



Bundesnetzagentur

Railway Market Analysis 2021

- Special report -

Market developments in 2020 under the constraints arising from the COVID-19 pandemic



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July 2021

**Bundesnetzagentur für Elektrizität, Gas,
Telekommunikation, Post und Eisenbahnen**

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Summary

Like all other sectors of the economy, the railway market also felt the effects of the COVID-19 pandemic and the government measures taken to contain it in 2020.

The Bundesnetzagentur has examined and assessed the impact the COVID-19 pandemic had on the railway market in Germany in 2020. For this, it surveyed approximately 100 railway undertakings which operated in the German market either as a railway undertaking or infrastructure manager. This analysis did not include the operation of service facilities such as passenger stations or freight terminals.

The undertakings' figures paint a clear picture. The pandemic's effects on the railway market in 2020 are evident from a five-year comparison of the market participants' operating performance and transport performance (Fig. 1). In 2020, transport performance in the short-distance passenger rail transport segment fell short of the previous year's level by a significant 38 percent. Even harder hit was the long-distance passenger rail transport segment which reported a drop of 47% over the previous year. The rail freight transport segment fared comparatively well in 2020 with just a five percent decline in net tonne-kilometres compared to 2019.

Infrastructure managers posted only slight declines in their revenue and performance figures because most passenger transport services continued operating and rail freight transport reported relatively stable volumes. The operating performance of all transport services exhibited a two percent decline and remained at the level of approximately 1.1 billion train-kilometres.

In a month-by-month breakdown (Fig. 2), the lockdown periods during the second and fourth quarters of 2020 and the resulting declines in transport performance are quite obvious.

Operating and transport performance of RUs

in bn pkm/tkm/m train-km

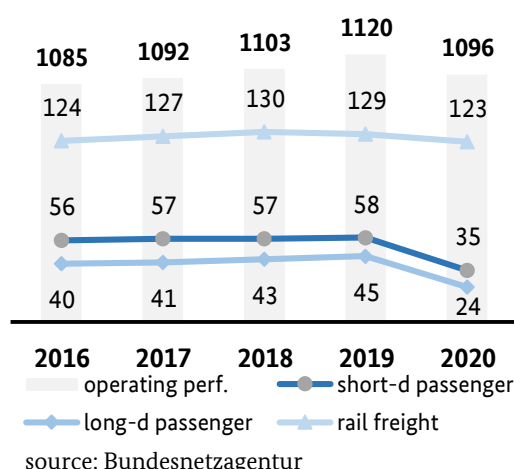


Figure 1: Development of transport and operating performance 2016 - 2020 (absolute, in billions of pkm/tkm or millions of train-km)

Particular mention must be made of the collapse in transport performance in the long-distance passenger rail transport segment which fell to just ten percent of the previous year's average in April 2020. Similarly, transport performance in the short-distance passenger rail transport segment during the same period dropped to 25 percent of the level seen in April 2019. The strong catch-up effects in the rail freight segment during the fourth quarter of 2020, with levels exceeding 100 percent of the average for 2019, are also striking.

Looking at the railway sector's share of the modal split, rail freight transport lost 0.5 percentage points and passenger rail transport lost three percentage points to road transport.

Competition developed unevenly with the pandemic being only partially responsible for this. The competitors lost market share, especially in the long-distance segment, largely because commercial, non-federally owned transport operations were, in part, entirely suspended and railway-specific government assistance was available only for contracted local

Railway undertakings' traffic performance

in percentages of passenger- / tonne- / train-kilometer

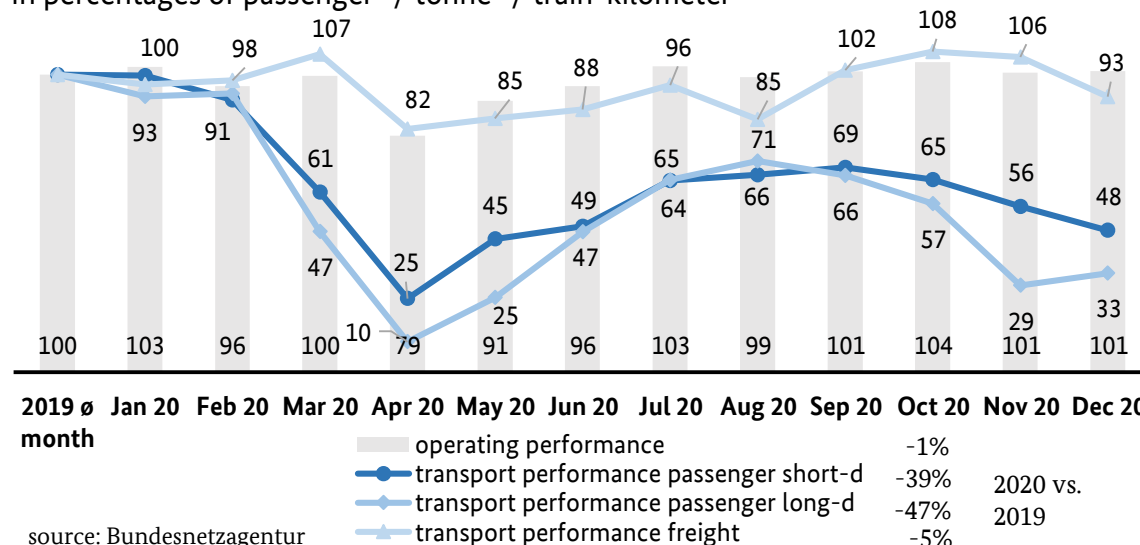


Figure 2: Development of transport performance and operating performance in 2020 compared to 2019 overall and broken down by type of service (change in percent, indexed 2019 = 100)

public transport services. In the short-distance passenger rail transport and rail freight transport segments, the competitors were able to expand their shares, largely in spite the pandemic, by acquiring new transport contracts and orders for transport services.

The figures for punctuality improved significantly in 2020. Due to the reduced traffic density and the increase in available train-path capacity, the effects of disruptions and construction measures were less severe than usual. The drop in the number of passengers led to less time being needed at stations for passengers to board or alight from a train and to fewer instances of scheduled dwell times being exceeded. As a result, the punctuality of the remaining transport services - both passenger and freight transport - increased substantially.

The railway undertakings incurred additional costs not only for protective equipment (such as masks, disinfectant spray and partitions) and cleaning activities but also for corona tests for their employees and for adjustments in their

processes (setting up home offices, increasing office space) in order to comply with COVID-19 rules and regulations. All in all, railway undertakings had to bear up to 100 million euros in special pandemic-related costs during 2020.

Government support measures particularly benefited enterprises providing contracted short-distance passenger rail transport service. These enterprises reported receiving more than 875 million euros from the rescue package for the local public transport sector. At the time the survey was conducted, no special assistance was being provided specifically for the long-distance passenger rail transport or rail freight transport segment. However, some enterprises availed themselves of assistance that was generally available, such as short-time work benefits, temporary financial assistance and loans from the Kreditanstalt für Wiederaufbau (KfW) reconstruction loan corporation. The respondents criticised what they considered excessive bureaucracy involved in making applications and the late disbursement of funds. The majority of the enterprises surveyed were

however satisfied with the government support measures.

The planned additional track-access charge funding for the rail freight transport sector and the long-distance passenger rail transport sector would expand government aid to these two transport services.

Based on data from the special survey, publicly available data from press reports and financial statements, and the Federal Statistical Office's Genesis database, the Bundesnetzagentur has come to the conclusion that the economic loss to the railway market in Germany for the year 2020, after offsetting against government assistance disbursed to railway undertakings and infrastructure managers, totalled approximately 2.55 billion euros. At approximately 2 billion euros, the long-distance passenger rail transport segment accounted for the largest share by far of this loss, while the economic damage for other transport services and the infrastructure managers was less.

All European countries were impacted by the pandemic. The parallel analysis that IRG-Rail conducted on the effects the pandemic has had on the railway markets of its 30 member states clearly shows how the different measures taken by the individual countries have influenced their transport indicators. The slumps in the transport performance reported for passenger rail transport service exceeded the 50 percent mark in those countries with a stringent lockdown and curfews or "stay at home" rules (such as Great Britain, Spain and Portugal), while countries with less stringent regulations (such as Sweden and Austria) reported smaller declines. Europe-wide, commercially operated passenger transport services were the hardest hit, being completely suspended in many countries and collapsing in the second quarter of 2020 by 90 to

100 percent over the same quarter of the previous year.

The rail freight transport segment was able to limit its pandemic-driven decline in transport performance in 2020 to less than minus 10 percent Europe-wide. In some cases, the reasons were not pandemic-related, such as in the case of the decline in transport services to and from Russia due to EU sanctions. In addition, there were opportunities to shorten transport times because there was less route congestion and more free slots due to suspended passenger service operations. In some countries such as Croatia and Greece, increased demand from certain product groups that are transported by rail (such as grain) led to an increase in rail freight transports compared to the previous year's level.

Introduction and methodology

Introduction and methodology

The enormous impact that the COVID-19 pandemic had on all areas of society, the economy and the political sector in 2020 can also be observed in the railway market. Using an initial special survey based on the first six months of 2020, the Bundesnetzagentur analysed in autumn 2020 the effects the pandemic had on railway undertakings and infrastructure managers in the German railway market and projected pandemic-related losses for the entire year of 2020. This analysis is part of the “Railway Market Analysis 2020” which can be accessed here:

<https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/PressSection/ReportsPublications/2020/RailwayMarketAnalysis2020.html>

Expanding on this, the present analysis is based on corporate data for all 12 months of 2020. It covers federally and non-federally owned infrastructure managers and railway undertakings. Using the same approach as with the 6-month analysis, approximately 100 railway undertakings which the Bundesnetzagentur considered to be representative of the railway market and offer high market coverage were selected to be surveyed. The figures presented in this report are extrapolations for the entire market of railway undertakings and infrastructure managers.

The mandate and scope of the Bundesnetzagentur’s market monitoring activities are set forth in section 17 of the Rail Regulation Act.

The survey asked the undertakings about the indicators transport performance, operating performance, revenue and expenditure for the months January through December 2020. The year 2019 provided the basis for comparison for the following findings. In addition to key transport and finance data, the survey included a set of questions focused on government assistance. In this section, the respondents were required to provide

information on the types and amounts of assistance they had received. In the third part of the questionnaire, the respondents were asked to list the special costs they had incurred due to the pandemic, such as for disinfection, masks, COVID-19 tests, cleaning measures, equipping home offices, and security personnel.

All of the surveyed undertakings except one market participant provided the requested data. This represents a response rate of 99 percent. These respondents also provided valuable comments and information regarding the pandemic’s specific effects in the respective undertaking or submarket. The Bundesnetzagentur would like to express its sincere thanks to all the respondents for the excellent collaboration and the time they took to participate in the survey!

The survey was based on the following methodological framework:

The analysis applies to the railway market in Germany. The requested performance indicators (train-path kilometres, passenger-kilometres, net tonne-kilometres) and the key financial indicators (revenue, expenditure) refer to services that were provided using the railway network within Germany’s borders. Enterprises that operate internationally were requested to differentiate between their German business operations and their business operations beyond Germany’s borders.

Infrastructure managers (such as passenger stations, freight terminals, rail sidings and maintenance facilities) were not examined. Due to the only slight decline in their operating performance (when viewed over the entire year 2020), the changes observed in this group were comparatively small. It was therefore decided not to conduct the survey in this area, in part out of consideration for the additional work this would entail for the participating infrastructure managers.

Effects that occurred at affiliated companies or groups in the domain of a parent company or holding were not part of the analysis.

No regional transport authorities or agencies in the area of contracted short-distance passenger rail transport service were surveyed. As a result, the pandemic's effects on their revenue levels and on the government assistance they received were not covered.

Transport undertakings with multimodal operations were requested to provide data only for the railway segment, without consideration for other modes of transport such as long-distance coach service or lorry transport.

The Bundesnetzagentur drew upon data from the Federal Statistical Office for individual superordinate market indicators (such as for the modal split).

The only available data on punctuality that could be analysed was from DB Netz AG and DB RNI.

The presentation of the revenue and results situations in chapter 2 is based on the revenue and expenditure data provided by the respondents.

The Bundesnetzagentur also conducted an assessment (section 4.3) of the financial effects that the COVID-19 pandemic specifically had on undertakings operating in the railway market in 2020. The previous year (2019) was used as the basis for comparison here.

Financial effects which were not due to the pandemic (if known) were deducted.

Most of the enterprises had not yet completed their annual financial statements at the time the survey was conducted. It is possible to make retroactive changes to the financial figures after they have been submitted.

