IRG-rail

Independent
Regulators' Group - Rail

Tenth Annual Market Monitoring Report

April 2022

01 Introduction

Participating countries

AT - Austria
BE - Belgium
BG - Bulgaria
HR - Croatia
CZ - Czech Republic
DK - Denmark
EE - Estonia
FI - Finland
FR - France
DE - Germany
GR - Greece
HU - Hungary
IE - Ireland
IT - Italy
XK - Kosovo*
LV - Latvia
LT - Lithuania
LU - Luxembourg
MK - North Macedonia
NL - Netherlands
NO - Norway
PL - Poland
PT - Portugal
RO - Romania
RS - Serbia
SK - Slovakia
SI - Slovenia
ES - Spain
SE - Sweden
CH - Switzerland
UK - United Kingdom

SCOPE

31 countries

5 years of data
2016 - 2020

Main focus this year
Additional analyses of the impacts of the COVID-19 pandemic in 2020

CONTENT OF THE REPORT

FOCUS TOPICS IN PREVIOUS REPORTS

2015	2016	2017	2018	2019
Degree of market opening	Quality of rail passenger services	Competition for the passenger market	Competition in the railway markets	Impacts of the COVID-19 pandemic in the first half of 2020

*Kosovo (XK): This designation is without prejudice to positions on status and is in line with UNSCR 1244 (1999) and the ICJ opinion on the Kosovo declaration of independence.

IRG-Rail – A network of cooperation

The Independent Regulators' Group-Rail (IRG-Rail) was established by 15 European rail regulatory bodies in June 2011. From the beginning, the objective of the group has been to establish a network of cooperation between member regulatory organizations in the railway sector. The group has expanded over the years and today includes members from 31 countries.

IRG-Rail members aim to consistently deal with regulatory challenges and rail developments across Europe. IRG-Rail acts as a platform for cooperation, sharing best practice and promoting a consistent application of the European regulatory framework. As put forward in the Group's statutory document[1], "the overall aim of IRG-Rail is to facilitate the creation of a single, competitive, efficient and sustainable railway market in Europe".

What we do

Article 56 (paragraph 2) of Directive 2012/34/EU states that regulatory bodies have a formal duty to monitor the situation in the railway market. Market monitoring is therefore an essential task for the national regulatory bodies. It is also a vital instrument for enhancing market transparency, setting direction for the activities of regulatory bodies and encouraging market participants to develop and improve their activities.

General aim of IRG-Rail Market Monitoring Working Group

The IRG-Rail Market Monitoring Working Group was set up as a platform for cooperation and exchange of best practices in terms of collection and analysis of data. The group has agreed on a set of guidelines[2] for gathering railway related data. Based on the results of a yearly collection, an annual Market Monitoring Report is produced by the Working Group.

This is the IRG-Rail's Tenth Market Monitoring Report and it refers to calendar year 2020, unless otherwise stated.

Content of the report

The Market Monitoring Report provides an annual overview of market developments and the economic conditions in the railway sector with respect to IRG-Rail member countries. The report also enables comparison over time regarding the development and competitiveness of the railway market.

The report consists of two parts. The Main Report presents results at the overall European level. The Working Document includes country specific data and more detailed observations among the monitored countries[3]. In addition, the underlying data is available on the IRG-Rail website[4].

Each Market Monitoring Report focuses on one or several subjects. This year, the report concentrates on the impacts of the COVID-19 pandemic on the European rail market in 2020. Firstly, an overview of the situation as well as the main counter-measures adopted by the states and their local transport authorities is presented. Furthermore, several specific, pandemic-oriented analyses are included beside the regular contents to show the impacts of the crisis from different angles.

Methodology

It is the responsibility of each regulatory body to gather, quality-check and submit data according to the guidelines agreed upon by the Working Group. The Working Group has developed a common template in order to ease the effort for the regulatory bodies and to ensure the comparability of the data. Data can originate from market surveys carried out by the regulatory bodies and/or national statistics as well as additional trustworthy sources.

Thirty-one countries contributed to this Tenth Market Monitoring Report. However, most countries were not able to provide a full set of data. In order to ensure reliable and consistent information, this report only presents indicators for which enough data was made available. Consequently, some analyses are performed using data from a selection of the participating countries. In each section of the report, key figures and analyses presented use a consistent sample of countries[5]. Therefore, some sections may not cover all 31 countries. Detailed information and specific data by country are provided as well in the Working Document.

[1] https://www.irg-rail.eu/irg/about-irg-rail/general-information/About-the-IRG-Rail.html
[2] The guidelines can be found on IRG-Rail website.
[3] The Working Document can be found here.
[4] The data can be found here.
[5] The perimeter of each figure is specified in a footnote. If this is not specified, the full sample is considered.

Impacts of COVID-19 on European Railways

Passenger services

Passenger train-km	Passenger-km	TAC* from passenger RU	Operator revenues
▼10%	▼49%	▼17%	▼21%
(31 countries)	(31 countries)	(28 countries)	(25 countries)

Freight services

Freight train-km	Freight tonne-km	TAC* from freight RU	Operator revenues
▼7%	▼6%	▼27%	▼8%
(31 countries)	(31 countries)	(29 countries)	(24 countries)

Note: All comparisons are for 2020 compared with 2019. The number of countries included is provided under each metric.
* Track Access Charges

OVERVIEW

The COVID-19 pandemic has significantly impacted the European transport system in 2020. The spread of the virus has led to restrictions of international and domestic travels and hence caused a global decline in the demand for passenger transport while the supply of rail transport was still somewhat maintained to provide crucial services. This has also been the case for the transportation of goods despite a global setback of the economic activity for freight transport.

This led to decreases for transport demand in 2020 in general, especially for passenger services. Overall, **passenger-km fell by 49% and freight tonne-km dropped by 6%** compared to 2019. On the supply side, the declines were smaller for both services with **-10% for passenger train-km and -7% for freight train-km.**[6]

Since the border closures were not applied on transport of goods, the decreases of international and national freight traffic were similar. In contrast, the impacts of the crisis were not the same for different segments of the passenger rail market. International passenger-km were more severely affected than that of national traffic, reduced by 67% and 48% respectively. Although the decrease in train-km for non-PSO services (-30%) was much larger than for PSO services (-7%), the difference in terms of passenger-km was quite limited (-52% for non-PSO against -48% for PSO).

Despite the application of temporary or permanent measures adopted to limit the impact of the pandemic on the railway sector (among which the adjustments of track access charges or state aids), railway undertakings suffered direct economic consequences of this drop of rail activities. **Revenues from passenger services fell by 21%** in 2020, with a reduction in PSO revenues being nearly eight times smaller than that of non-PSO revenues. This was made possible by a 10% rise in public compensations for PSO services. **Revenues from freight transport declined by 8%**, in line with the drop in traffic. Meanwhile, European infrastructure managers recorded on the one hand **decreases of the track access charges from railway undertakings, -17% from passenger services and -27% from freight services, and on the other hand, higher public subsidies**. It should be noted, however, that the pandemic might not have been the only determinant of these changes in European railway markets. More details on the longer-term trend of each indicator can be found in the following chapters.

This is the third IRG-Rail publication focusing on the impacts of the COVID-19 pandemic. IRG-Rail will continue to closely monitor these impacts and responses for 2021 and the coming years to assess how the European railway markets recover from this pandemic.

[6] See also our special publication on the impacts of the pandemic on the European rail sector in 2020 (here).

Global restrictions on rail transport demand

The COVID-19 pandemic affected all European countries during the majority of 2020. From March 2020, most countries implemented strict measures of confinement or restrictions on internal movement, resulting in a major drop in global mobility in all countries. This affected demand for rail transport as well as other modes of transport.

In most cases, restrictive measures on internal movements lasted for the entirety of the second quarter of 2020. A second phase of strict measures was seen in several countries during the last quarter of 2020.

Different restriction measures were implemented depending on transport services and geographical horizons:

- While strict lockdown measures applied to people, there was no regulatory restriction on the transport of goods in several countries. Some freight services even saw an increase in the demand for domestic distribution.
- Furthermore, restrictions on movement might vary depending on the geographical region. International movement of people was curbed as 16 countries reintroduced land, sea and air border control in light of the pandemic. Internal cross-regional movement was restricted as well in several countries.

Figure 1 – Calendar of "Stay at home" requirements/recommendations per country[7]

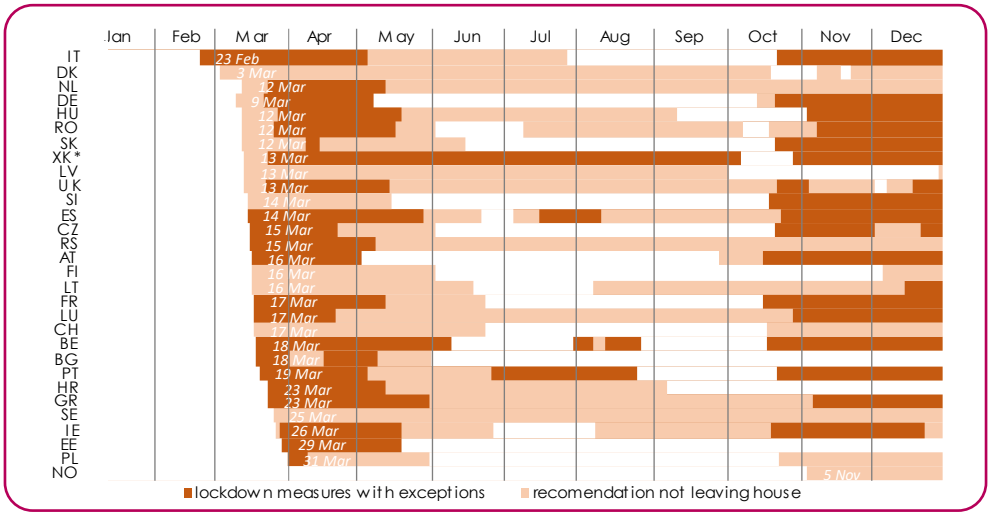
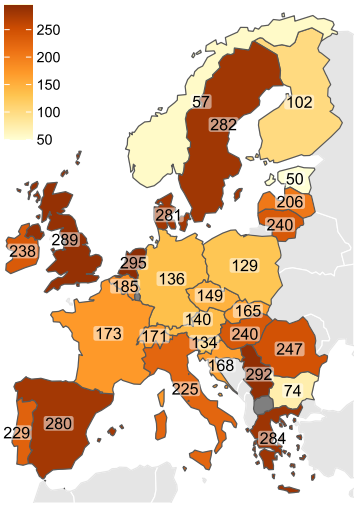


Figure 2 – Number of days in 2020 with "stay at home" requirements/recommendations[7]



Response measures adopted

Some temporary or permanent financial measures were adopted in 2020 to limit the impact of the pandemic on the railway sector by the states or infrastructure managers:

- Adjustment of track access charges: six countries noted adjustments in the charging principles applied by infrastructure managers for rail activities. These adjustments could be applied as raw discounts of global or specific charges, the postponing of the invoicing or as changes of the references for charges or discount schemes to take into account the sudden decrease of volumes. Several infrastructure managers also decided to apply a relaxation of cancellation charges or reservation penalties.
- State aids to railway undertakings have been provided in various ways to limit the impacts for the railway sector, as a funding of track access charges (three countries) and 13 RBs noted a raw compensation of loss of revenue (with possible incentives) or as an increase of public subsidies. 16 countries also granted temporary unemployment aid and subsidised loans or the postponement of public charges or debts. Temporary PSO contracts have been granted as well in two countries.
- State aids to the infrastructure managers or specific funding and incentives for infrastructure projects (or direct capital increase) were also granted in specific countries to compensate for their loss of revenue.

More information on the amount of the aids to the railway sector can be found in the Annex of the Working document accompanying this report.

Regulation (EU) 2020/1429 establishing measures for a sustainable rail market in view of the COVID-19 outbreak

On 7 October 2020, Regulation (EU) 2020/1429 establishing measures for a sustainable rail market in view of the COVID-19 outbreak was adopted. This regulation includes temporary measures to help the railway sector facing the impacts of the COVID-19 pandemic. It enables Member States to authorise infrastructure managers to remove, postpone or lower the charges for access in rail infrastructure during the pandemic, while ensuring state aids to the infrastructure managers for this loss of revenue. This temporary regulation was first applied during a period of reference going from 1 March 2020 until 31 December 2020. It was extended three times[8] to end on 30 June 2022. In the last Delegated Regulation ((EU) 2022/312), the Commission is also empowered to adopt delegated acts to prolong the reference period until 31 December 2023.

At the time of the publication, five countries have applied this Regulation (Austria, Denmark, Germany, Italy and Portugal) by means of different specific national complementary rules and/or administrative practices.

[7] Source: Oxford COVID-19 Government Response Tracker, indicator C6 "Stay at home requirements". The indicator records orders (either requirements or recommendations) to "shelter-in-place" and otherwise confine to the home.
[8] Commission delegated regulations (EU) 2020/2180 on 18 December 2020, (EU) 2021/1061 on 28 June 2021 and (EU) 2022/312 on 24 February 2022.

02

Network characteristics of the railway market

IN 2020

Network length

234 045 km
total route length

4.79 km
of lines per 100 km² country area

4.37 km
of lines per 10,000 inhabitants

Network usage intensity

49
trains per day per route km

81%
for passenger services

19%
for freight services

55%
share of electrified route

3.6%
share of high-speed route

The sample used to calculate these figures is specified in the following pages.

