

Independent Regulators' Group – Rail

IRG – Rail

Charges Working Group

**Overview of International Passenger
Services**

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Summary

This paper proposes an overview about the charging practices on international passenger services.

The first chapter sets out the legal framework related to the international passenger service and the charging practices that we can observe as well as the definition of this type of service.

Then the next chapter presents the outcome of the data collection gathered by the working group. This chapter describes and summarizes an important data base of more than 150 international routes and more than 300 legs of international routes. This paper shows not only information on the charges related to these routes but also on the frequency of those services, the speed, the period when the service are performed and presents some maps related to those services.

The third chapter provides a first analysis of the data which have been collected. It attempts to explain if some factors can partially explain some differences in the level of charges (for instance the type of infrastructure, the charging system, the period of the service, etc.).

Thereafter, the papers presents some case studies: one related to night services, one related to high speed services and one related to specific infrastructures.

This paper is purely descriptive and presents an "*Etat des lieux*" of international passenger services in Europe.

1. Introduction

The basic charging principle for the minimum access package is set out in Article 31(3) of the Directive 2012/34/EU. This article states that “[w]ithout prejudice to paragraph 4 or 5 of this Article or to Article 32, the charges for the minimum access package and for access to infrastructure connecting service facilities shall be set at the cost that is directly incurred as a result of operating the train service” (direct costs). The Article 32(1) sets out an exception to the basic charging principle that allows, under certain conditions, the infrastructure manager to contribute to the “full recovery of the costs incurred” by levying mark-ups on different market segments. The definition of mark-ups is based on a principle of sustainability to ensure “optimal competitiveness of rail market segment”. Furthermore Article 32(3) sets out another exception that allows for a higher charges for specific investment projects “on the basis of the long-term costs of such projects if they increase efficiency or cost-effectiveness or both and could not otherwise be or have been undertaken”. This is very relevant for higher charges for high speed line or other projects.

As of December 2019, seven countries are currently applying mark-ups. Their charging schemes rely on market segments, although they do not always define specific market segments for international routes. In addition, studies across countries within Europe have underlined important differences in direct costs, total costs and subsidies levels¹.

The objective of this paper is to provide an overview of the principles applied to current practices on charges for international passenger traffic and get a common understanding across countries whose RB is a member of IRG Rail.

For the purpose of this paper, we have designed a questionnaire aiming to gather qualitative data on international passenger services representing the situation as of 2019 /2020. In parallel, we have also gathered quantitative data on these services across Europe. The quantitative data covers several years from 2017 to 2020. Although the data collection lasted for a long period, most of the figures received are quite recent (2019). The situation of the different European countries that are connected by international railway circulations may be quite different, in particular in terms of level of subsidies. This should be taken into account for the purpose of the interpretation of data.

In this paper, we firstly present the relevant legal framework for the international passenger services and the definitions related to the international passenger services. Thereafter the paper provides an overview of specificities of international routes before focusing on a description of the charging practices in the countries involved in these international traffics. A fourth part is centered on different case studies before drawing in the conclusion a synthesis of the facts presented.

¹ See IRG-Rail (2017) “Updated review of charging practices for the minimum access package in Europe”, version 4: 24 November 2017 and IRG-Rail (2019) “Benchmark on Financing of Main Railway Infrastructure Managers in Selected European Countries”

22 RBs have answered to the qualitative questionnaire. We can notice that in 20 countries among the respondents there are international services. Only Finland² and Greece do not have international passenger services with other European countries members of IRG Rail. More than 300 legs of international routes have been identified on which we have received information related to the service provided, the charging regime and the level of the track access charges. We present the outcome of the data received and some maps will illustrate the results of our investigation. We have also analyzed different cases of international passenger services in order to illustrate the charging practices for international passenger services. This could serve as a starting point to analyze more in detail charges for international passenger services across European countries.

2. Legal basis and definition

This section covers the following topics:

- Legal basis
- Definition of international traffic

2.1. Legal Basis

The Article 31 (3) of the Directive 2012/34/EU specifies that “*the charges for the MAP (minimal access package) and for access to infrastructure connecting service facilities should represent the costs directly incurred as a result of operating the train service*” (direct costs).

In order to recover the fixed costs, the infrastructure manager (IM) may complement the fees related to the direct cost by mark-ups. Article 32(1) specifies the concept of market segments in the following way: “*Before approving the levy of such mark-ups, Member States shall ensure that the infrastructure managers evaluate their relevance for specific market segments, considering at least the pairs listed in point 1 of Annex VI and retaining the relevant ones. The list of market segments defined by infrastructure managers shall contain at least the three following segments: freight services, passenger services within the framework of a public service contract and other passenger services.*”

Infrastructure managers may further distinguish market segments according to commodity or passengers transported.

² Finland has an international service between Helsinki and Saint Petersburg and between Helsinki and Moscow. As Russia is not a member of IRG Rail and no other countries are involved, these are not taken into consideration.

Market segments in which railway undertakings are not currently operating but may provide services during the period of validity of the charging system shall also be defined. The infrastructure manager shall not include a mark-up in the charging system for those market segments.

The list of market segments shall be published in the network statement and shall be reviewed at least every five years. The regulatory body referred to in Article 55 shall control that list in accordance with Article 56”.

Article 32 of the Directive 2012/34/EU implies that market segments need to be designed by means of certain criteria in order to set up the right mark-ups. There is at least, according to the recast, three main segments: PSO, non PSO and Freight.

Article 37 of the Directive 2012/34/EU specifies that the member states cooperate in setting charging system for the use of the railway network related to international services. More specifically, Article 37(2) specifies that the cooperation between IM enables mark-ups, as referred to in article 32, to be efficiently applied, for traffic crossing more than one network of the rail system within the EU.

Most countries have copied or slightly adjusted this obligation of cooperation in their own legislation. The way this principle is applied across countries is different. The international cooperation comprises different aspects. This cooperation can be operational and also might involve charging aspects related to international passenger services.

Annex VI-1 to Directive 2012/34/EU states that: “*The pairs to be considered by infrastructure managers when they define a list of market segments with a view to introducing mark-ups in the charging system according to Article 32(1) include at least the following:*

1. *passenger versus freight services;*
2. *trains carrying dangerous goods versus other freight trains;*
3. *domestic versus international services;*
4. *combined transport versus direct trains;*
5. *urban or regional versus interurban passenger services;*
6. *block trains versus single wagon load trains;*
7. *regular versus occasional train services.* “

Finally, Recital 41 provides further insights on the definition of market segments: “*When levying mark-ups, distinct market segments should be defined by the infrastructure manager where the costs of providing the transport services, their market prices or their requirements for service quality differ considerably*”. For

Lastly, Article 32(3) of the Directive 2012/34/EU specifies that for specific future investment projects, or specific investment projects that have been completed after 1988, the infrastructure manager may set or continue to set higher charges on the basis of the long-

term costs of such projects if they increase efficiency or cost-effectiveness or both and could not otherwise be or have been undertaken. Such a charging arrangement may also incorporate agreements on the sharing of the risk associated with new investments.

2.2. Definition of International Passenger Services

The implementation act (EU) 2015/1100 (RMMS), in Article 2 (k), defines the international passenger services as follows: “*‘international passenger service’ means a passenger service where the train crosses at least one border of a Member State and where the service carries passengers between stations located in different states*”. Should these differences in definitions be mentioned and/or explained? Are IMs bound by this definition if they decide to introduce a market segment for international passenger services in their market segmentation?

This definition focuses on the principal purpose of the international services. It must be noticed that only one country, Poland, has defined in its national legislation the international services. Romania transposed into national legislation the provisions of Art 3 (5) regarding international passenger services. Other countries have either copied definition in the directive or refer directly to the definition in the directive.

