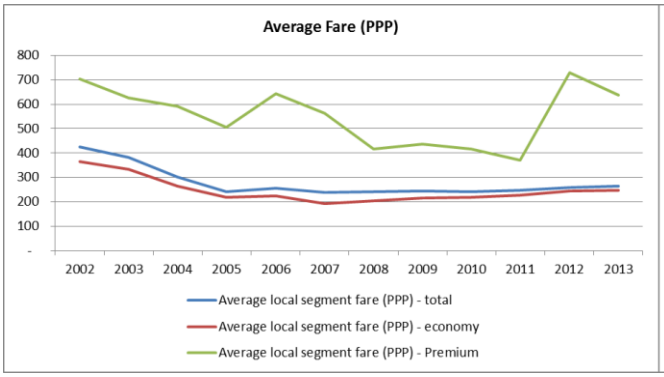
Hungary

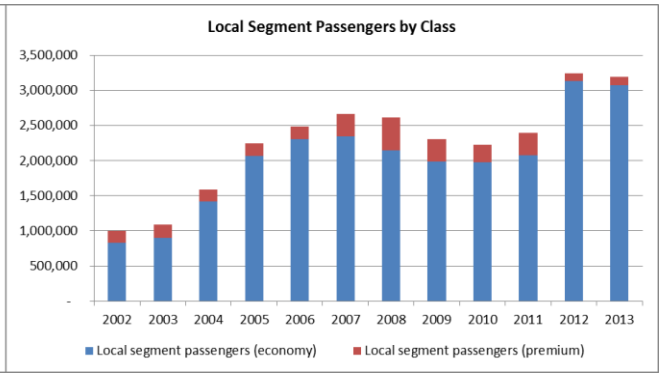

Total Segment passengers (one-way)
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Seat Capacity
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Frequency
60,000
50,000
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

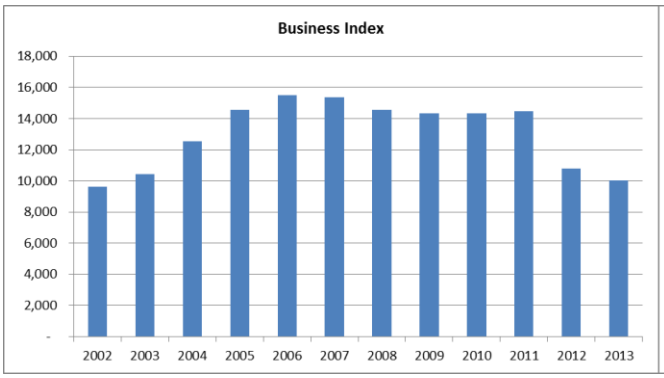

ASMs
5,000,000,000
4,500,000,000
4,000,000,000
3,500,000,000
3,000,000,000
2,500,000,000
2,000,000,000
1,500,000,000
1,000,000,000
500,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Seat Capacity by type
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

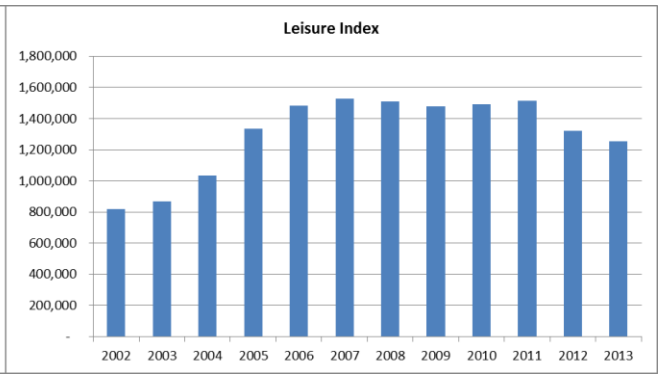

Seat Capacity by type
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats
Flights by type
60,000
50,000
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights
Direct Destinations
140
120
100
80
60
40
20
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


One-stop destinations (>3000 annual one-way pax)
80
70
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct/indirect OD passengers
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers
IATA index
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

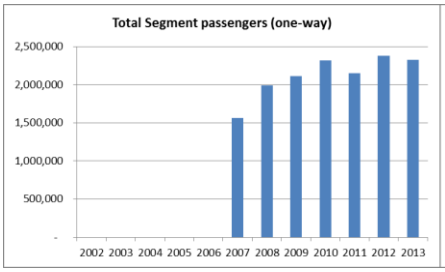

Average Fare (PPP)
800
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

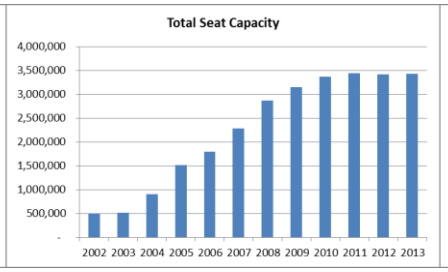

Local Segment Passengers by Class
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

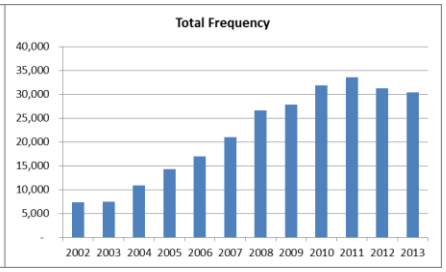

Business Index
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

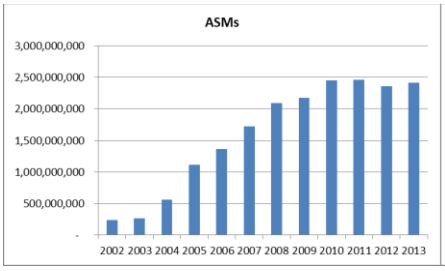

Leisure Index
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

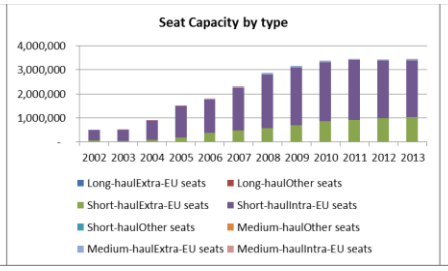
Latvia

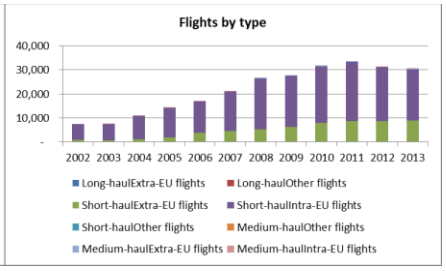

Total Segment passengers (one-way)
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

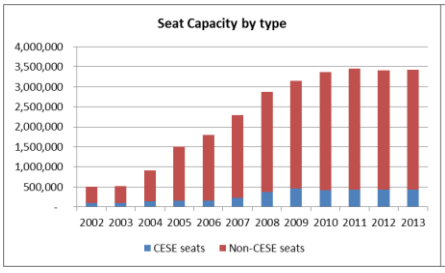

Total Seat Capacity
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

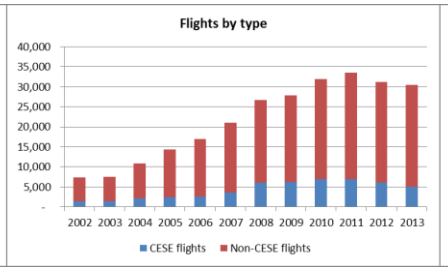

Total Frequency
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

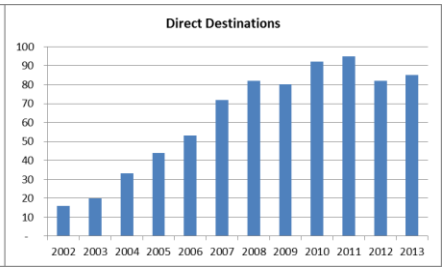

ASMs
3,000,000,000
2,500,000,000
2,000,000,000
1,500,000,000
1,000,000,000
500,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

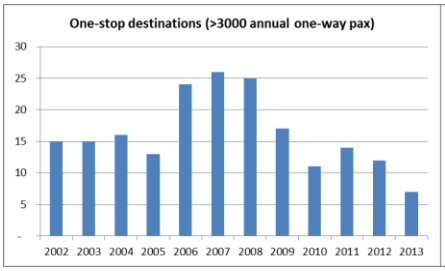

Seat Capacity by type
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

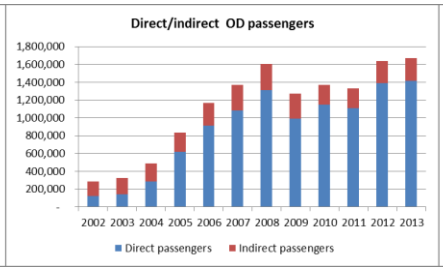

Flights by type
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

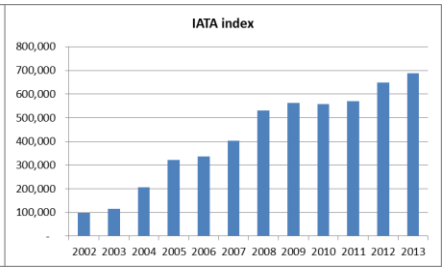

Seat Capacity by type
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats

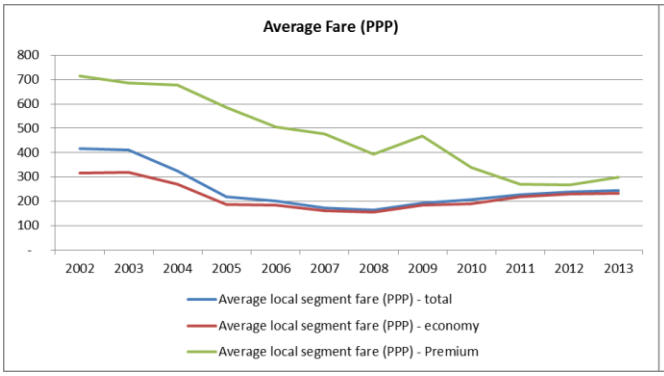

Flights by type
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights

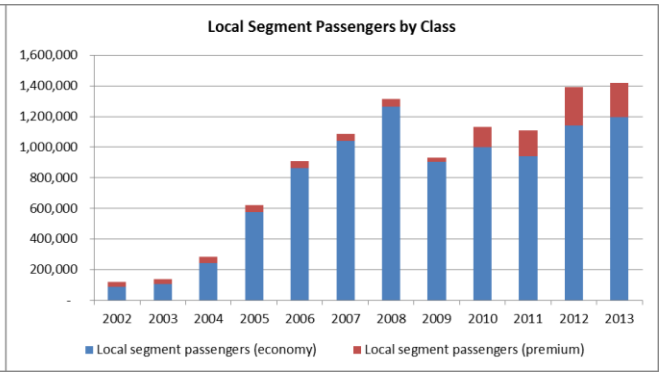

Direct Destinations
100
90
80
70
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

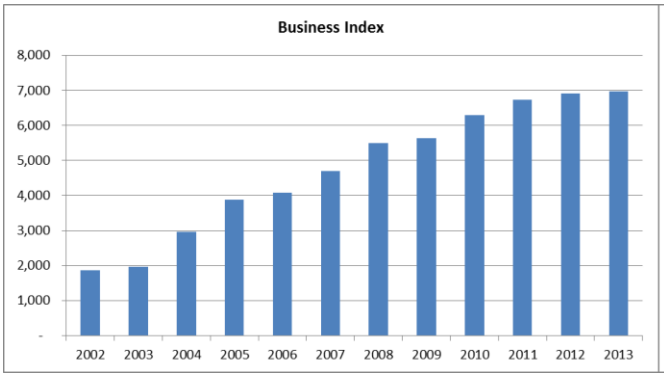

One-stop destinations (>3000 annual one-way pax)
30
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

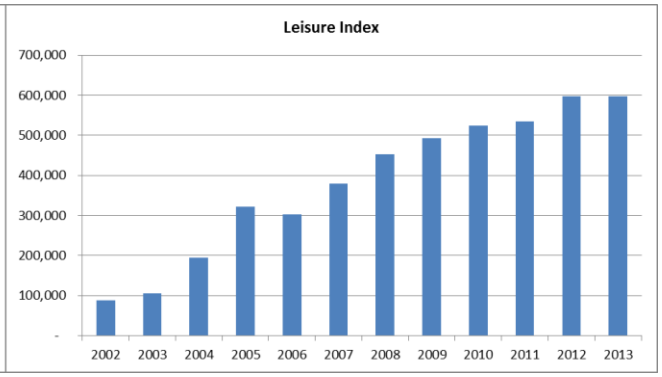

Direct/indirect OD passengers
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers


IATA index
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

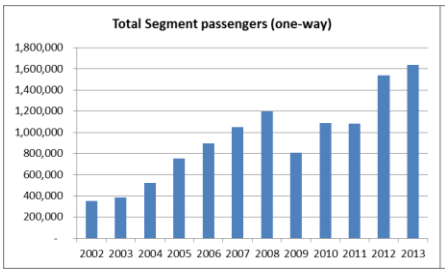

Average Fare (PPP)
800
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

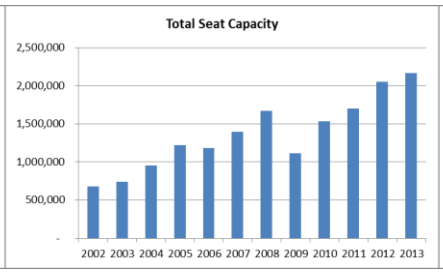

Local Segment Passengers by Class
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

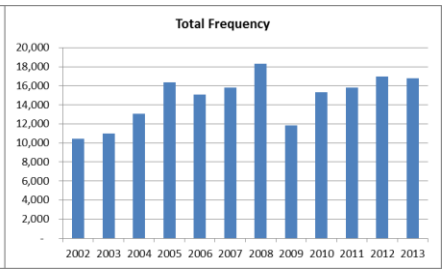

Business Index
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

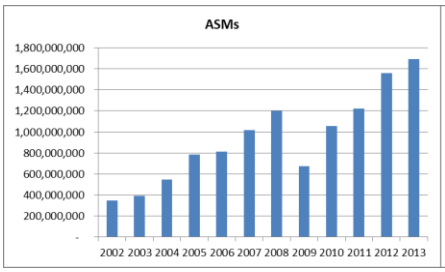

Leisure Index
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

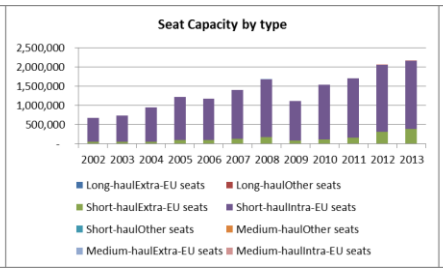
Lithuania

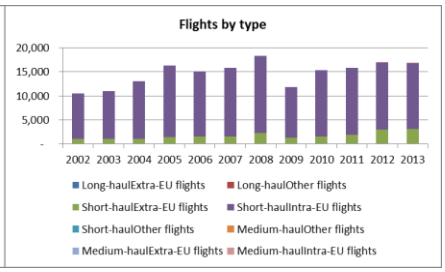

Total Segment passengers (one-way)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

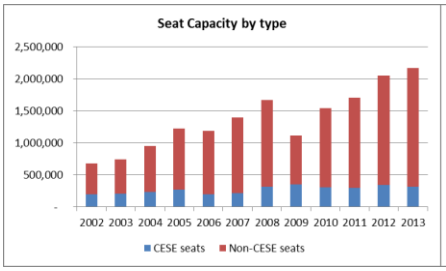

Total Seat Capacity
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

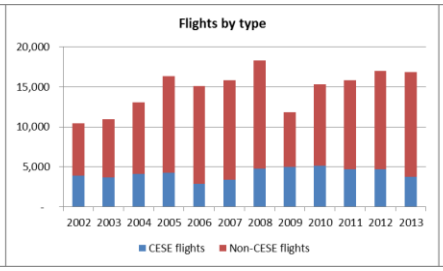

Total Frequency
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

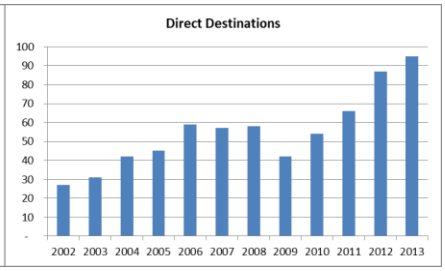

ASMs
1,800,000,000
1,600,000,000
1,400,000,000
1,200,000,000
1,000,000,000
800,000,000
600,000,000
400,000,000
200,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