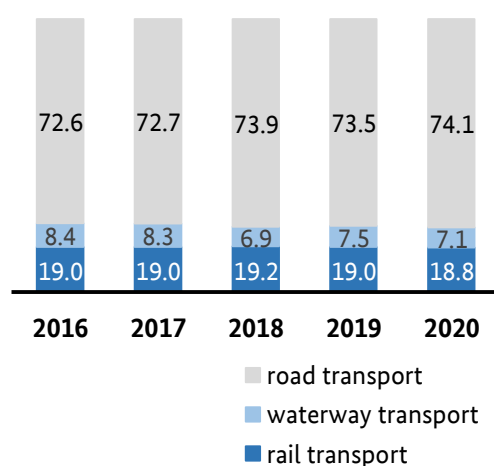
The data provided here regarding the effects the pandemic has had on European railway markets in 2020 are based on a survey conducted by the IRG-Rail Market Monitoring Working Group in which the Bundesnetzagentur was actively involved.

1. Market and performance indicators

1.1 Modal split

Looking at the rail freight transport segment, the railway undertakings were not able to increase their share of the modal split during the 2020 pandemic year (Fig. 3). In spite of the lockdown measures, the road freight transport segment was able to considerably expand its share by more than one-half of a percentage point. Conversely, inland waterway transport and railway transport lost between 0.4 and 0.2 percentage points in the modal split. This means that the railway sector's share of the modal split once again fell short of the 20 percent threshold and the federal government's targets.

Modal Split Freight transport in percent

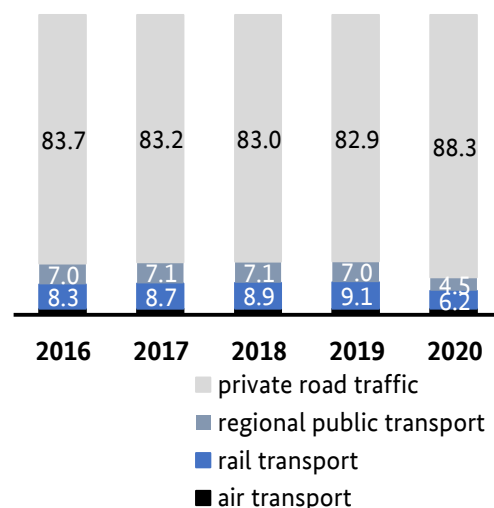


source: Bundesnetzagentur

Figure 3: Development of the modal split in the freight transport segment 2016 - 2020 (shares in percent)

Due to the pandemic, all services in the passenger rail transport segment lost market share in 2020 to motorised private transport (Fig. 4) which raised its long-standing record level to more than 88 percent. As a result of the selective cancellation of transport service and slumps in demand, marked declines can be observed among all modes of transport that were directly affected by lockdown measures. The share held by the railway sector fell by nearly three percentage points to 6.2 percent.

Modal Split Passenger transport, in percent



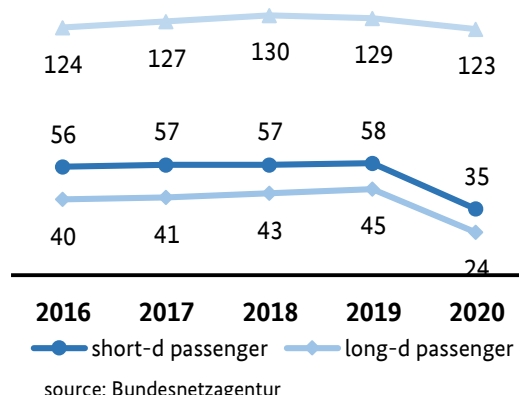
source: Bundesnetzagentur

Figure 4: Development of the modal split in the passenger transport segment 2016 - 2020 (shares in percent)

1.2 Transport and operating performance

When transport performance in the passenger rail transport segment is viewed over a five-year period, a significant decline in the individual services can be seen in 2020 (Fig. 5). The short-distance and long-distance passenger rail transport segments saw their number of

Transport performance of RUs in bn pkm/tkm



source: Bundesnetzagentur

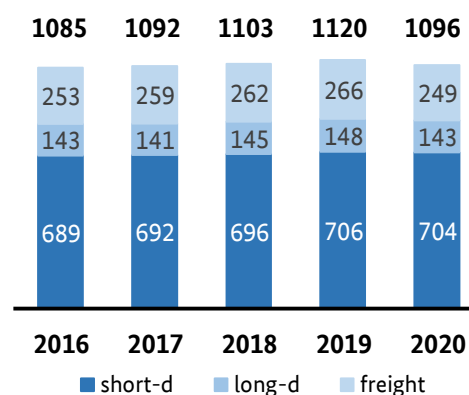
Figure 5: Development of transport performance 2016 - 2020 (in billions of passenger- or tonne-kilometres)

passenger-kilometres slump by more than 40 percent. By contrast, the decline in the number of tonne-kilometres in the rail freight transport segment was a moderate five percent. This development clearly brought an end to the long-standing growth trend in 2020. The downward trend in the rail freight transport segment that began in 2019 picked up speed in 2020 due to the pandemic.

In contrast to this, the political sector's and transport undertakings' aim of maintaining passenger service can be clearly seen in the development of the number of kilometres travelled. These efforts were under particularly undertaken to ensure that essential workers could reach their places of work and also to reduce passenger density in the trains (Fig. 6). Due to the award of contracts for short-distance passenger rail transport services to non-federally owned railway undertakings (for reasons unrelated to the pandemic) with effect from the changeover from the 2019 timetable to the 2020 timetable, there was a shift in the number of train-path kilometres travelled, from federally owned to non-federally owned railway undertakings. Non-federally owned railway undertakings reported a slightly smaller decline of nearly 30 percent in their transport performance in the short-distance passenger rail transport segment. Conversely, this means that the decline for federally owned railway undertakings was more than 40 percent.

A year-on-year comparison of operating performance reveals a two percent decline between 2019 and 2020. The decline in operating performance was less than one percent in the short-distance passenger rail transport segment and three percent in the long-distance passenger rail transport segment. In comparison, the decline in operating performance in the rail freight transport segment was six percent.

Operating performance IMs in million train-kilometer



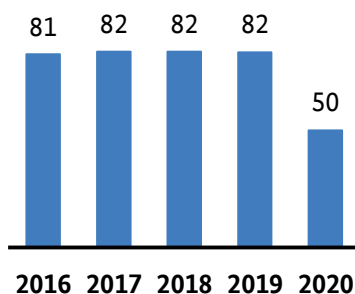
source: Bundesnetzagentur

Figure 6: Development of operating performance 2016 - 2020 (in millions of train-path kilometres)

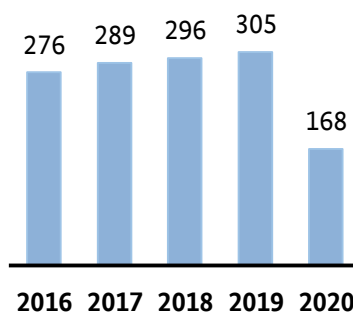
Viewed from a medium-term perspective, operating performance in the German railway network during the last five years has remained stable at approximately 1.1 billion train-path kilometres. The breakdown of train-path kilometres travelled between the three transport services also remained fundamentally the same. The slump in the number of passengers due to the COVID-19 pandemic is reflected in the train occupancy levels (Fig. 7). Average train occupancy in both short-distance and long-distance passenger rail transport fell to somewhat lower than half of the levels seen during the previous year. This broke the growth trend seen over the last several years in this segment as well.

Looking at the rail freight segment, the declines in transport volumes for hard-hit industries (such as the automotive industry) were offset by increased transport volumes in other areas (such as grain, foodstuffs and liquid goods). The average freight volume of freight trains increased overall.

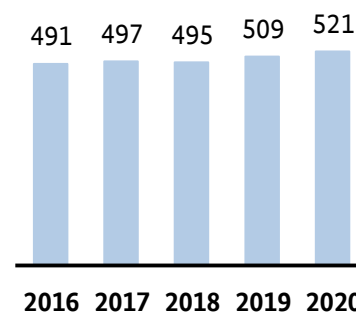
Average passengers per train in short-d trains
in passenger numbers



Average passengers per train in long-d trains
in passenger numbers



Average freight load per train
in net tonne



source: Bundesnetzagentur

Figure 7: Average train occupancy / load 2016 - 2020 (number of passengers / tonnes)

1.3 Development of competition

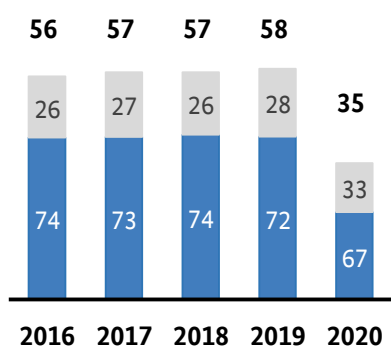
The pandemic was only partly responsible for how the shares held by the competitors in the German railway market developed in 2020 (Fig. 8).

The decline in the size of the share held by competitors in the long-distance passenger rail transport segment was clearly due to the pandemic. The market share gains posted by the competitors in this segment in recent years were cancelled out by the large-scale discontinuation of the ÖBB night train service, the scheduled

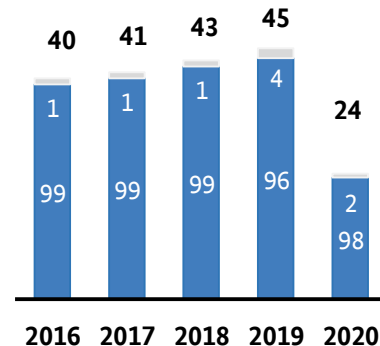
service offered by FlixTrain GmbH and most charter and excursion train service (such as the service offered by SVG GmbH and BTE GmbH).

In contrast to DB Fernverkehr AG, non-federally owned railway undertakings in the long-distance passenger rail transport segment (such as FlixTrain and Thalys) discontinued nearly all their operations starting mid-March and subsequently resumed only a few of their offerings in the following months. They then fell to nearly zero once again in November and December.

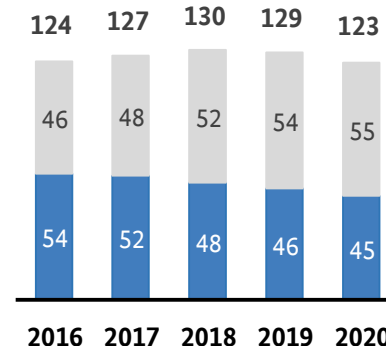
Competition Short-d.
in billion pkm



Competition Long-d.
in billion pkm



Competition Freight
in billion tonne-km



■ Share of federally owned RUs

■ Share of competitors

source: Bundesnetzagentur

Figure 8: Development of the competition in the individual transport services 2016 - 2020 (total transport performance in billions of passenger-kilometres or tonne-kilometres and shares in percent)

In contrast to this, the competitors increased their shares of the short-distance passenger rail transport and rail freight transport markets. These gains were not however directly related to the COVID-19 pandemic.

Looking at the rail freight transport segment, many non-federally owned railway undertakings were able to acquire transport contracts and significantly increase their operating services and transport volumes. Non-federally owned railway undertakings especially realised gains in cross-border and transit service. In the process they largely offset a decline in their transport performance, with their total number of tonne-kilometres for the entire year falling just one percent short of the level reported in 2019. The comparable decline seen at DB Cargo AG reached the higher single-digit percent range. This reflects not only pandemic effects but also the general downward trend in the market leader's performance.

Non-federally owned railway undertakings in the short-distance passenger rail transport segment won a number of tenders issued by regional transport authorities for regional networks. Since these service operations began in December 2019 and were provided during the entire year 2020, albeit at a lower utilisation rate which however applied to all trains - irrespective of the operator - in equal measure.

1.4 Punctuality

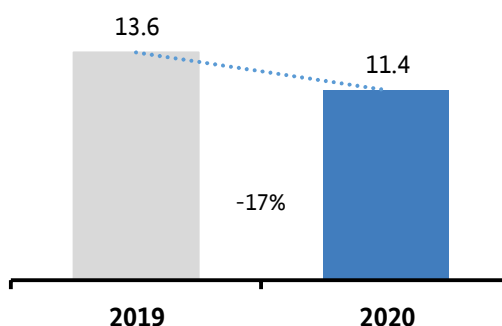
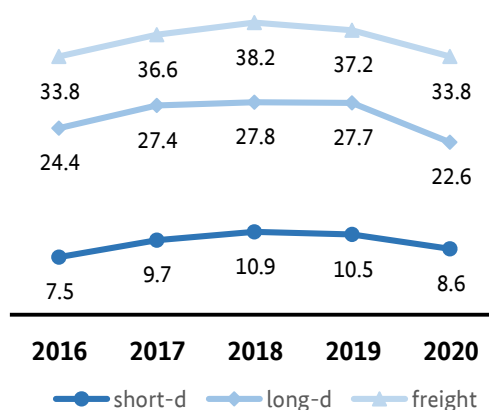
Disruptions in the network had less of an impact due to the reduced traffic density and the increase in available train-path capacity. Fewer passengers translated into faster boarding and alighting times and fewer instances of the stop time at train stations being exceeded. As a consequence, other transport operations significantly increased their punctuality levels, not only in the passenger but also the freight service segments.