European rail market

In 2020, the overall route length for IRG-Rail monitored countries was approximately 234,000 km. On a constant consolidation basis, the total route length has remained stable since both 2016 (30 countries included) and 2018 (31 countries included). However, this overall stability may hide more or less significant changes per country (see the Working Document for more detail).

More than half of the total route length comes from five countries with the longest networks (Germany, France, Poland, Italy and the UK). Luxembourg has the shortest network of all participating countries.

Figure 3 – Route length (in km) of the participating countries in 2020

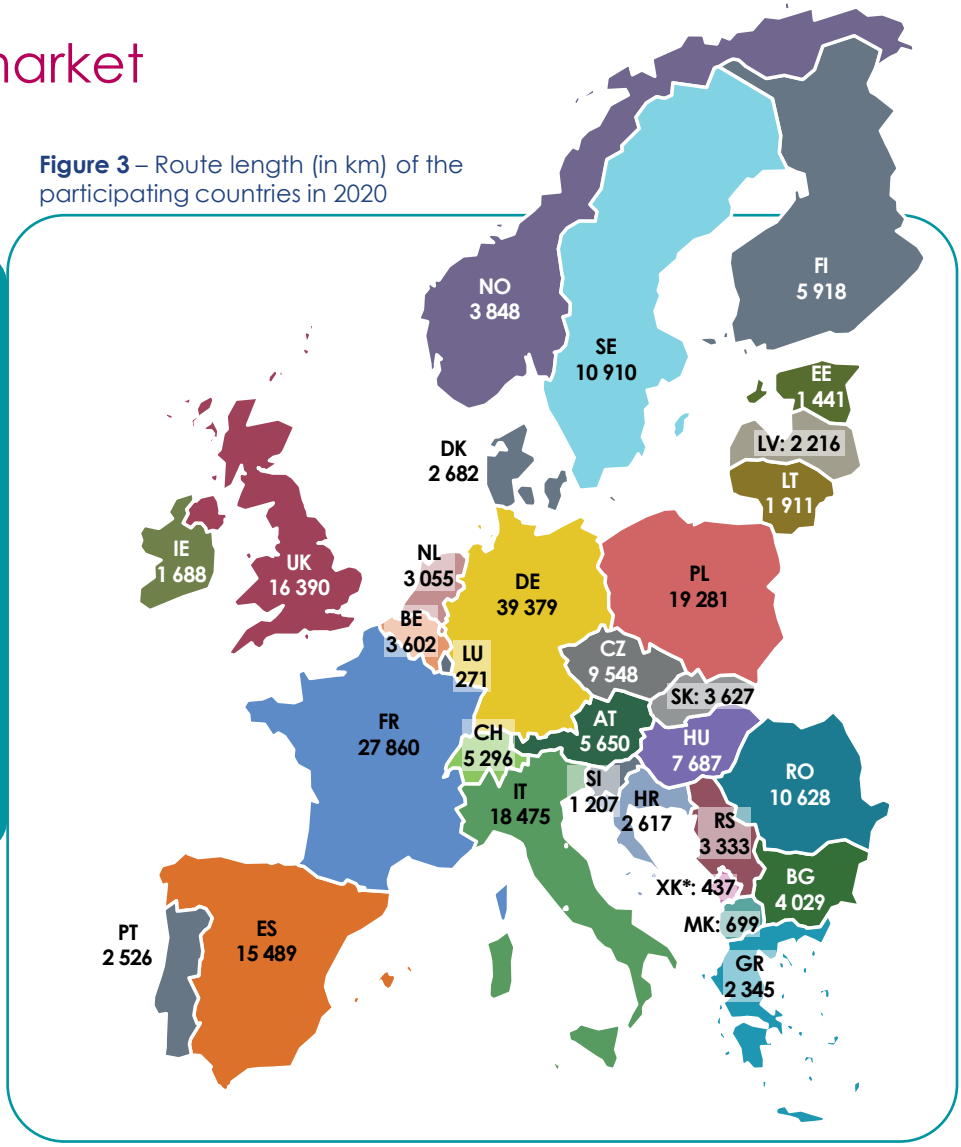
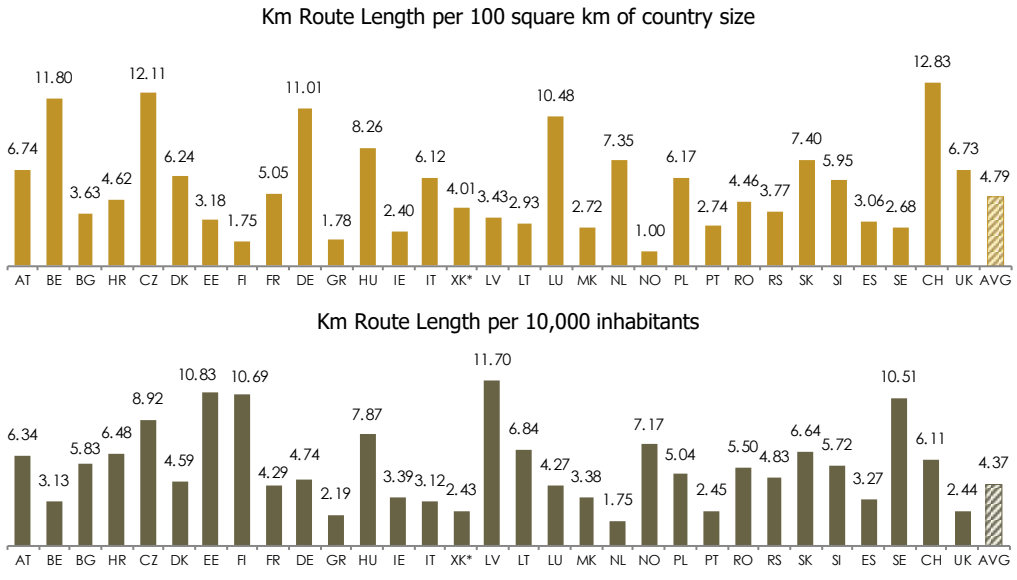


Figure 4 – Network density with regard to country area and population in 2020



The network density is an indicator of the development and coverage of the rail network in each country. The average network density in the monitored countries was the same as it had been in 2019.

Relative to country size, Switzerland has the highest network density. Czech Republic has the second highest network density followed by Belgium. All these three countries have rail networks with a high level of coverage across the countries' land area. Norway has the lowest network density relative to country size of all participating countries.

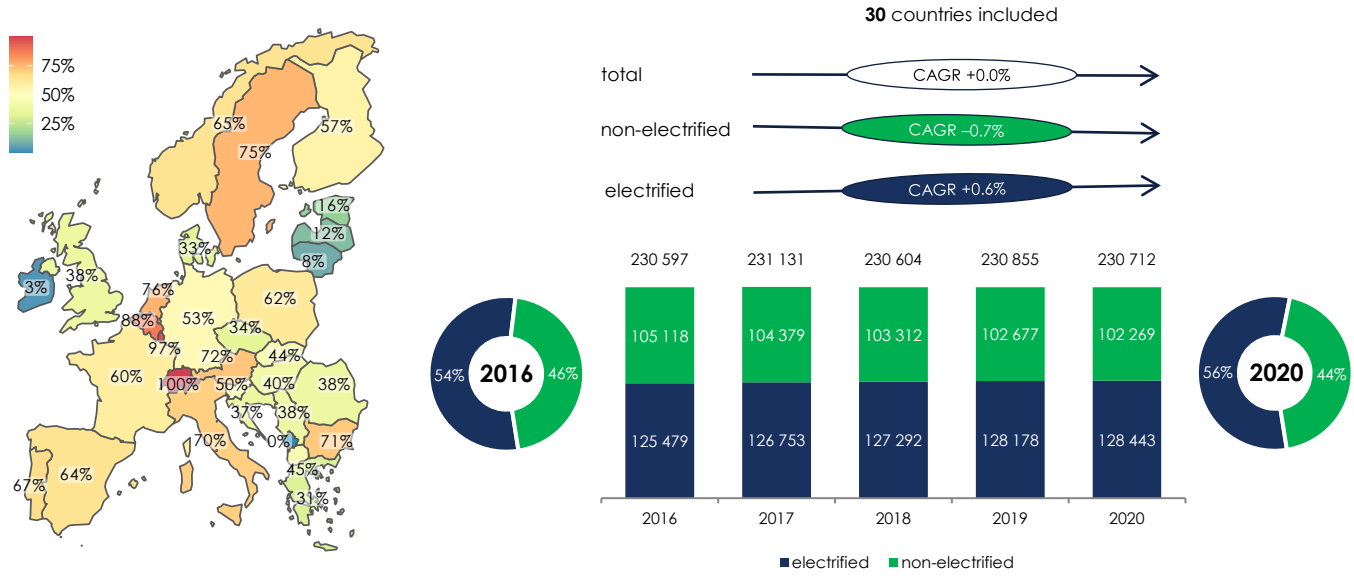
Network density can also be presented in terms of route length per 10,000 inhabitants. Since 2019, the network density has decreased by 4%. Latvia, Estonia, Finland and Sweden have the densest networks in terms of route length per population with more than 10 km of route per 10,000 inhabitants. Countries with a higher network density relative to population typically show a lower density in terms of country size. This is usually indicative of a relatively low population density or the fact that there are large areas of the country not served by the rail network.

Electrification of the railway

Across the 30 countries that reported data, 56% of the total route length was electrified in 2020, 2 percentage points higher than 2016. This corresponds to an increase of the electrified route length of 2.4% compared to 2016. During the same period, the non-electrified route length decreased by 2.7%.

The share of electrified network varies substantially across Europe, ranging between 0% (in Kosovo) and 100% (in Switzerland). Countries with a low share of electrified route length can mainly be found in the Baltic states, the UK and South-East Europe.

Figure 5 – Total route length (km) and electrified share of participating countries from 2016 to 2020 [8,9] (right) and electrified share per country in 2020 (left)



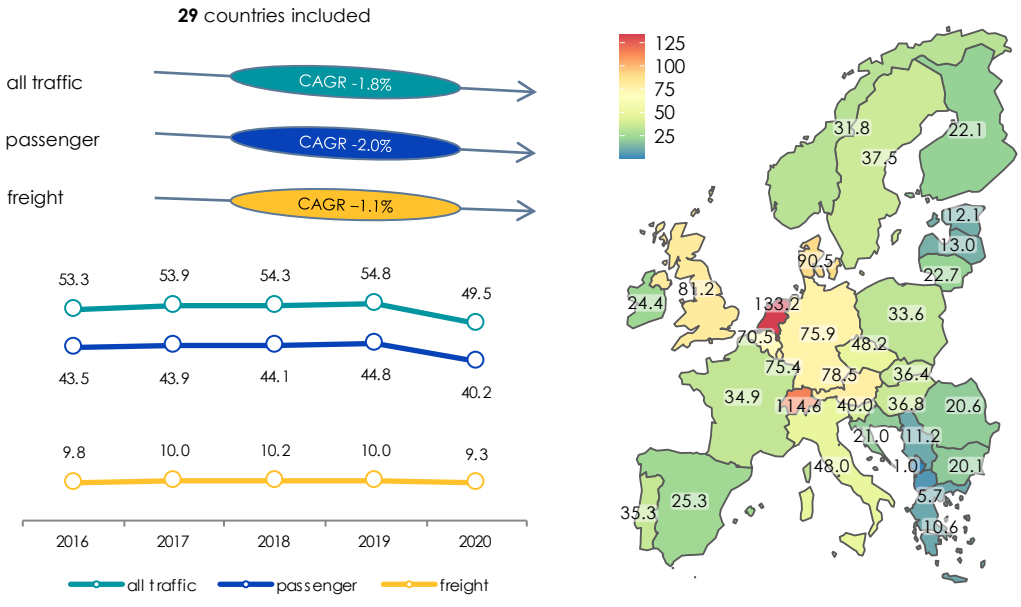
Network usage

Network usage across participating countries had risen gradually between 2016 and 2019. The cumulated increase reached 2.8% over this period. However, due to the pandemic, network usage across participating countries decreased significantly between 2019 and 2020, from 54.8 to 49.5 train-km per route km per day, which corresponds to a decrease of 9.7%.

During the pandemic, network usage decreased the most for passenger services. Between 2019 and 2020, the network usage for passenger traffic decreased by 10.3%.

Network usage for freight traffic also decreased during the same period but not as much as passenger traffic. The network usage for freight traffic decreased by 7.0 %.

Figure 6 – Overall network usage intensity (train-km per route km per day) for participating countries from 2016 to 2020 [10] (left) and its 2020 level per country (right)



[8] In this graph and the following, CAGR stands for the compound annual growth rate.
[9] 30 countries are included in this figure (Serbia is missing).
[10] 29 countries are included in this figure (Ireland and Serbia are missing).

Additional indicators to be found in the Working Document:
- High-speed route length
- ETCS-enabled route length

03

Track access charges (TAC) paid by railway undertakings for the minimum access package

IN 2020

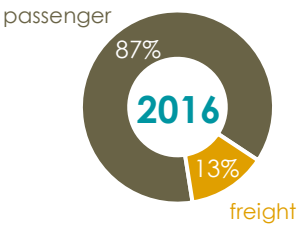
€15.6 bn
TAC from RU

€3.86
avg TAC from RU per train-km

91%
share of TAC from passenger market

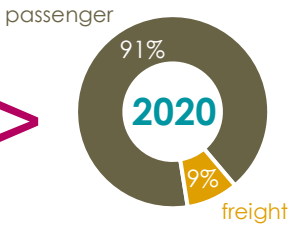
The sample used to calculate these figures is specified in the following pages.