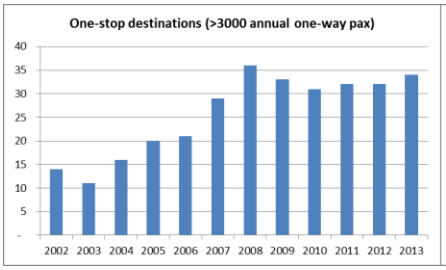

Seat Capacity by type
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

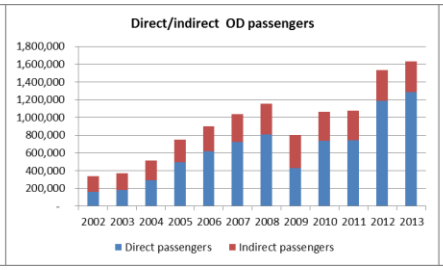

Flights by type
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

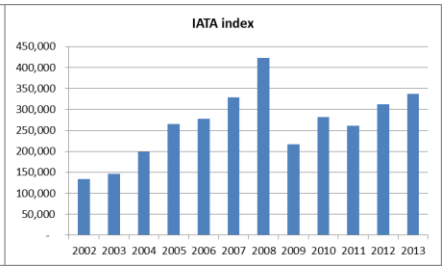

Seat Capacity by type
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats

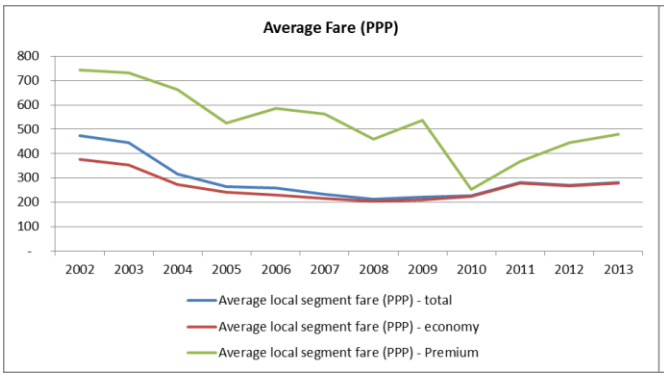

Flights by type
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights

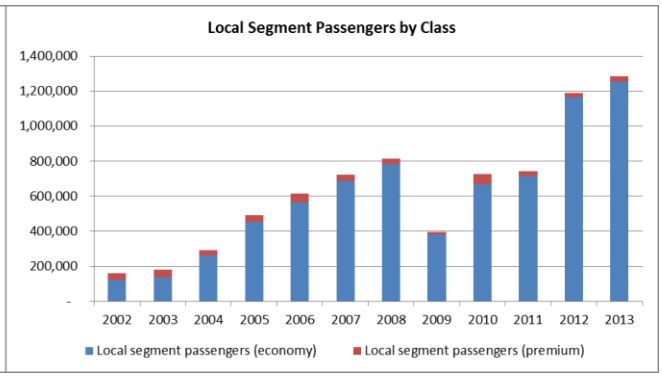

Direct Destinations
100
90
80
70
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

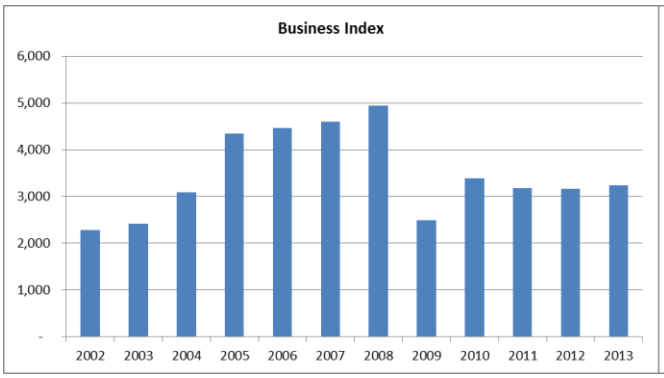

One-stop destinations (>3000 annual one-way pax)
40
35
30
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

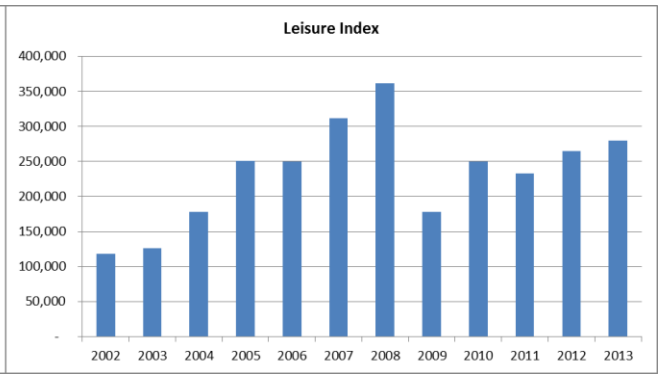

Direct/indirect OD passengers
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers


IATA index
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

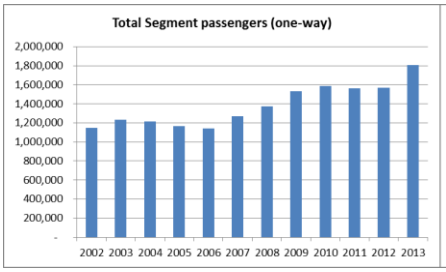

Average Fare (PPP)
800
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

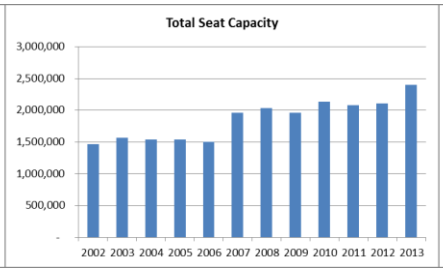

Local Segment Passengers by Class
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

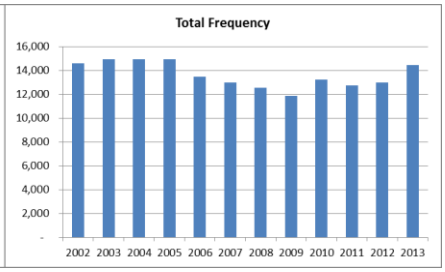

Business Index
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

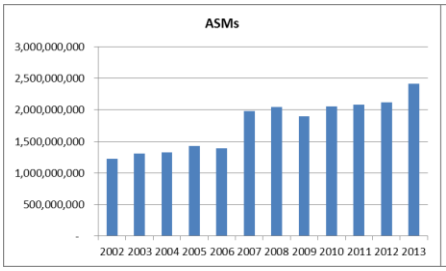

Leisure Index
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

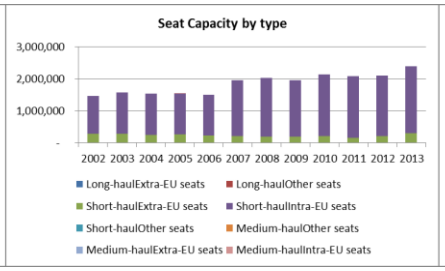
Malta

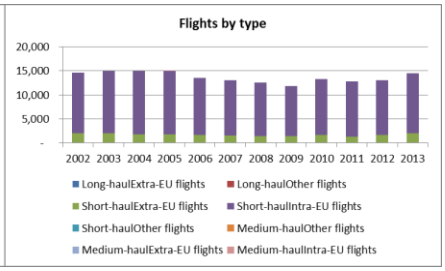

Total Segment passengers (one-way)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

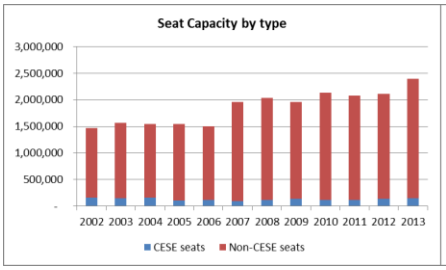

Total Seat Capacity
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

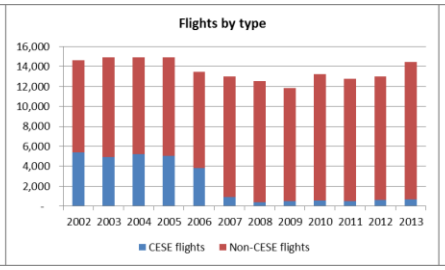

Total Frequency
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

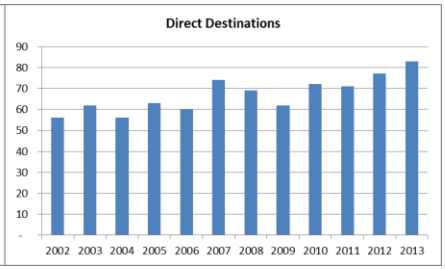

ASMs
3,000,000,000
2,500,000,000
2,000,000,000
1,500,000,000
1,000,000,000
500,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

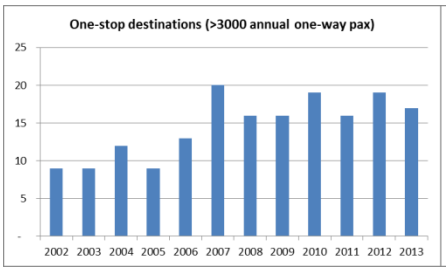

Seat Capacity by type
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

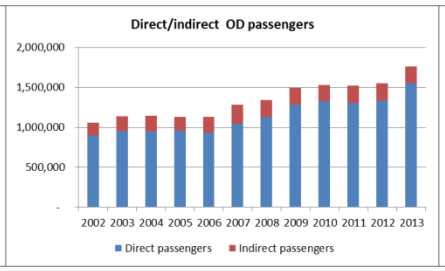

Flights by type
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

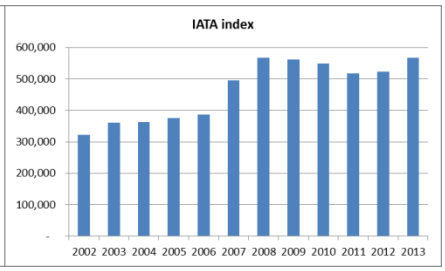

Seat Capacity by type
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats

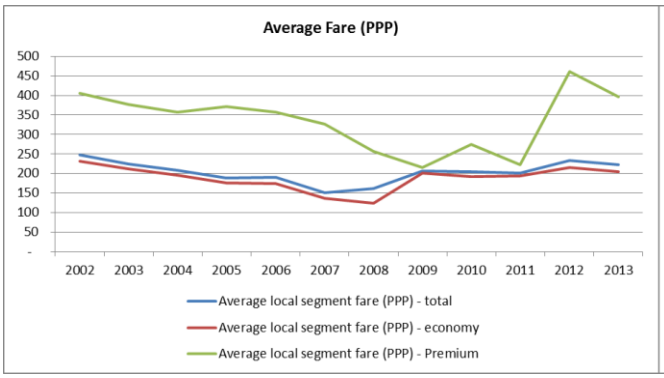

Flights by type
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights

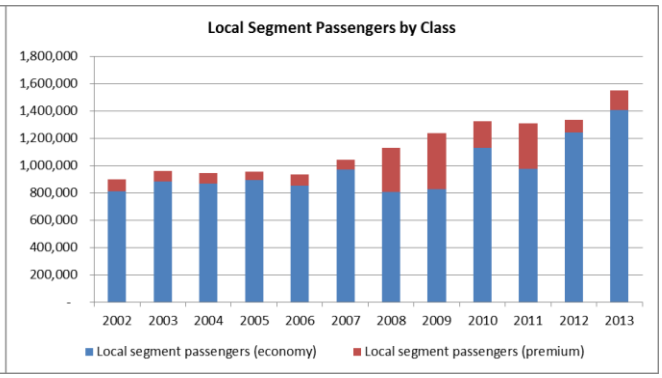

Direct Destinations
90
80
70
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

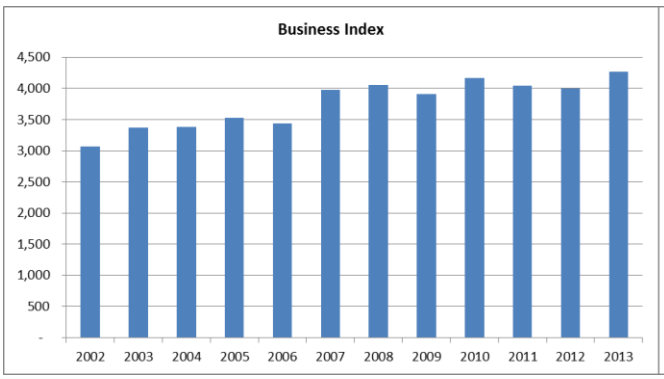

One-stop destinations (>3000 annual one-way pax)
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

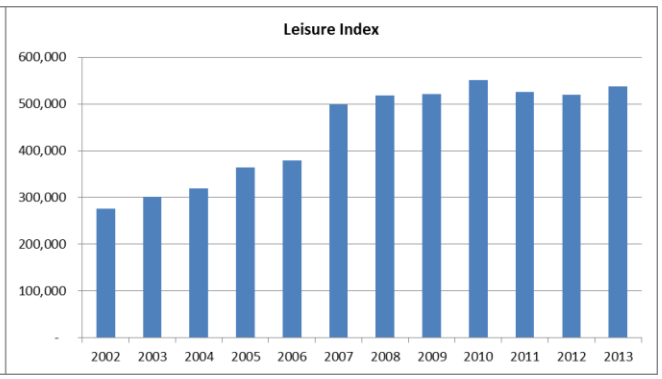

Direct/indirect OD passengers
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers


IATA index
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

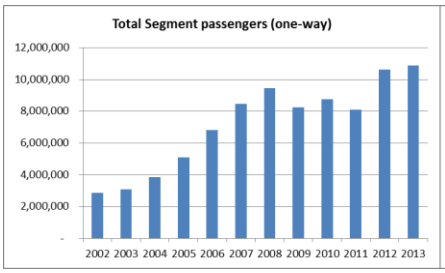

Average Fare (PPP)
500
450
400
350
300
250
200
150
100
50
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

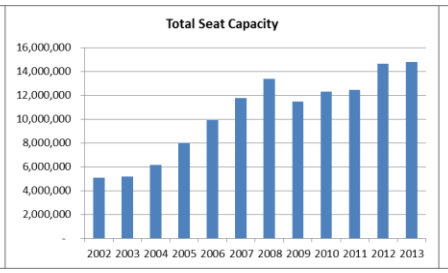

Local Segment Passengers by Class
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

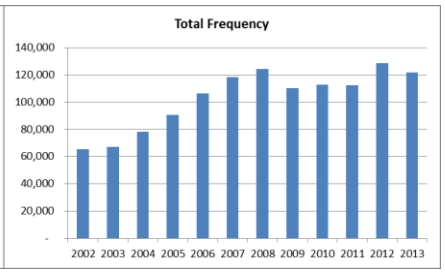

Business Index
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

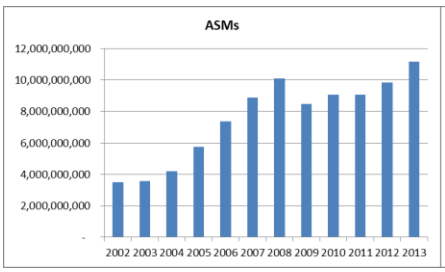

Leisure Index
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

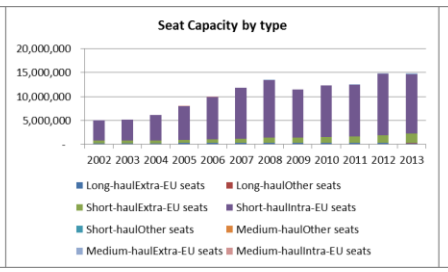
Poland

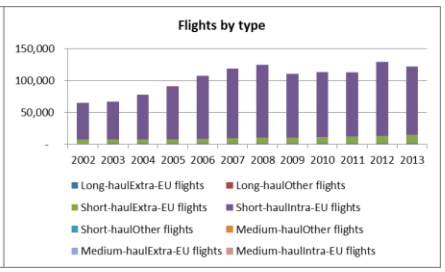

Total Segment passengers (one-way)
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

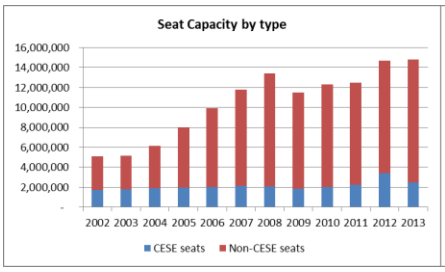

Total Seat Capacity
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

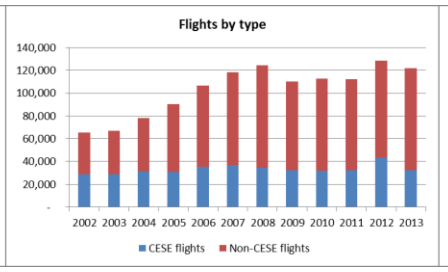

Total Frequency
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

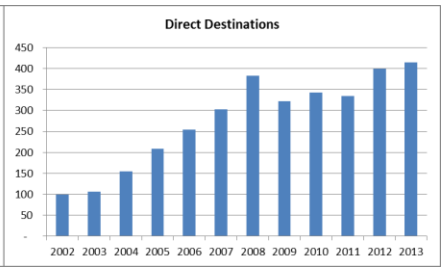

ASMs
12,000,000,000
10,000,000,000
8,000,000,000
6,000,000,000
4,000,000,000
2,000,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