Looking at a year-on-year comparison of the individual types of transport service, the share of delayed trains in all three segments declined to approximately the same level reported four years ago, primarily due to the lockdown in April but also to the restrictions imposed in autumn. The share of delayed trains shrank by nearly one-fifth in all transport services.

Conversely, the share of trains that did not run increased by more than ten percent, in line with the number of connections that were cancelled due to the pandemic. The levels reached here were the highest in five years.

It should be noted however that service was offered continuously on nearly all routes in the passenger rail transport segment and that

Share of delayed trains
in percentages



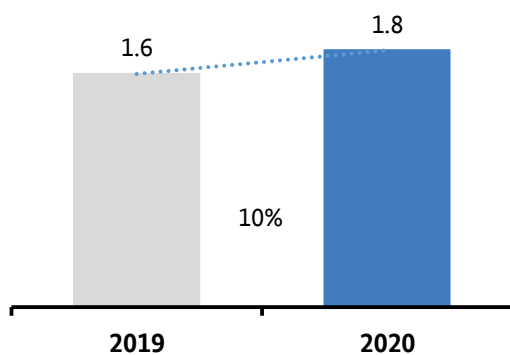
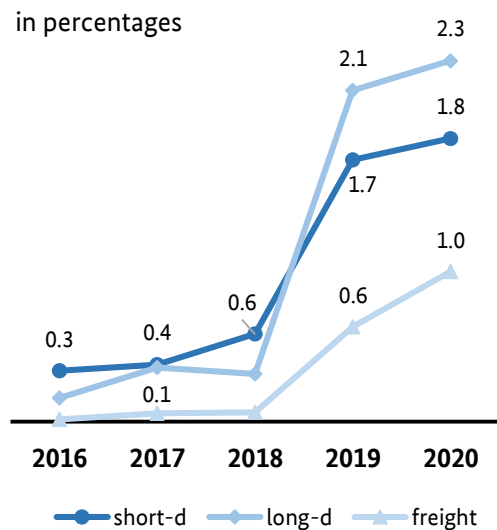
source: Bundesnetzagentur

Figure 9: Five-year comparison of the share of delayed trains in all transport services and change from 2019 to 2020 (in percent)

operations were largely maintained. If service had been partially or completely suspended - as was the case in other European countries - the share of trains that did not run would have been significantly larger.

Share of cancelled trains

in percentages



source: Bundesnetzagentur

Figure 10: Five-year comparison of the share of trains that did not run, in all transport services and change from 2019 to 2020 (in percent)

2. Economic indicators

2.1 Revenue in the railway transport market

The steady increase in revenue reported in recent years by all transport services was brought to a halt during the pandemic year (Fig. 11¹). The revenue generated by railway undertakings fell to the level seen five years ago. The market participants surveyed expect that once the pandemic is over, revenue will return to its old level only with some delay.

Revenues generated by RUs in billion Euro

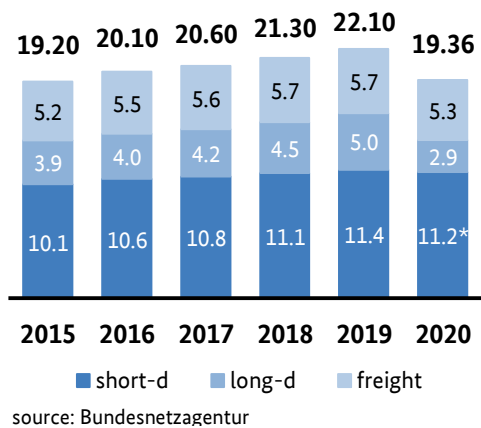


Figure 11: Development of revenue generated by railway undertakings 2015 - 2020 (in billions of euros)

The long-distance passenger rail transport segment saw the largest drop in revenue with a decline of more than 40 percent. This figure was even 70 percent for non-federally owned railway undertakings in the long-distance passenger rail transport segment.

In the short-distance passenger rail transport segment, payments from Germany’s federal states and their regional transport authorities guaranteed the largest portion of the railway undertakings’ revenues. Short-distance passenger rail transport undertakings were able to claim

assistance for the remaining losses in fares through the rescue package for local public transport. According to the Bundesnetzagentur’s information, the surveyed undertakings have applied for approximately 0.9 billion euros in payments from the rescue package to date. Further applications and payments are to be expected, so that the revenue levels of railway undertakings in the short-distance passenger rail transport segment could eventually remain more or less stable.

Revenue in the rail freight transport segment dropped by some six percent, with non-federally owned railway undertakings in this market reporting only a marginal one-percent decline. Several undertakings in this segment reported that they had secured additional transport contracts which stabilised their revenue level despite temporary standstills.

The slump in long-distance passenger rail transport service is particularly evident when total revenue is examined in relation to the number of train-path kilometres travelled (Fig. 12). Revenue

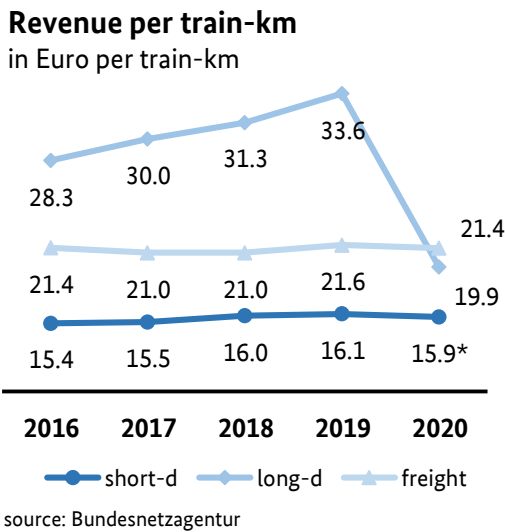
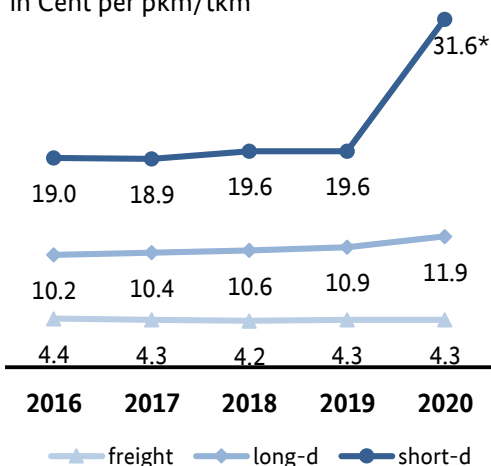


Figure 12: Development of revenue per train-path kilometre 2016 - 2020 (euros per train-path km)

¹ Revenue generated in the short-distance passenger rail transport segment includes 0.8 billion euros in payments from the rescue package for local public transport.

Revenue per pkm/tkm

in Cent per pkm/tkm



source: Bundesnetzagentur

Figure 13: Development of revenue per passenger- or tonne-km 2016-2020 (cent per passenger-/tonne-km)

per train-path kilometre declined by 40 percent but fell only slightly in the short-distance passenger rail transport and rail freight transport segments.

Measured in terms of transport performance, the payments made to keep local transport services going, the payments from the rescue package for local public transport and the simultaneous slump in passenger numbers had an impact on the level of revenue generated per passenger kilometre (Fig. 13). As a result, revenue per passenger-kilometre

in the short-distance passenger rail transport segment jumped by more than 50 percent.

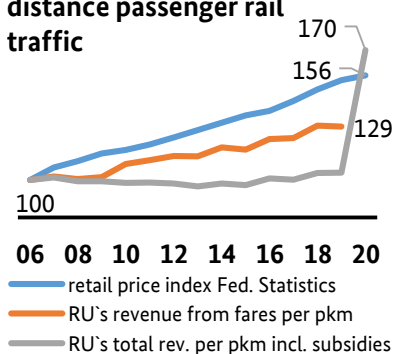
Only a slight increase in the amount of revenue per passenger-kilometre was recorded in the long-distance segment, while revenue per tonne-kilometre in the rail freight transport segment remained constant.

2.2 Retail prices

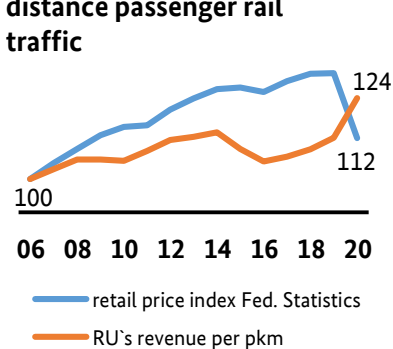
Retail prices (Fig. 14) were also impacted by the pandemic. In order to map this, the Bundesnetzagentur drew on data it collected itself and on publicly available indices published by the Federal Statistical Office. This data shows the development of prices for precisely-defined services based on the same fixed quantities and therefore reflects the perspective of end customers who monitor price trends for a specific service

In contrast, the average revenue per tonne-kilometre or passenger-kilometre as calculated by the Bundesnetzagentur also reflects shifts in the quantity structure of the demanded products and services (for example, changes in the demand for rail passes or discount offers such as special prices or the BahnCard (railcard)) and, in the process, enables a more precise assessment of revenue development from the railway undertakings' perspective.

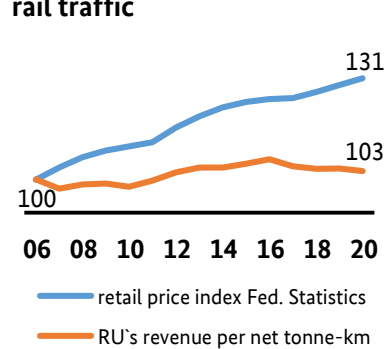
Retail prices for short-distance passenger rail traffic



Retail prices for long-distance passenger rail traffic



Retail prices for freight rail traffic



source: Bundesnetzagentur

Figure 14: Development of retail prices 2006-2020 (including public subsidies, indexed 2006 = 100)

Looking at nominal fare prices in the short-distance passenger rail transport segment, the long-standing trend toward steady increases continued unbroken. Due to the slump in demand for passenger service in the wake of the pandemic and - thanks to the compensatory financial measures launched by the public sector - only slight drops in revenue, the railway undertakings saw a correspondingly sharp increase in their specific revenues: more than 50 percent from 2019 to 2020.

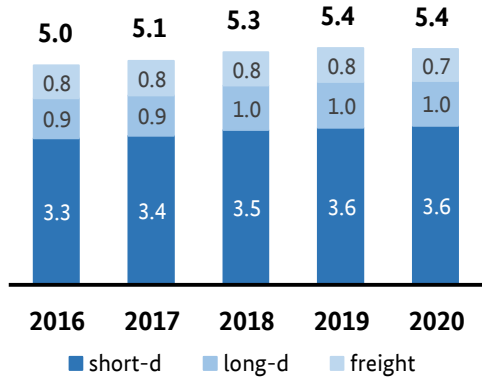
The picture is much different for the long-distance passenger rail transport segment. Here, the Federal Statistical Office measured a marked decline of more than ten percent in prices. At the same time, the average revenue generated per passenger-kilometre increased by approximately ten percent. Active subscription passes (rail passes, monthly passes) which were not used very much were probably the primary reason for this.

Conversely, retail prices in the rail freight transport segment remained largely unaffected by the pandemic and continued to follow long-established trends. Although a slight increase could be seen in the list prices reported to the Federal Statistical Office, the railway undertakings' average revenue per tonne-kilometre in 2020 once again fell slightly year-on-year.

2.3 Track access charges

The infrastructure managers experienced a comparatively small decline in their revenues in the wake of the pandemic in 2020. Since most passenger rail service continued to be offered and paid and the rail freight transport segment was able to stabilise its services over the course of the year, the overall declines seen in revenues generated from track access charges were only marginal (Fig. 15). The loss of revenue from regional transport authorities and railway undertakings was additionally compensated for by the rescue package for local public transport. As a

IMs' revenue from track access charges in billion Euro

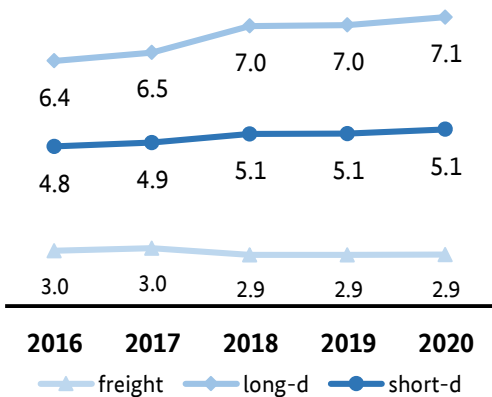


source: Bundesnetzagentur

Figure 15: Development of revenue generated by infrastructure managers from track access charges 2016 - 2020 (in billions of euros)

result, the infrastructure managers did not have to report any losses in the track access charges for short-distance passenger rail transport. Similarly protected, DB Fernverkehr AG's payments for continuing to provide service for long-distance routes flowed whereas the long-distance rail transport service provided by non-federally owned providers such as FlixTrain GmbH came to a standstill. Since these providers hold only a small share of the overall market, this did not have any overall impact.