Evolution of TAC from railway undertakings[11]



€16.7 billion

In 2020, the total amount of track access charges (TAC) paid by railway undertakings to infrastructure managers was €15.6 billion, the lowest value over the last five years. Compared with 2019 where the TAC from RU totalled €19.0 billion, the **decrease is 18%**. Total TAC, which include TAC from RU plus public funding[12], decreased by 10% from €21.5 billion in 2019 to €19.3 billion in 2020. Accordingly, the TAC paid by public subsidies in 2020, reached a new peak at €3.6 billion, after €2.5 billion in 2019. The main reason for this funding was to compensate for economic losses due to the pandemic.



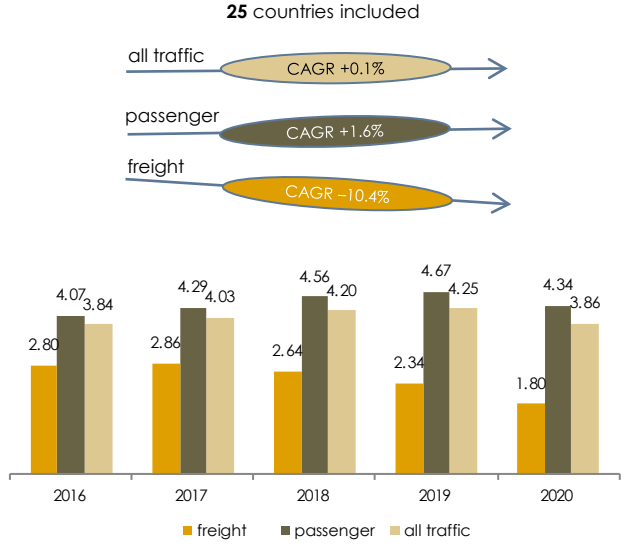
€15.6 billion

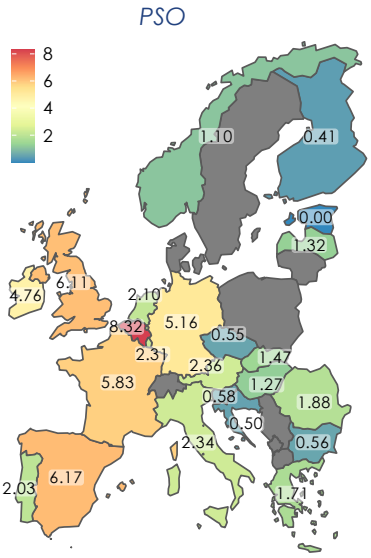
TAC from railway undertakings per train-km

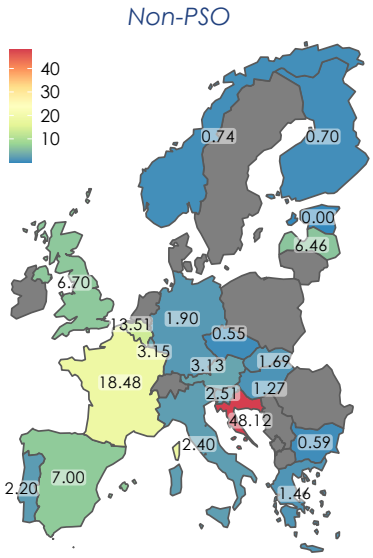
As in previous years, around 90% of the track access charges are paid by passenger services. The average TAC per train-km still varies substantially among European countries, ranging from below €1 to more than €12 in 2020. Due to the COVID-19 pandemic, there was a decline of TAC from RU in 2020 both for passenger and freight TAC. While freight TAC was 23% lower than in the previous year which continued the decreases observed since 2010, passenger TAC per train-km went down by 7% compared with 2019, which was the first reduction since 2016. As a consequence, the gap between freight and passenger TAC remained. Freight TAC in 2020 were less than half of passenger TAC.

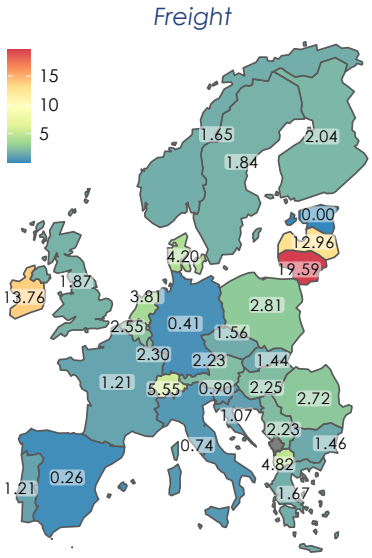
The decline is mainly caused by a shift of TAC from railway undertakings to TAC from public subsidies, especially in Estonia, France, Germany and Italy. In these countries, the state took over a part of the RU's economic burden that emerged from the pandemic. For instance, in Germany around one quarter of the TAC was paid by public subsidies, in France the subsidized share was around 40% and in Estonia, all of the TAC in 2020 were compensated by the state.

Figure 7 – Track access charges paid by railway undertakings[13] (in Euro per train-km) for the Minimum Access Package[14] from 2016 to 2020 (chart) and 2020 level per country (maps)









[11] 28 countries are included in this paragraph and its associated figures (Estonia, North Macedonia and Serbia are missing).
[12] Total TAC is a proxy of the sum of TAC from railway undertakings and TAC from public subsidies. Please note that the data of TAC from public subsidies might not be exhaustive since the scope of public funding for TAC varies substantially across countries and several RB could not specify the exact amount.
[13] 25 countries are included in this figure (Estonia, Kosovo, North Macedonia, Serbia and Sweden are missing).
[14] Directive 2012/34/EU of the European Parliament and of the Council.

Additional analyses: Impacts of the COVID-19 pandemic

Track access charges paid by railway undertakings for passenger services went down by around 17% on average in 2020 compared with 2019. This was a total decline of €2.8 billion. The highest absolute differences were observed for Germany with €0.7 billion and France with €0.9 billion.

In general, the decrease of the TAC correlates with the falling numbers of train-km. Moreover, the share of TAC paid by public subsidies (rather than by RU) increased. With such measures, governments funded at least a part of the economic losses caused by the pandemic.

In Germany, from March 2020 onwards, 98% of the non-PSO TAC were compensated by the government, which results in a total decrease of all passenger TAC from RU of 16%. In Estonia, the government funded the whole amount of TAC for RU. In Latvia, a TAC reduction to one Euro per train-km was introduced. However, in Slovenia, the exemption of TAC for PSO trains ended in December 2019, which resulted in a sharp annual increase of TAC from passenger services in 2020.

Figure 8 – Trends of TAC from passenger RU and passenger train-km in 2020 compared with 2019

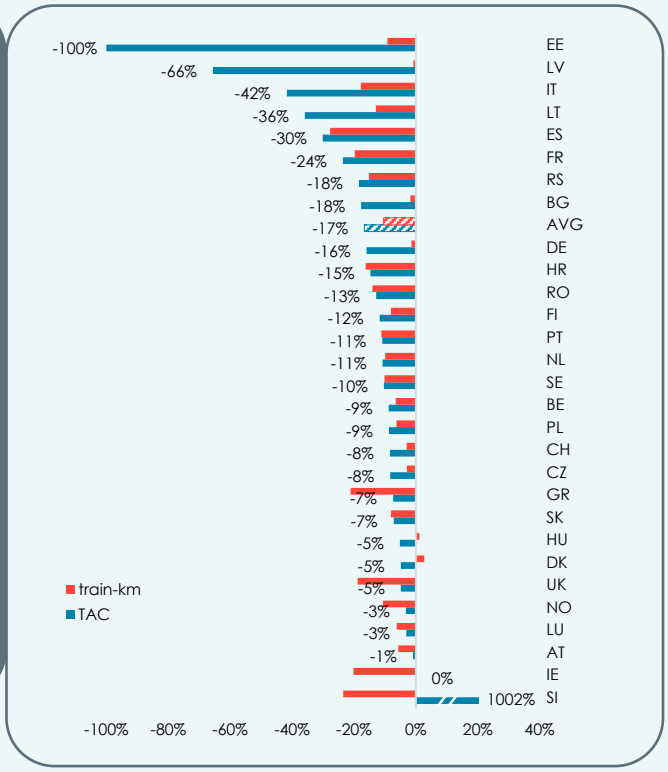
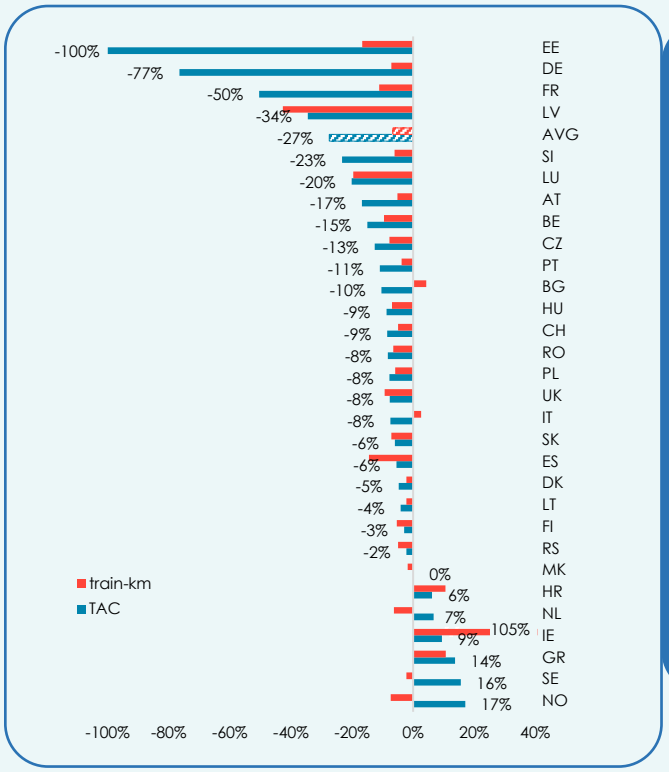


Figure 9 – Trends of TAC from freight RU and freight train-km in 2020 compared with 2019



Freight TAC paid by RU went down by €0.5 billion between 2019 and 2020, which was a decrease of 27%, with Germany alone contributing 60% of the decrease. Indeed, freight RU in Germany were compensated for 98% of their TAC from March 2020 on. In France, freight TAC from RU declined by 50% since the state took over the TAC in the second half of 2020. Estonia funded all freight TAC for their railway undertakings.

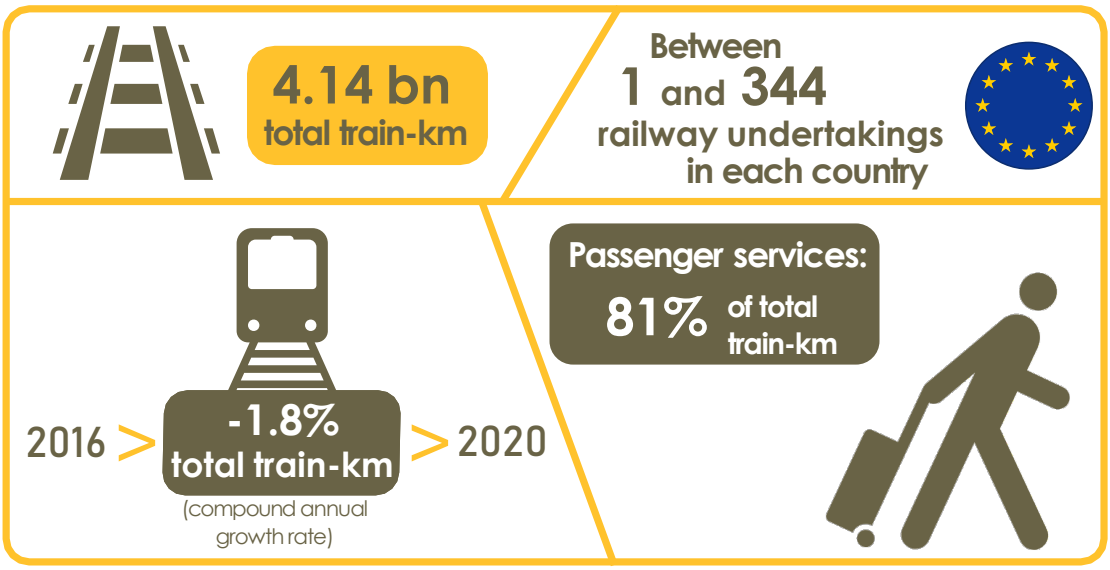
In the majority of countries, freight TAC showed a similar change with freight train-km. However, in Sweden and Norway, freight TAC increased due to the introduction of new TAC schemes aiming at a higher coverage of the costs for the Minimum Access Package.

Generally, freight TAC showed a larger decrease than passenger TAC from 2019 to 2020. However, this may be a part of a long-term downward trend of freight TAC (see page 10) of which the pandemic was only an aggravating factor.