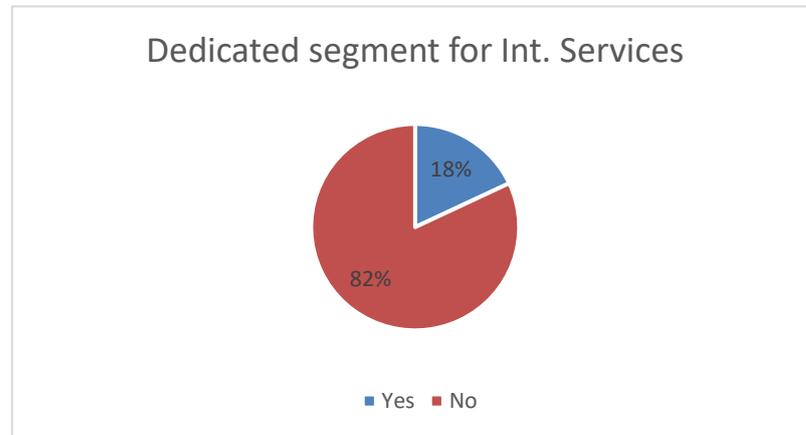
In a lot of countries that apply a mark-up, there is not a specific market segment for international service, but international services are subsumed into another segment, for instance high speed traffic (Belgium and Germany.) Few countries have defined a market segment for the international passenger services: Austria, Belgium, Switzerland, Great Britain, Italy, Lithuania and France, even if a number of countries apply mark up to segments that include international services (as Germany).

In Spain, international traffic falls within one or another service³ depending on the length of the line and its gauge, and whether it runs on high speed or conventional lines. For instance, Madrid-France in HS falls within long distance VL1 service; but Barcelona-France fall within interurban services VCM. Both the Spanish and the German IM do not make a distinction between national or international passenger traffic.

The graph below illustrates the share of European countries participating in this overview that allocate international passenger services into a dedicated segment. Looking at the specific segments of the observed international passenger services only roughly 20% are put into a dedicated international passenger services segment.

³ The Spanish Railway Act defines a list of services which are similar to segments as regulated by the Directive.

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As there is no common national definition across countries for a segment of international passenger services we will stick with the definition of the Implementing act for examining the international passenger services across Europe.

3. Presentation of Routes and Routes Characteristics

The data collection process was successful, as we have received data on 331 legs of international ODs from 20 countries + Eurotunnel, which are shown on the map below⁴:

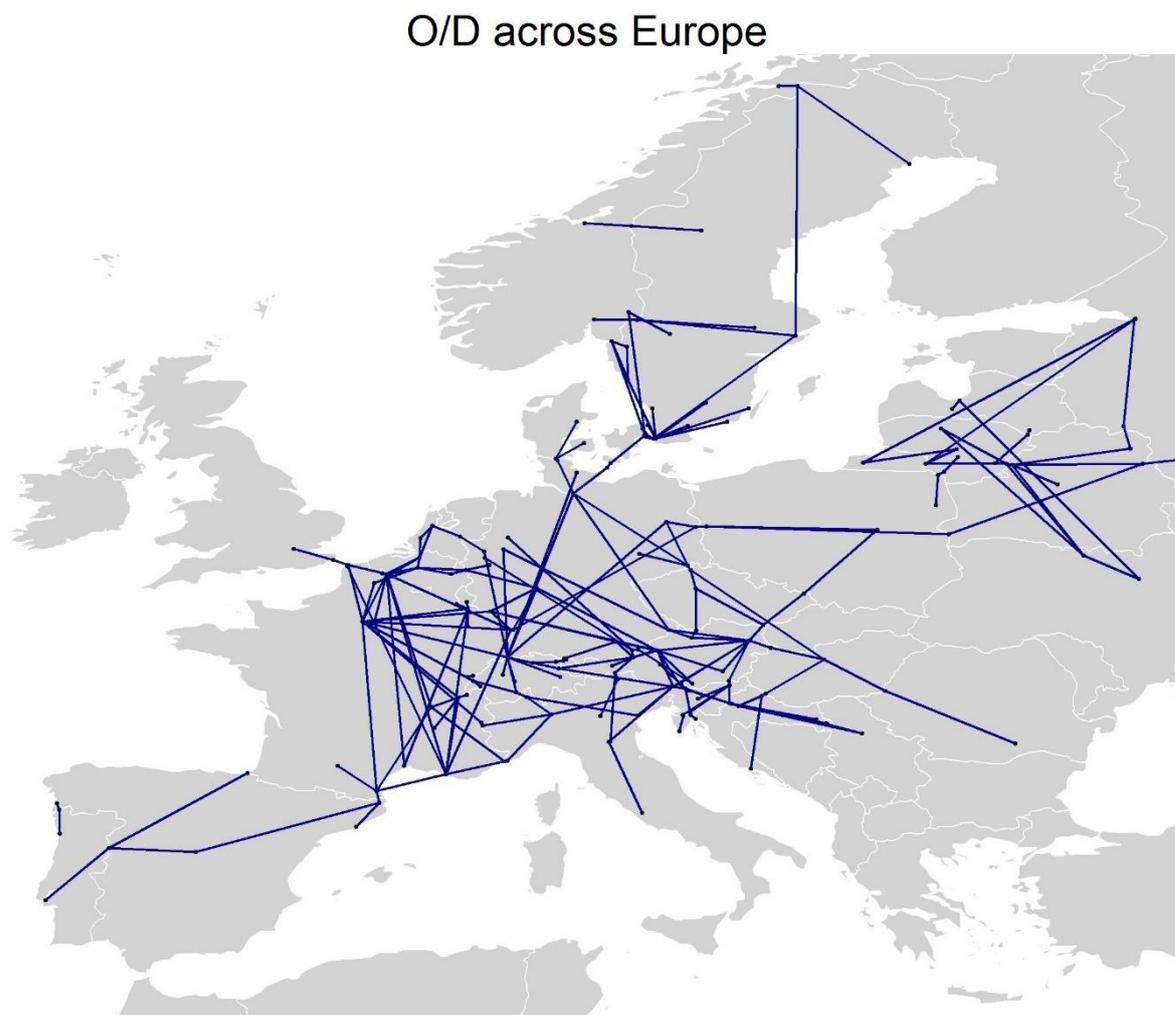


Figure 1: ODs across Europe

There is no easily accessible source available, which provides this kind of data. The RBs manually collected the data, gathering the information within each country separately. There are some sources like the Charging Information System (CIS) from RNE, but this source

⁴ We use R to create maps and thank: D. Kahle and H. Wickham. ggmap: Spatial Visualization with ggplot2. The R Journal, 5(1), 144-161. URL <http://journal.r-project.org/archive/2013-1/kahle-wickham.pdf>

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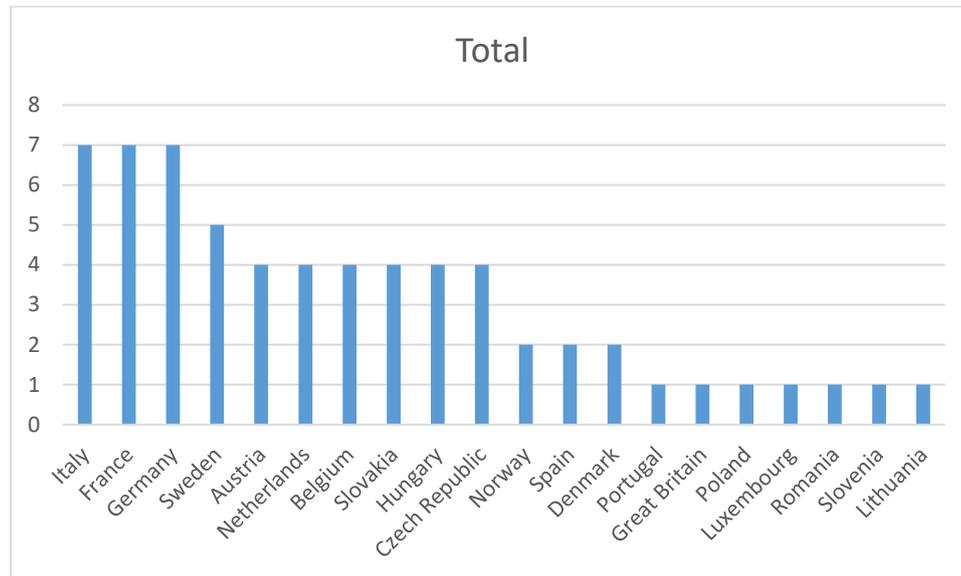
rather helps finding information ex-ante and requires very detailed information about the rolling stock and other information. The information can cover several years (2018, 2019).