Track access charges average in Euro per train-km



source: Bundesnetzagentur

Figure 16: Development of track access charges per train-path kilometre 2016 - 2020 (in euros per train-path kilometre)

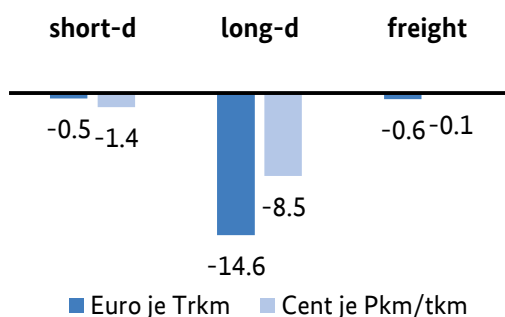
Looking at revenue generated from track access charges in the rail freight transport segment the delta between 2020 and 2019 was a negative six percent. Revenue from track access charges in long-distance transport fell by one percent, while revenue from track access charges in the short-distance passenger rail transport segment actually increased by one percent. Taken together, the overall difference in the revenues from track access charges for the three transport services in 2019 and in 2020 was a negative 0.4 percent.

The average track access charge per passenger-kilometre / tonne-kilometre (before track access charge assistance) remained virtually unaffected by the pandemic and continued to follow the respective trends seen in the previous years.

2.4 Results situation

Drawing on the Bundesnetzagentur's special survey, it is possible to make specific statements about the pandemic's effects on the results of infrastructure managers and railway undertakings for 2020 in comparison to 2019, based on the requested data. Many undertakings had not yet completed their annual financial statement for 2020. As a result, they estimated their annual revenue and total annual costs.

Change in Operating Results of RUs 2019 vs. 2020



source: Bundesnetzagentur

Figure 17: Delta of the result from revenue and expenditure from 2019 to 2020 for the respective unit of measure (in euros per train-path kilometre and in cents per passenger-kilometre / net tonne-kilometre)

The overall financial situation of the railway undertakings in all three rail service segments worsened during the pandemic year (Fig. 17).

Based on the respective unit of measure, the negative differences in the results between 2019 and 2020 were the greatest among the railway undertakings in the long-distance passenger rail transport segment.

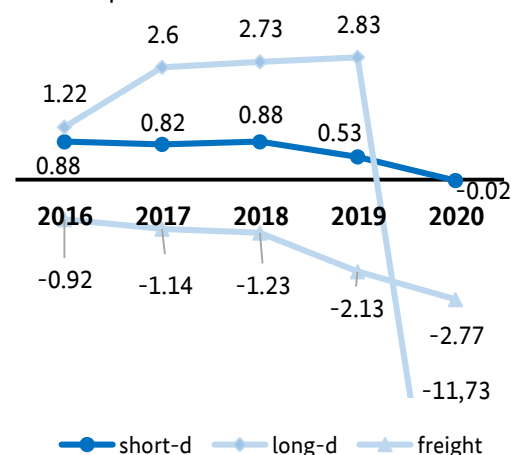
The result deltas in the short-distance passenger rail transport segment and the rail freight transport segment were also negative, albeit at a low level.

As a rough estimate, the Bundesnetzagentur calculated the operating results for the individual transport service based on one train-path kilometre. The operating results declined in all three services in 2020, but most of all in the long-distance passenger rail transport segment (Fig. 18).

In the short-distance passenger rail transport segment, more than three-quarters of all railway undertakings surveyed reported a negative result based on revenue minus expenditure in 2020, approximately the same number as in 2019.

Operating Result

in Euro per train-kilometre



source: Bundesnetzagentur

Figure 18: Operating result per train-path kilometre for the individual transport service (in euros per train-path kilometre)

None of the railway undertakings operating in the long-distance passenger rail transport segment generated a positive result in 2020.

In contrast, the share of railway undertakings reporting positive results in the rail freight transport segment grew from approximately one-third in 2019 to nearly two-thirds in 2020. All in all, however, this market had a negative overall balance as well in 2020 - for federally owned as well as non-federally owned railway undertakings offering rail freight transport services. However, more than half of the surveyed non-federally owned railway undertakings that offer rail freight transport services improved their results. This reduced the negative overall result for this group.

Three-quarters of the infrastructure managers reported a negative balance from revenue and expenditure, a slight decline over 2019. Several infrastructure managers stated that they used the phases with reduced transport operations for construction activities and maintenance work which in turn led to increased spending. In addition, the expenditures in 2020 included special pandemic-related costs for disinfection, masks and security personnel. These costs are examined separately in section 4.1.

3. Developments during 2020

3.1 Short-distance passenger rail transport

Large-scale cancellations and an attendant decline in operating performance in the short-distance passenger rail transport segment occurred only in April. Transport operations on most of the routes were maintained during all the other months. As a result, the number of train-kilometres travelled was approximately the same as or even more than the previous year's level.

The effects of the pandemic can be traced in a monthly breakdown of financial indicators (Fig. 19). Following a good start to the year, transport performance began to drop off when the first restrictions were imposed in March. Compared with the previous year's average, April - the month hit hardest by the lockdown - marked the low point with just 25 percent of the passenger-kilometres reported for the same month in 2019.

Following the likewise poor months of May and June, transport performance stabilised in summer at a level between 60 and 70 percent. It then fell to less than 50 percent again toward the end of the year due to the reinstatement of lockdown

measures. This decline occurred even though orders for transport service were fulfilled during the second lockdown. This pattern was seen among nearly all railway undertakings in this segment. No significant difference was observed between federally owned and non-federally owned undertakings.

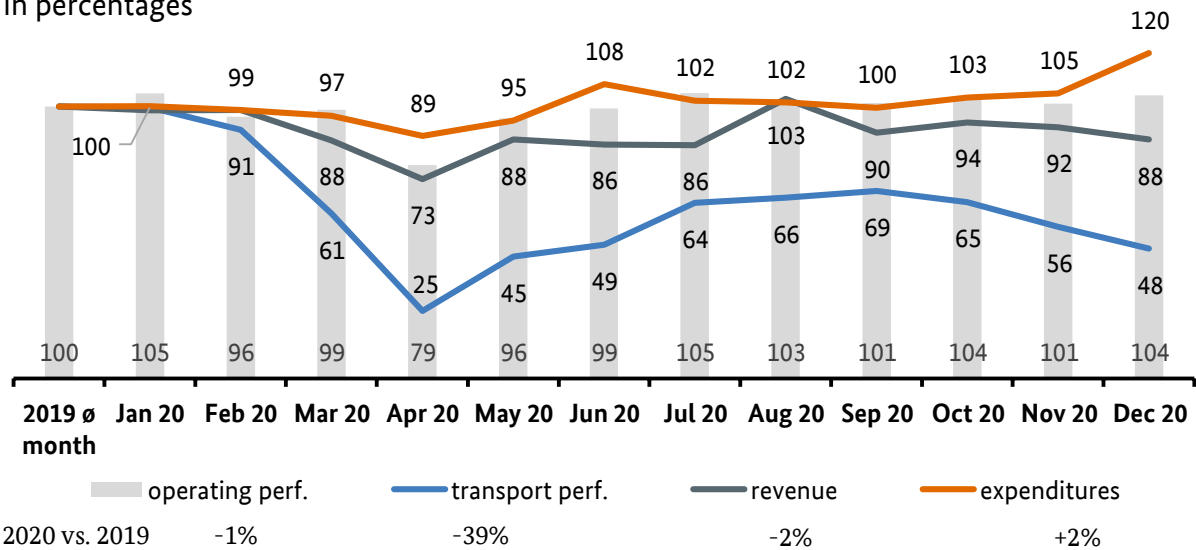
Revenue and expenditure largely followed operating performance. This was due firstly to the continuing payments made by the regional transport authorities. Secondly, revenue levels were stabilised by the revenue generated from the sale of rail passes that are valid for set periods.

Due to the decline in operating performance, railway undertakings were able to reduce their expenditures slightly from March to May. During the rest of the year, expenditure remained consistently above the 100 percent mark, with adjustment postings in December.

3.2 Long-distance passenger rail transport

The largest decline in transport performance was reported by the long-distance passenger rail

Economic indicators short-distance passenger rail transport in percentages



source: Bundesnetzagentur

Figure 19: Development of financial indicators in the short-distance passenger rail transport segment (Change in percent, indexed: 2019 = 100)

transport segment which dropped to just ten percent in April 2020. Although this segment recovered somewhat faster in the following months than did the short-distance passenger rail transport segment, it also saw a sharper decline again toward the end of the year. Normally one of the most important months of the year in terms of traffic, December posted a new low, falling to just one-third of the previous year's level (Fig. 20).

effect is apparent in the development of expenditure (where DB Fernverkehr AG plays a dominate role) since there was no similar reduction in expenditure during the lockdown months despite reduced operating performance.

In contrast to this, for non-federally owned long-distance rail transport undertakings for which government assistance was not available, it was

Economic indicators Long-distance passenger rail transport in percentages

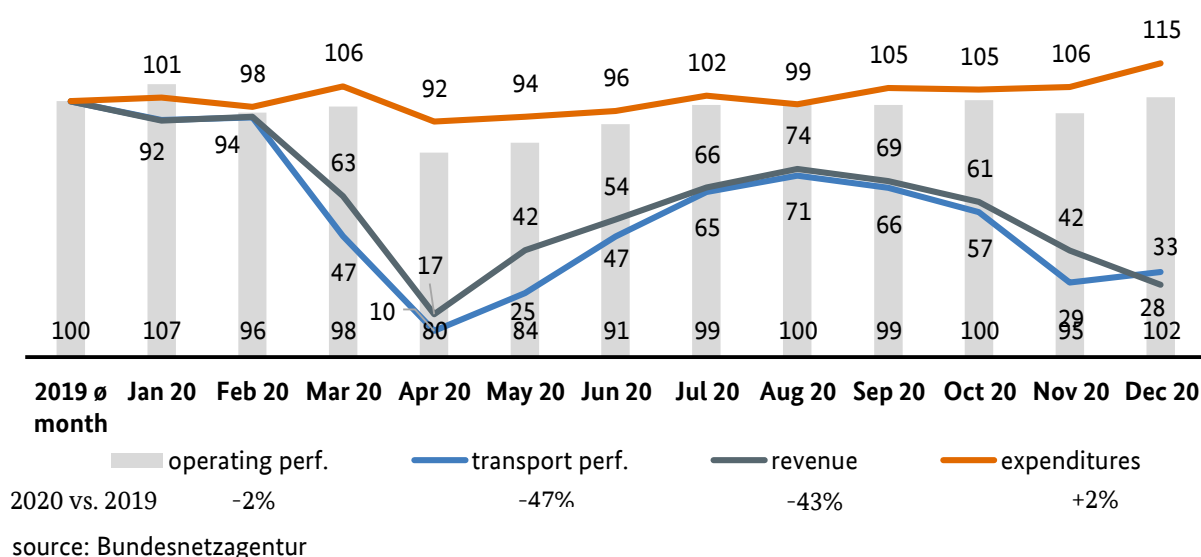


Figure 20: Financial indicators long-distance passenger rail transport segment (change in percent, indexed: 2019 = 100)

Without exception, total expenditure reported by the surveyed undertakings in this segment remained high. This was due to the fact that DB Fernverkehr AG in particular continued to operate most of the train-kilometres it offered in order to “[...] make it possible for members of essential occupational groups to remain mobile even during the pandemic. [...] On the other hand, a standstill would have brought very little in the way of savings. Reducing the amount of service we offered would not have substantially lowered the cost of providing trains or for personnel.”² This

simply not economically feasible to continue offering services when there were practically no customers during the months that were subject to travel restrictions and lockdowns. For this reason, non-federally owned long-distance passenger rail transport undertakings (such as FlixTrain and Thalys) saw an even greater decline in their performance figures due to the almost complete suspension of services starting in mid-March. Revenue dropped in parallel to their performance curve (Fig. 21).

