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THE INFLUENCE OF COVID-19 ON INTERNATIONAL AND LONG-DISTANCE PASSENGER RAIL TRANSPORT. THE CASES OF ITALY AND POLAND – THE FIRST OBSERVATIONS

Wpływ COVID-19 na międzynarodowy i dalekobieżny kolejowy transport pasażerski. Przypadki Włoch i Polski – pierwsze spostrzeżenia

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Abstract: The objective of the article is to present the influence of COVID-19 on international and long distance passenger rail transport in Italy and Poland. Despite differences in the development of the pandemic the decision to put limits on long-distance rail services was taken in both countries at the very same time. On 23 March 2020 the last large-scale cancellations so far were introduced both in Italy and Poland. The entire rail transport in the two countries has been stopped to a very large extent. The only remaining international trains in Italy and Poland are cross-border regional trains operated by some railway companies from the neighbouring countries – France and Switzerland in the case of Italy and Germany in the case of Poland. As far as long-distance rail traffic is concerned, in Italy over 90% of all trains of this kind have been cancelled whereas in Poland the figure is 43%. A similar characteristic is the fact that almost all prestigious high speed trains have been cancelled. This is probably connected with the fact that their main target are business trips which in the time of pandemic have come almost to a complete stop.

Keywords: COVID-19, rail transport, passenger transport, long-distance trains, high speed rail, Italy, Poland

Introduction

The pandemic of COVID-19 arrived to Europe at the beginning of 2020. Italy was one of the first countries to discover its cases on 31 January. The epidemic started spreading over the continent and appeared quickly also in Central-Eastern Europe. On 4 March 2020 the first case was identified in Poland. Most countries have reacted quite quickly putting limits on numerous aspects of social and economic life, and public transport has resulted to be one of the first and most affected activities.

The objective of this article is to present the influence of the pandemic on international and long distance passenger rail transport in Italy and Poland. There are several reasons for the selection of these two countries: geographical factors (similar area and settlement systems consisting of several important urban agglomerations which balance the presence of the capital city), a similar length of railway network, large-scale regional disparities (between North and South in Italy and South-West and North-East in Poland) and finally the fact that Italy has been the first European country to suffer from large-scale diffusion of COVID-19 whereas the development of this disease has been much delayed in Poland.

1. Methods

This article contains the first observations of a completely new situation which is a large-scale limitation of rail transport decided in order to prevent the spread of coronavirus pandemic. For this reason the paper is based mainly on press releases, webpages of railway enthusiasts and official websites of the Italian and Polish governments. In order to assess the scale of limits put on rail transport a set of lines has been chosen as case studies. In order to present the influence of COVID-19 on rail transport between the most important cities of both analysed countries – Italy and Poland – five main lines in each country have been selected. They include both high speed lines and conventional but updated trunk line sections in Italy whereas in Poland they are conventional lines with the exception of the only semi high speed link in the country. In all calculations only trains operating on working days have been taken into consideration.

2. The reactions of the national governments to the epidemic

2.1. Italy

On the same day when the first cases of coronavirus were identified (31 January), the Italian government

declared the state of emergency. On 23 February on the basis of the first decree-law 11 municipalities in Lombardy and Veneto regions were placed under quarantine. All schools and commercial activities as well as regional train services in that area were closed. On 4 March the same rule was applied for all schools and universities in Italy. On 8 March the quarantine was expanded to the entire Lombardy and 14 provinces in Piedmont, Veneto, Emilia-Romagna and Marche regions of Northern and Central Italy. On the same day theatres, cinemas and museums in the entire country had to close. On 11 March a similar regulation was extended to all shops except for grocer's and pharmacies. Ten days later all businesses and industrial activities in Italy declared for not necessary were stopped (www.governo.it, 2020).

2.2. Poland

On 14 March the state of epidemic emergency was introduced by the government which was changed into the state of epidemic six days later. On 15 March a cordon sanitaire was introduced on the Polish borders. The closure of schools, kindergartens was decided on 11 March and the universities stopped their teaching activity a day later. At the same time theatres, cinemas and museums were closed (Koronawirus w Polsce...2020). On 13 March a decision to close shopping centres (apart from grocer's and pharmacies) and restaurants was taken by the government (www.gov.pl, 2020).