These are the reasons why this does not comprise a comprehensive overview of all international long-distance connections. We tried to exclude short PSO connections that really just provide regional services from one border town to the other.

We have gathered the following information on those routes:

- Origin point
- Destination point
- Starting point of the leg
- Border point of the leg
- Countries and Infrastructure manager involved
- Frequency per week
- Period: Day/Night
- Speed
- Duration
- Distance- length of the OD and leg
- Speed of OD and leg
- Track access charges per leg
- Level of direct costs per leg
- Level of markup if any per leg
- Market segment of the leg
- Methodology used for direct costs calculation
- Methodology used for mark-up calculation

From our qualitative questionnaire, we know that 63 railway undertakings are involved in those services. The following graph shows the number of railway undertaking providing international services per country. Most numbers that are shown in the tables or graphs are rounded to either .0 or .5.



3.1. Period of the Service (day/night)

The first information is related to the period during which these services are operated. These trains can be operated during the day, the night or during the day and the night. As shown in the following graph, nearly 75% of those services are operated only during the day.

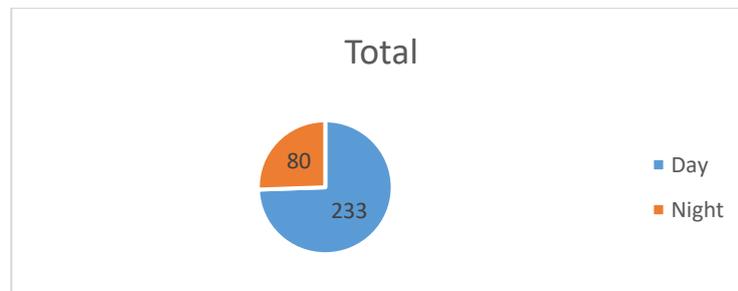


Figure 2: Share of Day and Night services

The night international services cover long distances. These services cover globally the links between the following countries:

- France- Italy
- Germany and other countries like Russia, Hungary and Croatia
- Austria-Italy
- Austria -Hungary
- Spain-Portugal
- Norway-Sweden

The following map summarizes this information:

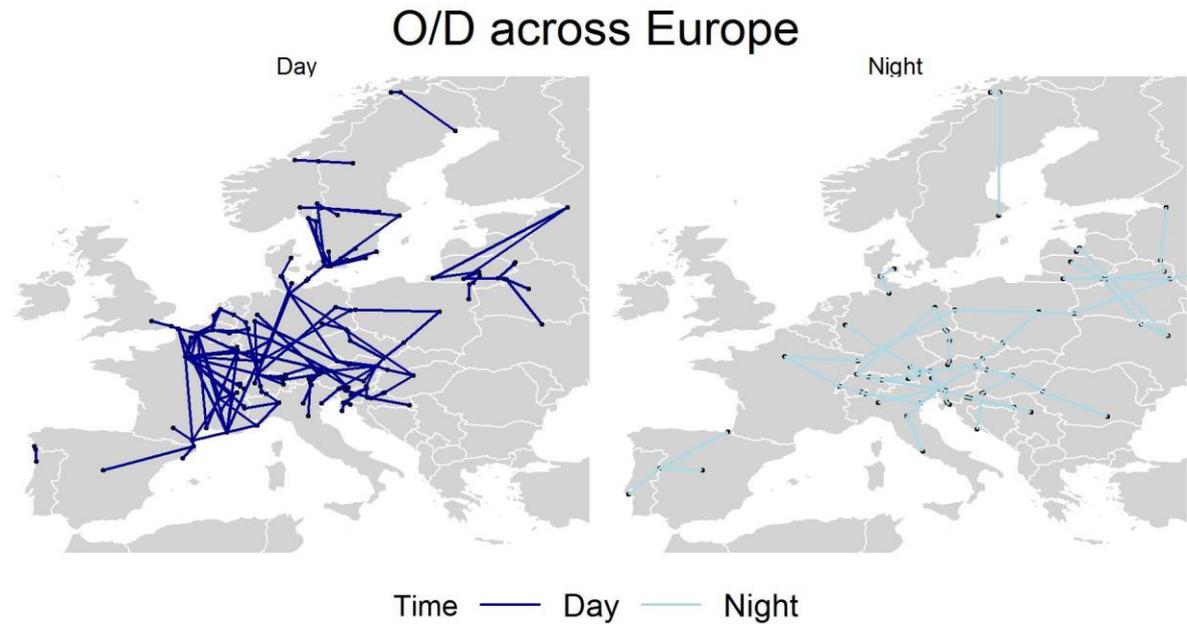


Figure 3 : ODs across Europe by Time

The level of track access charges for the international night trains services is rather low. The weighted average (in function of the frequency and the distance) is 3.54€ per train-km and the unweighted average is 5.37 € per train km. Figure 4 shows the difference in charges between night and day services:

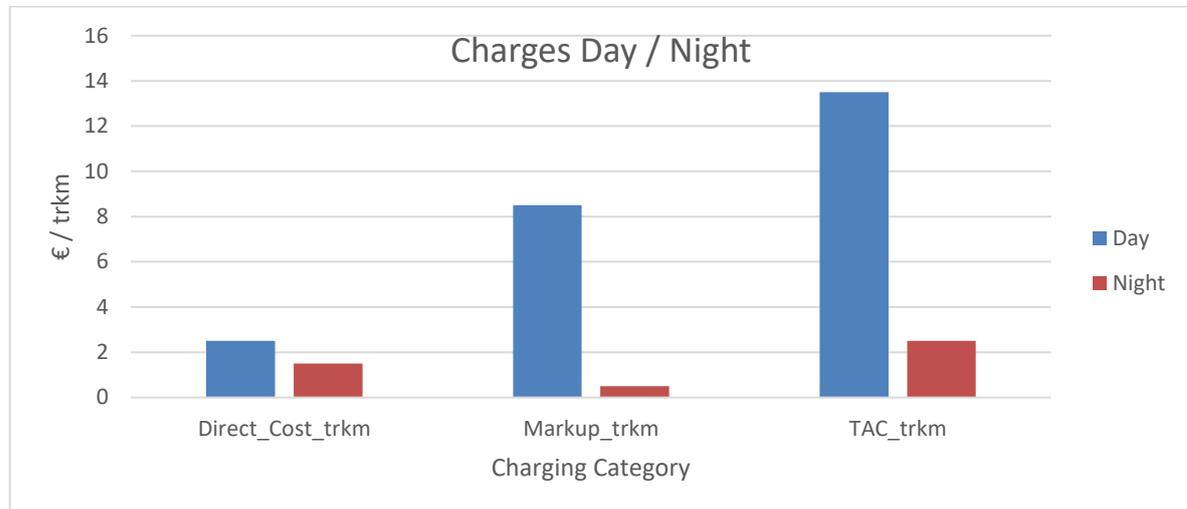


Figure 4: Averages of charges categories for day and night services

We can observe that the charges for the day services are much higher than the charges for the night services. The direct cost levied for the night services are slightly lower than for the day services while the mark-up levied for the day services are much higher than the mark-up levied for night services.