² Richard Lutz, Chairman of the Board of DB AG, Deutsche Verkehrszeitung - DVZ (trade journal for the German transport sector), 31 March 2021

Economic indicators non-federally owned long-distance passenger rail transport, in percentages

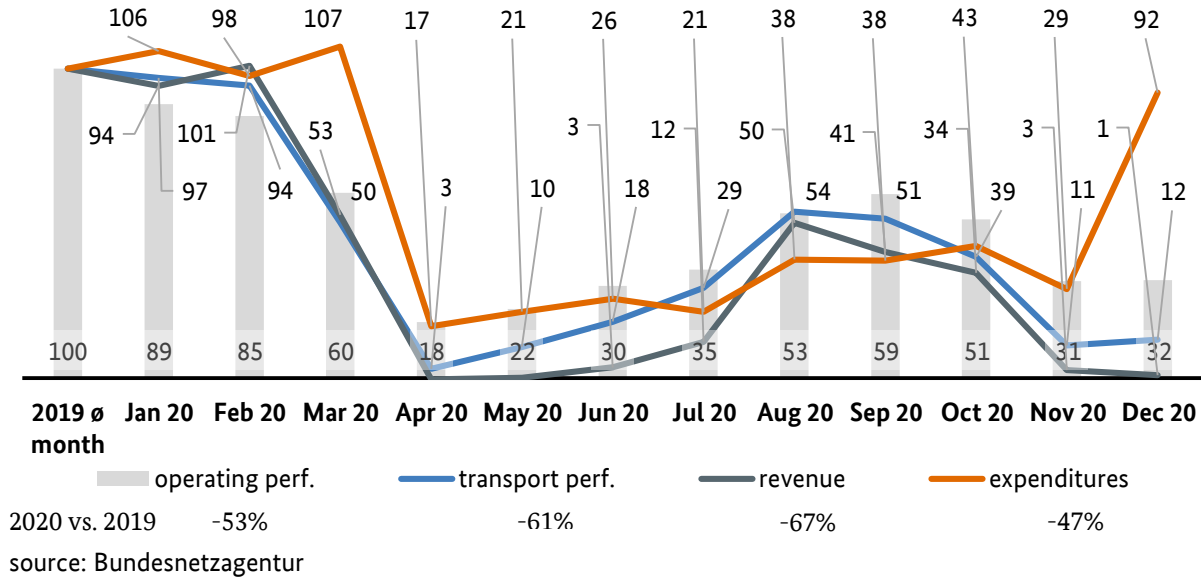


Figure 21: Development of financial indicators in the non-federally owned long-distance passenger rail transport segment (change in percent, indexed: 2019 = 100)

Non-federally owned railway undertakings were at least able to significantly reduce their cost base during those months with restricted or no service and could thus cushion their financial losses (costs minus revenue) somewhat. However, even when all transport services are suspended, there is still a certain level of costs that continue to be incurred. On the other hand, the surge in expenditure seen

in December was the result of year-end adjustments and corrections.

Development of high-speed transport

Most transport operations were continued in the high-speed rail transport services provided by DB Fernverkehr AG’s ICE fleet. As a result, operating

Development of high-speed transport (ICE trains) in 2020 in percent

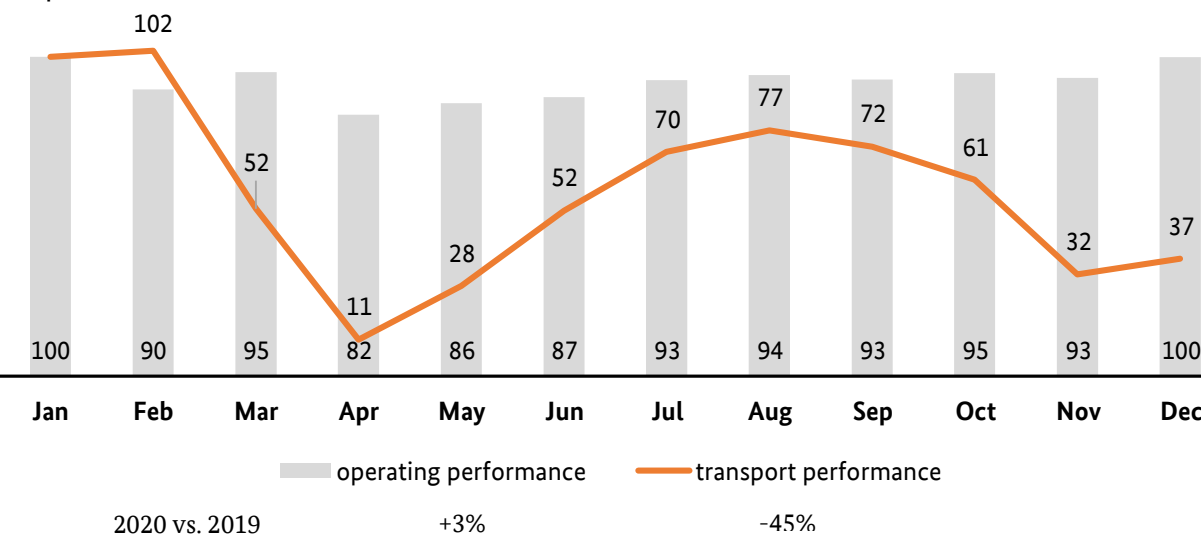
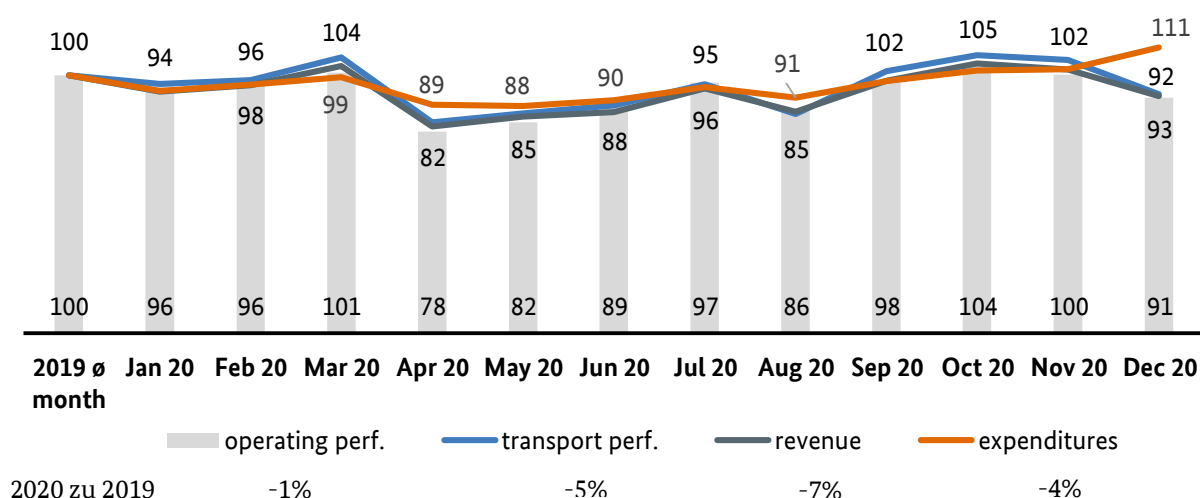


Figure 22: Development of high-speed transport 2020 (change in percent, indexed: Jan. 2020 = 100)

Economic indicators Freight rail transport in percentages



source: Bundesnetzagentur

Figure 23: Development of financial indicators in the rail freight transport segment (change in percent, indexed: 2019 = 100)

performance never dropped below 80 percent of the level seen at the start of the year. Looking at the entire year, even more train-path kilometres were travelled in 2020 than in 2019.

However, demand collapsed during the lockdowns in April and at the end of 2020. All in all, the transport performance of high-speed trains in 2020 fell by 45 percent, a little less than the total transport performance reported for long-distance passenger rail transport.

3.3 Rail freight transport

A comparison of the performance of the individual transport services in 2020 reveals that rail freight transport came through the pandemic better than the others. Here, not only transport performance but also revenue and expenditure saw small declines.

A breakdown by month shows a comparatively straight line for the rail freight transport market's development in 2020 (Fig. 23). The decline during the months April through June was primarily due to production cutbacks in certain branches of industry (such as the automotive industry). The

recovery in the following months was so strong that during the fourth quarter transport performance even exceeded the 2019 annual average.

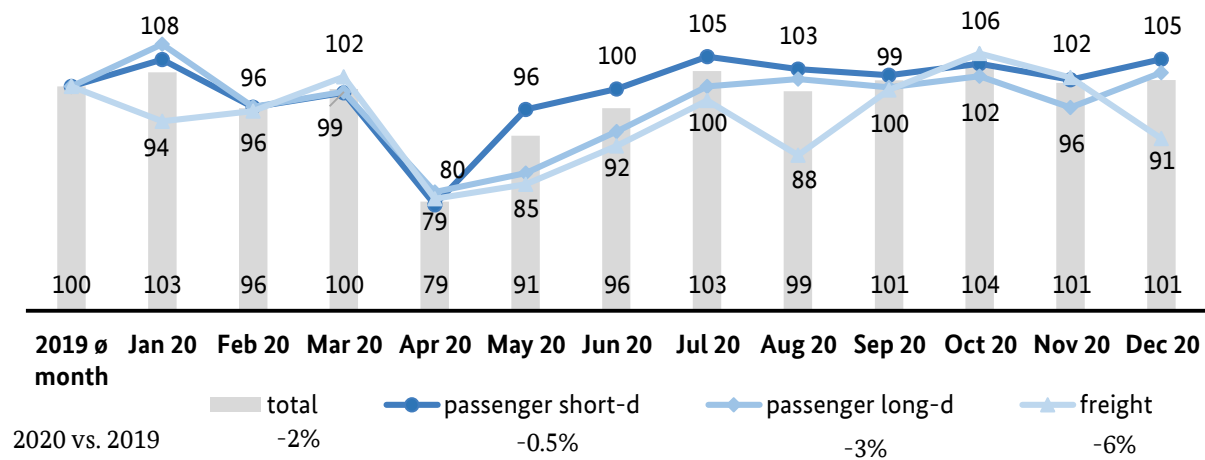
The railway undertakings in the rail freight transport segment were also able to lower their expenditures due to the reduced number of transports. The remaining difference in the rail freight transport segment was consequently relatively small (Fig. 15).

Other than the already established support instruments (such as track access charge assistance and service facility charge assistance), railway undertakings in the rail freight transport segment have not been granted any other special pandemic-related government assistance.

3.4 Infrastructure managers

Monthly operating performance (Fig. 24) reflected the different phases of the pandemic: The slump during the first lockdown in April 2020 impacted each of the transport services.

Operating performance of Infrastructure Managers
in percentages



source: Bundesnetzagentur

Figure 24: Development of operating performance, broken down by type of service (change in percent, indexed: 2019 = 100)

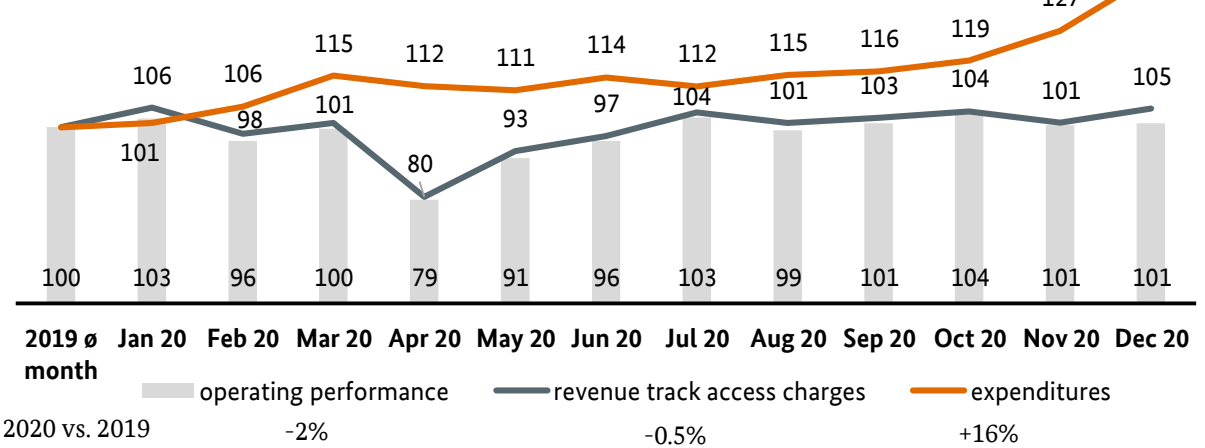
After the reopening of the economy, up until summer 2020, it is quite evident that the amount of train service offered in the short-distance passenger rail transport segment was maintained despite new lockdowns being imposed. In the long-distance passenger rail transport segment, most trains were operating again in July after a bit of a time lag. Train service was less sharply reduced during the second lockdown.

In the rail freight transport segment, the “reboot” in mid-year reflected the backlog in demand for

freight transport service. After a setback in August, followed by very high figures in October and November, the curve fell to slightly under the previous year’s level, reflecting the number of holidays in December. Since operating performance in this segment declined only slightly, revenue from track access charges remained virtually unchanged.