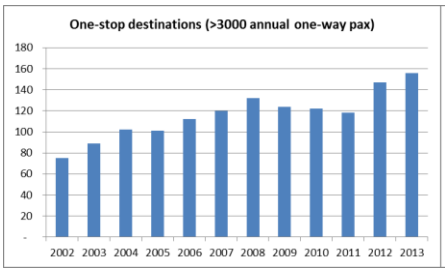

Seat Capacity by type
20,000,000
15,000,000
10,000,000
5,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

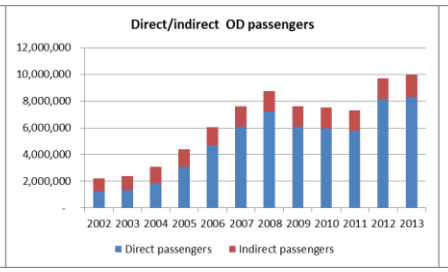

Flights by type
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

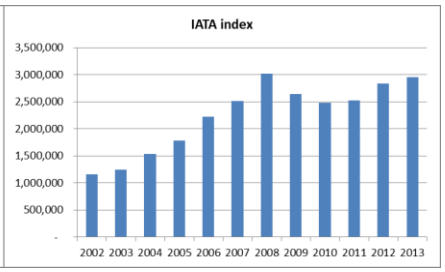

Seat Capacity by type
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats

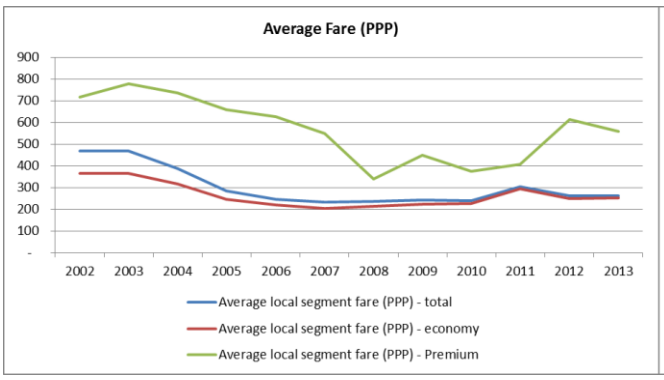

Flights by type
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights

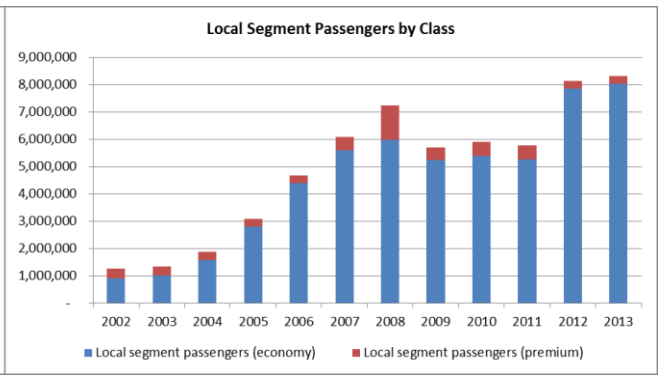

Direct Destinations
450
400
350
300
250
200
150
100
50
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

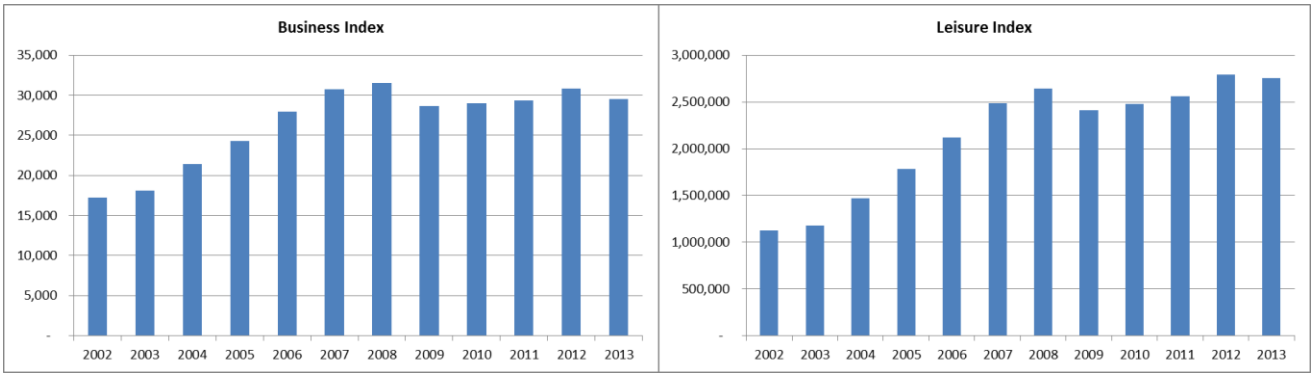

One-stop destinations (>3000 annual one-way pax)
180
160
140
120
100
80
60
40
20
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


Direct/indirect OD passengers
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers

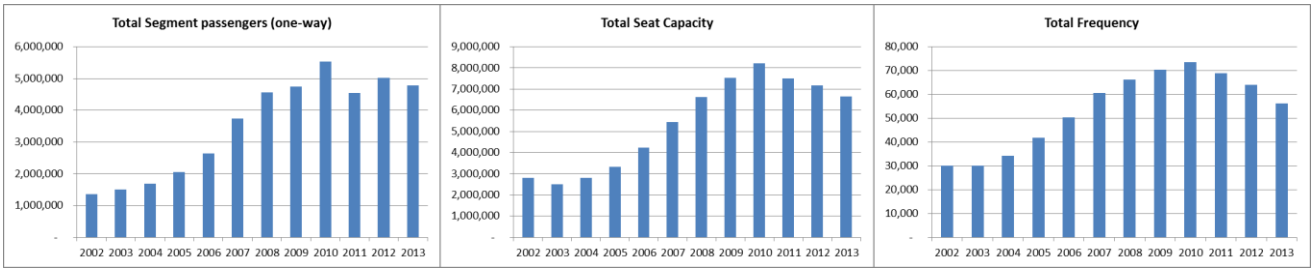

IATA index
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

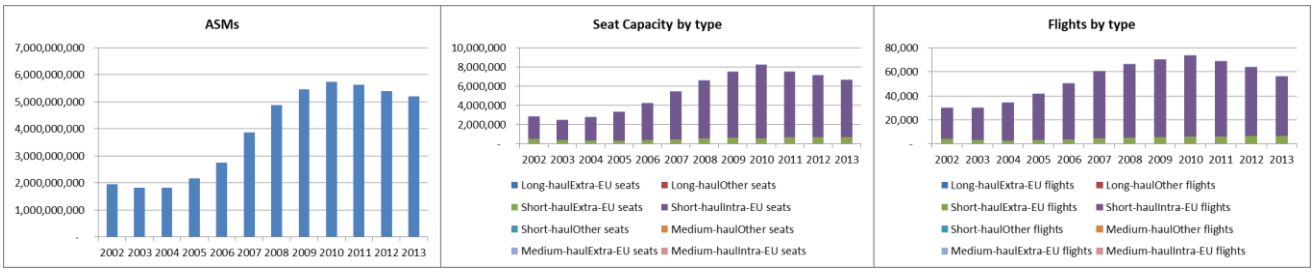

Average Fare (PPP)
900
800
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

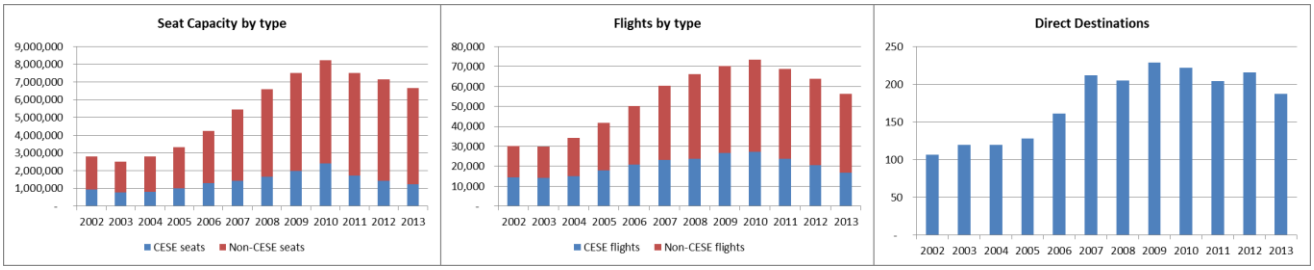

Local Segment Passengers by Class
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

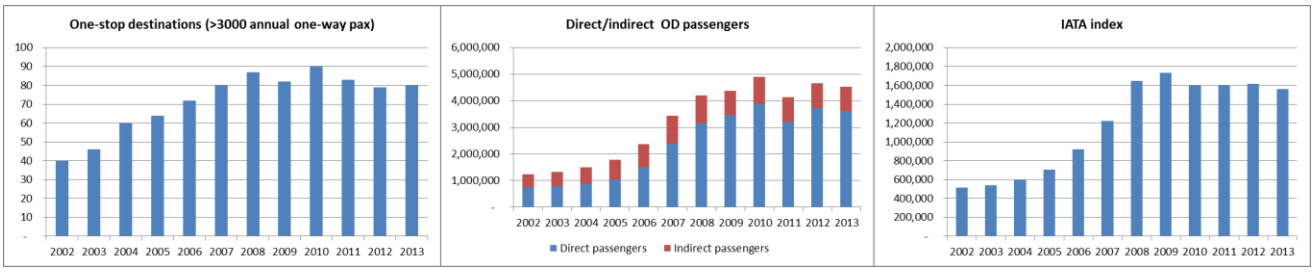

Business Index
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Leisure Index
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

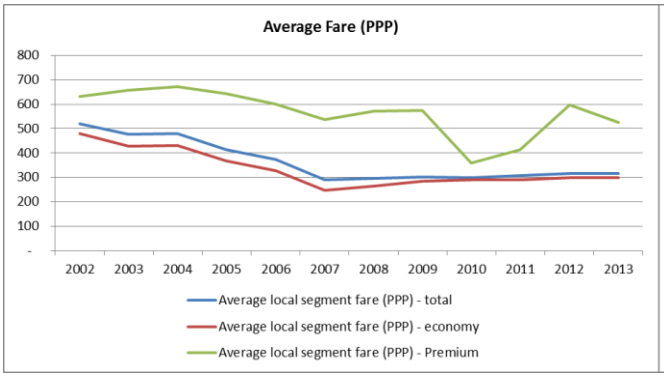
Romania

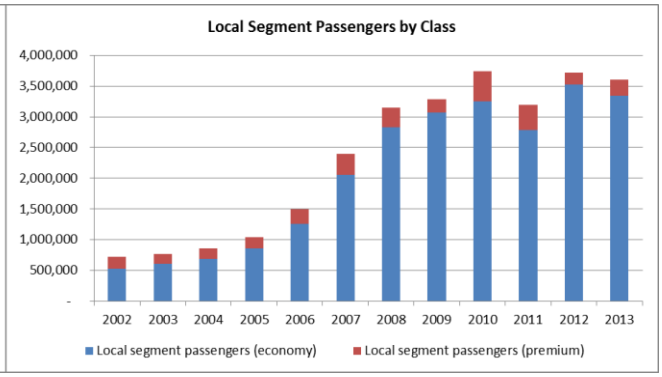

Total Segment passengers (one-way)
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Seat Capacity
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Frequency
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

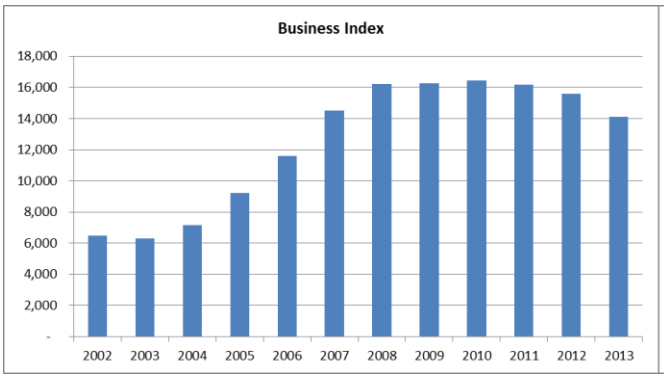

ASMs
7,000,000,000
6,000,000,000
5,000,000,000
4,000,000,000
3,000,000,000
2,000,000,000
1,000,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Seat Capacity by type
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

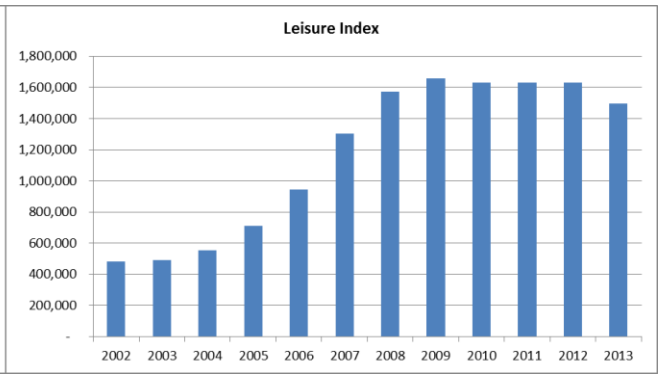

Seat Capacity by type
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats
Flights by type
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights
Direct Destinations
250
200
150
100
50
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


One-stop destinations (>3000 annual one-way pax)
100
90
80
70
60
50
40
30
20
10
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct/indirect OD passengers
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers
IATA index
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013