3. The influence on international rail transport

3.1. Italy

The first trains to be cancelled in Italy were international trains. On 8 March the Austrian Federal Railways ÖBB decided to cancel the night train Venice/Milan-Vienna (Covid-19: ÖBB cancella..., 2020). On 9 and 10 March the trains to and from France, i.e. the night train Venice-Paris and day trains Milan-Marseille operated by the company Thello owned by the national Italian railway company Trenitalia were stopped (Coronavirus, Thello sospende..., 2020). On 11 March all day trains connecting Venice and Bologna with Austria and Germany via Brenner Pass, operated by the Federal Austrian Railways ÖBB and German Federal Railways DB were cancelled. The same decision applied to the night train Rome-Vienna (Covid-19: DB-ÖBB sospende..., 2020). On 20 March all international trains operated by the national Italian railway company Trenitalia were suspended (www.trenitalia.com, 2020). The last to be cancelled were regional trains connecting Lombardy and Swiss

canton Ticino operated by the Italian-Swiss company TILO which were stopped on 29 March (*Sospeso il traffico ferroviario...*, 2020). After the cancellation of cross border trains coming to Italy operated by Austrian and Slovenian railways (via Brenner Pass and San Candido from Austria and Villa Opicina from Slovenia) the only two rail border crossings which at the moment of writing (11 April) are still open are Ventimiglia (to France) and Domodossola (to Switzerland), operated by French and Swiss railways respectively. However, they are open only for regional trains which end at the first Italian border station (www.trenitalia.com, 2020).

3.2. Poland

Already on 13/14 March all long-distance trains to and from the Czech Republic and Slovakia were cancelled. A day after also the western border (i.e. with Germany) and eastern borders (i.e. with Ukraine, Belarus and Lithuania¹) were closed for trains operated by the national long-distance train company PKP Intercity (www.intercity.pl, 2020). Regional cross-border trains operated by the national regional operator Polregio and regional government owned local companies

4. The influence on long-distance connections

4.1. Italy

On 13 March the national carrier Trenitalia decided to put first large-scale limits on its long-distance offer maintaining merely 11 pairs of high speed *Freccia* (Italian for "arrow") and 33 pairs of Intercity trains (*Coronavirus: le rimodulazioni...*, 2020). However, already a day after a complete cancellation of all night Intercity trains was decided in order to stop the exodus from North to South of Italy (*Covid-19: stop a tutti gli Intercity notturni...*, 2020; *Coronavirus, un mese di raccomandazioni...*, 2020). The next reductions of service were decided on 18 March (only 7 pairs of fast *Freccia* trains and 7 pairs of Intercity were kept in operation) and on 23 March when merely 5 pairs of *Freccia* and 3 pairs of Intercity remained in the timetable (www.ferrovie.it, 2020). The scale of the reduction of the offer has turned out to be huge. The cancellation of 97% of all high speed trains and 94% of Intercity trains means *de facto* a complete stop of the entire long-distance railway service in the country (tab. 1).

Tab. 1. The reduction of high speed Freccia and InterCity trains in Italy in March 2020.

Type of train/period	High speed (<i>Freccia</i>)	Intercity (day and night)
Regular timetable for 2020	168	54
After reduction on 13 March	11	33
After reduction on 18 March	7	7
After reduction on 23 March	5	3

Source: own elaboration on the basis of www.ferrovie.it, 2020 and www.thetrainline.com, 2020.

(Koleje Dolnośląskie in Lower Silesia and Koleje Śląskie in Silesia) were cancelled between 16 and 30 March (<https://polregio.pl>, 2020; www.kolejedolnoslaskie.pl, 2020; www.kolejeslaskie.com, 2020). For the moment of writing (11 April) the only cross-border trains which are still in service to and from Poland are trains operated by German railways (companies UBB and NEB respectively) connecting Germany with the first station on Polish territory (Świnoujście and Kostrzyn) as well as transit German trains Görlitz – Zittau (operated by ODEG company) which go through one Polish station (Krzewina Zgorzelecka) (www.bahn.de, 2020).