04

Railway undertakings and European rail traffic

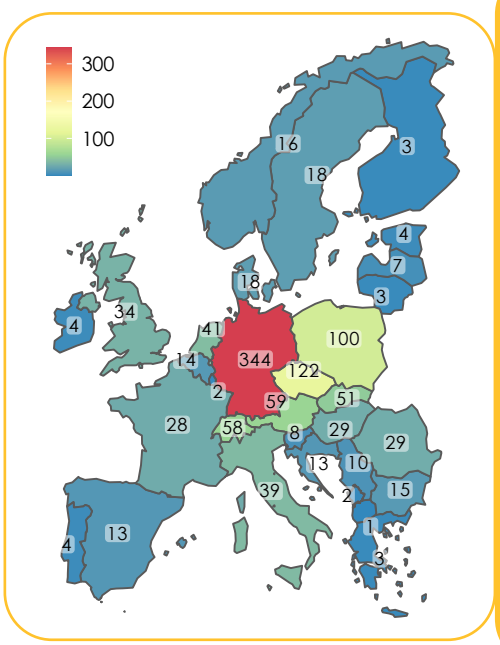
IN 2020



The sample used to calculate these figures is specified in the following pages.

Railway undertakings (passenger and freight)

Figure 10 – Total number of railway undertakings by country in 2020[15]



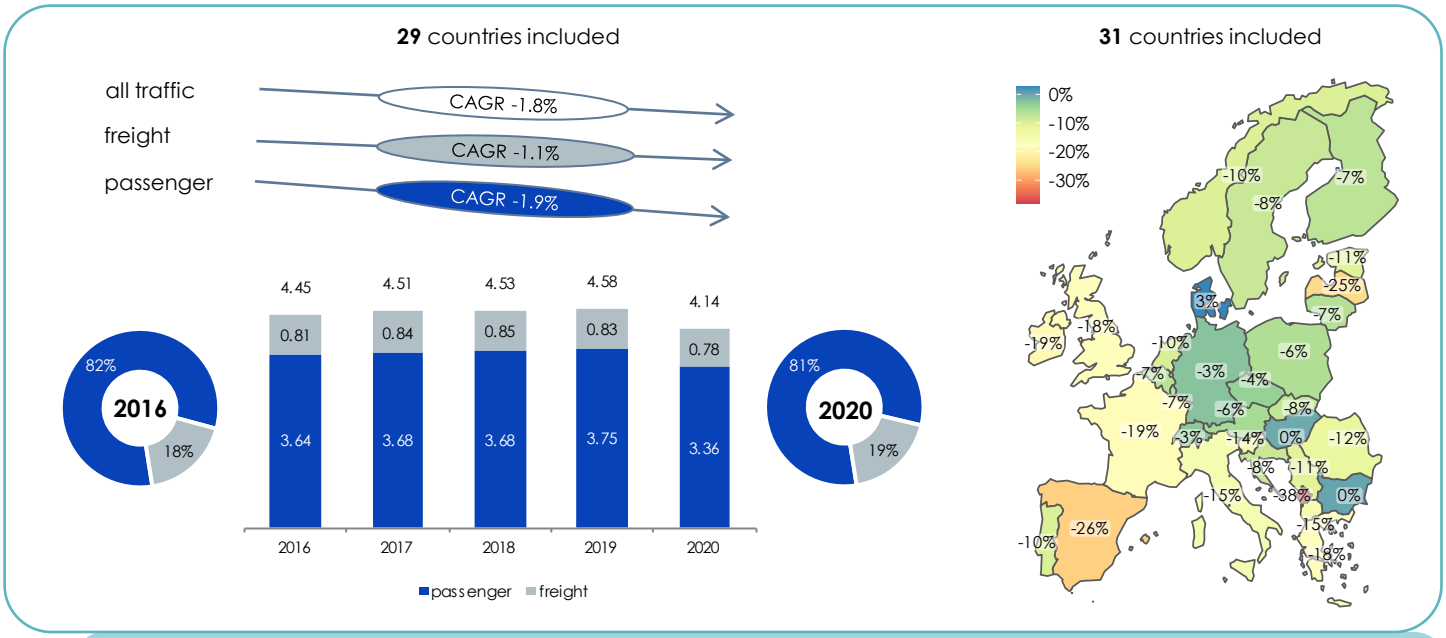
In 2020, the majority of members either reported additional railway undertakings (RU) active in their countries (13) or the same number as in the previous year (13). Five countries experienced a slight decline. Across all participants, the number of railway undertakings varied substantially ranging from solely one single active undertaking in North Macedonia up to a maximum of 344 companies in Germany. On average, passenger services were offered by 33% of the overall number of railway undertakings, while freight services were offered by 73%[16].

For most members (21), the number of active railway undertakings operating freight traffic exceeded that in passenger traffic. Furthermore, the number of freight operators saw a higher annual increase than the number of passenger operators. Most likely, this was due to the fact that the opening of the freight railway market was (and remains) much more advanced across Europe than that of its passenger counterpart.

Moreover, the passenger sector can be split up into PSO and non-PSO services. In this regard, each country had at least one railway undertaking operating under public service contracts. There were three countries (Kosovo, the Republic of North Macedonia and Romania) where the entire passenger traffic was conducted by PSO operators. Conversely, there were seven countries with more railway undertakings operating in the non-PSO segment (with Czech Republic and Germany having the highest numbers in this regard).

Total rail traffic

Figure 11 – Rail traffic in billion train-km from 2016 to 2020[17] (left) and 2020/2019 change (right)



For 2020, a total of 4.14 billion train-km was reported by 29 countries (almost 10% less than the volume of 2019). Of this, passenger services accounted for 81% of total rail traffic while freight traffic contributed 19%. Hence, a relatively low number of railway undertakings active in passenger services accounted for the vast majority of total rail traffic. From 2016 to 2019, there was a steady increase in European train-km. Due to the fall in 2020 resulting from COVID-19 pandemic, the compound annual growth rate from 2016 to 2020 decreased by 1.8% for overall train traffic volume. Stronger effects on passenger rather than on freight services explain why the distribution passenger and freight traffic changed in favour of freight services. The latter accounted for 19% of total train-km in 2020, compared with 18% in 2019.

[15] The number of railway undertakings (RU) in each country may differ a lot from those presented in this figure when the counting is based on the RU's ownership as many RU might belong to a same group. Besides, an RU may operate in several countries, through its subsidiaries or not. The overall number of RU in Europe can therefore not be obtained by simply summing the number of RU across all countries.

[16] Note that in total this number exceeds 100% since one RU may provide both passenger and freight services.

[17] 29 countries are included in this figure (Ireland and Serbia are missing).

05

The rail freight market

IN 2020

778 m
freight train-km

433 bn
freight net tonne-km

Freight load factor:
557 net tonne-km per freight train-km

47%
total market share of new entrants in the freight market
(net tonne-km)

€20.98
RU's revenue per freight train-km

€cts3.72
RU's revenue per net tonne-km

The sample used to calculate these figures is specified in the following pages.

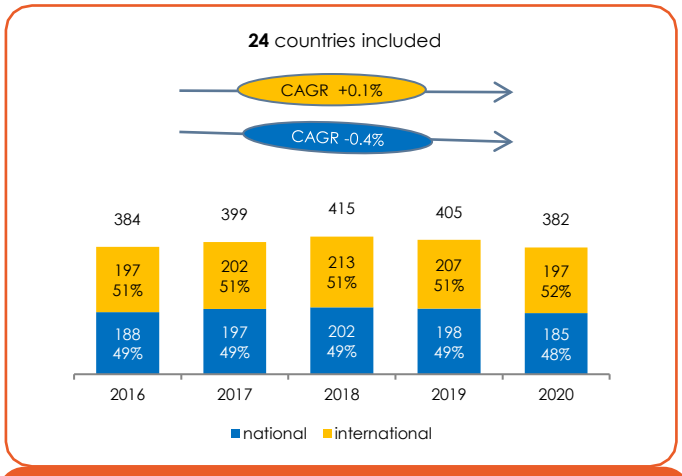
The rail freight market size

For reference, the modal split of rail freight transport in the EU countries, measured in tonne-km, was 17.6% of total inland freight transport in 2019 (source: Eurostat).[18]

In 2020, freight train-km decreased by 6% compared with 2019. There was also a 6% decrease in net tonne-km compared to the previous year. On the supply side, 0.78 billion freight train-km were operated which is the lowest value in the last five years. On the demand side, 433 billion net tonne-km were transported. This is the second year in a row where there was a decline in freight traffic, suggesting that the pandemic may not be the only impacting factor.

Figure 12 – Total freight traffic from 2016 to 2020[19] (left) and 2020/2019 change in tonne-km (right)

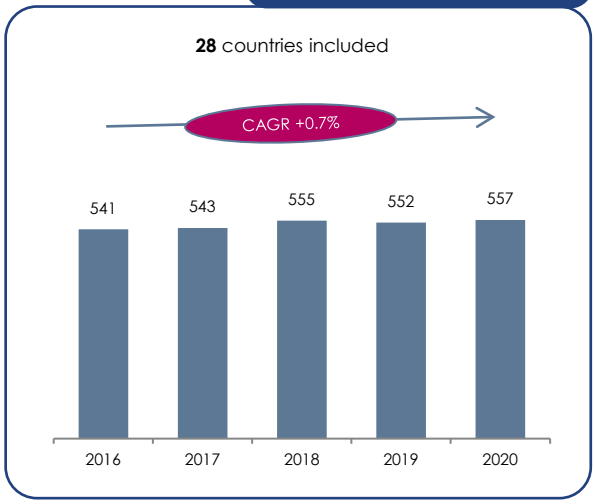
Figure 13 - National and international freight traffic (in billion net tonne-km) from 2016 to 2020[20]



In 2020, 185 billion net tonne-km were transported nationally, 7% less than 2019 level. Meanwhile, 197 billion net tonne-km were transported internationally, which was down 5% compared to the previous year. Overall freight traffic slightly decreased in 2019, although prior to this there were two consecutive years of traffic growth in 2017 and 2018. In terms of the breakdown between national and international traffic, international traffic continues to account for a larger proportion (52%). Please note that the sample used for this figure is different from that for other figures, resulting in potential different values of total freight traffic.

The freight load factor has remained relatively stable since 2018, after a sharp increase between 2017 and 2018. This results in an average annual growth rate of 0.7% over the last five years. In 2020, since net tonne-km and train-km showed the same annual change, the freight load factor remained at around the same level as 2019.

Figure 14 – Freight load factor (net tonne-km per freight train-km)[21]



[18] Data on the modal split of freight transport in the European Union can be found on Eurostat website.
[19] 29 countries are included in the figure for freight train-km (Ireland and Serbia are missing), 28 countries are included in the figure for net tonne-km (Republic of North Macedonia, Ireland and Serbia are missing).
[20] 24 countries are included in this figure (Republic of North Macedonia, Belgium, Estonia, Ireland, France, Serbia and Switzerland are missing).
[21] 28 countries are included in this figure (Republic of North Macedonia, Ireland and Serbia are missing).

Additional analyses: Impacts of the COVID-19 pandemic

Figures 15 and 16 show the impacts of the COVID-19 pandemic on national and international freight traffic by country. In most cases, both indicators of the supply side (train-km) and of the demand side (net tonne-km) recorded a decrease. Exceptionally, Bulgaria and (to a smaller extent) Norway reported an increase in both national and international net tonne-km in 2020. In Bulgaria, there was a significant modal switch of international haulages from road to rail during the pandemic. Furthermore, maintenance work on the Bulgarian railway network resulted in the redirection of trains via alternative, but longer, routes, which increased tonne-km. In Norway, both the domestic and foreign incumbent expanded their operations. In Latvia, amid the downturn of international (transit) cargo transportation, domestic shippers became more active in 2020, leading to an increase in national tonne-km (in contrast to the train-km since the distances travelled were shortened).

Unlike the passenger market, international freight traffic did not decline more than national traffic. On average, international net tonne-km fell by 5% and freight train-km fell by 9% compared with 2019. Similarly, national traffic fell by 7% and 6% respectively. 12 of the 23 countries that supplied data reported an increase in the share of international tonne-km (see map in Figure 16).

Given that not all restrictions were applied to the transport of goods, international freight services were not impacted to the same extent as other services. As a result, the reduction in freight traffic should be linked to the economic downturn caused by the measures implemented in response to the pandemic.