3.2. Speed (Normal services vs High-speed services)

The speed of international trains is also an interesting characteristic. We have observed that, as shown in the next graph approximately 89 percent of those trains are operated at classic speed and only 11% on the entire route are high-speed trains on at least a part of the route (with average speed higher than 160 km/h).

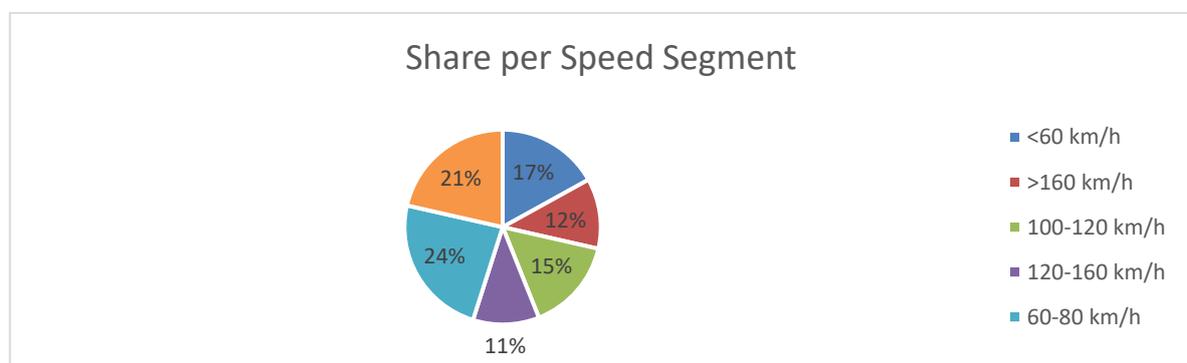


Figure 5: Share of average speed category for all ODs.

Figure 6 below summarizes this information:

O/D across Europe by Speed

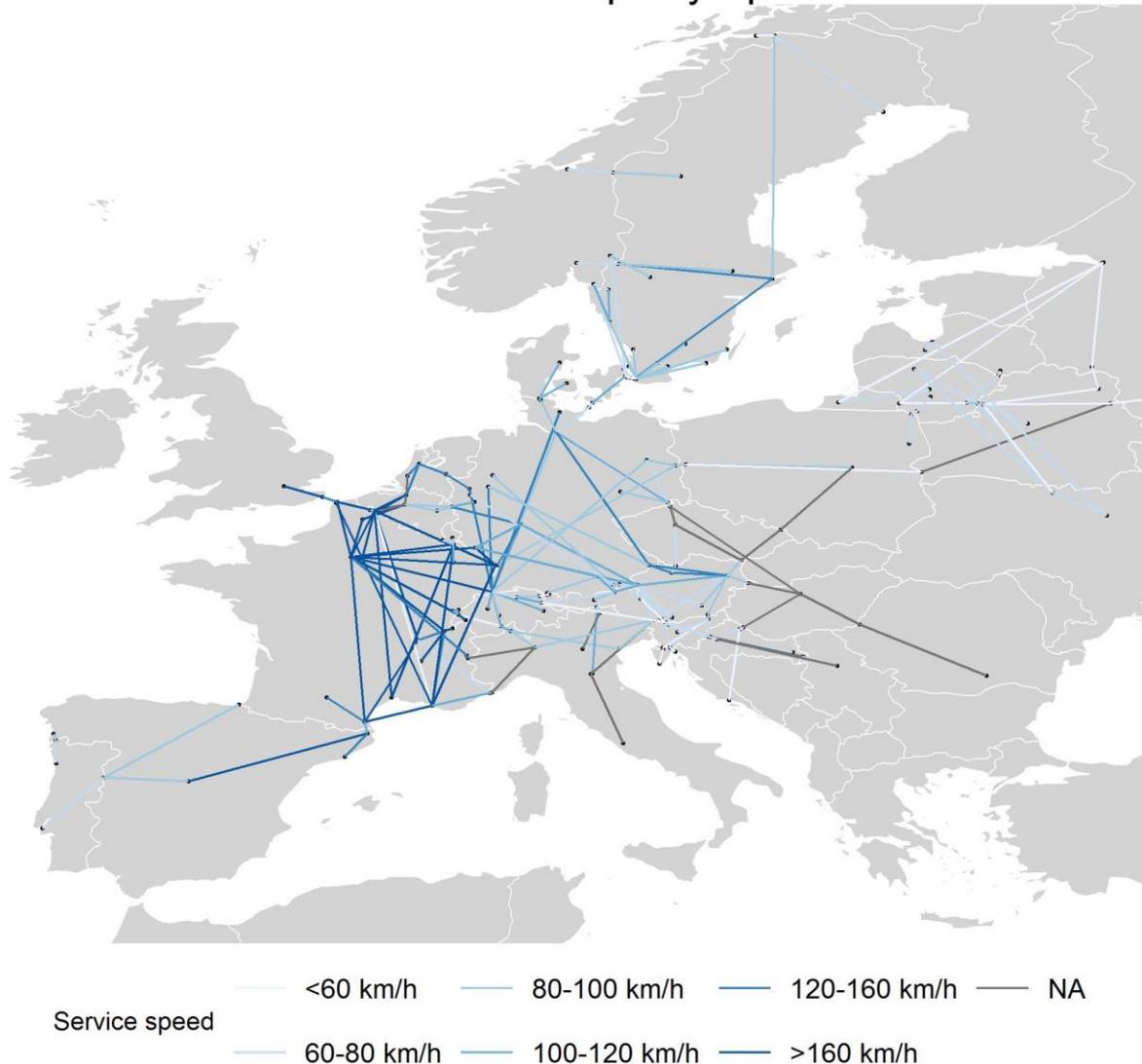


Figure 6 : ODs across Europe by Speed

The track access charges for high-speed services are higher than in the case of conventional speed. The weighted average track access charge for high-speed train service⁵ is 16.95 € per train km. For example, the TAC levied to cross the Figueiras Tunnel on the line Barcelona Toulouse at the border between Spain and France is at a level exceeding 40 € per trains km. We may also notice that the track access charges for the high-speed line between France and Spain managed by LFP, is above 35 € per train-km and the level of track access charges related to Eurostar (line between GB and France or Belgium) goes beyond 40€ per train-km on the British segment. As described later, this

⁵ High speed services are only proposed during the day.

disparity is due to the existence of international sections at the borders that involve tunnels and costly infrastructures that raise the level of charges considerably for these sections. By removing these “third legs” from the equation, charges for the use of the national infrastructure are lower. As a result, the track access charges for normal services are much lower, especially due to the lower markup level.