¹ The Polish border with Russia (Kaliningrad Oblast) is not taken into consideration here as at the moment no regular passenger trains cross it.

In order to analyse the reduction of long-distance trains five lines have been chosen: 1) Rome-Milan, 2) Rome-Venice, 3) Rome-Genoa, 4) Rome-Reggio Calabria and 5) Milan-Bari. The line Rome-Milan is far the most important Italian long distance railway line on which the highest number of high speed trains per day is present. The maximum speed for the moment is 300 km/h. This connection is crucial in particular for business trips. A very interesting issue is the fact that it is also the first high speed line in the world on which direct on track competition has been introduced. In fact, from 2012 the national carrier Trenitalia has had to face the competition of a private company called Italo-NTV. Rome-Venice is another crucial high speed connection, important especially (but not only) for leisure travel.

Tab. 2. The number of high speed Freccia and Italo-NTV trains on selected lines in the regular timetable and after the last reduction on 23 March 2020.

Period/train type	High speed trains of Trenitalia (<i>Freccia</i>)	High speed trains of NTV-Italo
Rome-Milan		
Regular timetable	52	32
After 23 March 2020	1	0
Rome-Venice		
Regular timetable	15	10
After 23 March 2020	0	1

Only trains Rome-Milan via the high speed line via Florence. Other trains are not included.

Source: own elaboration on the basis of www.trenitalia.com, 2020.

As we can see in tab.1 the reduction of the service between Rome and Milan and Rome and Venice has been huge – 98% and 96% respectively. On both lines there is only one pair of trains left – a Freccia of the state carrier Trenitalia in the case of Rome-Milan and a private NTV-Italo on Rome-Venice. This would demonstrate a cooperation between the two competing companies in this difficult period. Tab. 3 shows three important Italian long-distance lines which only partially use high speed sections. The first connects the capital with the main harbor city of Northern Italy – Genoa, the second with the southern-most urban

agglomeration of the Peninsula – Reggio Calabria whereas the third one links Milan with the second largest city of Southern Italy – Bari.

As we see in tab. 3 on the first two lines only one pair of trains has remained in the schedule, whereas on the third line one service is offered. It seems there is no rule about Freccia or Intercity trains being more or less “vulnerable” to cancellations – in some cases the only train in operation is a high-speed Freccia unit, in some cases an Intercity locomotive-hauled train.

Tab. 3. The number of high speed Freccia and Intercity trains on selected lines in the regular timetable and after the last reduction on 23 March 2020.

Period/train type	High speed (<i>Freccia</i>) trains	Intercity trains
Rome-Genoa		
Regular timetable	7	5
After 23 March 2020	0	1
Rome-Reggio Calabria		
Regular timetable	4	4
After 23 March 2020	1	0
Milan-Bari		
Regular timetable	7	4
After 23 March 2020	0	0

Source: own elaboration on the basis of www.trenitalia.com, 2020.

4.2. Poland

On 17 March the national carrier PKP Intercity decided to cancel 174 trains beginning from 17-23 March. Considering the fact that the company operates about 400 trains daily this number sums up to about 43%² of its entire offer (Madrjas & Malinowski, 2020). The scale of reduction of the service may not seem so large, nevertheless on numerous lines only a minimum offer is guaranteed. In fact, the entire Pendolino fleet operating the country's only semi high speed line between Warsaw and Kraków and Katowice was stopped.

Five long-distance lines have been chosen to be analysed: 1) the main country's trunk line Warsaw-Kraków which is a semi high speed line (200 km/h), 2) the line Warsaw-Gdańsk which links the capital with the most important urban agglomeration of Northern Poland round the harbor city of Gdańsk, 3) the link between Kraków and Wrocław, i.e. the second and the fourth largest Polish cities, connecting also several minor centres between and two more peripheral connections running through low densed areas: 4) Warsaw-Białystok (a regional centre of North-Eastern Poland) and 5) Gdańsk-Szczecin (main city of the North-West of the country) (tab. 4).