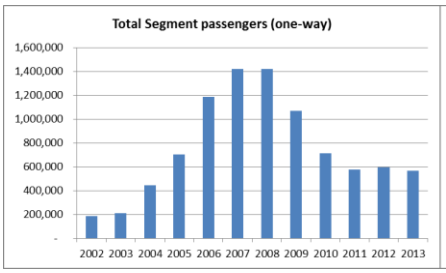


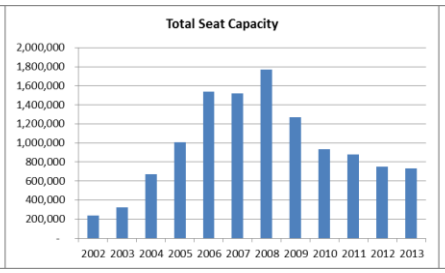


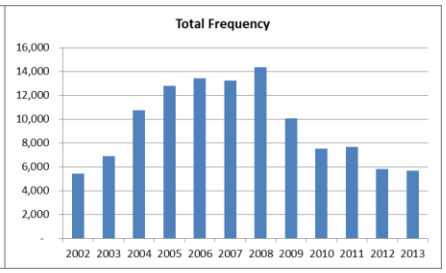


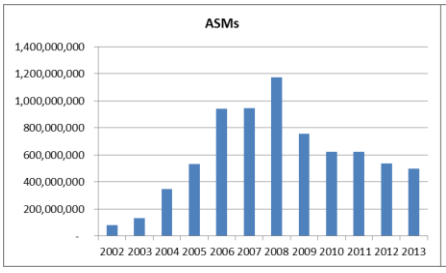
Slovakia

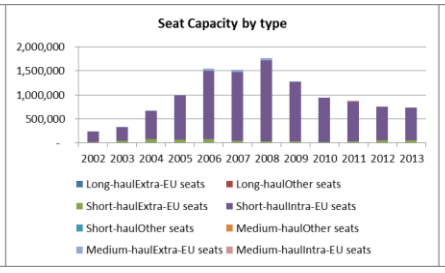
Excluding Vienna

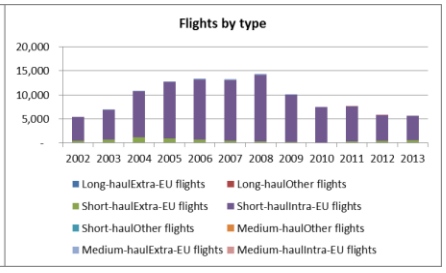


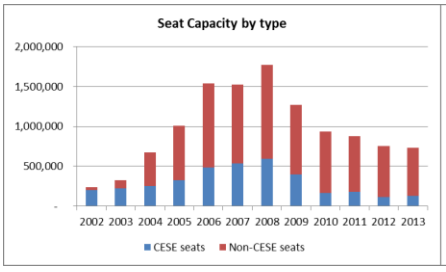


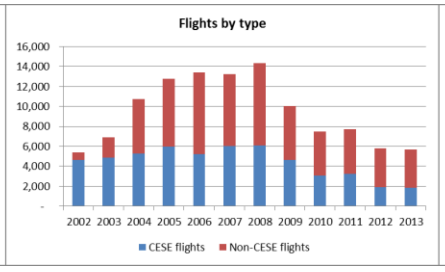


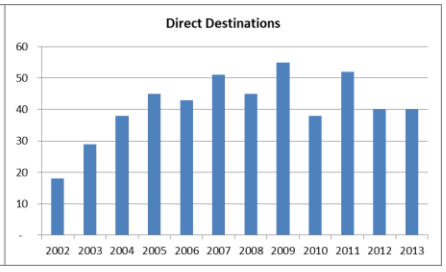


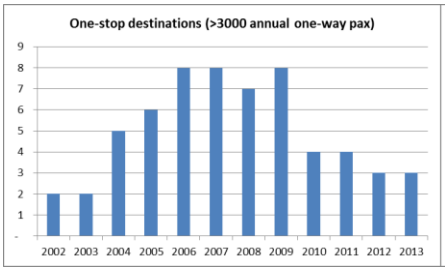


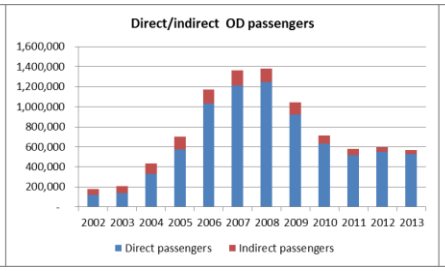


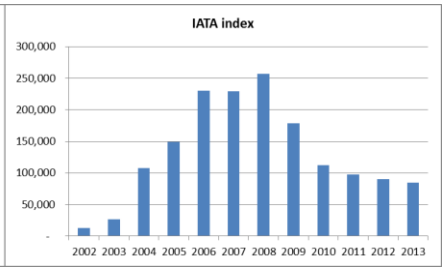


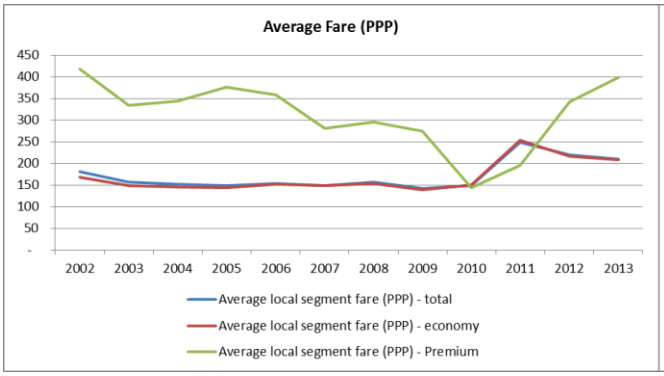


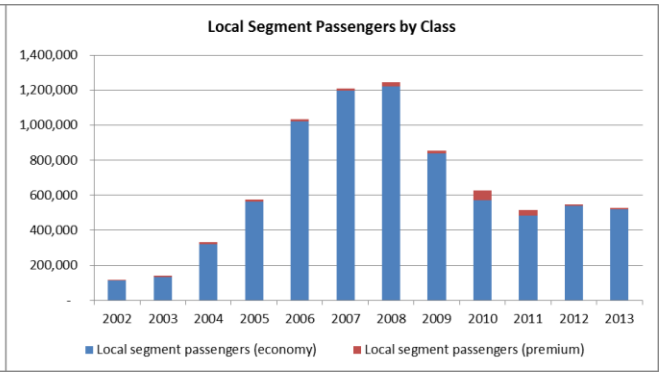


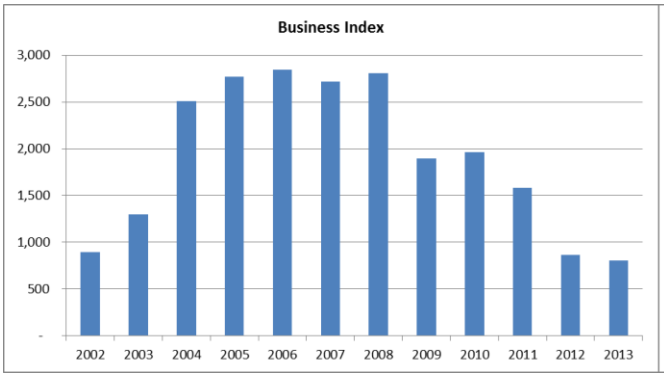


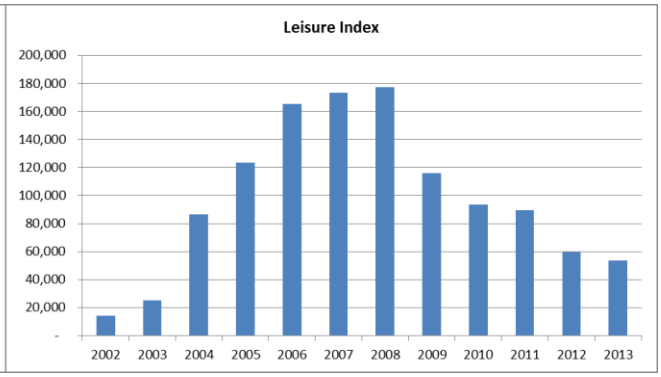




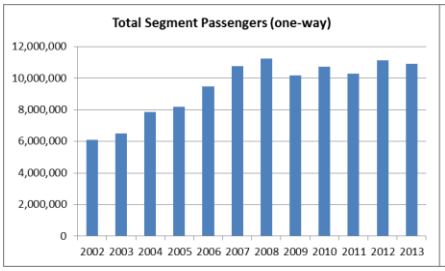


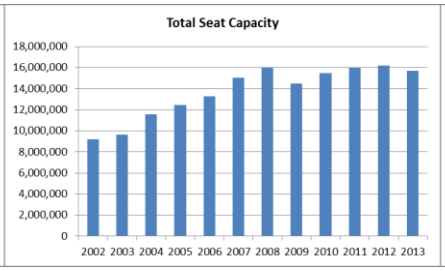


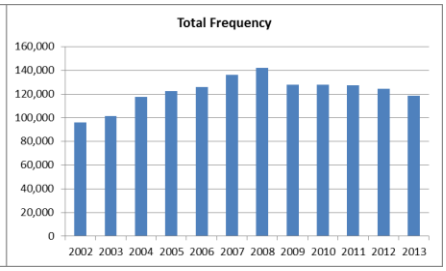


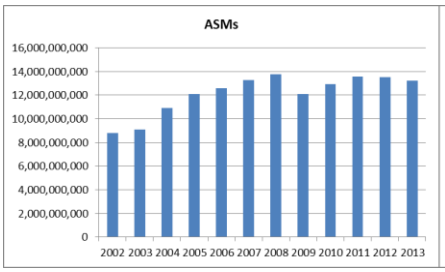


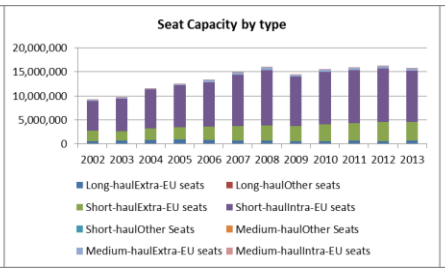
Including Vienna

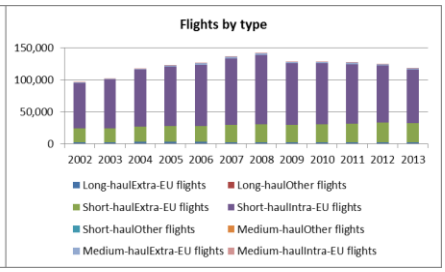


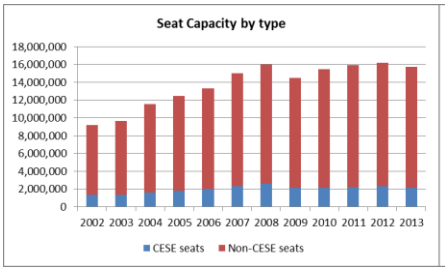


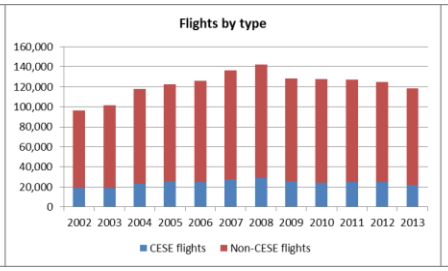


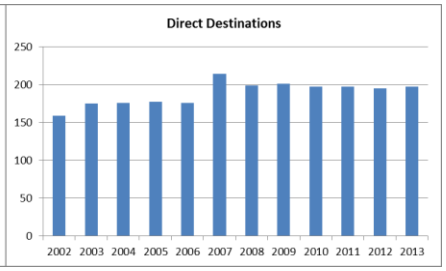


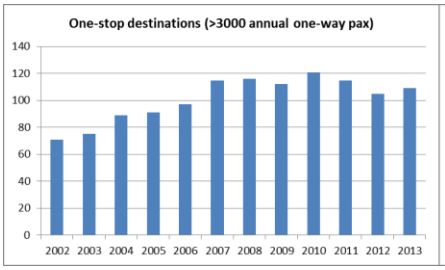


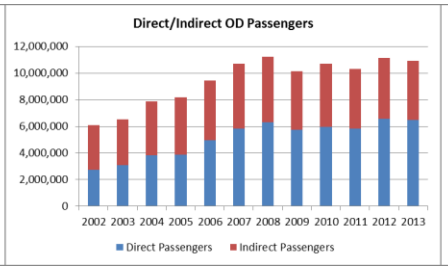


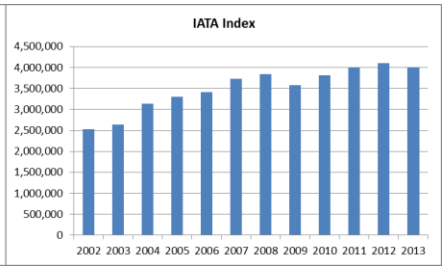

Seat Capacity by type
CESE seats
Non-CESE seats

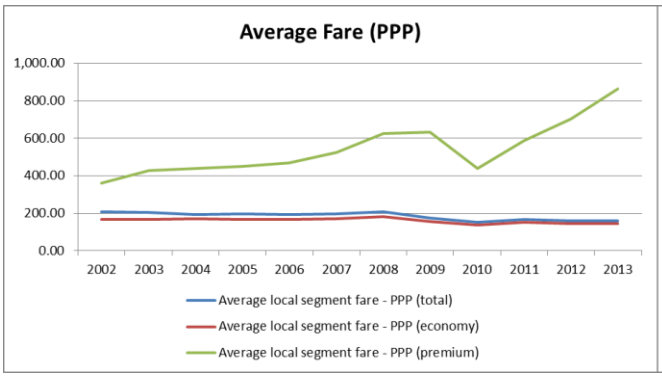

Flights by type
CESE flights
Non-CESE flights

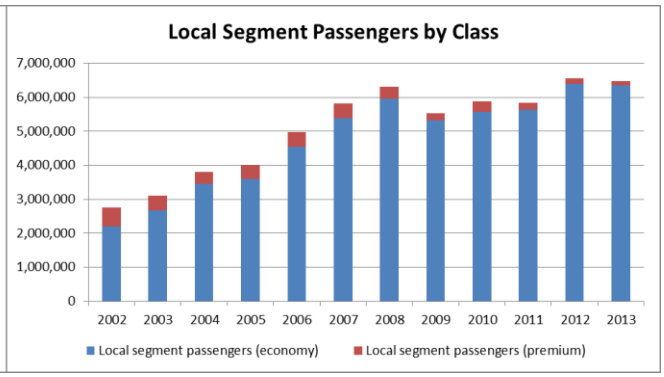

Direct Destinations

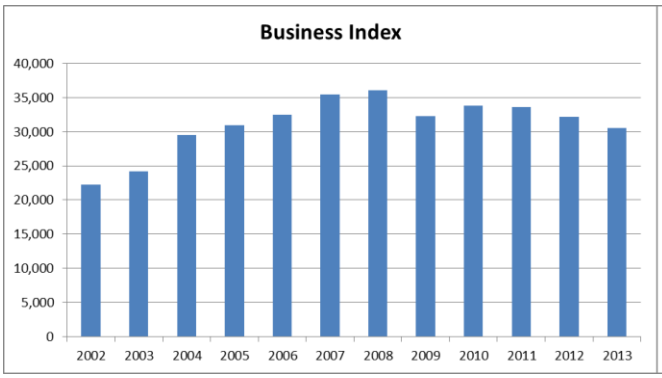

One-stop destinations (>3000 annual one-way pax)

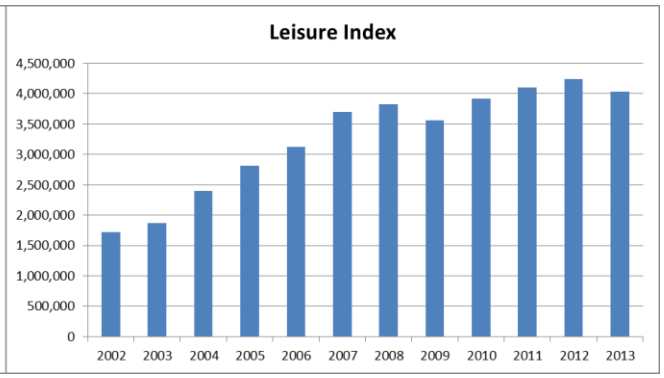

Direct/Indirect OD Passengers
Direct Passengers
Indirect Passengers


IATA Index

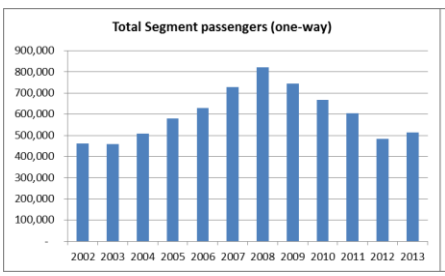

Average Fare (PPP)
Average local segment fare - PPP (total)
Average local segment fare - PPP (economy)
Average local segment fare - PPP (premium)

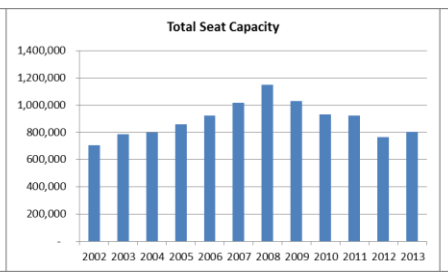

Local Segment Passengers by Class
Local segment passengers (economy)
Local segment passengers (premium)