Figure 15 – Trends of freight national traffic in 2020 compared with 2019[22]

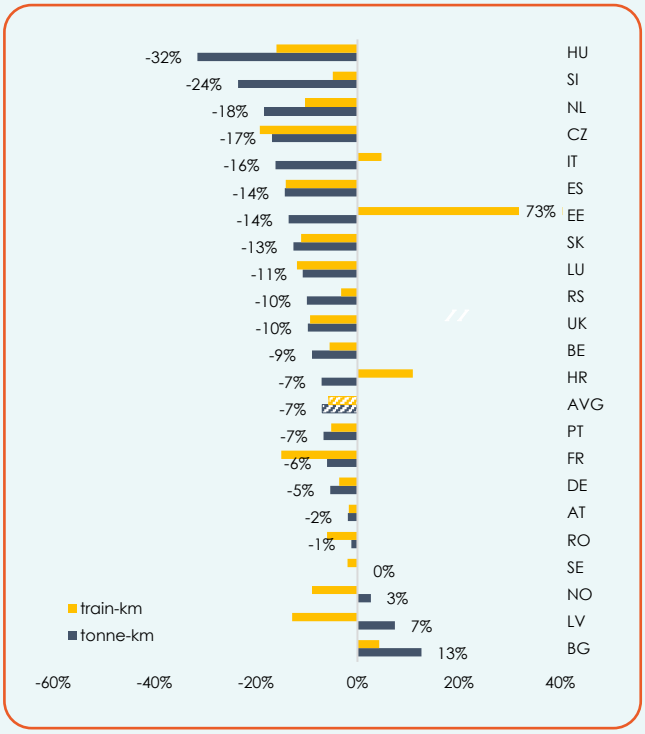
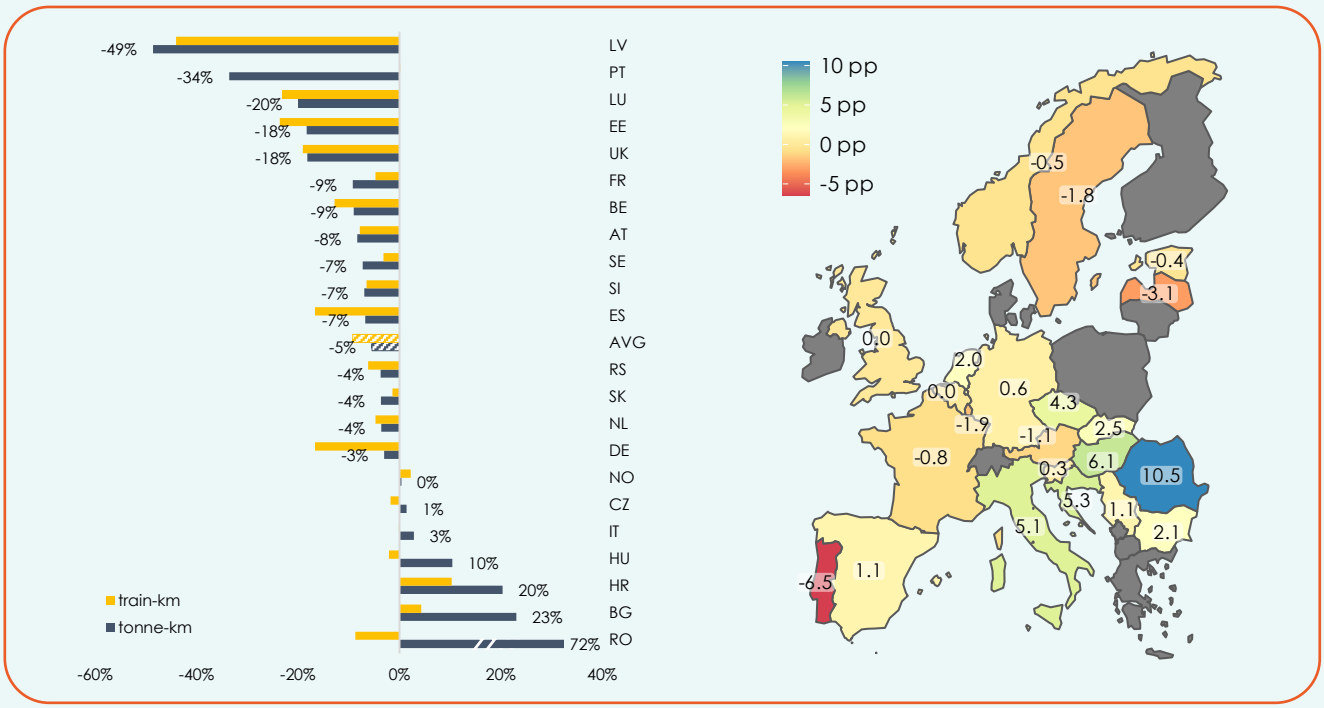


Figure 16 – Trends of freight international traffic (left)[22] and its share of total freight traffic (right) in 2020 compared with 2019



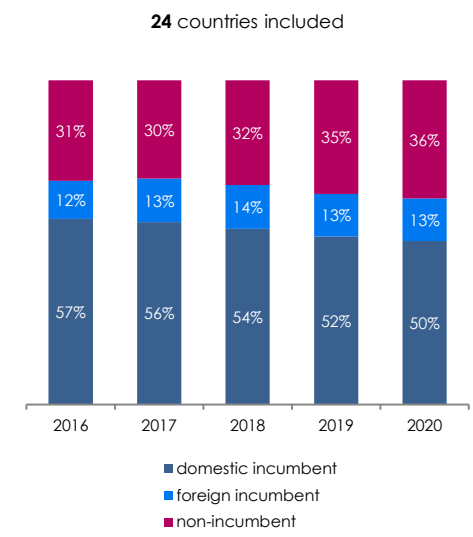
[22] Only included in this figure countries that reported data for both national and international freight traffic (Denmark, Finland, Ireland, Greece, Lithuania, Kosovo, North Macedonia, Poland and Switzerland are missing).

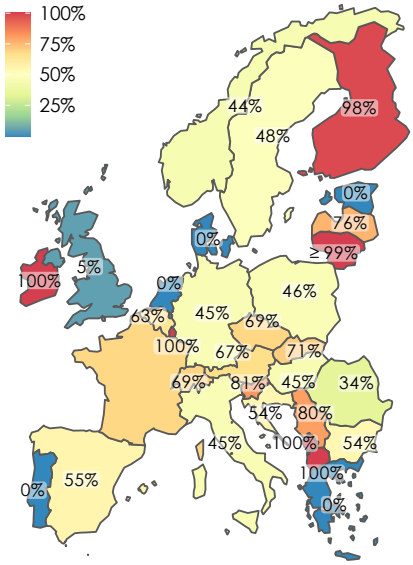
Market shares of freight railway undertakings

Domestic incumbents are still predominant players in the global European rail freight market, but their market shares continue to decline. In 2020, domestic incumbents covered 50% of the market, having lost 7 percentage points of the market share since 2016. The market share of non-incumbents has grown year on year to 36% in 2020, while the share of foreign incumbents has remained stable. The pandemic did not significantly impact the market split observed since 2016.

In seven countries, non-incumbents operated most of the freight traffic in 2020 (more details are provided in the Working Document).

Figure 17 – Market shares (based on net tonne-km) of freight railway undertakings (left)[23] and share of the domestic incumbent per country in 2020 (right)

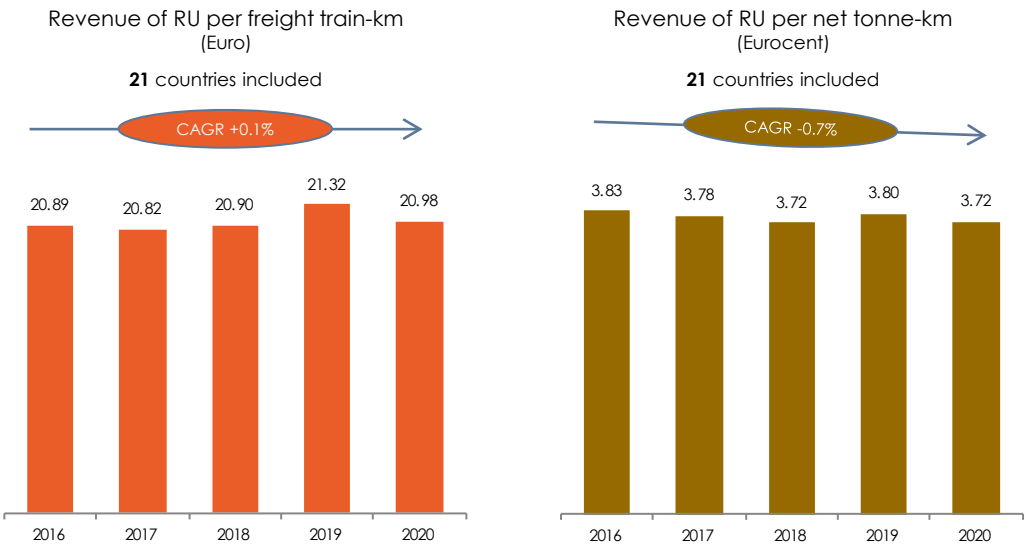




Economic performance indicators of freight railway undertakings

Freight revenues per train-km have remained relatively stable over the last five years. The increase in 2019 was offset by the reduction in 2020. Over the same period, revenues per net tonne-km have slightly decreased, by 0.7% per annum on average, with a decline of 2% between 2019 and 2020. This corresponds to the difference between the reduction of total freight revenues (-8%), which is the numerator of the indicator, and that of tonne-km (-6%), which is the denominator.

Figure 18 – Freight railway undertakings' revenue per train-km and per net tonne-km from 2016 to 2020[24]



[23] 24 countries are included in this figure (France, Ireland, Serbia, Kosovo, North Macedonia and Sweden are missing). Incumbents include their subsidiaries, if any.
[24] 21 countries are included in this figure (Belgium, Czech Republic, Denmark, Estonia, France, Ireland, North Macedonia, Slovakia, Serbia and Switzerland are missing).

Additional analyses: Impacts of the COVID-19 pandemic

Figure 19 shows how the COVID-19 pandemic influenced the European rail freight market during 2020 on a monthly basis. There were significant differences between monitored countries but, in general, freight traffic decreased in the first half of 2020 and started to gain its 2019 level from October to the end of the year. In most countries that reported monthly data, freight tonne-km in December 2020 exceeded the value of the same month in 2019.

It should be noted that the impact of the pandemic on the freight market over the course of 2020 was not as pronounced as it was on the passenger market (see Figure 25).

Figure 19 – Monthly comparison of freight tonne-km, 2020/2019 change[25]

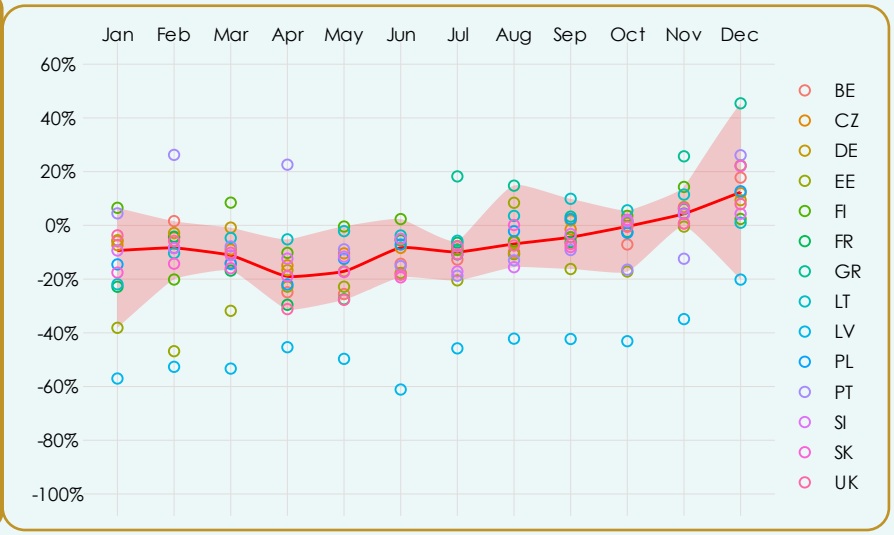
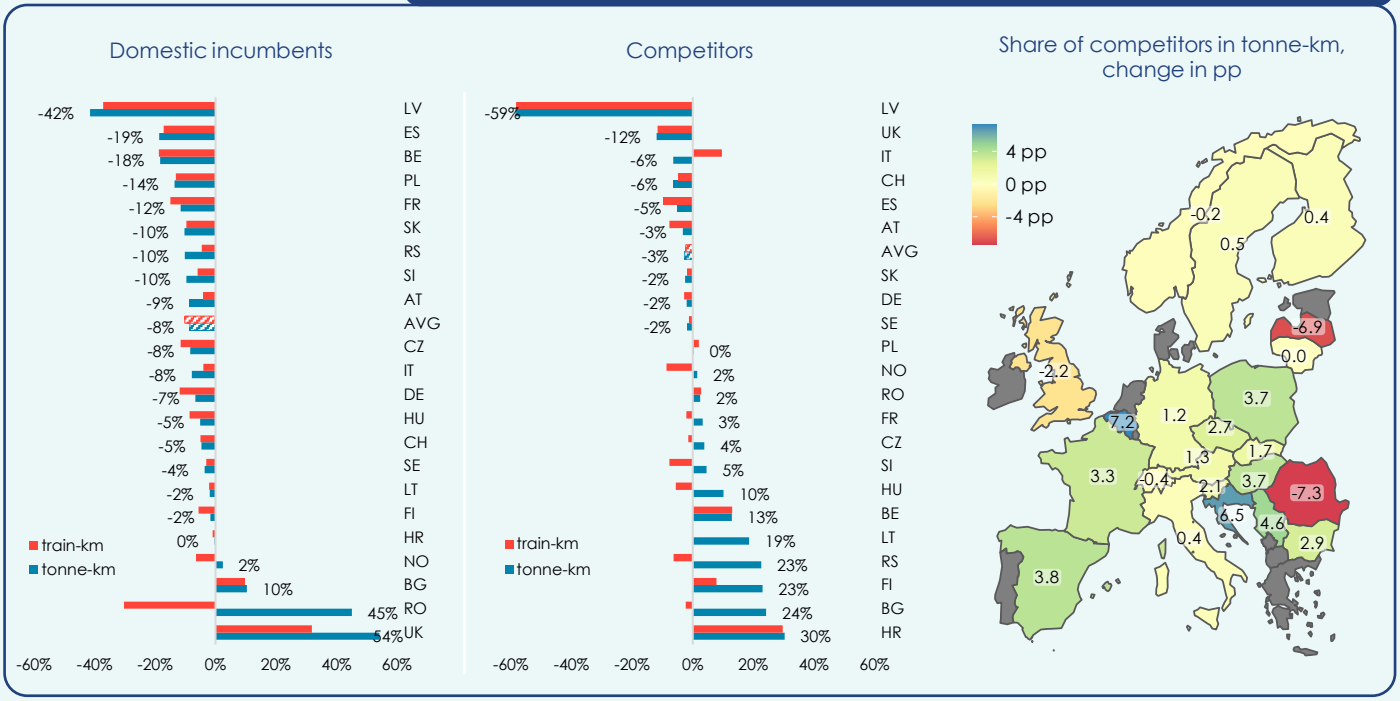


Figure 20 compares freight traffic trends for domestic incumbents and competitors, both for the supply side (train-km) and the demand side (net tonne-km) between 2019 and 2020. Both the incumbents and their competitors suffered from less total freight traffic in 2020. However, a better overall performance of freight alternative operators can be observed in the majority of countries (down 3% in tonne-km against 8% for domestic incumbents). Therefore, in most countries which reported data for both categories of operators, an increase in the market share of competitors can be observed.