As it results from tab. 4, there are large differences in the scale of reduction on Poland's main railway lines. Whereas the most crucial trunk lines have seen a reduction of over 70% of all trains (75% on Warsaw-Kraków and even 84% on Warsaw-Gdańsk line), on less important (and less busy) connections the share of cancelled trains sums up to 40-60% (40% on Gdańsk-Szczecin, 55% on Warsaw-Białystok and 56% on Kraków-Wrocław line). This is connected with an interesting fact, that PKP Intercity has cancelled all its semi high speed and high standard express trains (which dominated on these crucial lines) leaving only cheaper IC and TLK trains. Probably this is due to the fact that much lower ticket prices for these connections enable all passengers to use them in the case of necessity – which would not be the case with rather expensive EIP and EIC which core target are business trips. It is also true that the offer on some less important lines like Gdańsk-Szczecin was already very poor and there were not all that many trains that could be eliminated.

² Several trains were cancelled on two different days, e.g. the pair from A to B was suspended on 17 March whereas the return pair B to A on 18 March. Because of that it would be difficult to prepare a detailed statistic about cancellations made on different days.

Tab. 4. The number of long distance trains (EIP, EIC, IC, TLK types) on selected lines in the regular timetable and after the last reduction on 17-23 March 2020.

Period/train type	EIP	EIC	IC	TLK
Warsaw-Kraków				
Regular timetable	10	3	2	5
After 23 March 2020	0	0	1	4
Warsaw-Gdańsk				
Regular timetable	11	4	1	7
After 23 March 2020	0	0	0	4
Kraków-Wrocław				
Regular timetable	0	0	8	1
After 23 March 2020	0	0	4	0
Warsaw-Białystok				
Regular timetable	0	0	6	5
After 23 March 2020	0	0	2	3
Gdańsk-Szczecin				
Regular timetable	0	0	4	1
After 23 March 2020	0	0	2	1

Legend:

EIP – semi high speed (200 km/h) Pendolino train
 EIC – express train (locomotive-hauled train with high standard of service)

IC – Intercity train (locomotive-hauled train or multiple electric unit)

TLK – economic fast train (locomotive-hauled train with low standard of service)

Warsaw-Kraków line: only trains via the semi high speed Central Trunk Line (CMK). One of the analysed trains in service at the moment uses a longer route via the CMK and Kielce. Trains using the conventional route via Radom and Kielce are not included.

Kraków-Wrocław line: only trains via Częstochowa Stradom
 All trains operated by the national carrier PKP Intercity.

Source: own elaboration on the basis of www.pkp.pl, 2020 and www.intercity.pl, 2020.

Conclusions

Despite the fact that the first case of COVID-19 was registered in Italy over a month earlier than in Poland the decision to put limits on long-distance rail services was taken in both countries at the very same time. On 23 March the last large-scale cancellations so far were introduced in Italy and Poland.

In international rail transport which depends both on the given country and the neighbouring one, the closure decision and procedure times have turned out to be longer. In Italy and in Poland they lasted until the last days of March. Interestingly, only trains which now enter Italy and Poland are cross-border regional trains operated by railway companies from the neighbouring countries – France and Switzerland in the case of Italy and Germany in the case of Poland. However, all these trains end in the first Italian/Polish railway station (border station) and represent merely a small share of the cross-border regional train offer according to the normal schedule.

In the case of long-distance connections prestigious (semi) high speed trains have turned out to be more “vulnerable” to cancellations. This is probably connected with the fact that their main target are business trips which have come to an almost complete stop in the time of pandemic. The scale of cancellation in Italy and Poland is different. Whereas the Italians have decided to suspend over 90% of all long-distance connections, Poles have closed only about half of them. Nevertheless, on some most important Polish trunk lines the share is over 80%, too.

It goes without saying that the influence of COVID-19 pandemic on passenger rail transport is huge. The situation is very dynamic and next weeks and months may bring important changes. Therefore it is advisable to observe thoroughly the impact of the pandemic on transport and to work on further and deeper analyses.

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