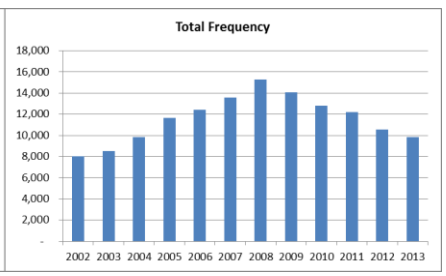

Business Index

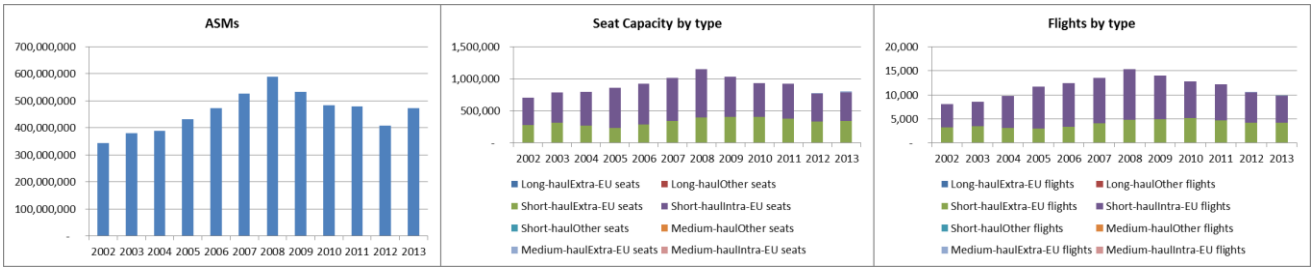

Leisure Index

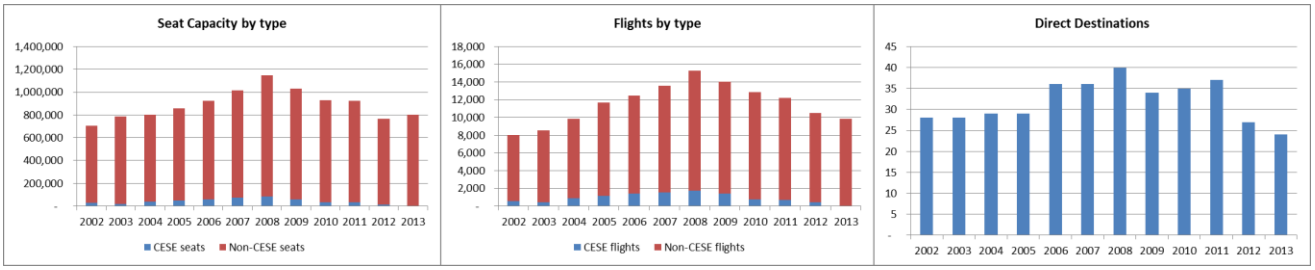
Slovenia

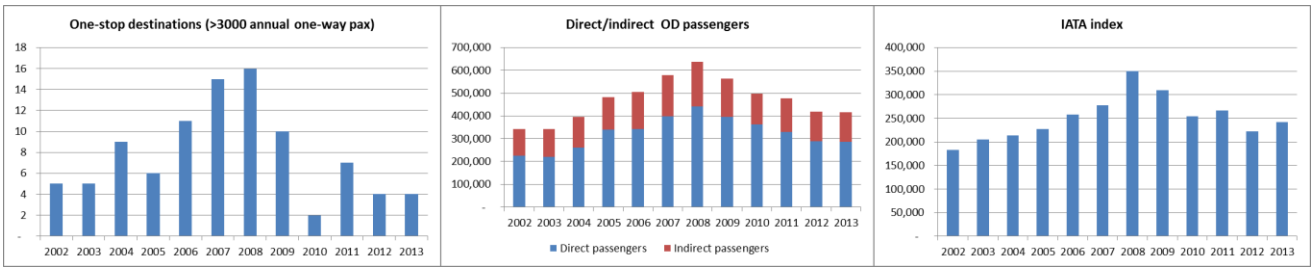

Total Segment passengers (one-way)

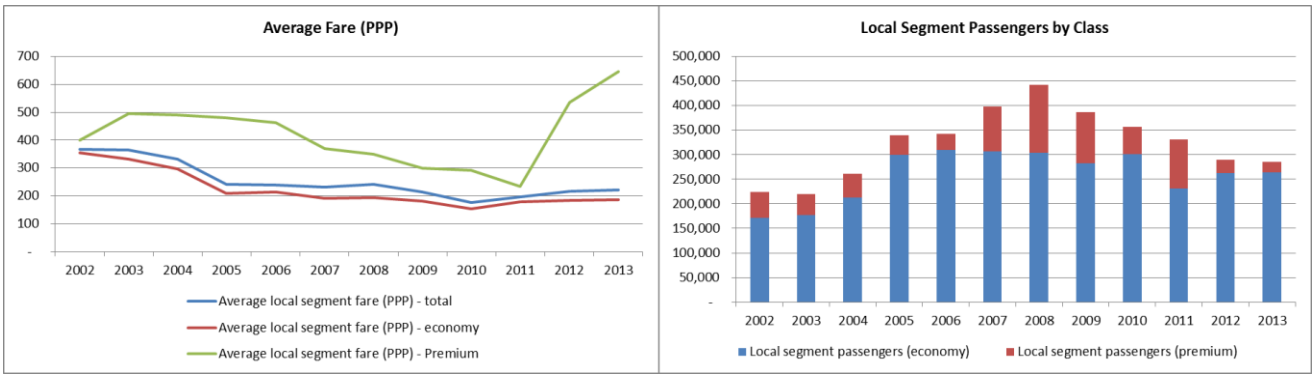

Total Seat Capacity

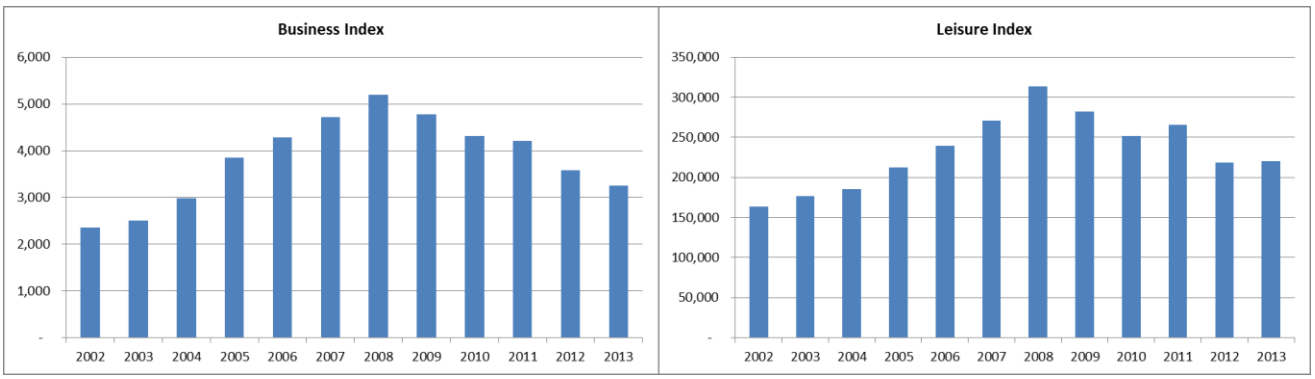

Total Frequency


ASMs
700,000,000
600,000,000
500,000,000
400,000,000
300,000,000
200,000,000
100,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Seat Capacity by type
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights


Seat Capacity by type
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats
Flights by type
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights
Direct Destinations
45
40
35
30
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

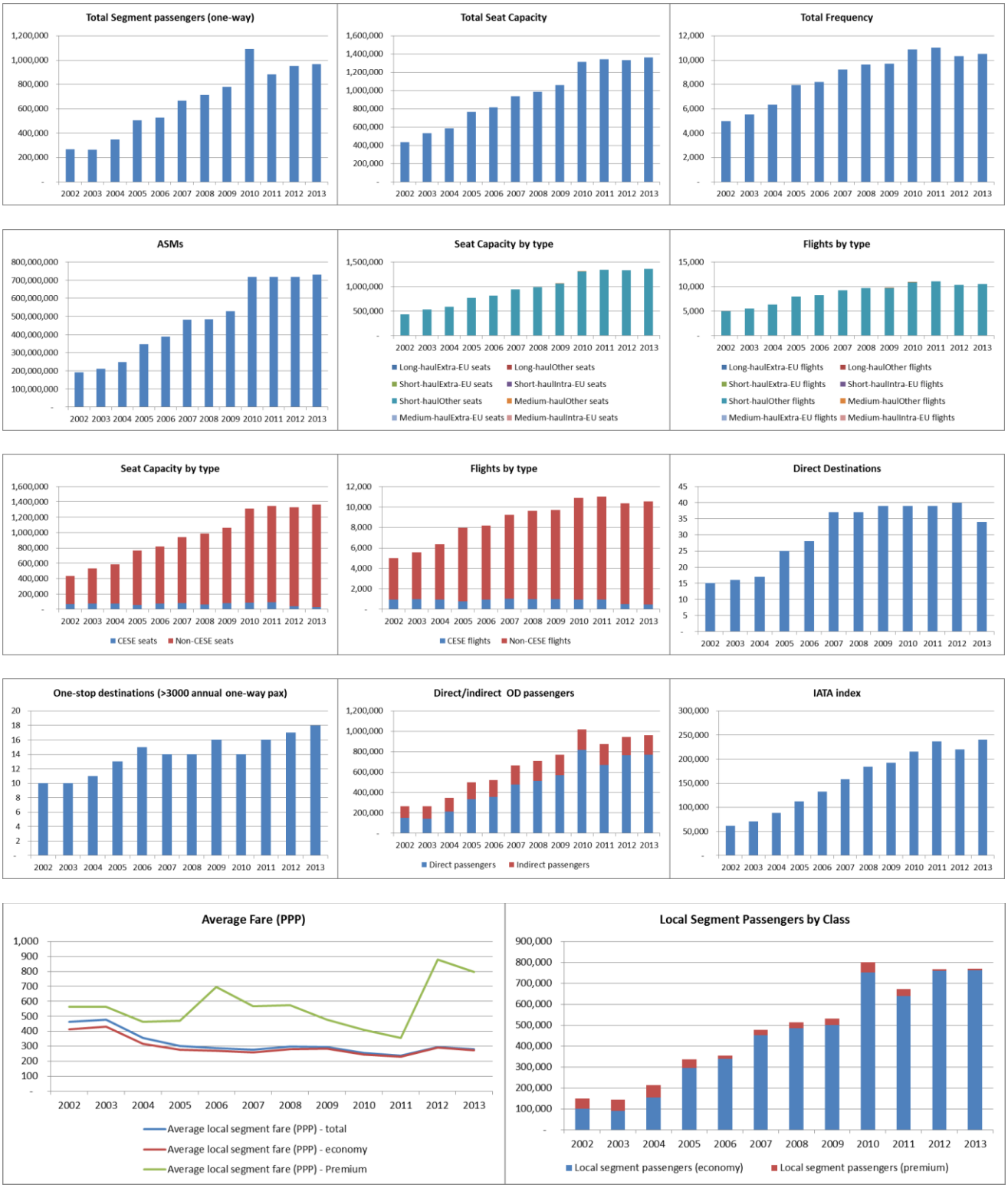

One-stop destinations (>3000 annual one-way pax)
18
16
14
12
10
8
6
4
2
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct/indirect OD passengers
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers
IATA index
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


Average Fare (PPP)
700
600
500
400
300
200
100
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium
Local Segment Passengers by Class
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

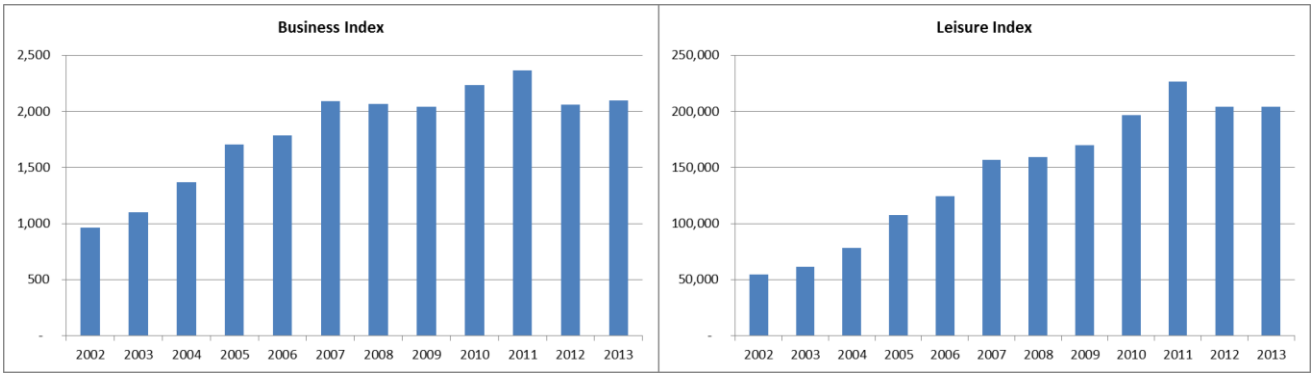

Business Index
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Leisure Index
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

NON-EU[32]

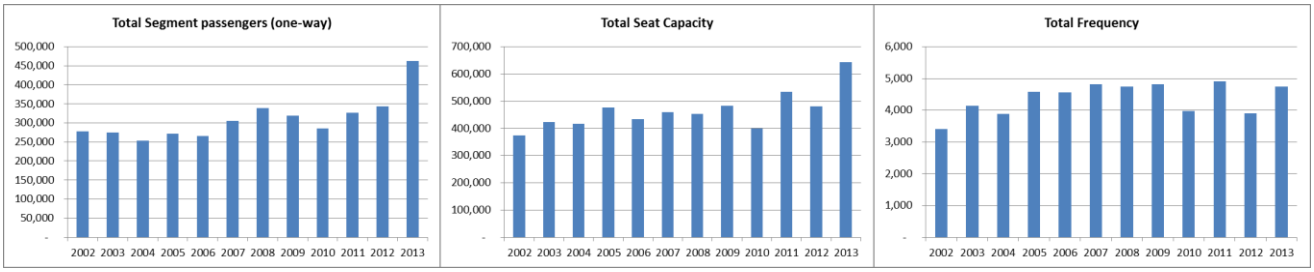
Albania

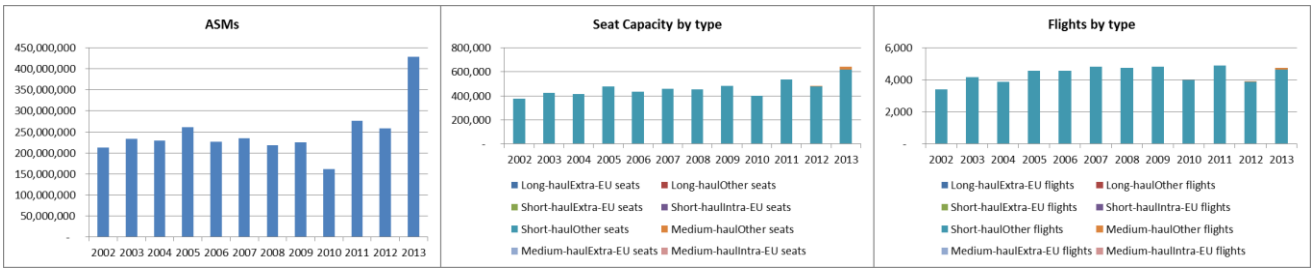


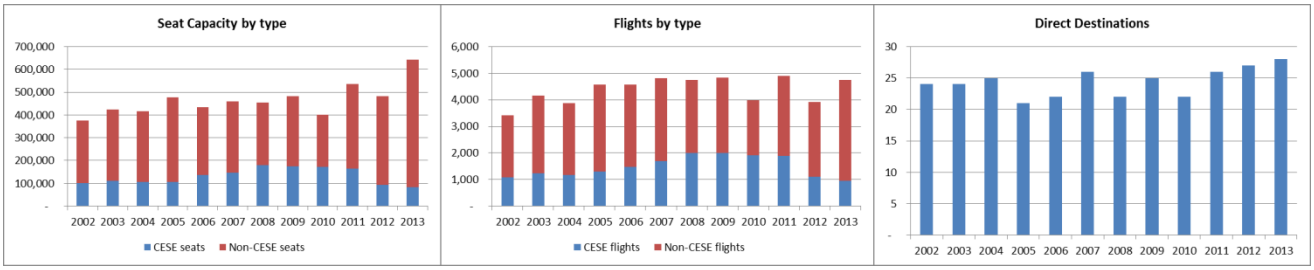
[32] Please note due to the limited data available for Bosnia and Herzegovina, a country specific analysis has not been included

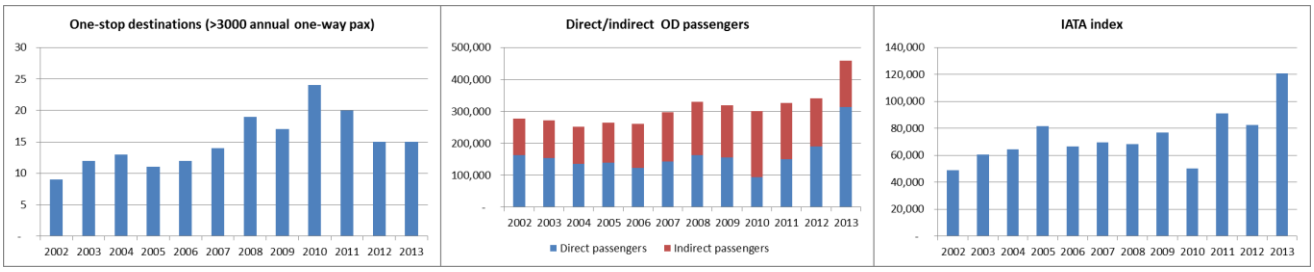

Business Index
2,500
2,000
1,500
1,000
500
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Leisure Index
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