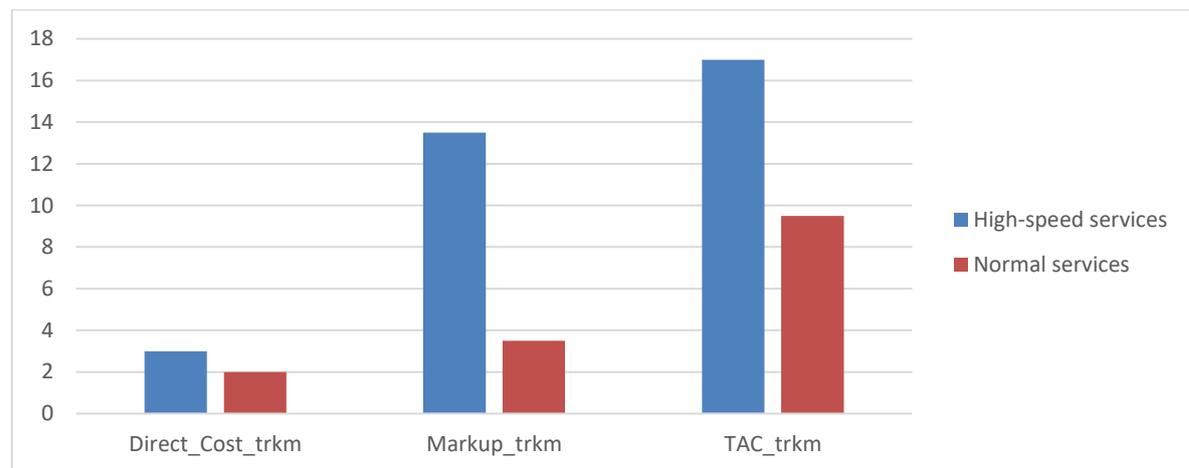


Figure 7: Averages charges per category for high-speed and normal services

3.3. **Frequency of the Service**

We have also looked at the frequency of the international passenger services offered in Europe. We have identified three categories:

- High frequency (more than 30 rotations per week)
- Medium frequency (between 10 and 30 rotations per week).
- Low frequency (less than 10 rotations per week).

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The graph below shows the share of each category:

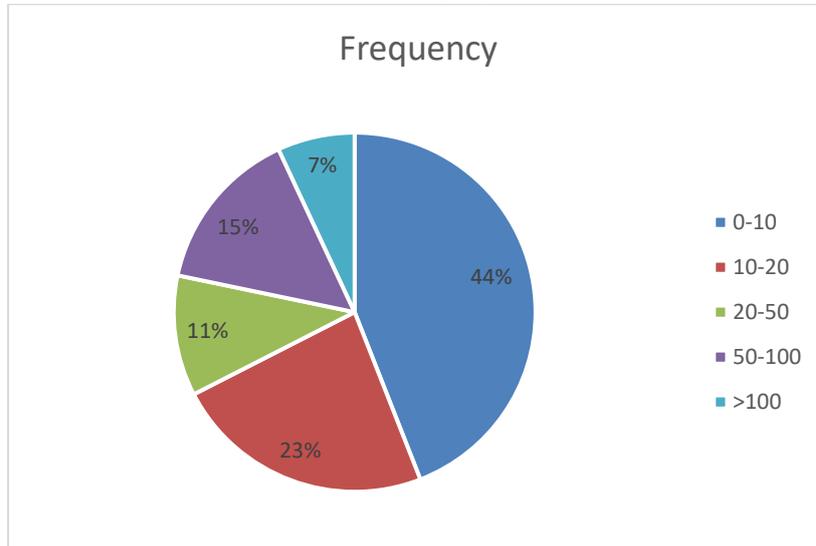


Figure 8: Frequency of services

The map of Figure 9 below summarizes this information:

O/D across Europe by Frequency

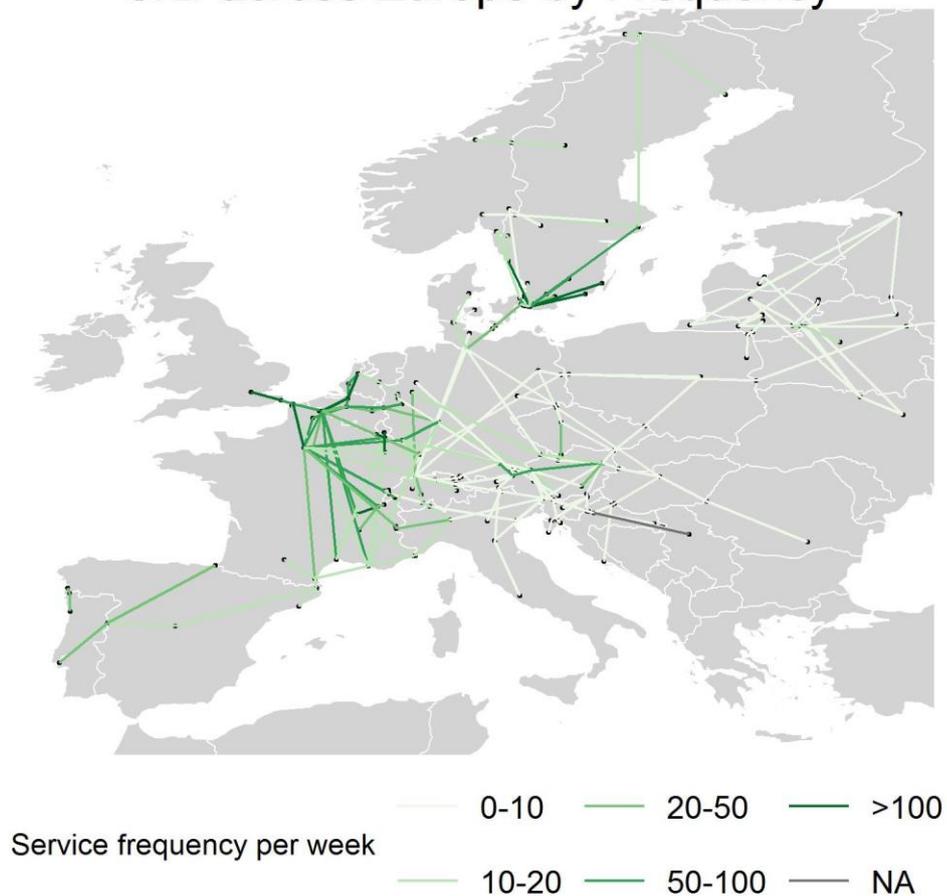


Figure 9: ODs across Europe by Frequency

It must be noticed that the night services are mainly concentrated in the categories low and medium frequencies. Most of these services have a frequency below 20 trains per week. We can also observe that the routes with the highest frequency are mostly the routes with the highest speed.

3.4. Subsidies – PSO Services versus non-PSO Services

Very few countries subsidize the international passenger services. This is only the case for four countries (Czech Republic, France, Norway and Slovenia) and it represents only 20 legs of routes.

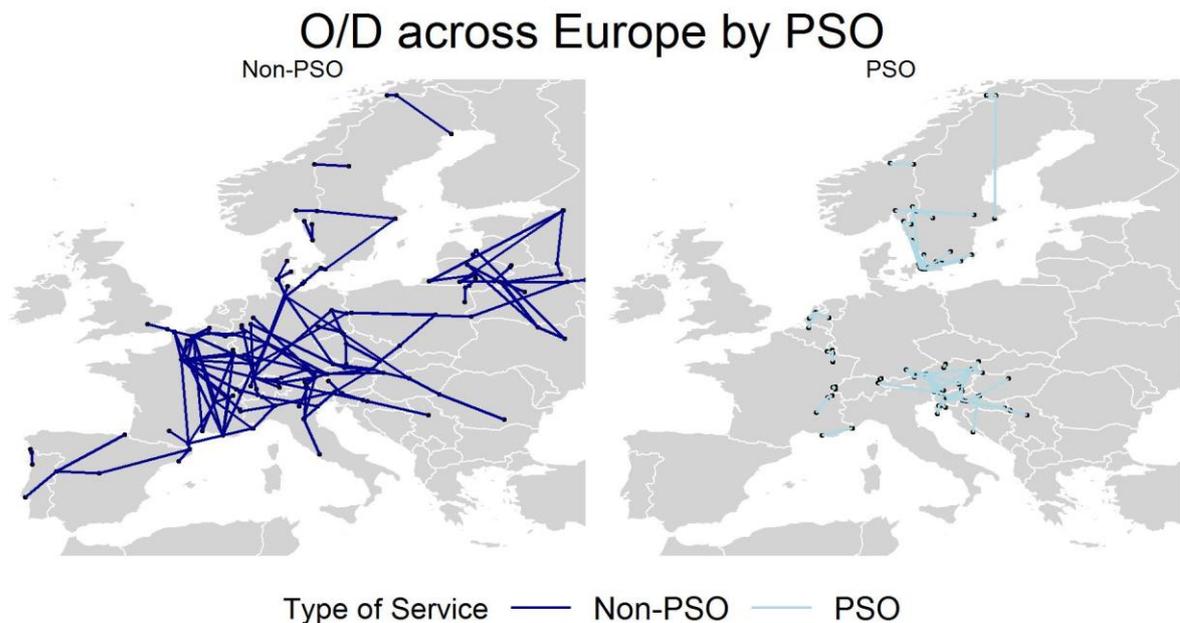


Figure 10: ODs across Europe by PSO

For France, the services subsidized are only the regional services with destinations a bit beyond the borders. The weighted average TAC for all the countries concerned by those routes is low: 2.46 € per train-km and the unweighted average is 3.68 € per train-km⁶. No country was able to give indication about the level of subsidy directly granted to international rail services.