A month-to-month breakdown shows the infrastructure managers’ stable profit situation (with the exception of the slump in April 2020)

Economic indicators Infrastructure Managers
in percentages



source: Bundesnetzagentur

Figure 25: Development of the infrastructure managers’ financial indicators (change in percent, indexed: 2019 = 100)

and their consistently high funding requirements (Fig. 25). Also during the lockdowns, no decline in expenditure is evident, due to the high fixed costs incurred by the operator business regardless of the amount of traffic.

There was consensus among many undertakings that the peak in December 2020 was driven by closing entries made at the end of the year. For instance, in many undertakings, write-downs are posted only once a year, namely in December. In addition to this, adjustment postings are made in December for payments made during the fiscal year.

4. Special factors that have played a role during the COVID-19 pandemic

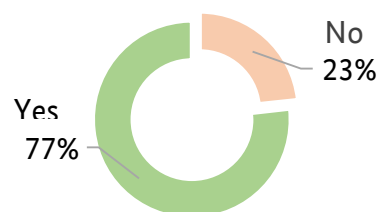
4.1 Special pandemic-related costs

The Bundesnetzagentur asked railway undertakings whether they had incurred special costs in connection with the pandemic. More than three-quarters of the undertakings surveyed reported incurring special pandemic-related costs (Fig. 26). The other enterprises were primarily either solely infrastructure managers or foreign rail enterprises offering only transit transport service through Germany.

According to the undertakings surveyed, they incurred special costs for (this list is not exhaustive):

- additional cleaning activities in administrative spaces / offices, including contracts awarded for external cleaning services
- additional cleaning of vehicles and third-party train disinfection contracts
- protective masks / masks that cover the nose and mouth
- disinfectants and dispensers

Did your company incur special pandemic-related costs?



Source: Bundesnetzagentur

Figure 26: Share of enterprises with or without special pandemic-related costs (in percent)

- construction measures (glass partitions, transparent protective barriers, etc.)
- production of signs
- additional workers
- safety measures in train stations
- equipment needed in order to work from home
- additional expenditure for employees (travel and overnight stays)
- costs for standing time and parking
- costs for COVID-19 tests
- border certificates

Special pandemic-related costs

Broken down by infrastructure managers, railway undertakings and service (in millions of euros and in percent)

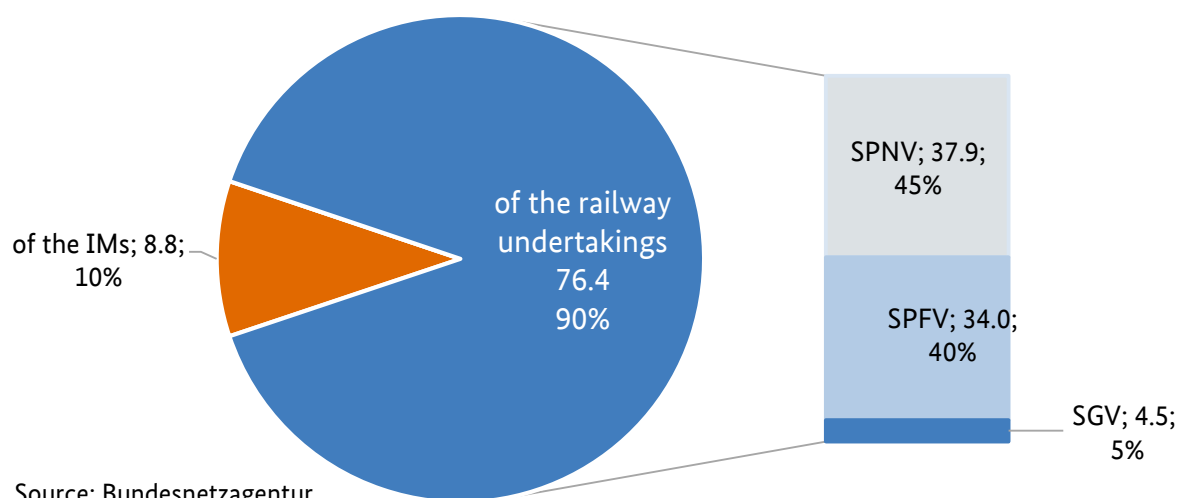


Figure 27: Distribution of special pandemic-related costs, broken down by infrastructure managers, railway undertakings and transport service (in millions of euros and in percent)

Looking at the entire market, railway undertakings incurred special pandemic-related costs amounting to approximately 85 million euros.

owned railway undertakings, the reported figure averaged approximately 400,000 euros per undertaking.

Government assistance received

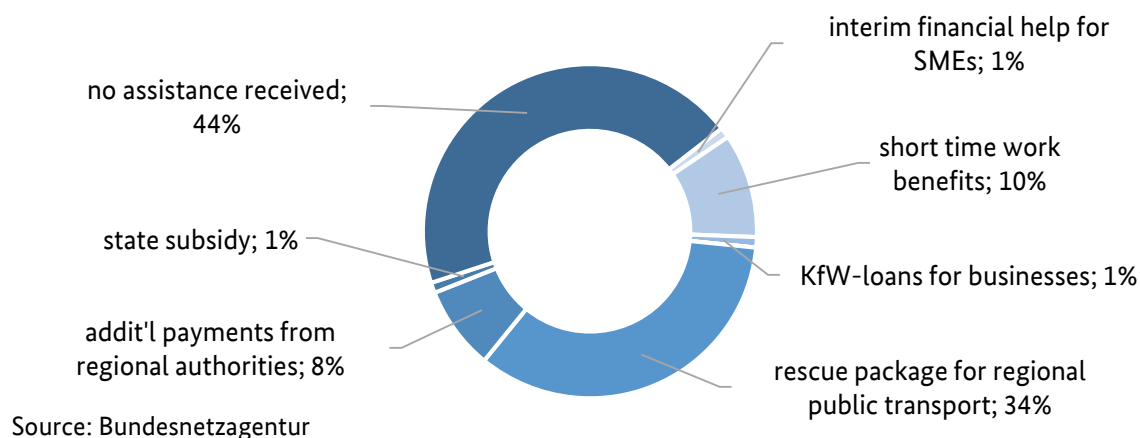


Figure 28: Share of undertakings that have availed themselves of pandemic-related government assistance (multiple answers possible)

As expected, 90 percent of these costs were reported by railway undertakings - particularly railway undertakings in the passenger rail transport segment (Fig. 27). They are responsible not only for the rolling stock fleet but also for customer contact. Most of the costs relating to cleaning and protective gear were incurred in these two areas. Occasionally, smaller amounts were reported in the rail freight transport segment. Nearly 9 million euros in special costs were incurred by infrastructure managers, primarily for protective measures in the administrative area.

Some enterprises criticised that the special costs incurred due to the pandemic could not be claimed in connection with government aid payments and posed an additional strain on their already small margins.

The range of the special pandemic-related costs per undertaking extends from a few thousand euros all the way to millions of euros for larger market participants. In the case of non-federally

DB AG reported a total of 112 million euros in special costs for its railway network system and provided a detailed list of its specific hygiene and safety measures in response to a “minor interpellation” in the German Bundestag: <https://dip21.bundestag.de/dip21/btd/19/279/1927944.pdf>

This also includes the special costs incurred for service facility operators (such as the commercially used areas in train stations) and for other unregulated business fields such as bus service. Only the amounts attributable to the regulated portion of Deutsche Bahn AG’s operations were used for this analysis.

Numerous undertakings however noted that they provided estimates in many cases, that the amounts reported did not include certain cost elements that can’t be evaluated, and that they did not yet have their statements. It can therefore be concluded that the actual special pandemic-related costs are greater than the

reported figures and that they will probably exceed the 100-million-euro mark.

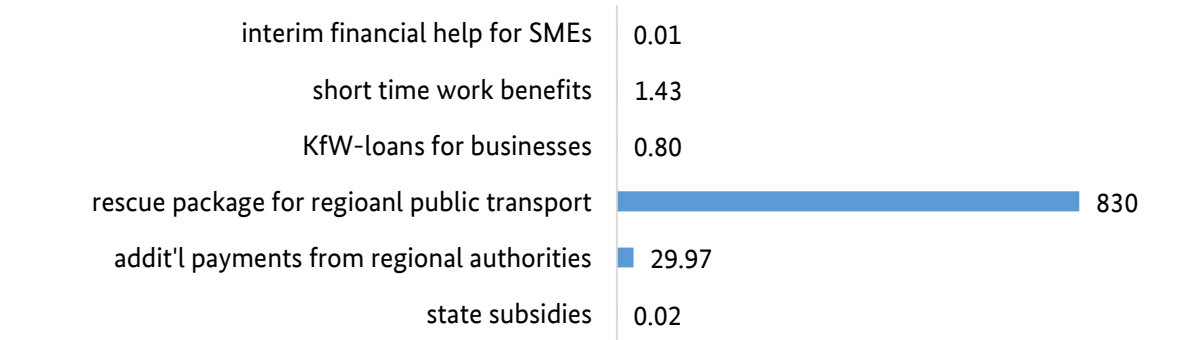
4.2 Government support for railway undertakings

The Bundesnetzagentur asked the railways which of the following forms of pandemic-related government assistance they had received (Fig. 28).

Nearly all of the railway undertakings providing short-distance passenger rail transport service received payments from the rescue package for local public transport. This is approximately one-third of all enterprises surveyed. This makes the local public transport assistance payments from Germany’s federal states the most widely used form of support.

The reported volume of the payments received through the rescue package for local public transport totalled approximately 875 million euros. Railway undertakings that have concluded “gross cost contracts” with their regional transport authorities and were paid in full for the contracted services had no occasion to apply for assistance payments for local public transport themselves because this was done by the regional transport authorities.

Pandemic-related government payments in millions of euros



source: Bundesnetzagentur

In addition to this, some railway undertakings received approximately 30 million euros in additional payments from regional transport authorities, over and above existing transport contracts.

Short-time work benefits were granted to ten percent of the undertakings surveyed. Respondents reported receiving a total of slightly less than 1.5 million euros in payments for short-time work benefits.

Only one undertaking made use of interim financial assistance for small and medium-sized enterprises and only one accepted a loan from the Kreditanstalt für Wiederaufbau.

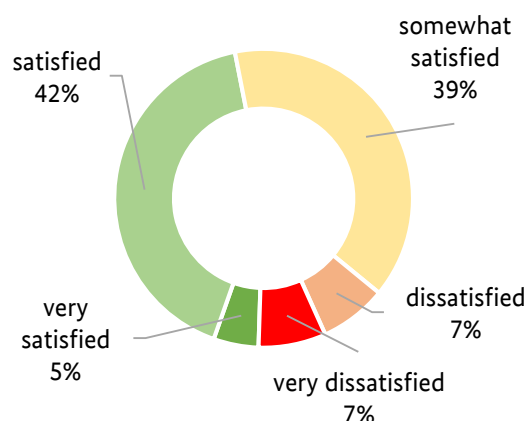
Looking at the distribution of the absolute amount of assistance granted (Fig. 29), it is evident that these payments went almost exclusively to railway undertakings with contracts to provide short-distance passenger rail transport service. From an overall perspective, the shares of assistance granted to railway undertakings in the long-distance passenger rail transport segment or rail freight transport segment and to infrastructure managers were very small.

Figure 29: Pandemic-related government assistance paid (in millions of euros)

Nearly half of all of the undertakings surveyed - and thus the largest share - claimed no government assistance at all. This was due in most cases to the fact that the specific offers of financial assistance through the government were not foreseen for these undertakings (such as in the long-distance passenger rail transport segment or the rail freight transport segment) to date.

Half of the undertakings surveyed rated the government measures as good or good with some reservations. Only a small portion was dissatisfied with the package of measures offered.

Grade of satisfaction with COVID-19 measures



source: Bundesnetzagentur

Figure 30: Satisfaction with the government's financial assistance measures (in percent)

The respondents repeatedly criticised the elaborate bureaucratic application process, the amount of information required and the protracted processing time - sometimes months - until disbursement.

According to the undertakings surveyed, due to their small margins, government assistance payments were an important factor in their ability to survive the pandemic crisis.

4.3 Estimating the pandemic's financial impact

In order to estimate the additional losses brought about by the COVID-19 pandemic in 2020, the Bundesnetzagentur calculated the difference between the change in revenue and the change in expenditure. For this calculation, revenues were closely based on the revenues reported in the special survey for the entire year 2020, while possible savings in expenditure due to the reduction in service offerings were estimated on the basis of performance indicators and publicly available information. Additionally, special pandemic-related expenditures (please see section 4.1) and government assistance (please see section 4.2) were taken into account.

Economic damage resulting from the pandemic for railway undertakings and infrastructure managers in Germany 2020.