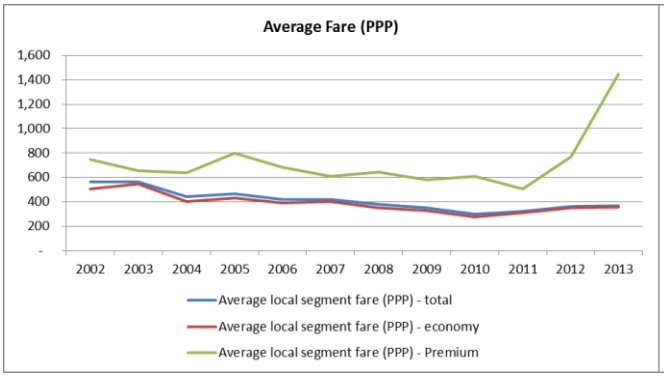
Macedonia

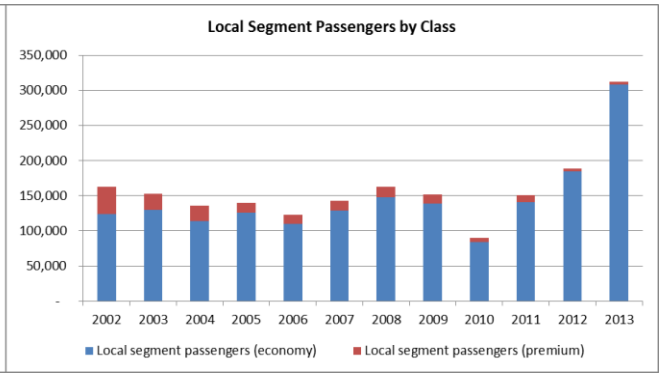

Total Segment passengers (one-way)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Seat Capacity
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Total Frequency
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

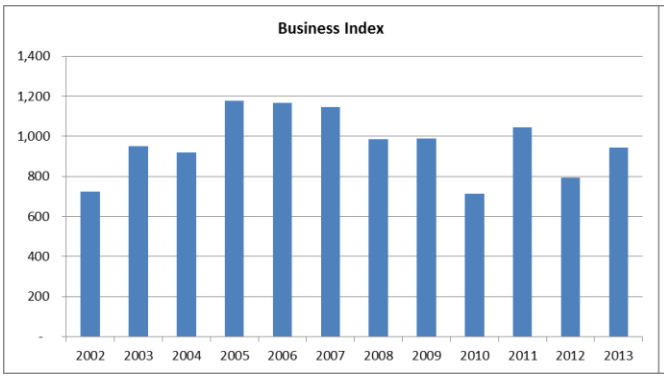

ASMs
450,000,000
400,000,000
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Seat Capacity by type
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats
Flights by type
6,000
4,000
2,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

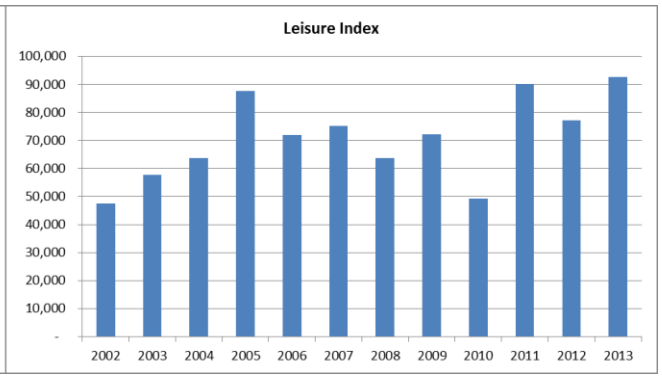

Seat Capacity by type
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE seats
Non-CESE seats
Flights by type
6,000
5,000
4,000
3,000
2,000
1,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
CESE flights
Non-CESE flights
Direct Destinations
30
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


One-stop destinations (>3000 annual one-way pax)
30
25
20
15
10
5
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct/indirect OD passengers
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers
IATA index
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

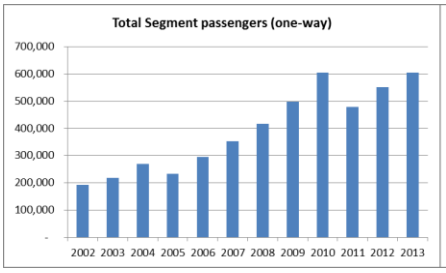

Average Fare (PPP)
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

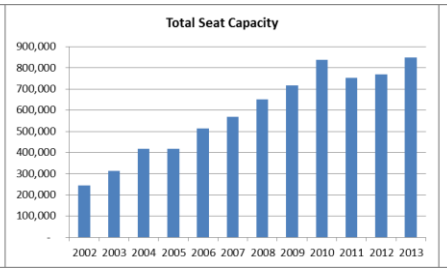

Local Segment Passengers by Class
Local segment passengers (economy)
Local segment passengers (premium)

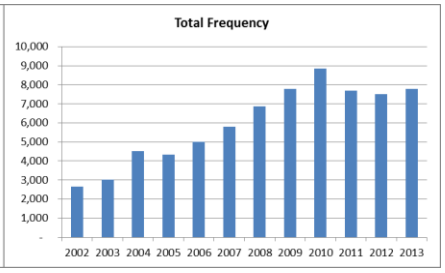

Business Index

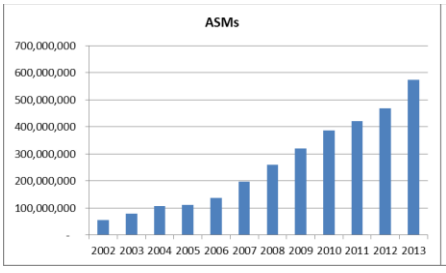

Leisure Index

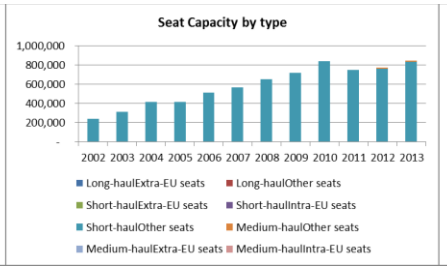
Montenegro

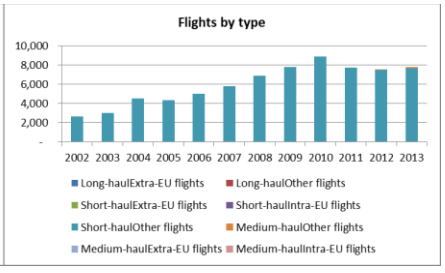

Total Segment passengers (one-way)

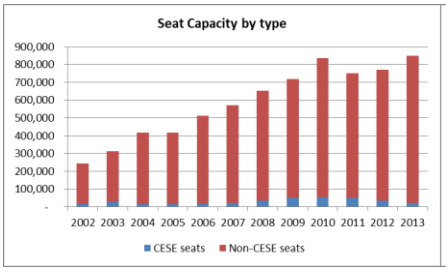

Total Seat Capacity

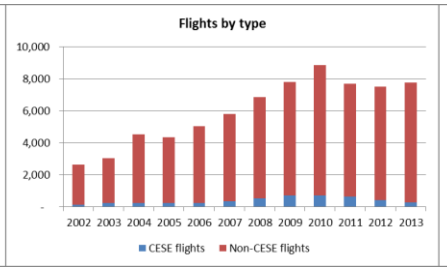

Total Frequency

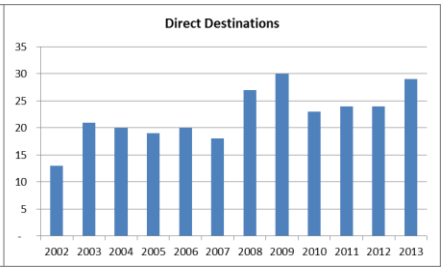

ASMs

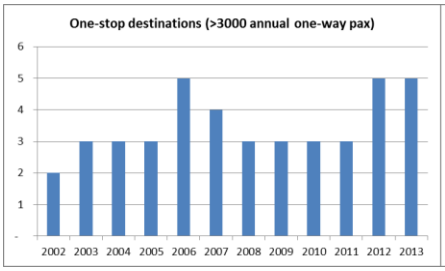

Seat Capacity by type
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats

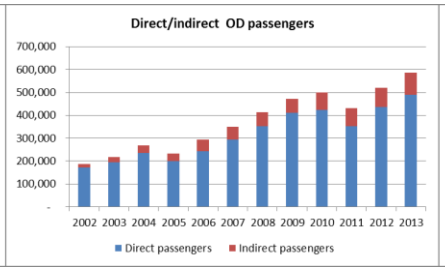

Flights by type
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

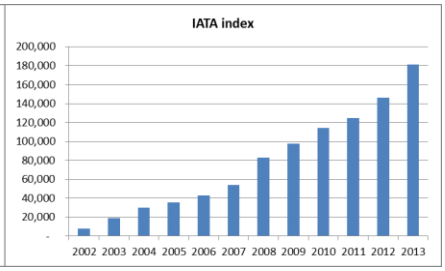

Seat Capacity by type
CESE seats
Non-CESE seats

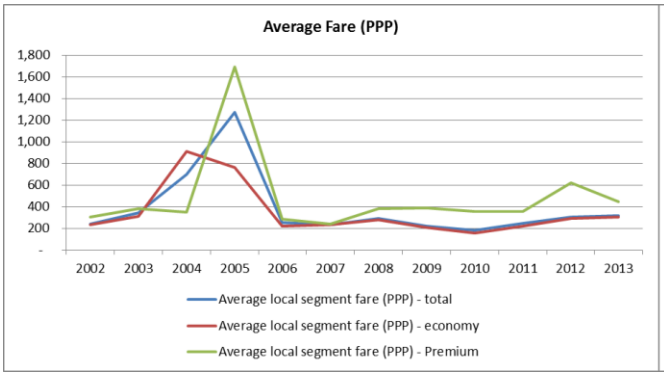

Flights by type
CESE flights
Non-CESE flights

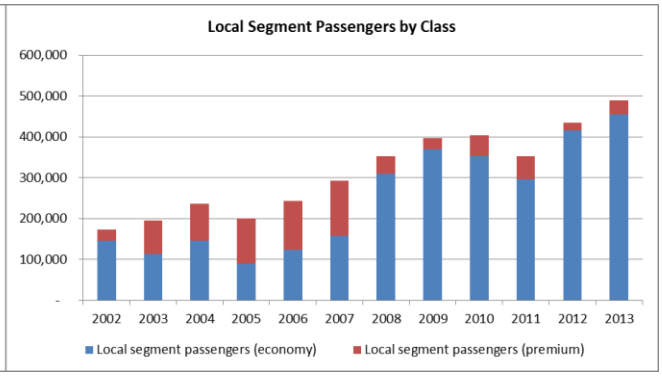

Direct Destinations

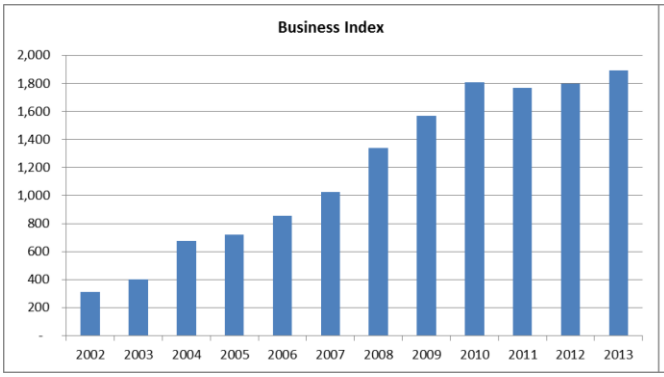

One-stop destinations (>3000 annual one-way pax)
6
5
4
3
2
1
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

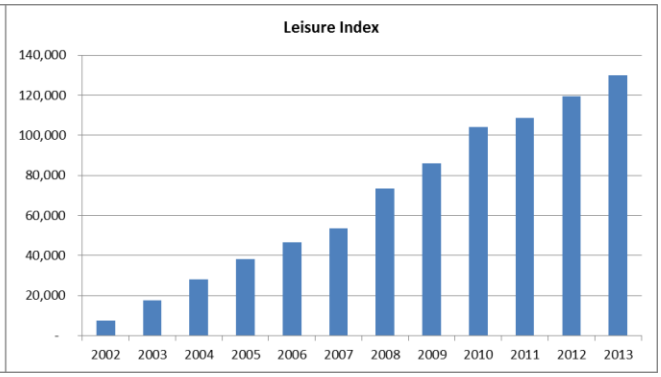

Direct/indirect OD passengers
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Direct passengers
Indirect passengers


IATA index
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

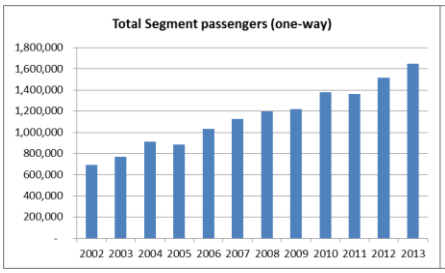

Average Fare (PPP)
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium

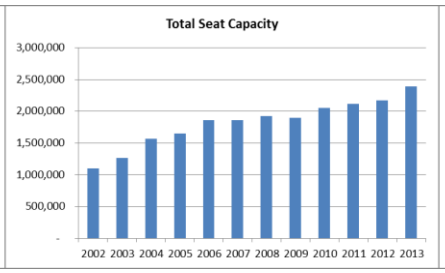

Local Segment Passengers by Class
600,000
500,000
400,000
300,000
200,000
100,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Local segment passengers (economy)
Local segment passengers (premium)

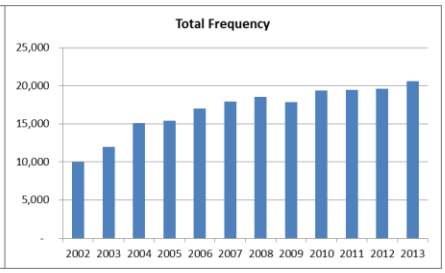

Business Index
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

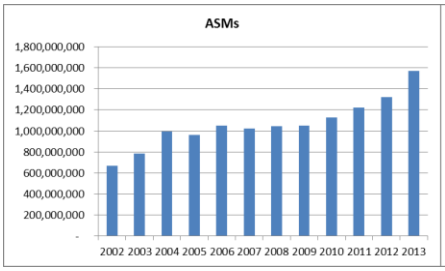

Leisure Index
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

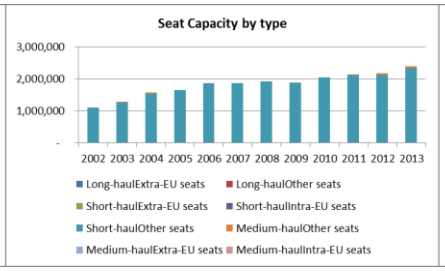
Serbia

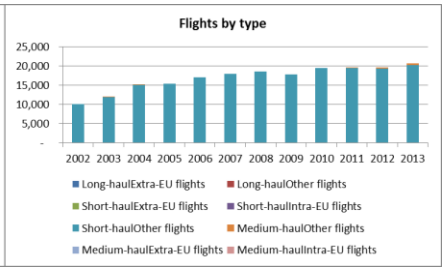

Total Segment passengers (one-way)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


Total Seat Capacity
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


Total Frequency
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


ASMs
1,800,000,000
1,600,000,000
1,400,000,000
1,200,000,000
1,000,000,000
800,000,000
600,000,000
400,000,000
200,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013


Seat Capacity by type
3,000,000
2,000,000
1,000,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU seats
Long-haulOther seats
Short-haulExtra-EU seats
Short-haulIntra-EU seats
Short-haulOther seats
Medium-haulOther seats
Medium-haulExtra-EU seats
Medium-haulIntra-EU seats


Flights by type
25,000
20,000
15,000
10,000
5,000
-
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Long-haulExtra-EU flights
Long-haulOther flights
Short-haulExtra-EU flights
Short-haulIntra-EU flights
Short-haulOther flights
Medium-haulOther flights
Medium-haulExtra-EU flights
Medium-haulIntra-EU flights

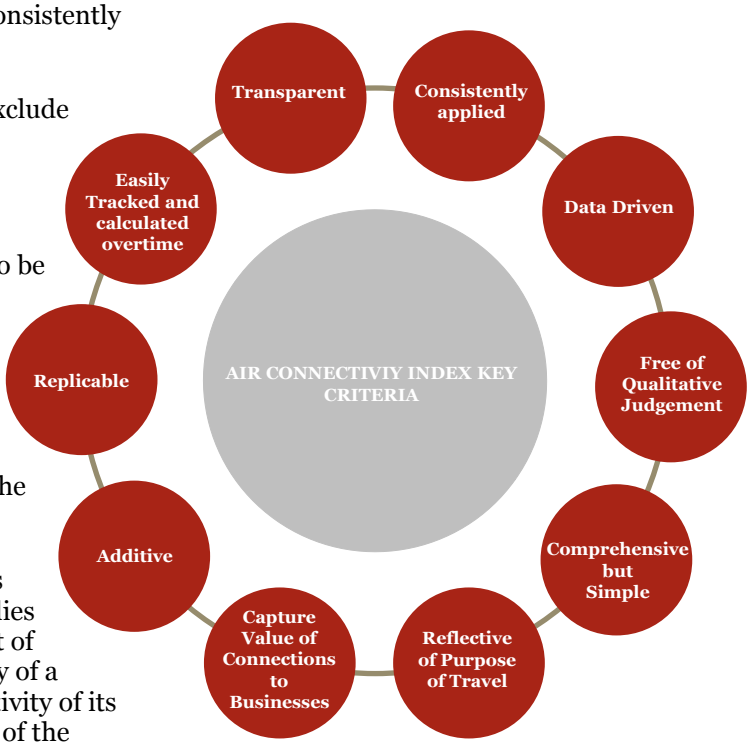

Seat Capacity by type
CESE seats
Non-CESE seats
Flights by type
CESE flights
Non-CESE flights
Direct Destinations
One-stop destinations (>3000 annual one-way pax)
Direct/indirect OD passengers
Direct passengers
Indirect passengers
IATA index
Average Fare (PPP)
Average local segment fare (PPP) - total
Average local segment fare (PPP) - economy
Average local segment fare (PPP) - Premium
Local Segment Passengers by Class
Local segment passengers (economy)
Local segment passengers (premium)
Business Index
Leisure Index

The development of a connectivity measure for this study

Criteria

The criteria used to develop the index include the following:

- The index should be transparent and consistently applied;
- The index should be data-driven and exclude qualitative judgements;
- The index should capture a range of factors relating to connectivity without being overly complex so that it is able to be interpreted;
- There should be two measures of connectivity – one for business and one for leisure;
- The index should capture the value of the connections to businesses;
- The index should be comparable across airports, cities and countries. This implies that the index should take on some sort of additive structure – i.e. the connectivity of a country should be a sum of the connectivity of its cities, which in turn should be the sum of the connectivity of all the airports which are situated in those cities; and



- The index should be replicable and easily be tracked and calculated over time.