Figure 20 – Trends of freight traffic in 2020 compared with 2019 of domestic incumbents and competitors[26]



[25] Based on an earlier data collection, the numbers in this figure may be different from those presented elsewhere in this report. The red line is the median value of the sample. The upper and lower bounds of the light red area are the maximum and minimum of the sample excluding the outliers, which are all values that exceed 1.5 times the interquartile range.

[26] Only included in this figure countries that reported data for both domestic incumbent and competitors (Denmark, Estonia, Greece, Ireland, Kosovo, Luxembourg, Netherlands, North Macedonia and Portugal are missing).

06

The rail passenger market

IN 2020

3.4 bn
passenger train-km

254 bn
passenger-km

21%
total market share of new entrants in the passenger market
(in passenger-km)

€17.33
RU's revenue per passenger train-km

€cent 20.20
RU's revenue per passenger-km

The sample used to calculate these figures is specified in the following pages.

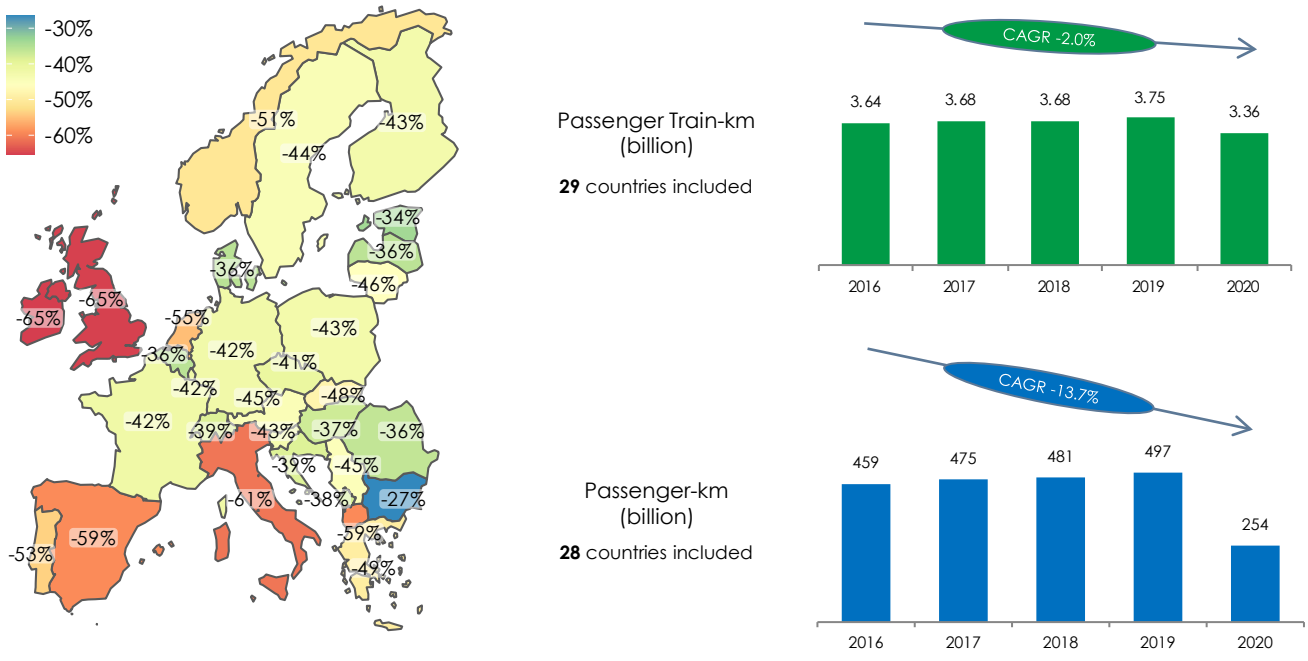
The rail passenger market size

In 2019, the modal share of rail passenger services in the European Union represented 8% of the total inland transport in terms of passenger-km. The share of rail passenger services increased slightly compared with the previous year (Eurostat data).[27]

In 2020, passenger traffic was severely impacted by the pandemic. There was a reduction in traffic on both the supply side (passenger train-km) and the demand side (passenger-km). Overall, there were 3.36 billion train-km and 254 billion passenger-km.

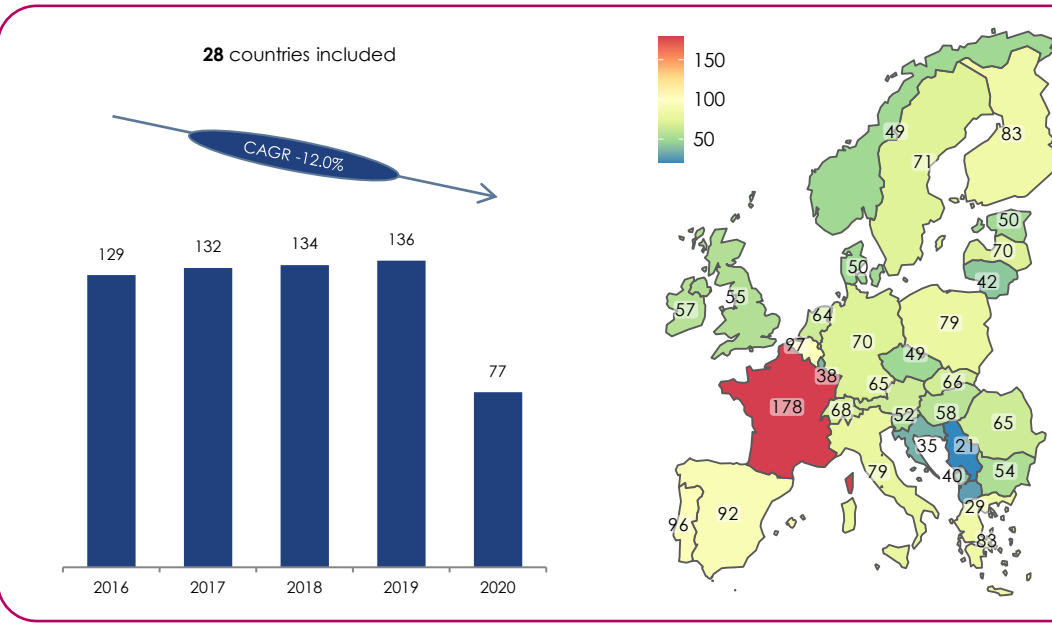
Figure 21 shows how passenger traffic has evolved since 2016. On the supply side, passenger train-km were increasing between 2016 and 2019, before falling by 10% in the last year. On the demand side, passenger-km numbers had been increasing at a higher rate before nearly halving in 2020 (down 49%). Hence, the impact of the pandemic was more apparent on the demand side.

Figure 21 – Total passenger traffic from 2016 to 2020[28] (right) and 2020/2019 change in passenger-km (left)



The impact of the pandemic on passenger traffic is also reflected in the passenger load factor. Figure 22 shows the average number of passengers per train since 2016. This is derived by dividing passenger-km by passenger train-km. In 2020, there were an average of 77 passengers per train, down 43% compared with 2019. Like the total passenger-km, the passenger load factor increased steadily from 2016 to 2019, by 1.6% per annum on average. The large decrease in 2020 resulted in a negative CAGR over the last five years.

Figure 22 – Passenger load factor (passenger-km per passenger train-km) from 2016 to 2020 (left)[29] and 2020 level per country (right)



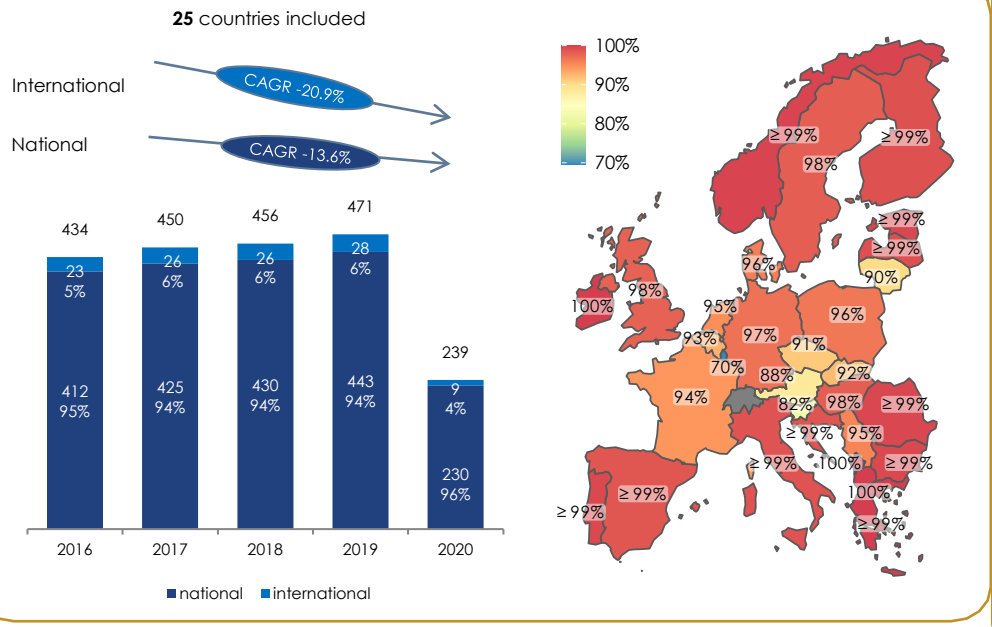
[27] Data on the modal split of passenger transport in the European Union can be found on Eurostat website.

[28] 29 countries are included in this figure for train-km (Ireland and Serbia are missing). 28 countries are included in this figure for passenger-km (Belgium, Ireland and Serbia are missing).

[29] 28 countries are included in this figure (Belgium, Ireland and Serbia are missing).

The rail passenger market components

Figure 23 - National and international passenger traffic (in billion passenger-km) from 2016 to 2020 (left)[30] and share of national traffic per country in 2020 (right)



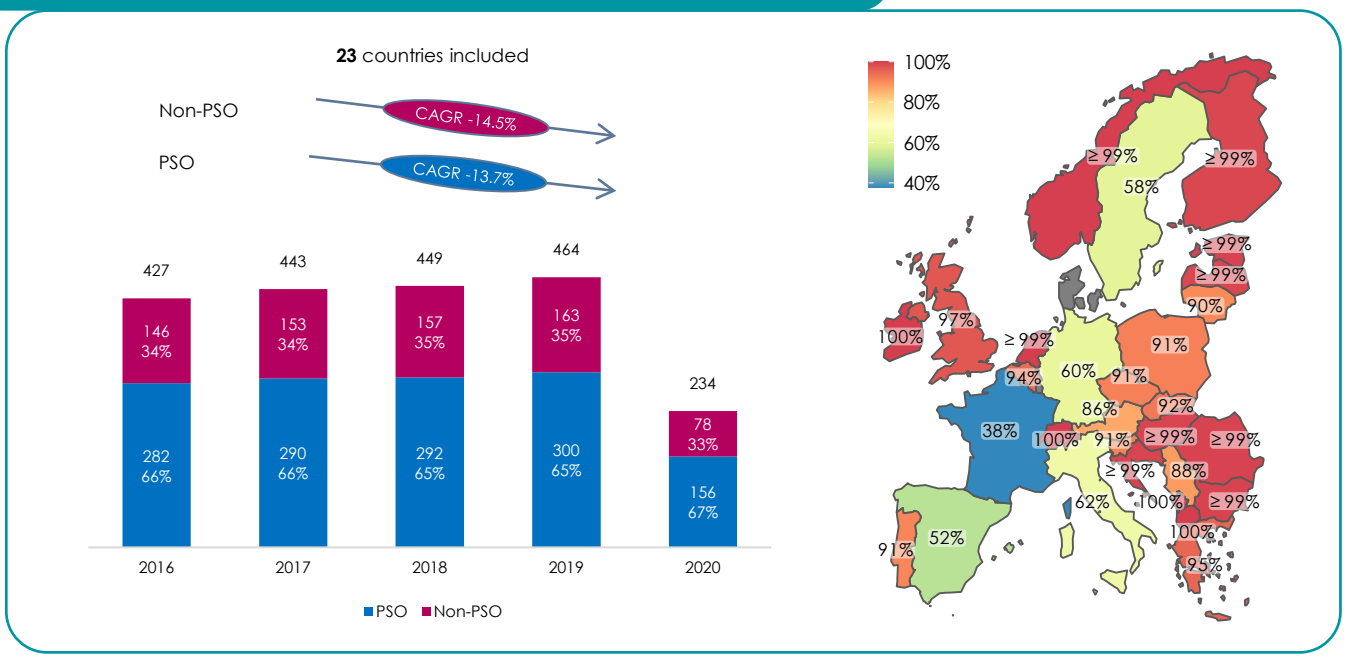
In 2020, there was a significant decrease in both national and international passenger traffic, measured in terms of passenger-km, compared to 2019. The fall in international traffic (down 68%), exceeded the fall in national traffic (down 48%). This can be explained by the restrictions on international cross-border movement, which were imposed by many countries throughout 2020. This development has not substantially altered the distribution between national and international traffic, with 96% of traffic taking place domestically and just 4% of overall traffic coming from international services.