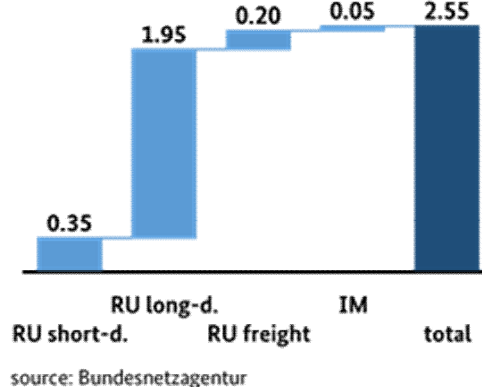


Figure 31: Economic damage to railway undertakings and infrastructure managers in Germany in 2020 due to the COVID-19 pandemic (in billions of euros)

In total, the Bundesnetzagentur estimates that railway undertakings and infrastructure managers in the railway market suffered an additional pandemic-driven financial loss after government assistance payments in the amount of 2.55 billion euros for the entire year 2020.

Infrastructure managers

The economic effects for infrastructure managers were largely due to the decline in the operating performance of railway undertakings and in the associated revenues generated through track access charges. Compared to the previous year, operating performance in 2020 declined by approximately one percent. This should result in a corresponding potential savings in the marginal costs. Due to increases in track access charges between 2019 and 2020, revenue in 2020 exceeded the level reported for the previous year. Against this backdrop, based on an overall comparison of the year 2019 with the year 2020, significant pandemic-related losses cannot be attributed to infrastructure managers.

However, the largest infrastructure managers had reckoned with a sizable increase in revenue for 2020 and had geared their expenditures (for increased construction and maintenance activities, for example) to this. Since budget figures on revenue and expenditure are not available to the Bundesnetzagentur, it cannot make any statements regarding the size of deviations from the respective budget that occurred due to the COVID-19 pandemic.

Short-distance passenger rail transport

In order to determine the economic impact that the pandemic has had on railway undertakings operating in the short-distance passenger rail transport segment, the revenues generated in 2020 and 2019 were compared with one another and the payments by the public authorities were added. To offset the losses in fare revenue which the railway undertakings suffered, Germany's Federal Government and federal states made available funds from the rescue package created for local public transport, depending on the respective contractual arrangements.

On the other hand, temporary cancellations of transport services occurred only on a localised basis. As a rule, the transport authorities ordering short-distance passenger rail transport services granted financial compensation to cover fixed costs. This compensation took into account the reduced level of expenditure resulting from the cancellations. Furthermore, additional expenditures for hygiene measures and cleaning were offset for the calculation.

Due to the assistance measures provided by the public sector, the pandemic had only a moderate impact on the general economic situation of railway undertakings in the short-distance passenger rail transport segment. Based on the above-outlined method, pandemic-related losses which railway undertakings suffered and were not offset by the public sector totalled 0.35 billion euros.

Long-distance passenger rail transport

Out of all the transport services, the long-distance passenger rail transport segment was hardest hit by the pandemic. Although the number of passengers recovered during the summer, revenue for the entire year 2020 shrank by approximately 43 percent.

Savings were achieved primarily by reducing or discontinuing the transport services being offered. By doing so, non-federally owned railway undertakings were able to cut their expenditures by approximately half.

DB Fernverkehr suffered the greatest pandemic-related economic losses by far. The ten percent increase in specific revenues was not enough to offset the approximately 45 percent decline in average train occupancy.

Ultimately, railway undertakings operating in the long-distance passenger rail transport segment suffered a loss of approximately 2

billion euros in 2020 due to the COVID-19 pandemic.

Rail freight transport

The decline in transport performance during the months April and May is responsible for the greater part of the losses incurred in this segment due to the pandemic. By contrast, rail freight transport largely stabilised during the second half of 2020.

Parallel to the decline in transport volumes during the second quarter of 2020, the railway undertakings reduced their number of train-kilometres. The attendant reduction in expenditure among the railway undertakings is reflected in the reported numbers.

The remaining pandemic-related losses reported by railway undertakings in the rail freight transport segment total approximately 0.2 billion euros for the entire year 2020. It should be noted that railway undertakings in the rail freight transport segment had already been generating losses during the previous years. These losses were even greater in 2020 due to the additional pandemic-related losses.

Other losses arising from the pandemic

The effects of the pandemic estimated by the Bundesnetzagentur pertain to railway undertakings and infrastructure managers in Germany. The revenues that service facility operators generated from usage charges were comparatively less affected since the number of train kilometres travelled declined by only approximately one percent.

However, it must be noted that the undertakings also suffered losses from railway-related businesses, such as leases in passenger stations. In addition, there were effects on business enterprises or business units which are not

railway undertakings or infrastructure managers but whose business was also impacted.

Besides the categories mentioned above, DB AG also reported, for example, the following additional pandemic-related losses:

- DB Netze passenger stations (train stations) 20 million euros
- DB Netze Energie 58 million euros
- holdings/other (services for intra-group railway undertakings) 108 million euros

Undertakings operating in the railway market reported further losses which were incurred in other European countries or in connection with activities in the domain of other modes of transport, such as bus transport.

4.4 Effects of retroactive funding for track access charges in 2020 on undertakings

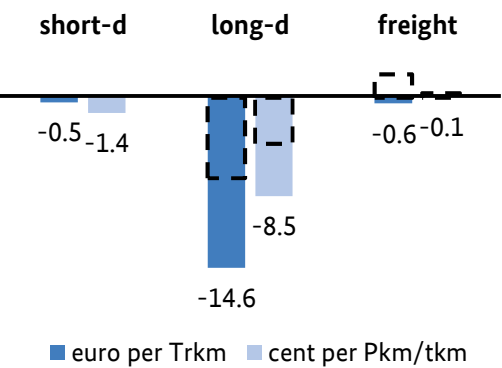
Political decisions regarding retroactive track access charge funding for rail freight transport and long-distance passenger rail transport with effect from March 2020 are currently being discussed with the European Commission. This is based on the Regulation (EU) 2020/1429 from 7 October 2020, which enables EU Member States to implement measures to ensure a sustainable railway market in light of the COVID-19 outbreak.

This assistance would not affect track access charges themselves or the infrastructure managers' revenues. However, it would lead to a significant reduction in the expenditures incurred by railway undertakings in the rail freight transport and the long-distance passenger rail transport segments.

The Bundesnetzagentur estimates that track access charge assistance, depending on how it is designed, could lead to additional relief that

would exceed 850 million euros in the long-distance passenger rail transport segment and 270 million euros in the rail freight transport segment for the 2020 calendar year.

Change in Operating Results of RUs 2019 vs. 2020



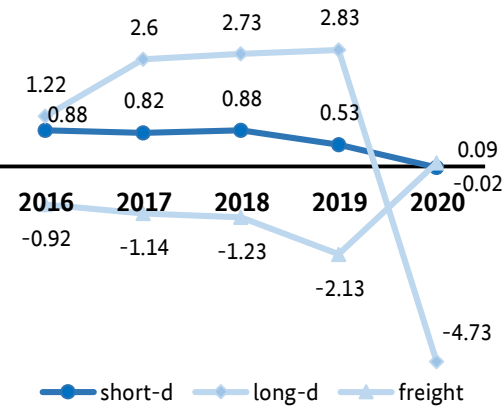
source: Bundesnetzagentur

Figure 32: Delta of the balance from revenue and expenditure from 2019 to 2020 per unit of measure (in euros per train-path km and cents per passenger-km / net tonne-km; dotted line: including subsequent track access charge assistance)

When the potential retroactive track access charge assistance is taken into account, the negative result deltas seen in the long-distance passenger rail transport segment would be reduced by approximately half (Fig. 32). By contrast, the provision of additional track access charge assistance in the rail freight transport segment would, on average, improve the railway undertakings' results over 2019.

In this case, the average operating result (Fig. 33) would be slightly less than -5 euros per train-path kilometre (instead of -12 euros per train-path kilometre). This means however that even when additional track access charge assistance is provided, the railway undertakings operating in the long-distance passenger rail transport

Operating Result in euro per train-km



source: Bundesnetzagentur

Figure 33: Operating result per train-path kilometre for the respective transport service, including retroactive track access charge assistance, for 2020 (euros per train-path kilometre)

segment will still have to deal with a sizable negative operating result.

Depending on the unit of measure, the rail freight transport segment could, on average, achieve a neutral operating result.

5. Developments in the European market in 2020

5.1 Pandemic measures taken by European countries

In some cases, the pandemic hit the railway markets of other countries in Europe even harder. An analysis conducted by IRG-Rail's Market Monitoring working group asked the 31 participating countries about the effects the pandemic had in 2020. The European governments responded to the pandemic in 2020 with a wide range of measures that influenced mobility and traffic flows.

- Restrictions on the freedom of movement were put into place in nearly all countries participating in the survey. Starting in March 2020, most of the countries imposed strict lockdown measures which remained in effect for nearly the entire second quarter. The majority of the countries saw a new phase of strict restrictions during the fourth quarter.
- An official recommendation to "remain at home" was issued in all of the surveyed countries. The duration of the recommendation however varied from country to country. For example, in Norway the recommendation to stay at home was in effect only during the fourth quarter, while many countries maintained it for the entire period from March 2020 until the end of the year.
- Countries like Italy, France, Portugal and Spain lowered the permissible level of train occupancy to 50 percent. In Great Britain, train stations with short platforms were closed when it was not possible to ensure the required minimum distance between passengers.
- In the rail freight transport segment, some countries tried to mitigate the effects. In Estonia, for example, the rates for renting freight wagons were lowered and in Poland and Spain, the periods of validity for safety certificates and licences for train drivers were extended.

- Changes in the train timetables were handled very differently from country to country. Countries like Italy, Great Britain, Slovakia and Belgium significantly reduced the scheduled frequency of ordered train services. In contrast, service in Sweden, Norway and Germany was largely maintained at its normal level.

The governments set up state assistance programmes aimed at cushioning the pandemic's economic effects for the railway undertakings. The forms of assistance that were offered most often and that railway undertakings in the countries of Europe availed themselves of most frequently were:

- short-time work benefits (such as in Austria, Belgium, France, Italy, Romania, Slovenia and Sweden)
- compensation paid to railway undertakings and infrastructure managers for lost revenue (such as in Finland, France, Germany, Hungary, Poland, Italy and Great Britain)
- easier lending conditions and repayment terms (such as in Belgium, Finland, Italy, Poland, Romania and Sweden)
- reassignment of commercially operated routes in the area of contracted transport service (such as in Austria)
- suspension of cancellation fees (such as in Germany, Poland, Austria, Belgium, Croatia, Italy and Portugal)
- reduction in track access charges, either through discounts (France, Italy and Slovakia) or changes in the basis for the calculation (Estonia and Spain)

5.2 Development of transport

The size of the slump in operating performance (number of train-kilometres) resulting from the pandemic varied greatly from country to

country in Europe (Fig. 34). This was related to the specific measures implemented in the respective country. Contracted passenger rail transport service was maintained in some countries, such as Austria, Hungary, the Czech Republic as well as Germany, primarily with the aim of enabling the required minimum distance between passengers in the trains.

Other countries, such as Slovenia and Serbia, temporarily suspended rail traffic completely. France saw not only a sharp reduction in train service from March until May but also experienced a general strike in January. Operating performance during the first two months of 2020 was generally better than in the same period in 2019. Consequently, the decline in the passenger rail transport segment is clearly due to the pandemic.

The negative effects were smaller in the rail freight transport market. Some countries even saw an increase in the level of their operating performance. In Croatia and Greece, this was due to the increased demand in Italy for grain products which had to be transported from countries in Southeast Europe to Italy.

In nearly all countries, a significant decline in operating performance was apparent during the lockdown months due to border closings and delays at major ports. This decline was however reversed in many cases during the course of the year. In Latvia, the number of train-kilometres travelled fell by nearly half, due not only to temporary closings of the border to Russia and the opening and closing of a large coal mine in Russia but also primarily to the reduction in transports in the wake of EU sanctions against Russia, in other words, to reasons not driven by the pandemic.