Methodology

We have developed an index similar to other measures (such as IATA connectivity index, York Business Connectivity Index, Worldbank connectivity index) where the capacity (either frequency or seats) on a route are then weighted by the value of the destination. We have taken elements of these indices and modified them to account for some of the limitations identified. We have also considered these on an annual basis, rather than weekly, to account for seasonality throughout the year. The measure cannot capture all factors, however, we will supplement the indices with a range of measures (discussed in previously in appendix D).

The following formula will be applied:

$$\sum \left[\text{BASE CAPACITY}\right] * \left[\text{WEIGHTING OF DESTINATION AIRPORT}\right]$$

BASE CAPACITY
- Annual scheduled seat capacity on route x
- Annual scheduled flights on route x

WEIGHTING OF DESTINATION AIRPORT
- Size of airport (Total Pax)
- Available onward connectivity (IATA index)
- Business importance of the destination (GaWC)

D.1.1.1. Base capacity

The base capacity will be measured by the following two measures

1. total available scheduled annual seat capacity (one-way) on each route for each airport being considered; and
2. total scheduled annual flights (one-way) on each route for each airport being considered.

Capacity data has been obtained for 2004-2013 from Sabre ADI/ Milanamos (PlanetOptim). Both sources draw from Innovata schedule data.

D.1.1.2. Weightings

The base capacity on each route is then weighted based on the 'value' applied to the route destination. Alternative weightings capture different elements of connectivity – business importance, overall demand and onward connections.

Weighting	Description
Weighting based on the destination city's rating in GaWC	• GaWC categorises and ranks world cities by business importance • The latest year for this ranking is 2012 and is applied across all years as the measure is only available for some years • We have assigned a weighting to each city with a logarithmic relationship based on the distribution of connectivity in 2000 applied to the 2012 rankings with the city ranked number 1 (New York) being assigned 100% down to 4% for unranked cities.
Weighting based on the total passengers at the destination airport	• Total annual passengers at the destination airport is used as the weighting in the IATA connectivity index • Total passengers captures the overall demand for the destination airport • The weighting is assigned on a linear basis with the airport with the highest number of passengers weighted 100% with other airports weighted relative to this
Weighted by a measure similar to the IATA connectivity index (i.e. seat capacity weighted by size of destination airport)	• The measure used to weight the destination is calculated based on annual seat capacity weighted by total passengers at the destination airport • The IATA index captures both overall demand for the destination airport (e.g. total available seat capacity) and the onward connectivity of the destination – so it adds a further dimension to the total passenger weighting • The weighting is assigned on a linear basis with the airport with the highest measure weighted 100% with other airports weighted relative to this
Weighting based on the total transfer passengers at the destination airport	• Total transfers at the destination airport can capture the onward connectivity of the destination airport • The weighting is assigned similarly to total passengers with the airport with the highest number of transferring passengers weighted 100% with other airports weighted relative to this on a linear basis

Note: More details on the GaWC weightings are provided in appendix E.

D.1.1.3. Business connectivity measure

Based on discussions with stakeholders and our market survey, business travellers place more importance on different aspects of connectivity. For example, the importance of the destination city as a business destination, convenience (location of airport in respect to the city centre) and frequency are key factors. In order to capture these characteristics, we have created a combined measure which assesses the base level of connectivity based on annual flights – which better reflects convenience and frequency compared to total seat capacity. The base measure is then weighted by the GaWC business connectivity ranking for the destination to capture business

importance of the destination city. To capture the secondary airport impact as well as onward connectivity, we have also included a component where the base measure (flights) is weighted by the IATA connectivity measure.

Business Connectivity measure = *0.5*(Annual flights x GaWC city weighting) +0.5*(Annual flights x IATA measure)*

The business and leisure connectivity indices are calculated route by route and summed for all routes from the specific airport, city, country or region. The measures are additive and can be used to compare the relative level of connectivity for different airports, cities, countries, regions as well as the relative change over time.

For example, for the business index, we can look at the city of Warsaw for 2013. The calculation would be carried out for all route operated from airports in Warsaw (WAW and WMI). An example for Warsaw International (WAW) and Warsaw Modlin (WMI) to London Heathrow (LHR) and London Luton (LTN) are shown in the table below.

Key Variables	WAW	WMI
Business Connectivity Index		
Annual Flights to LHR	1754	-
GaWC Weighting for London	88%	88%
Annualised IATA Weighting for LHR	98.3%	-
Annual Flights to LTN	797	168
Annualised IATA Weighting for LTN	4.2%	4.2%
Total	**1634**	**77**

As shown in the table above, in 2013 a total of 1754 flights were scheduled between Warsaw and London Heathrow. London has been assigned a weighting of 88% as per the GaWC table in appendix E. London Heathrow has been assigned a weighting of 98.3% as per the annualised IATA index in appendix E. The contribution of this route would be calculated as follows:

*Business connectivity= 0.5 *(1754 x 88%) + 0.5*(1754 x 98.3%)*

In the case of Warsaw Modlin airport (WMI) the London Luton (LTN) route was selected as example. In 2013, 168 flights were scheduled from WMI to LTN. As per the previous example, London was assigned a weighting of 88%. LTN, on the other hand, has a weighting of 4.2% as per the IATA like index. The contribution for this route would be calculated as follows:

*Business connectivity= 0.5 *(168 x 88%) + 0.5*(168 x 4.2%)*

This is repeated for all routes from Warsaw Airport and Warsaw Modlin airport and summed up to arrive at the total business index for the city of Warsaw.

D.1.1.4. Leisure connectivity measure

For passengers travelling for leisure purposes, timing and frequency tend to be less important than they are for business travellers, with low fares and available capacity to popular and well-connected destinations usually being the key determinants. In order to capture connectivity for leisure passengers, we have taken total available seat capacity and weighted each route by the destination's measure of the IATA connectivity index. The leisure connectivity index takes into account an additional layer to the IATA connectivity index in that it weights the destination by the IATA connectivity index rather than the total passengers.

Leisure connectivity measures *= annual seat capacity by route * weighting based on IATA connectivity measure*

Similarly for the leisure index we use Warsaw and Warsaw Modlin airports as examples.

Key Variables	WAW	WMI
Leisure Connectivity Index		
Annual Seat Capacity to ATH	42844	-
Annualised IATA Weighting for ATH	11.6%	11.6%
Annual Seat Capacity to BCN	67009	15705
Annualised IATA Weighting for BCN	32.6%	32.6%
Total	**4970**	**5120**

As shown in the table above, in 2013 a total of 42844 seats were offered between Warsaw and Athens in 2013. Athens airport was assigned an 11.6% weighting as per the annualised IATA index presented in Appendix E. The contribution of this route to the leisure connectivity index would therefore equal to the following:

Leisure connectivity= 42844 x 11.6%

In the case of Warsaw Modlin airport, 15705 seats were offered to Barcelona airport in 2013. Barcelona airport's weighting according to the annualised IATA index is of 32.6%, this means that the leisure connectivity index for this route would equal to the following:

Leisure connectivity= 15705 x 32.6%

As per the business index, this is repeated for all routes from Warsaw airport and Warsaw Modlin airport and summed up to arrive at the total leisure index for the city of Warsaw.

D.1.1.5. Comparison to the IATA connectivity measure

The table below shows the differences between the IATA connectivity index and the leisure connectivity index utilised for the study.

IATA Connectivity Index vs Leisure Connectivity Index for LCA-LGW route, 2013

Connectivity Indices	LCA to LGW	LCA to LHR
Weekly Seat Capacity (7-13 July 2013)	2279	4081
Destination Airport Weighting (LGW)	33.1%	78.9%
IATA Connectivity Index	**754**	**3220**
Annual Seat Capacity	86899	212999
IATA index weighting of LGW	18.5%	98.3%
Leisure connectivity index	**16076**	**209378**

For the leisure connectivity index, we have calculated an annualised IATA-like index (where we use annual available seat capacity (as opposed to a sample week in July as per the IATA index) x weighting based on total annual pax)) for every airport globally to use as a weighting. We have then taken the annual available seats at a route level and weighted the destination airport based on the annualised IATA index. By doing this, we take into account seasonality of routes (by looking at annual capacity rather than a sample week) and weight it by the annualised IATA index rather than total passengers, to take in an additional layer of connectivity (i.e. how well connected the destination airport is based on the IATA index rather than total airport passengers). Taking a sample month of July is a particular issue for seasonal leisure routes, as the index may overstate the contribution to connectivity of summer destinations relative to year-round and business destinations, similarly, it would understate the contribution to connectivity of winter routes. The difference in connectivity can be seen in the table above, where a different weighting is utilised for LGW (i.e. 33.1% in the case of the IATA index versus 18.5% in the case of the leisure connectivity index). The lower weighting assigned to LGW in the case of the leisure index indicates the lower availability of onward connections from the airport. The difference generated by onward connections can also be noticed in the comparison between LGW and LHR which shows how the difference in onward connections available from each airport impacts on the weighting assigned to each airport (i.e. 18.5% for LGW and 98.3% for LHR).

Limitations

In an ideal world with full information, there are a huge range of factors which should be considered in the measurement of connectivity. However, given lack of consistent information across all countries and the aforementioned criteria, incorporating some of these factors is not feasible.

In addition, there are many other considerations to be made in measuring connectivity, such as the overall door-to-door journey time and cost, however, given the wide scope of countries and lack of readily available data, we were not able to consider this in the connectivity measure that was developed. Other considerations include:

- Actual connection times – this has been captured to some extent by measures the number of reasonable one-stop destination
- Cargo – limited information to include across all countries in the index

- Surface access – limitations of information to capture this across all markets
- Secondary airports – there are few catchments within CESE where passengers have a choice of airport (the extent to which the values of secondary airports has been captured has been presented earlier in appendix D)

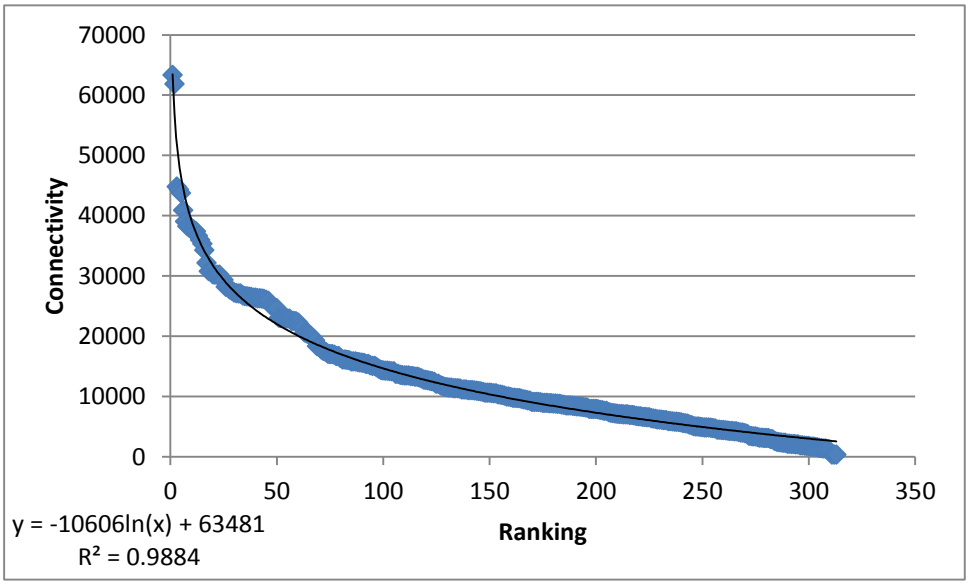
Appendix E. - Weightings

Business connectivity

The business connectivity measure applies weightings based on the Globalisation and World Cities (GaWC) business connectivity index. We have used GaWC rankings based on 2012 data in our calculations, however, the distribution of the rankings based on the measure of connectivity is not available for 2012. In order to estimate how the weightings should be applied, we have obtained the distribution from the raw data from 2000 to determine the distribution of the rankings and applied this curve to the rankings for 2012 to obtain weightings by city.

The figure below shows the distribution of the city rankings for the GaWC business connectivity index. Each point represents a different city. The y-axis shows the GaWC measure of business connectivity, whereas the x-axis shows the ranking of each city.

Distribution of rankings by measure of GaWC business connectivity measure (2000)



Source: GaWC, PwC analysis.

The tables show the 2012 rankings and the weighting applied to each city. Where cities were not included in the GaWC rankings, we have applied a weighting equivalent to the lowest ranked city in the list.

#	Rank	City	Weight
Alpha++	1	New York	100%
	2	London	88%
Alpha+	3	Hong Kong	82%
	4	Paris	77%
	5	Singapore	73%
	6	Shanghai	70%
	7	Tokyo	67%
	8	Beijing	65%
	9	Sydney	63%
	10	Dubai	62%
Alpha	11	Chicago	60%
	12	Mumbai	58%
	13	Milan	57%
	14	Moscow	56%
	15	Sao Paulo	55%
	16	Frankfurt	54%
	17	Toronto	53%
	18	Los Angeles	52%
	19	Madrid	51%
	20	Mexico City	50%
	21	Amsterdam	49%
	22	Kuala Lumpur	48%
	23	Brussels	48%
Alpha-	24	Seoul	47%
	25	Johannesburg	46%
	26	Buenos Aires	46%
	27	Vienna	45%
	28	San Francisco	44%
	29	Istanbul	44%
	30	Jakarta	43%
	31	Zurich	43%
	32	Warsaw	42%
	33	Washington DC	42%
	34	Melbourne	41%
	35	Delhi	41%
	36	Miami	40%
	37	Barcelona	40%
	38	Bangkok	39%
	39	Boston	39%
	40	Dublin	38%
	41	Taipei	38%
	42	Munich	38%
	43	Stockholm	37%
	44	Prague	37%
	45	Atlanta	36%
Beta+	46	Bangalore	36%
	47	Lisbon	36%
	48	Copenhagen	35%
	49	Santiago	35%
	50	Guangzhou	35%
	51	Rome	34%
	52	Cairo	34%
	53	Dallas	34%
	54	Hamburg	33%
	55	Duesseldorf	33%
	56	Athens	33%
	57	Manila	32%
	58	Montreal	32%
	59	Philadelphia	32%
	60	Tel Aviv	32%
	61	Lima	31%