⁶ We have data on TAC for only 7 routes or leg of routes.

The PSO services are generally subsidized. The level of TAC appears to be lower than the non-PSO services. Figure 11 below shows the level of track access charges, direct costs and mark-up for PSO and non-PSO services (weighted average).

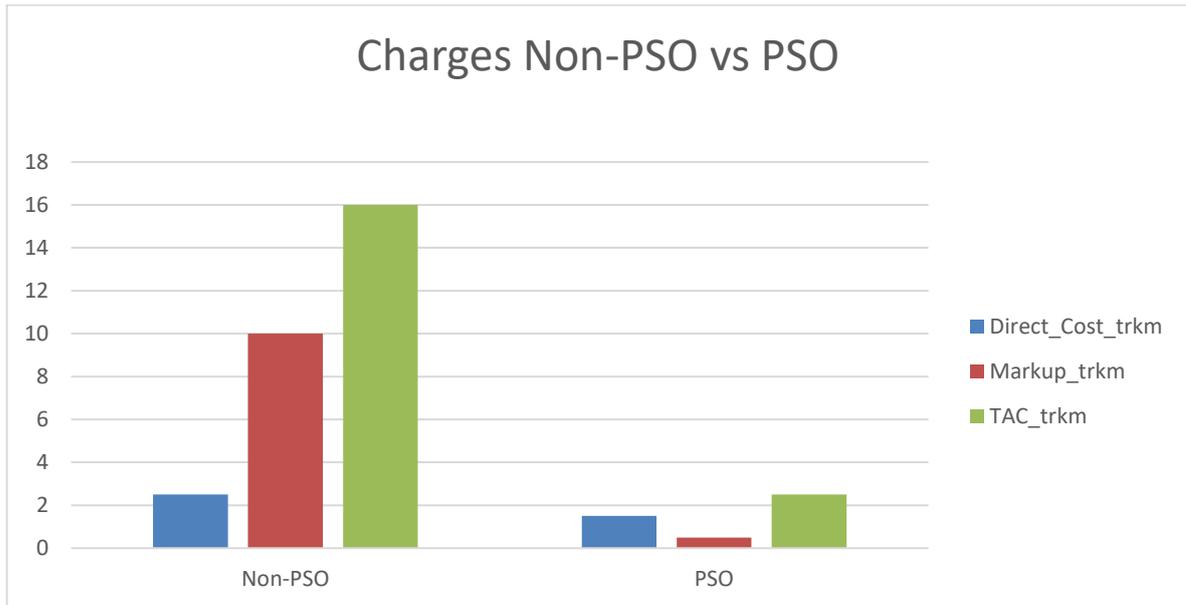


Figure 11: Average charges per charging category PSO vs. Non PSO for all ODs

4. Charging systems: analysis and first interpretation of the data

The data collection has shown that there were differences in charge levels across countries. These differences can be important and occur also for the same kind of services (high speed trains, night trains). Before starting the data collection, the Working Group considered that some factors might explain partly, for each of those factors, the difference in charge levels. These factors were the following:

- Level of net costs / public grant⁷
- Nature of charging regime (Direct cost vs Direct cost + Mark-ups)
- Characteristics of the infrastructure (age, geography, high speed track etc.) and of the train services (day, night)
- Level of direct costs and the way and method these direct costs are allocated to the different services
- Choice of segmentation in each country
- Level of mark-up and methodology to define what the market can bear and estimation on what it can bear

Each factor might partly explain the difference in charge levels. The combination of several factors can explain a greater part of those differences. This list of factors can be seen as a grid analysis in order to help us to understand the differences in charges for international passenger services. The next sections will analyze in what way each of these factors can partly explain differences in charges which arise in different situations and how we can link each of those factors to the various situations we have observed in the data collection.

4.1. Level of subsidies or grants

Based on previous data collection from the IRG Benchmark, we know that the level of state funding for the provision of the MAP can be very different. This could explain a difference in total track access charge, when a passenger service crosses from one country with low level of subsidies to another country with high level of subsidies. In our data collection we have observed that few services were subsidized. These are mainly regional PSO services crossing the borders. In that case the level of charges is very low and represents 2,46 € per train-km instead of an average of 12 € per train-km for all the international passenger services on which we have collected information.

⁷ Net cost = Total costs- Subsidies/Public grants. We refer to subsidies for rail infrastructure and transport services.

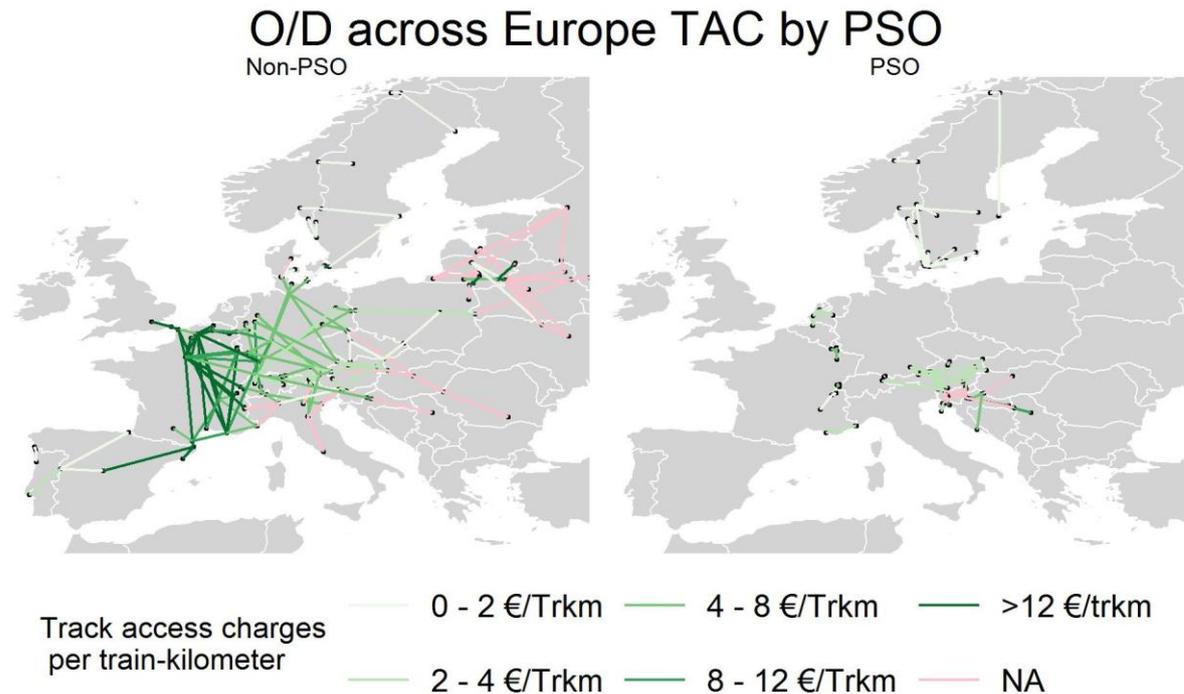


Figure 12: ODs across Europe by TAC by PSO

It is also fair to observe that even if specific international passenger services do not receive specific direct subsidies, they could indirectly benefit from the subsidies granted to the IM. We can assume that if an IM receives an important proportion of subsidies it will need a lower level of charges and then the global level of charges will be lower. This can influence the choice of charging regime. We can anticipate that an IM, receiving a low level of subsidy, might seek to recover more than the direct costs and then will levy mark-ups. This difference in charging systems will be analyzed in the next section.