The decline in transport performance was significantly larger than the decline in operating

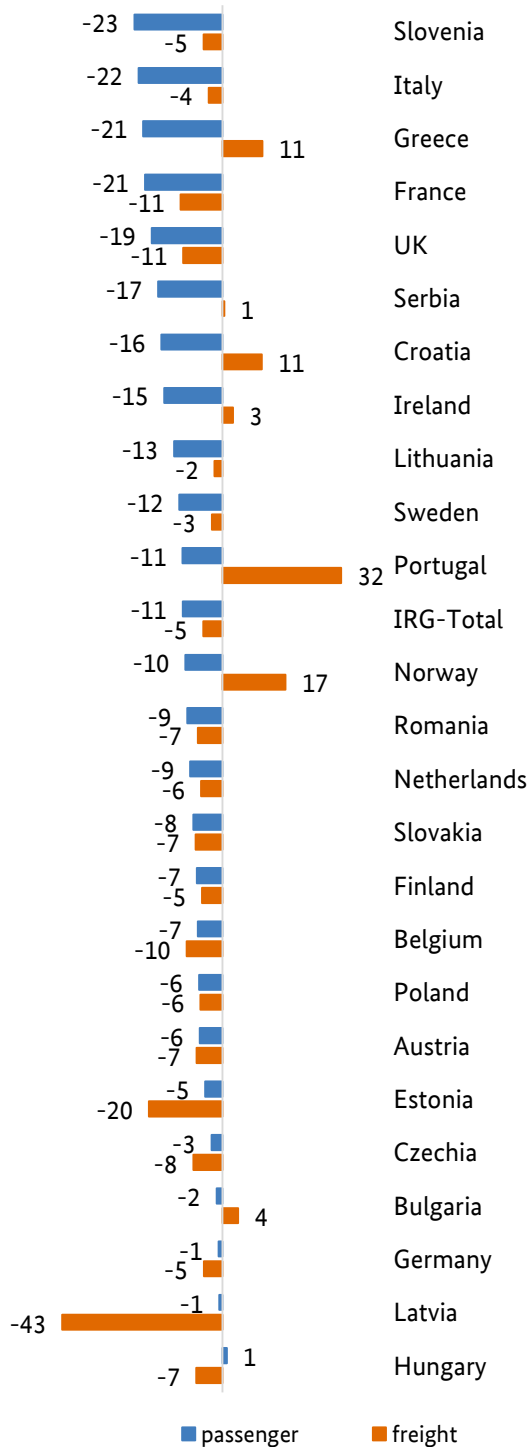
performance in the passenger transport segment. Here, the full impact of the pandemic can be seen, especially those repercussions arising from changes in people's travel habits (Fig. 35).

On average, the number of passenger-kilometres travelled in 2020 in the countries surveyed fell by half over the level reported in 2019. The decline ranged from -60 percent to more than -90 percent during the second quarter of 2020. The average decline for the group of all countries surveyed was -75 percent. Very strict curfews which nearly brought public life and, in the process, passenger transport to a standstill were imposed in countries with the greatest declines (Ireland, Great Britain and Spain). But transport performance collapsed significantly even in countries where less stringent rules were in effect (such as Sweden and Austria).

Commercially operated passenger service was almost completely suspended during the second and fourth quarters of 2020 in the majority of the countries in Europe. This chiefly affected transport operations in the tourism industry and cross-border connections which were among the first services to be suspended.

The development of transport performance in the rail freight transport segment largely followed the decline seen in operating performance.

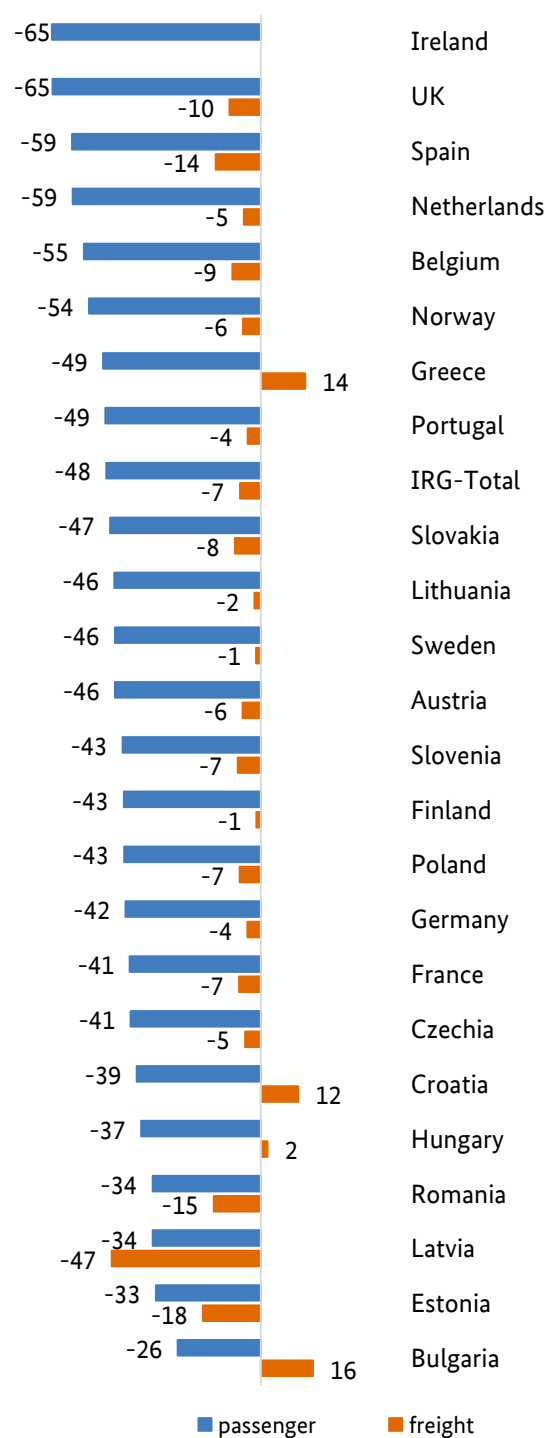
Operating performance 2020 vs. 2019 in percent



source: IRG-Rail Market Monitoring

Figure 34: Comparison of operating performance in the passenger and freight transport segments in the countries of Europe (2020 compared with 2019, delta in percent)

Transport performance 2020 vs. 2019 in percent



source: IRG-Rail Market Monitoring

Figure 35: Comparison of transport performance in the passenger and freight transport segments in the countries of Europe (2020 compared with 2019, delta in percent)

5.3 Punctuality

Compared to 2019, the level of train punctuality improved in 2020 due to the pandemic-driven reduction in transport service. The lower passenger numbers in the passenger transport segment led to faster boarding and alighting times which had a positive impact on punctuality figures. These differences, particularly during the lockdown in April, were significantly larger than the annual averages.

The improvements seen in punctuality figures in the rail freight transport segment - which often suffers the knock-on effects of irregularities in passenger service - were in some cases considerably greater than those observed in passenger rail transport.

Fewer train-path conflicts, less frequent route congestion and more slots helped speed up traffic in countries with dense rail freight traffic (such as Poland, Germany, Italy, Sweden and Austria). Due to the cumulative effects, punctuality in 2020 was in some cases approximately 30 percentage points better than in April 2019.

5.4 Revenue development

Revenue data for the individual European countries is available only for the first half of 2020 and only for half of the countries surveyed.

Revenue in the passenger rail transport segment is generated from passenger fares and public funding (such as payments from transport authorities).

As expected, the revenue curve during the first half of 2020 is also below the curve for the same period in 2019 due to the reduced operating performance and transport performance in the wake of the pandemic.

Accordingly, the declines in revenue were the most noticeable - more than 50 percent - in those countries with the largest slumps in transport volumes (Fig. 37). The sharp drops in

Punctuality 2020 vs. 2019
in percentage points

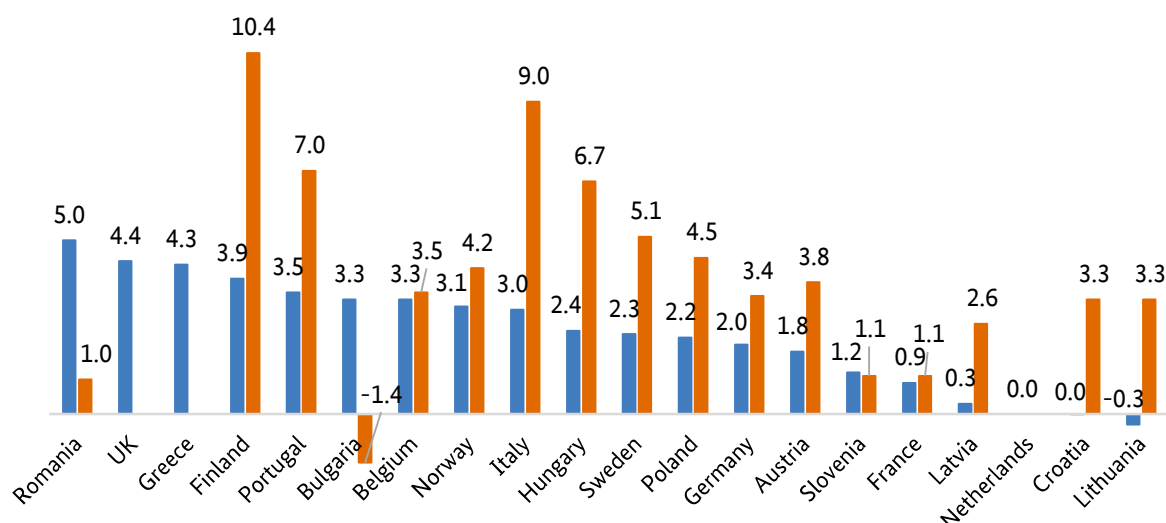


Figure 36: Comparison of punctuality in the passenger rail and rail freight transport segments in the countries of Europe (2020 compared to 2019, delta in percentage points)

revenue in these countries even exceeded 90 percent during the second quarter of 2020.

The difference in revenue levels was smaller, usually between -10 and -20 percent, in those countries where contracted transport services were largely maintained. In Luxembourg, revenues have not been coupled with passenger numbers since 2020. Instead, transport services are financed on a centralised basis through public funding.

The decline in revenue generated in the rail freight transport segment largely correlated with the number of net tonne-kilometres provided. The revenue losses reported in the rail freight transport segment are concentrated in the range of -10 to -20 percent because the declines in this segment were smaller than in the passenger rail transport segment. Only in the Baltic states is the delta significantly larger, irrespective of the pandemic. This is due to Russia-related transports following the imposition of EU sanctions. A few countries (such as Croatia) which benefited from increased demand for certain product groups even reported revenue growth.

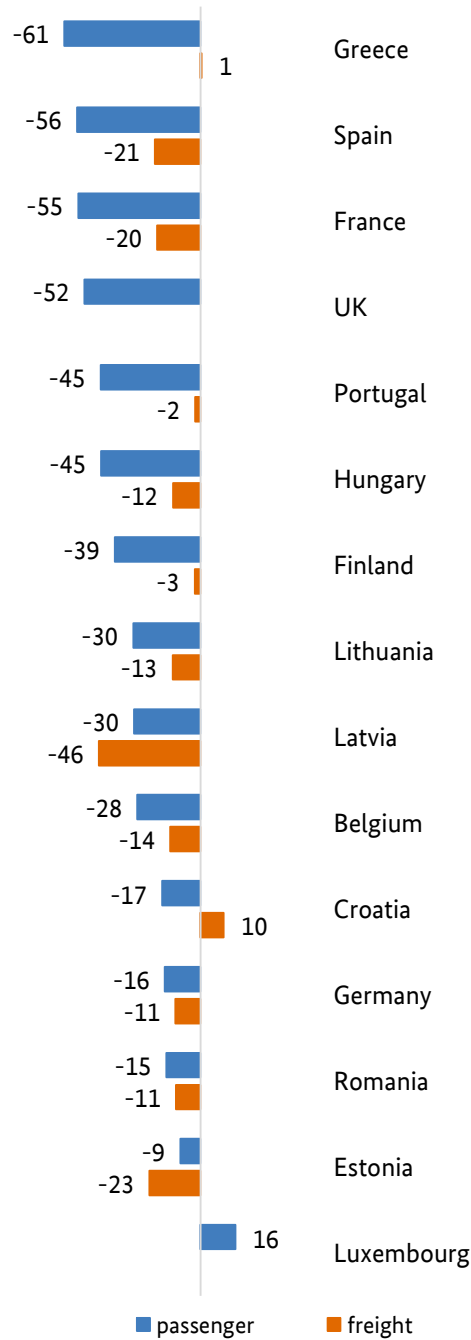
The IRG-Rail Market Monitoring Working Group has published two reports on the effects the COVID-19 pandemic has had in Europe:

Impact on the first half of 2020
Impact on the entire year 2020

These reports can be accessed on the IRG-Rail Market Monitoring Working Group’s website:

<https://www.irg-rail.eu/irg/documents/market-monitoring>

Revenues RUs 1st half 2020 vs. 1st half 2019, in percentages



source: IRG-Rail Market Monitoring

Figure 37: Comparison of the revenues generated by railway undertakings in the passenger rail transport and rail freight transport segments in the countries of Europe (comparison of the first half of 2020 with the first half of 2019, delta in percent)

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List of abbreviations

IM	infrastructure manager
RU	railway undertaking
IRG-Rail	Independent Regulator's Group-Rail (alliance of independent railway regulators in Europe)
pkm	passenger-kilometre
tkm	tonne-kilometre
trkm	train-path kilometre

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Section 702 - Technical Aspects of Rail Regulation, Rail Sector Digitalisation, Market Monitoring, Statistics

Section 704 - Economic Principles of Rail Regulation and of the Transport Sector

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