GaWC rating	Rank	City	Weight
Beta+	62	Budapest	31%
	63	Berlin	31%
	64	Cape Town	31%
	65	Luxembourg	30%
	66	Houston	30%
	67	Kiev	30%
	68	Bucharest	30%
	69	Beirut	29%
Beta	70	Ho Chi Minh City	29%
	71	Bogota	29%
	72	Auckland	29%
	73	Montevideo	28%
	74	Caracas	28%
	75	Riyadh	28%
	76	Vancouver	28%
	77	Chennai	27%
	78	Manchester	27%
	79	Oslo	27%
	80	Brisbane	27%
	81	Helsinki	27%
	82	Karachi	26%
	83	Doha	26%
	84	Casablanca	26%
	85	Stuttgart	26%
	86	Rio de Janeiro	26%
	87	Geneva	25%
Beta-	88	Guatemala City	25%
	89	Lyon	25%
	90	Panama City	25%
	91	San Jose	25%
	92	Bratislava	24%
	93	Minneapolis	24%
	94	Tunis	24%
	95	Nairobi	24%
	96	Cleveland	24%
	97	Lagos	24%
	98	Abu Dhabi	23%
	99	Seattle	23%
	100	Hanoi	23%
	101	Sofia	23%
	102	Riga	23%
	103	Port Louis	23%
	104	Detroit	22%
	105	Calgary	22%
	106	Denver	22%
	107	Perth	22%
	108	Calcutta	22%
	109	San Diego	22%
	110	Amman	21%
	111	Antwerp	21%
	112	Manama	21%
	113	Birmingham	21%
	114	Nicosia	21%
	115	Quito	21%
	116	Rotterdam	21%
	117	Belgrade	20%
	118	Monterrey	20%
	119	Almaty	20%
	120	Shenzhen	20%
	121	Kuwait	20%
	122	Hyderabad	20%

GaWC rating	Rank	City	Weight
Beta-	123	Edinburgh	20%
Gamma+	124	Zagreb	19%
	125	Lahore	19%
	126	St. Petersburg	19%
	127	Jeddah	19%
	128	Durban	19%
	129	Santo Domingo	19%
	130	St. Louis	19%
	131	Islamabad	19%
	132	Guayaquil	18%
	133	Baltimore	18%
	134	San Salvador	18%
	135	Cologne	18%
	136	Phoenix	18%
	137	Adelaide	18%
	138	Bristol	18%
	139	Charlotte	18%
	140	Georgetown	17%
	141	Osaka	17%
	142	Tampa	17%
Gamma	143	Glasgow	17%
	144	San Juan	17%
	145	Marseille	17%
	146	Guadalajara	17%
	147	Leeds	17%
	148	Baku	17%
	149	Vilnius	16%
	150	Tallinn	16%
	151	Raleigh	16%
	152	Ankara	16%
	153	Belfast	16%
	154	San Jose	16%
	155	Colombo	16%
	156	Valencia	16%
	157	Cincinnatti	16%
	158	Milwaukee	15%
	159	Muscat	15%
	160	Ljubljiana	15%
Gamma-	161	Nantes	15%
	162	Tianjin	15%
	163	Accra	15%
	164	Algiers	15%
	165	Gothenburg	15%
	166	Porto	15%
	167	Columbus	14%
	168	Utrecht	14%
	169	Orlando	14%
	170	Amedabad	14%
	171	Ascuncion	14%
	172	Kansas City	14%
	173	Seville	14%
	174	Turin	14%
	175	Dar Es Salaam	14%
	176	Portland	14%
	177	Krakow	14%
	178	Managua	13%
	179	Pune	13%
	180	Liepzig	13%
	181	Malmo	13%
	182	La Paz	13%

GaWC rating	Rank	City	Weight
High sufficiency	183	Southampton	13%
	184	Indianapolis	13%
	185	Porto Alegre	13%
	186	Strasbourg	13%
	187	Gaborone	13%
	188	Chengdu	13%
	189	Richmond	12%
	190	Pittsburgh	12%
	191	Tijuana	12%
	192	Austin	12%
	193	Quingdao	12%
	194	Nassau	12%
	195	Tegucigalpa	12%
	196	Lille	12%
	197	Curitiba	12%
	198	The Hague	12%
	199	Hartford	12%
	200	Wroclaw	11%
	201	Edmonton	11%
	202	Luausanne	11%
	203	Dhaka	11%
	204	Nuremburg	11%
	205	Lusaka	11%
	206	Kampala	11%
	207	Bilbao	11%
	208	Douala	11%
	209	Abidjan	11%
	210	Salt Lake City	11%
	211	Hangzhou	11%
	212	Poznan	11%
	213	Wellington	10%
	214	Ottawa	10%
	215	Dakar	10%
	216	Queretaro	10%
	217	Dresden	10%
	218	Newcastle	10%
	219	Skopje	10%
	220	Nanjing	10%
	221	Tirana	10%
	222	Chongquing	10%
	223	Belo Horizonte	10%
Sufficiency	224	Florence	10%
	225	Pretoria	10%
	226	Toulouse	9%
	227	Arhus	9%
	228	San Antonio	9%
	229	Bremen	9%
	230	Nashville	9%
	231	Bologna	9%
	232	Canberra	9%
	233	Nagoya	9%
	234	Sacramento	9%
	235	Providence	9%
	236	Luanda	9%
	237	Dalian	9%
	238	Liverpool	9%
	239	Jacksonville	9%
	240	Puebla	8%
	241	Kaohsiung	8%
	242	Minsk	8%
	243	Linz	8%
	244	Tbilisi	8%
	245	Las Vegas	8%

GaWC rating	Rank	City	Weight
Sufficiency	246	Maputo	8%
	247	Harare	8%
	248	Cardiff	8%
	249	Xiamen	8%
	250	Birmingham	8%
	251	Leon	8%
	252	Port of Spain	8%
	253	Penang	8%
	254	Memphis	7%
	255	Aberdeen	7%
	256	Abuja	7%
	257	Hannover	7%
	258	Surabaya	7%
	259	Bem	7%
	260	Halifax	7%
	261	Ciudad Juarez	7%
	262	Alexandria	7%
	263	Bordeaux	7%
	264	Phnom Penh	7%
	265	Winnipeg	7%
	266	Cali	7%
	267	Greensboro	7%
	268	Genoa	7%
	269	Medellin	7%
	270	Santa Cruz	6%
	271	Montpellier	6%
	272	Cordoba	6%
	273	Wuhan	6%
	274	Graz	6%
	275	Jerusalem	6%
	276	New Orleans	6%
	277	Rochester	6%
	278	Nice	6%
	279	Pusan	6%
	280	Windhoek	6%
	281	Dammam	6%
	282	Christchurch	6%
	283	Recife	6%
	284	Tashkent	6%
	285	Hamilton	6%
	286	Reykjavik	6%
	287	Naples	5%
	288	Tulsa	5%
	289	Ludwigshafen	5%
	290	Kingston	5%
	291	Brasilia	5%
	292	Johor Bahru	5%
	293	Xi'An	5%
	294	Macao	5%
	295	Fukuoka	5%
	296	Sheffield	5%
	297	Izmir	5%
	298	Nottingham	5%
	299	Des Moines	5%
	300	Campinas	5%
	301	Chisinau	5%
	302	Halfa	5%
	303	Madison	5%
	304	Yerevan	4%
	305	Cebu	4%
	306	Labuan	4%
	307	Salvador	4%
Unranked		All other cities	4%

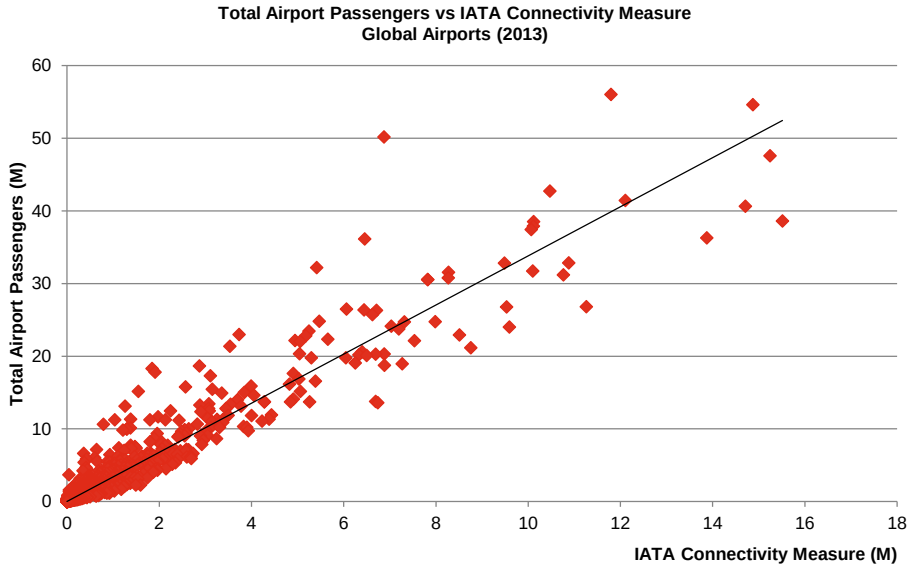
Leisure connectivity

The leisure connectivity measure uses weightings based on the adapted IATA connectivity measure discussed in appendix D. The weightings were calculated for each year with each airport being weighted relative to the level of connectivity for the highest ranking airport (assigned a value of 1) in that year. An example of the top 20 highest ranked airports and their weightings for 2013 is shown below.

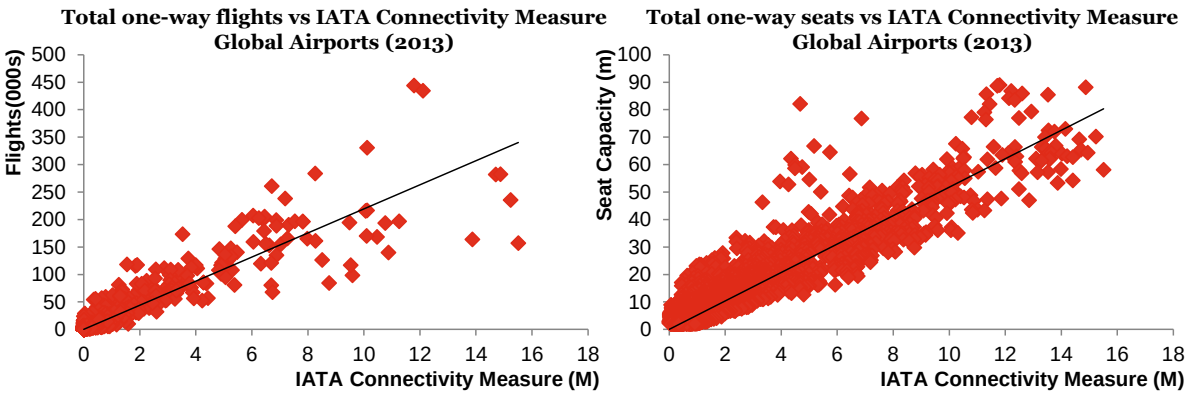
Rank	Airport	Adapted IATA Connectivity measure (m)	Weight
1	HKG	15.5	100.0%
2	LHR	15.2	98.3%
3	PEK	14.9	95.9%
4	LAX	14.7	94.8%
5	SIN	13.9	89.4%
6	ORD	12.1	78.1%
7	ATL	11.8	76.0%
8	SFO	11.3	72.6%
9	BKK	10.9	70.1%
10	JFK	10.8	69.4%
11	DXB	10.5	67.5%
12	CDG	10.1	65.2%
13	DFW	10.1	65.2%
14	PVG	10.1	65.1%
15	FRA	10.1	64.9%
16	NRT	9.6	61.8%
17	ICN	9.5	61.4%
18	CAN	9.5	61.2%
19	TPE	8.8	56.5%
20	SHA	8.5	54.9%

Linearity test for the IATA connectivity index

The applicability of using a linear relationship for weightings was tested. We tested for linearity of the IATA connectivity index against three key base measures of total airport passengers, number of flights, and seat capacity.



$$\text{IATA Connectivity} = \begin{cases} 0.2737 \times \text{passengers} & (R^2=0.93) \\ 0.2877 \times \text{passengers} - 0.0005 \times \text{passengers}^2 & (R^2=0.93) \end{cases}$$



IATA Connectivity = { 0.0395 x flights (R^2=0.87); 0.0454 x flights – 0.00003 x flights^2 (R^2=0.87) } { 0.1787 x seats (R^2=0.93); 0.1915 x seats – 0.0003 x flights^2 (R^2=0.93) }

Note: All coefficients were significant at a 5% level.
Source: Sabre ADI/ Milanamos (PlanetOptim), PwC analysis

Visually, the relationship appears linear for all three plots. We tested both linear and polynomial functional forms with the coefficient for the squared term in the polynomial form very close to zero with no significant change in coefficient of determination for the two forms in both models. Therefore, we can conclude that there is little evidence to suggest that the relationship is non-linear.

Appendix F. - Summary Table of CESE Countries Indicators, 2013

Country	Population	GDP/Capita (PPP, Intl $)	PwC ACI[33]	O&D Passengers	Direct vs Transfer Pax	Air Trips/Capita	Hub Reliance
Albania	2.8m	9,506	Business – 2,181	960k	Direct – 79% Transfer – 21%	0.34	Main hub : Tirana int'l Other hubs: Vienna (5%), Rome Fiumicino (4%)
Bosnia-Herzegovina	3.9m	8,280	Business – 55	360k	Direct – 56% Indirect – 44%	0.03	Main hub: Sarajevo Intl Other hubs: Vienna (13%), Istanbul (11%), Munich (7%)
Bulgaria	7.2m	14,499	Business – 6,376	2.3m	Direct – 76% Transfer – 24%	0.25	Main hub: Sofia Int'l Other hubs: Vienna (4%), Munich (3%), Istanbul (1%)
Croatia	4.3m	18,191	Business – 8,740	2.5m	Direct – 76% Transfer – 23%	0.34	Main hub: Zagreb International Other hubs: Frankfurt (4%), Munich (4%), Vienna (3%)
Cyprus	900k	25,265	Business – 7,199	3.6m	Direct – 88% Transfer – 12%	3.59	Main hubs: Larnaca and Paphos International Other hubs: Istanbul (1%), Athens (1%), Vienna (1%)
Czech Republic	10.5m	27,200	Business – 17,531	4.7m	Direct – 78% Transfer – 22%	0.37	Main hub: Praha International Other hubs: Frankfurt (3%), Munich (1%), Dubai International (1%)

[33] ACI stands for Air Connectivity Index

Country	Population	GDP/Capita (PPP, Intl $)	PwC ACI[33]	O&D Passengers	Direct vs Transfer Pax	Air Trips/Capita	Hub Reliance
Estonia	1.3m	23,144	Business – 2,889	830k	Direct – 63% Transfer – 37%	0.58	Main hub: Tallinn Other hubs: Riga (8%), Frankfurt (7%), Helsinki (6%)
Hungary	9.9m	20,065	Business – 10,005	4.0m	Direct – 80% Transfer – 20%	0.34	Main hub: Budapest International Other hubs: Munich (3%), Frankfurt (2%), Amsterdam (2%). Vienna is also believed to capture some of the long-haul market previously served by Malév
Latvia	2.0m	19,120	Business – 6,961	1.7m	Direct – 84% Transfer – 16%	0.57	Main hub: Riga International Other hubs: Frankfurt (3%)
Lithuania	3.0m	22,747	Business – 3,730	1.6m	Direct – 78% Transfer – 22%	0.65	Main hub: Vilnius Other hubs: Riga (4%), Copenhagen (4%), Frankfurt (4%)
Macedonia	2.1m	10,904	Business – 1,059	460k	Direct – 68% Transfer – 32%	0.16	Main hub: Skopje Other hubs: Vienna (9%), Istanbul (9%), Belgrade (3%)
Malta	420k	27,840	Business – 4,271	1.8m	Direct – 88% Transfer – 12%	2.29	Main hub: Malta International Other hubs: Frankfurt (3%), Fiumicino (1%)
Montenegro	620k	11,913	Business – 2,165	590k	Direct – 83% Transfer – 17%	0.28	Main hub: Podgorica International Other hubs: Belgrade (6%), Vienna (3%)
Poland	38.5m	21,214	Business – 29,056	10.0m	Direct – 83% Transfer – 17%	0.24	Main hubs: Warsaw, Krakow, Gdansk Other hubs: Frankfurt (3%), Munich (3%)

Country	Population	GDP/Capita (PPP, Intl $)	PwC ACI[33]	O&D Passengers	Direct vs Transfer Pax	Air Trips/Capita	Hub Reliance
Romania	21.3m	13,396	Business – 13,892	4.5m	Direct – 79% Transfer – 21%	0.20	Main hub: Bucharest Otopeni Airport Other hubs: Munich (4%), Vienna (2%)
Serbia	7.2m	11,269	Business – 5,548	2.2m	Direct – 75% Transfer – 25%	0.25	Main hub: Belgrade International Other hubs: Munich (2%), Vienna (2%)
Slovakia	5.4m	24,605	Business – 29,715	570k	Direct – 93% Transfer – 7%	0.22	Main hub: Bratislava, Kosice Other hubs: Vienna (3%), Prague (2%)
Slovenia	2.0m	27,900	Business – 3,257	420k	Direct – 68% Transfer – 32%	0.20	Main hub: Ljubljana Other hubs: Frankfurt (7%), Munich (6%), Istanbul (5%)

Note: Slovakia includes Vienna