Figure 23 also presents the share of national traffic across monitored countries. The map shows that, for many countries, national services represent more than 90% of the total passenger market, with the likes of Ireland, Kosovo* and North Macedonia reporting national traffic of 100%. The highest share of international traffic can be found in Luxembourg (30%).

There was also a significant decrease in both PSO and non-PSO traffic compared to previous years. In 2020, PSO traffic fell by 48% compared with 2019, while non-PSO traffic was down 52% compared with the previous year.

Figure 24 presents the share of PSO traffic across monitored countries. There is substantial variation across countries, ranging from 38% in France to 100% in countries such as Ireland and Norway.

Figure 24 – PSO and non-PSO traffic (in billion passenger-km) from 2016 to 2020 (left)[31] and share of PSO traffic per country in 2020 (right)

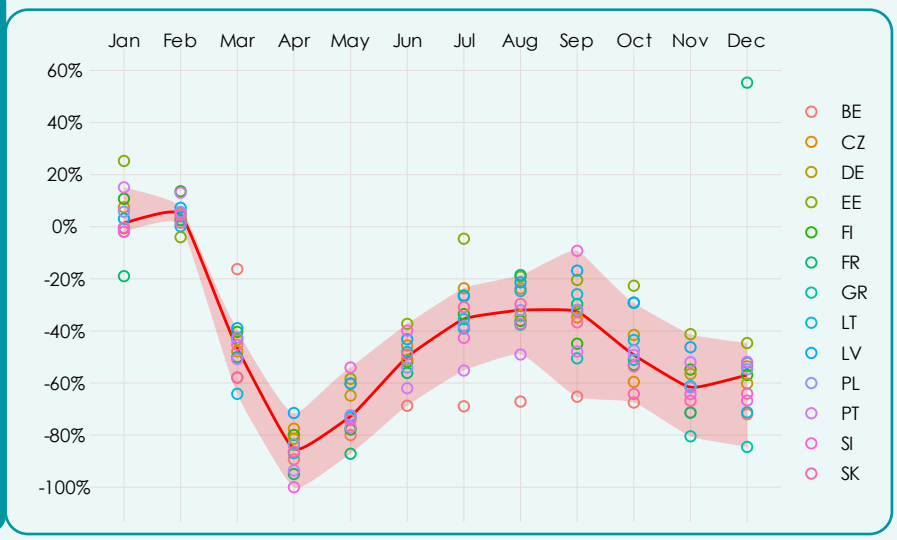


[30] 25 countries are included in this figure (Belgium, Ireland, North Macedonia, Serbia, Slovakia and Switzerland are missing)
[31] 23 countries are included in this figure (Belgium, Denmark, Ireland, Kosovo, Luxembourg, Serbia, Slovakia and Switzerland are missing)

Additional analyses: Impacts of the COVID-19 pandemic

In 2020, the passenger market was significantly impacted by the COVID-19 pandemic. The effect on passenger traffic varied across countries and over the course of 2020. Figure 25 shows a monthly comparison of passenger-km for 2020 and 2019 across selected countries. In each of the countries that reported monthly data, there was a substantial decrease in passenger-km in February, March and April. Following this, there was an upturn across all countries during the summer but this was not sufficient to bring traffic back to its 2019 level. Passenger traffic in most countries recorded another decrease at the end of the year to finally reach only half of their value from 2019.

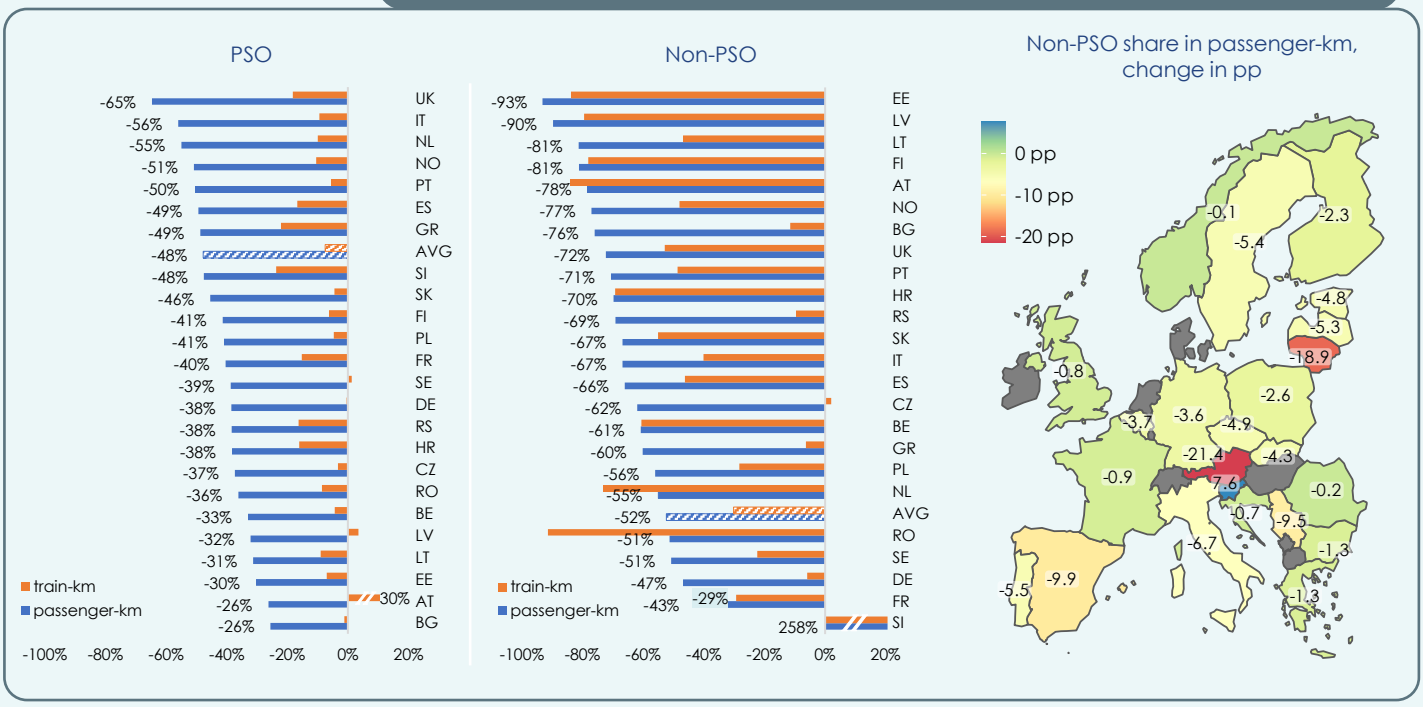
Figure 25 – Monthly comparison of passenger-km, 2020/2019 change[32]



Due to the impacts of the pandemic, there was a substantial reduction in passenger traffic for both PSO and non-PSO services, but the impact was stronger for non-PSO services. All reporting countries except Slovenia witnessed a decrease of the non-PSO share in total passenger-km. The reason was the introduction of several new international non-PSO services going from Czech Republic and Slovakia to Croatia via Slovenia.

Overall, it can be seen that the traffic decline was more pronounced in passenger-km than it was in train-km. On average, passenger-km fell by 48% for PSO services and 52% for non-PSO services, compared with a 7% and 30% fall in train-km for PSO and non-PSO services, respectively. In all countries, one can observe that the downturns in passenger-km and train-km are more correlated for non-PSO than for PSO services since public transport was more or less maintained during lockdown periods.

Figure 26 – Trends of passenger traffic in 2020 compared with 2019 of PSO and non-PSO services[33]



[32] Based on an earlier data collection, the numbers in this figure may be different from those presented elsewhere in this report. The red line is the median value of the sample. The upper and lower bounds of the light red area are the maximum and minimum of the sample excluding the outliers, which are all values that exceed 1.5 times the interquartile range.

[33] Only included in this figure are countries that reported data for both PSO and non-PSO traffic (Denmark, Hungary, Ireland, Luxembourg, Kosovo, North Macedonia, Romania and Switzerland are missing).

Additional analyses: Impacts of the COVID-19 pandemic

The pandemic impacted both national and international traffic. Figure 27 presents the impact on national and international traffic both in terms of train-km and passenger-km. As previously seen, the impact of the pandemic was more pronounced when looking at passenger-km than at train-km and this holds for all countries that reported data.

In terms of national services, on average, there was a 48% decrease in passenger-km and a 9% fall in train-km. Meanwhile, for international services, there was a 68% reduction in passenger-km and a 43% fall in train-km compared with 2019. Overall, the reduction in traffic was more apparent in international services, which is the case for all countries presented in Figure 27. This can be attributed to the restrictions on international cross-border travel which were imposed by many countries throughout 2020.

Figure 27 – Trends of passenger traffic in 2020 compared with 2019 of national and international services[34]

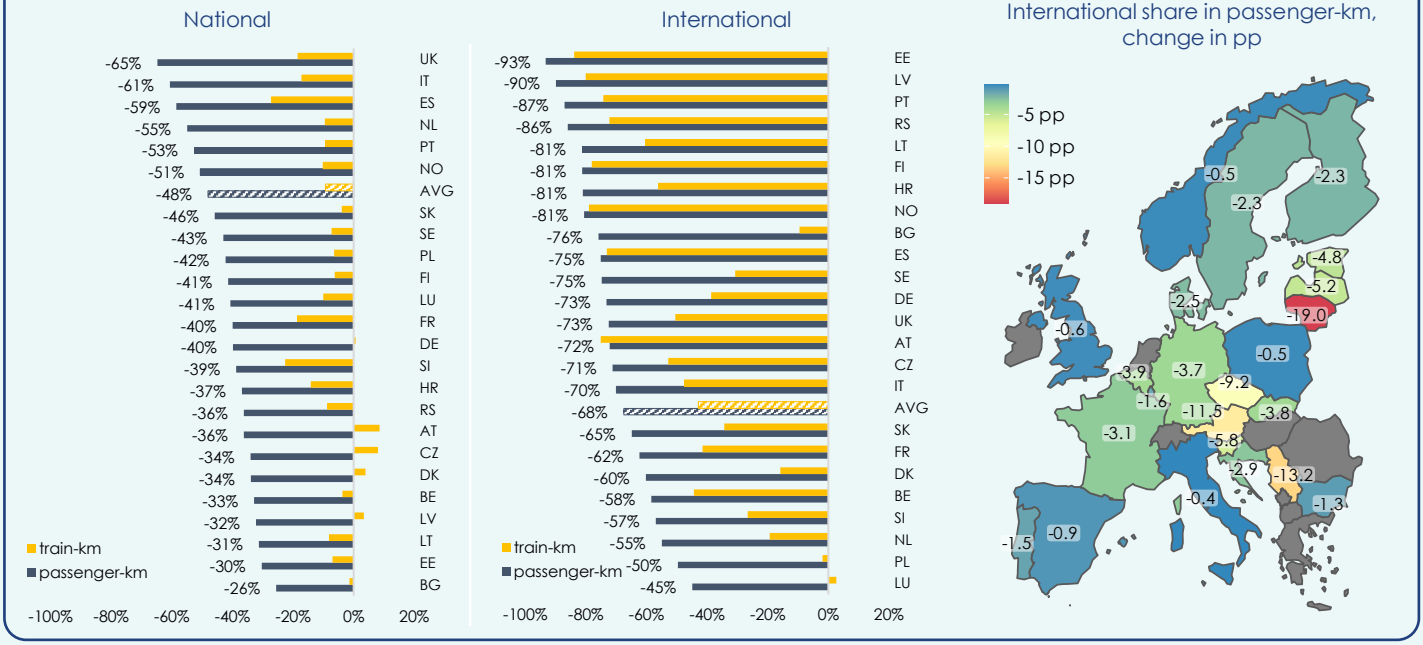


Figure 28 – Trends of passenger traffic in 2020 compared with 2019 of domestic incumbents and competitors[35]

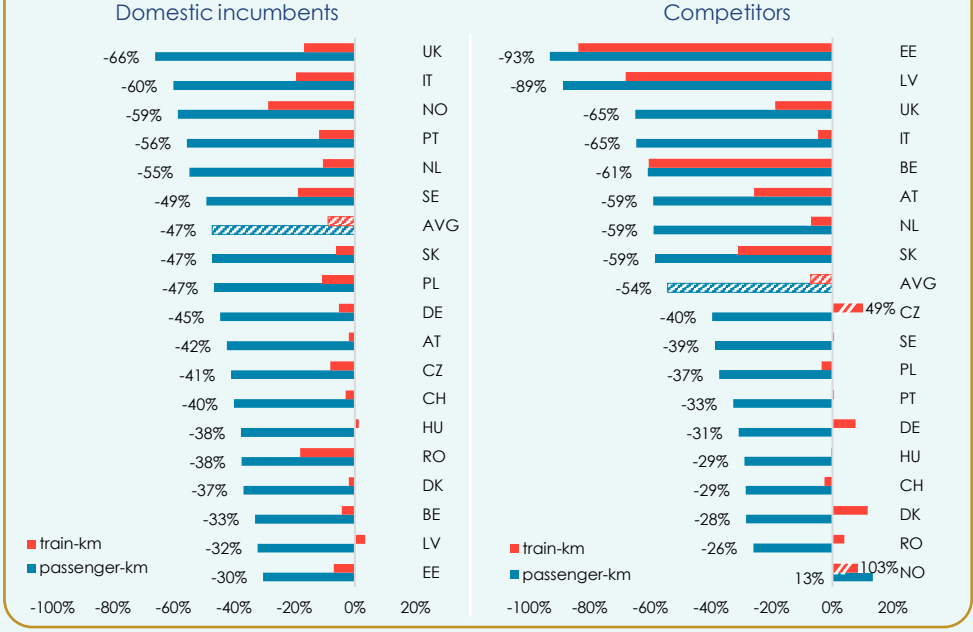


Figure 28 presents the impact of the pandemic on domestic incumbents and competitors regarding their passenger traffic. It can be observed that the impact was more prominent for competitors than for domestic incumbents. This was the case in terms of both train-km and passenger-km.