4.2. Charging regime

The IM normally covers at least the direct costs of a service through charges. However, the IM can also opt to levy mark-ups to cover up to its total costs. In our data collection chapter, we have compared the difference in charges whether under a charging system with only direct cost or under a system with direct costs + markup. The following graph shows the charging system used by each country:

Charging Regimes across Europe

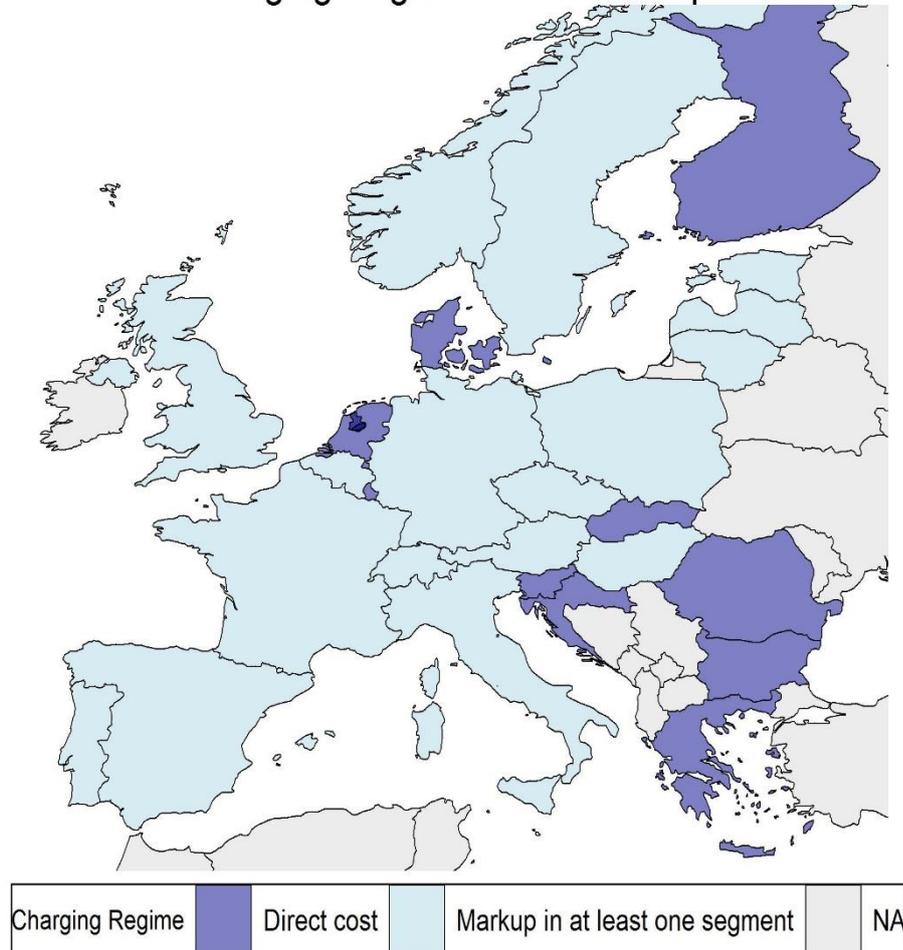


Figure 13: Charging system across Europe in 2019

While comparing the charging system used by each country and the level of charges, we can observe that the countries charging mark-ups have a higher level of charges than the countries charging only direct costs. The next map shows the level of track access charges on the routes with international services:

O/D across Europe by TAC per Trkm

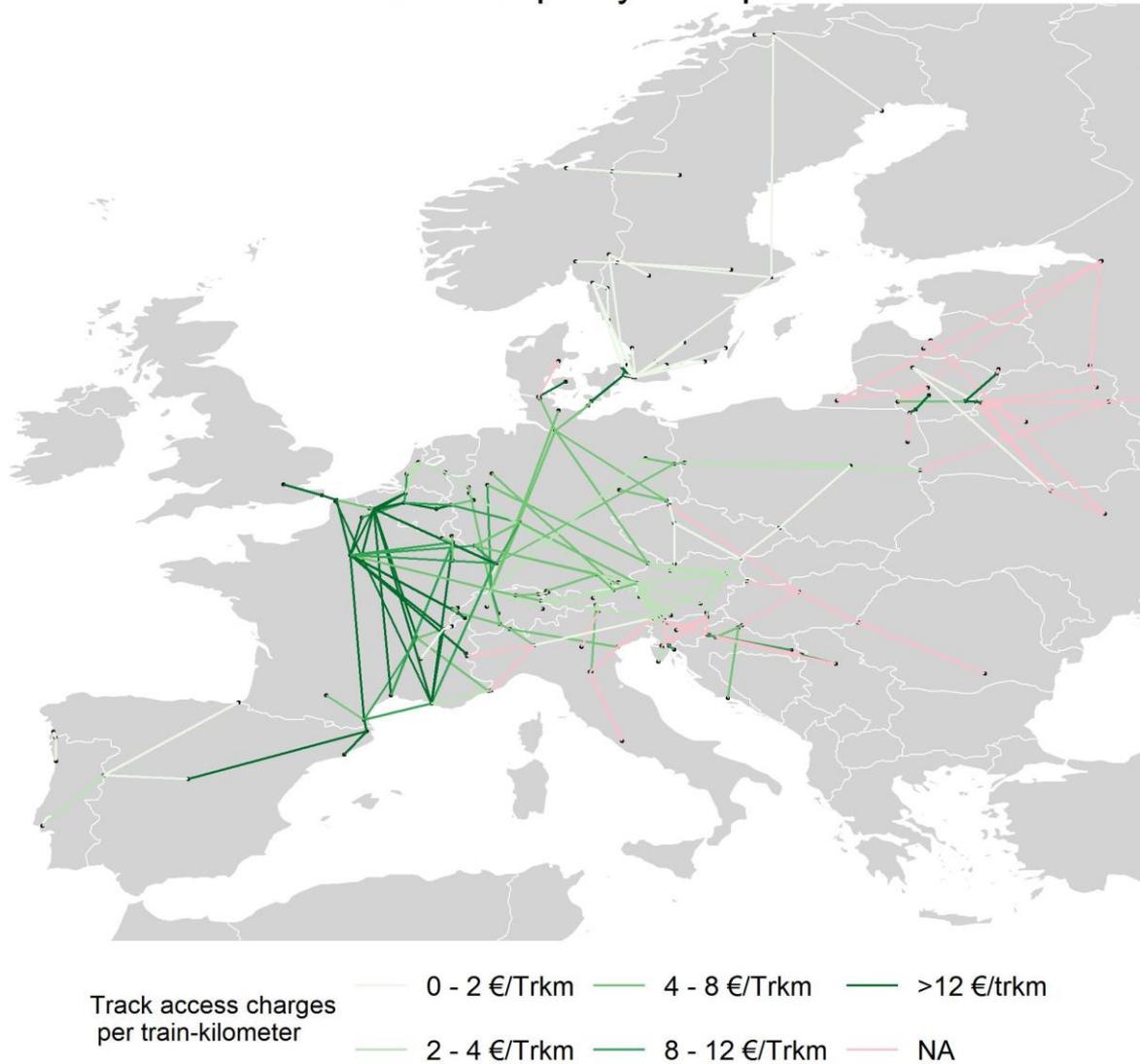


Figure 14: ODs across Europe by TAC

Table 1 below shows the weighted average⁸ of the track access charges (TAC), direct costs and mark-ups of the international passenger services per country.⁹

⁸ The weighted average is calculated in function of the frequency and the distance.