On average, passenger-km fell by more than half for competitors (-54%) compared with 47% for domestic incumbents. Meanwhile, in terms of train-km, there was a 7% reduction for competitors, compared with 9% for domestic incumbents.

[34] Only included in this figure are countries that reported data for both national and international traffic (Hungary, Ireland, Kosovo, North Macedonia and Switzerland are missing).

[35] Only included in this figure are countries that reported data for both domestic incumbent and competitors (Bulgaria, Spain, Croatia, Finland, France, Greece, Ireland, Kosovo, Lithuania, Luxembourg, North Macedonia, Serbia and Slovenia are missing). Incumbents include their subsidiaries, if any.

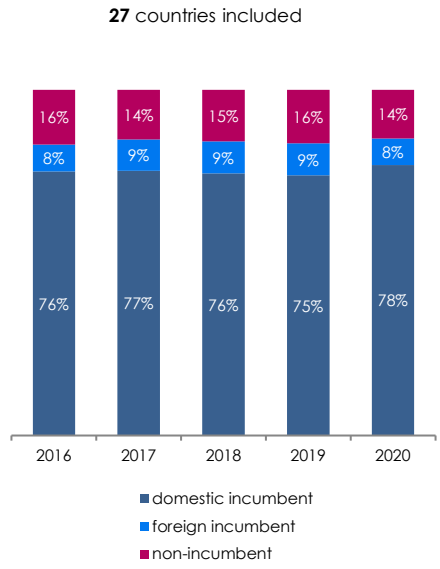
Market shares of passenger railway undertakings

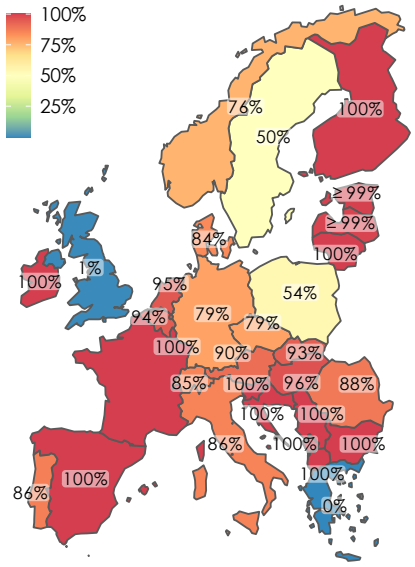
In 2020, domestic incumbents continued to possess the largest share of the passenger market with 78% of all passenger-km. This is up markedly from 75% in 2019 and is the highest market share since 2016. This comparative expansion of domestic incumbent means that competitors (non-incumbents and foreign incumbents) saw a reduction in their respective market shares compared with 2019. The pandemic seems to have affected domestic incumbents less severely than their competitors.

In 2020, 11 countries reported having a de facto monopoly with all passenger traffic being operated by domestic incumbents and their subsidiaries.

The market shares of incumbent and non-incumbent railway undertakings are an important indicator of the potential for competitive advantages for incumbents and of possible barriers to new entrants.

Figure 29 – Market shares (based on passenger-km) of passenger railway undertakings (left)[36] and share of domestic incumbent per country in 2020 (right)

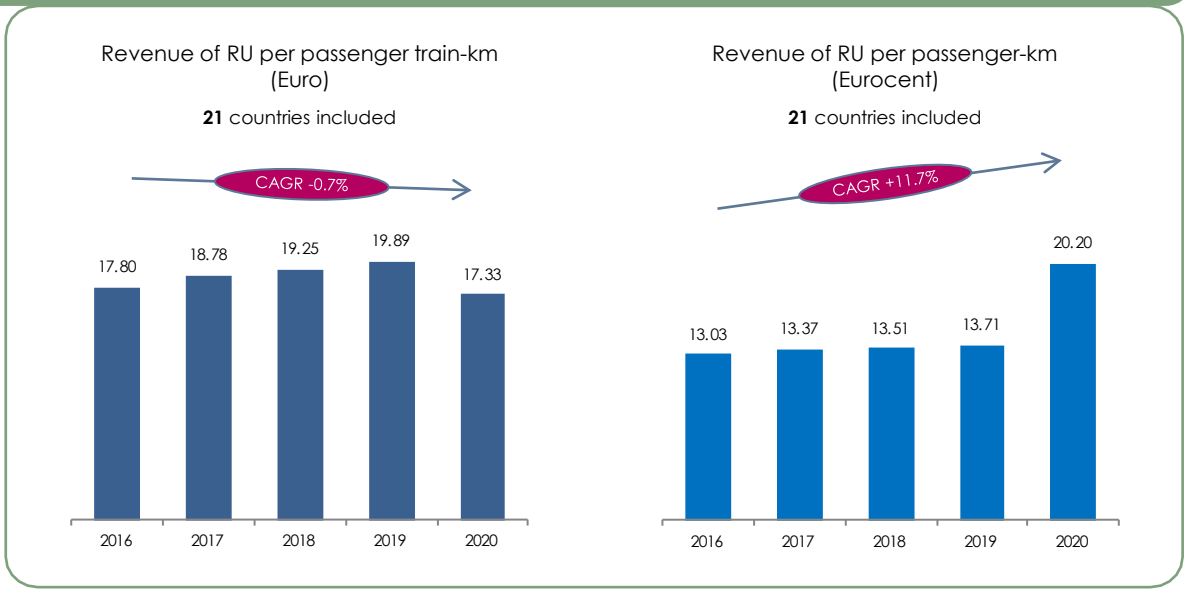




Economic performance of passenger railway undertakings

In 2020, the average revenue of passenger railway undertakings was €17.33 per train-km and €20.20 cent per passenger-km. Figure 30 shows how the revenues of passenger railway undertakings have evolved since 2016. Prior to this year, supply-side revenue had been increasing steadily, before a 13% fall in 2020 as a result of the pandemic. On the demand side, revenue per passenger-km was stable from 2016 until 2019, before a significant increase in 2020 (up 47%). This increase in revenue can be attributed to the decrease in passenger-km which is greater than that of the total revenue. The reduction in total revenue was moderate since big amounts of compensations were granted to railway undertakings in 2020. The total public compensations in 23 countries that reported revenue data for the last two years went up from €22 billion in 2019 to €25 billion in 2020, thus increasing by 15%.

Figure 30 – Passenger railway undertakings' revenue (from fares and compensations) per train-km and per passenger-km from 2016 to 2020[37]



[36] 27 countries are included in this figure (Belgium, Ireland, Serbia and Sweden are missing). Incumbents include their subsidiaries, if any.
[37] 21 countries are included in this figure (Belgium, Czech Republic, Denmark, Ireland, Norway, Serbia, Slovakia, Switzerland and the UK are missing).

Additional analyses: Impacts of the COVID-19 pandemic

Figure 31 – Trends of RU's revenues from passenger services in 2020 compared with 2019

Due to reductions in passenger traffic throughout 2020, there was a substantial reduction in revenue generated by railway undertakings from passenger services compared with 2019. Figure 31 presents the impact on both PSO and non-PSO operators by country. On average, revenue from PSO services fell by 7% and non-PSO revenue fell by 54% compared with 2019. In Latvia, revenue from non-PSO services fell by more than 90% compared to the previous year.[38] Given that the impact was more pronounced in the non-PSO sector, the share of non-PSO revenue (as a proportion of total revenue) fell in most countries that submitted data.

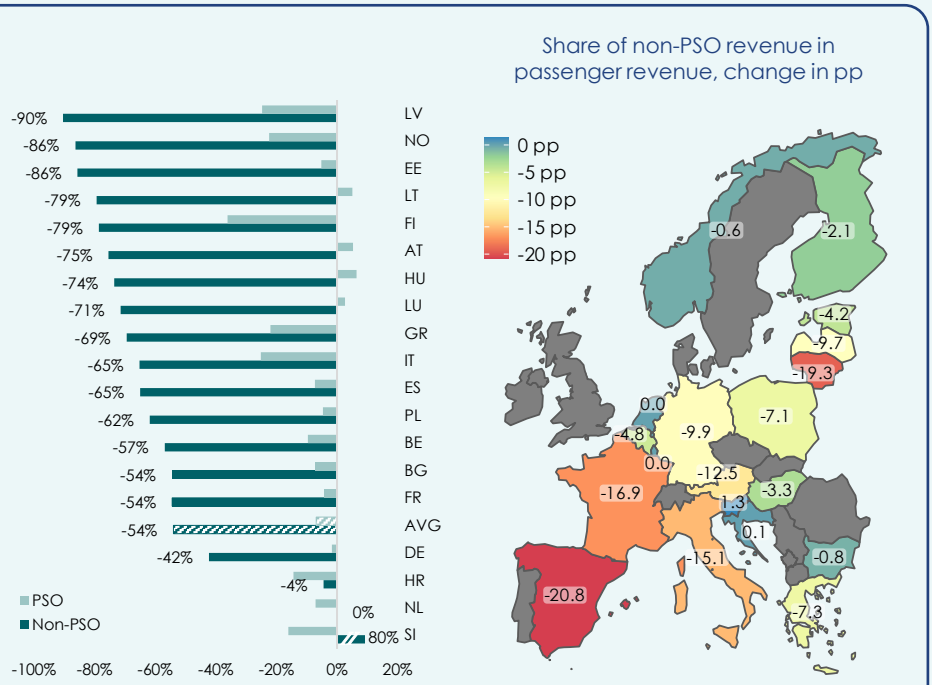
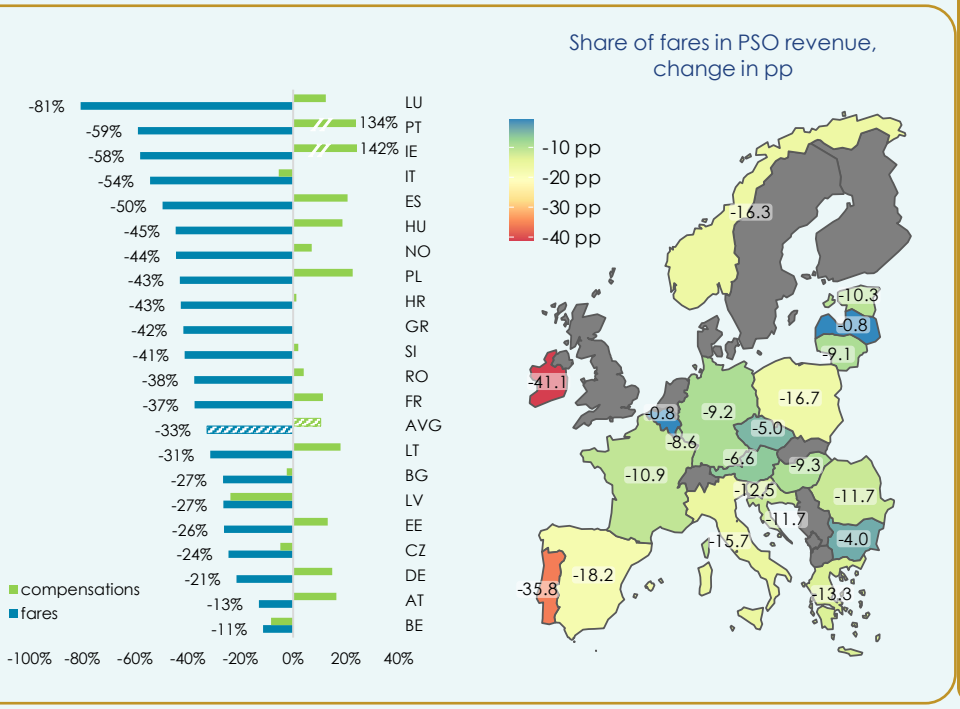


Figure 32 – Trends of RU's revenues from PSO services in 2020 compared with 2019



Given the reduction in passenger traffic throughout 2020, there was a sharp fall in revenue generated from fares compared to previous years. Figure 32 shows how revenue from PSO services generated from fares and compensations evolved across monitored countries. On average, revenue from fares fell by a third (33%). However, there was substantial variation between countries, ranging from a fall of 81% in Luxembourg to just 11% in Belgium. Meanwhile, on average, there was an 11% increase in revenue generated from compensations. This can be attributed to a rise in government support for PSO passenger service operators due to the impacts of the pandemic. Without any surprise, the share of fares in operators' revenue from PSO services decreased in all countries.

[38] The decrease in Latvian revenue from non-PSO services was due to methodological changes.