⁹ The displayed total charge for the Netherlands is an estimation of the High Speed Line charge based on article 32(3) Directive. We consider, for sake of simplicity and consistency the difference between total track access charge and direct costs as a mark-up although it is not qualified as such by the Netherlands.

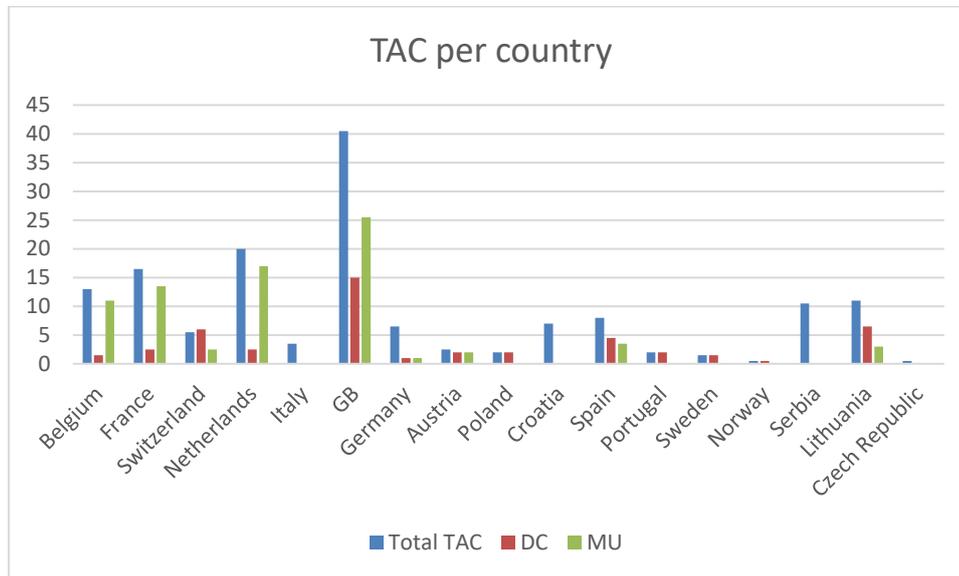


Figure 15: Average charges per category per country (excluding specific infrastructure).

	Unweighted average	Weighted average	
TAC	10.5 €/train-km	12,0€/train-km	
Direct costs	2,50€/train-km	2.5€/trains-km	
Mark-ups	5.00€/train-km	8.00 €/train-km	

Table 1: Average charges per category for all ODs

We notice for the level of TAC and mark-ups an important difference between the weighted average and the unweighted average. This can be explained by the fact that the most expensive services which are the high-speed services have a high frequency. Some high-speed services like Thalys trains have more than 10 services per day in one direction and weigh much more on the average than other services.

We notice important disparities across countries. We can observe that Great Britain has the highest level of track access charges for international passenger services. Sweden and Norway have low level of track access charges for international passenger services. Belgium, France and Spain have track access charges above the average.

There are also substantial differences in track access charges for international routes where only direct costs are charged and international routes where direct costs and mark-up are charged. For routes where only direct costs are charged, the average track access charges is 3.23 €/trains-km and the weighted average track access charges is 3.06 € €/trains-km. For routes where direct costs and mark-ups are charged, the average track access charges is 9.08 € €/trains-km and the weighted average track access charges is 14.10 €/trains-km.

For this type of routes, there is a substantial difference between the unweighted average and the weighted average.

These differences can show that a difference in charging systems is a factor explaining the difference in charges for international services without stating any judgement on IM's charging mark-ups which is authorized by the European regulations and the directive 2012/34.

4.3. Type of Infrastructure

Before analyzing how the direct level of direct costs and of the mark-ups can respectively and partly explain differences in charges for international passenger services, it is interesting to analyze the influence of the characteristics of infrastructure. To simplify the analysis, we consider three types of infrastructure:

- Classic infrastructure
- High speed track infrastructure
- Specific infrastructure (bridge, tunnel).

The data collection has gathered data on international passenger services for all these categories of infrastructure. We may observe differences in charges as shown in this table:

Type of infrastructure	Level of charges
Classic infrastructure	8 € per train-km
High speed infrastructure	17 € per train-km
Specific infrastructure	Between 43 € and 83 € per trains km

Table 2: Level of charges for types of infrastructure

For instance, the level of charges for high speed track is nearly two times higher than for a classic infrastructure. On top of this, the level of charges for specific infrastructures are much higher (between 5 and 28 time higher than the TAC for a classic line). It is clear that the cost of a high-speed track is much higher than the costs of a conventional lines and this can be reflected in the level of charges. For specific infrastructures the managers of those infrastructures can recover long term costs; this explains why the level of charges is high. We also observe that within this category, there are important variations of charges. This can be explained by the costs and the nature of this type of infrastructure and the way this infrastructure is financed (purely privately or totally or partially subsidized). For the classic and high-speed track infrastructure, the difference in charges within this infrastructure can be explained by difference in direct costs and/or mark-ups.

We can see that the characteristics of infrastructure is a factor that seem to have an influence on the differences in charges. Nevertheless, this factor does not explain entirely

difference in charge level. We observe that, within the same category of infrastructure, it exists difference in charge because the level of direct costs and mark-up can differ between countries. That will be analyzed in the next sections.

4.4. Level of Direct Costs

This section leverages partially on the paper “IRG Benchmark of MAP financing” published in November 2019 and more specifically on the chapter direct costs presented to the IRG plenary in November 2019. This chapter focuses on the following topics:

- Compare the level of direct cost across IRG members
- Compare the methodology for calculation of direct costs and review the split of direct costs per main segment (freight, PSO, Non PSO) and categories.

We had observed differences across countries sorted by the level of direct costs. The unweighted average for the 20 countries having provided data is 1.85 € per train km, the average weighted by train kilometres is only slightly lower at 1.77 € per train km, so it seems that the unweighted average is not biased.

It would already appear obvious that a passenger service going from one country to another country with higher level of direct costs would become more expensive once it crosses the border.

In the data we have collected for this paper, we gathered information about level of direct costs for international passenger services. We can first observe that the average of direct costs for international passenger services is slightly higher than the average of direct costs we had observed in our benchmark paper. The average is at a level of 2.5 € versus a weighted average of 1.77 € observed in our benchmark paper. This can be explained by the fact that direct costs may differ per main segment.

We have also noticed important disparities of direct costs level for international passenger services as shown in the following graph.



Figure 16 Direct costs for international passenger services

The amplitude of differences is rather similar to the amplitude we had observed in the benchmark paper. The highest level of direct costs is approximately 14 times higher than the lowest level of direct costs. This can demonstrate that it is a factor which can help us to partly explain difference in charges for international passenger services. Is it explaining the difference in charges in this case? This is clearly the case. Does it explain entirely the difference in charges for Eurostar? Clearly no, as we have also observed difference in mark-up for this service.

The benchmark paper had identified the following reasons for explaining these difference in direct cost levels:

- Methodology (econometric, engineering, subtraction, other).
- Difference in the interpretation to calculate the direct costs and for using specific methodologies.
- The age of the infrastructure.
- The fact that some categories are not included like renewals.

The same reasons could logically explain the difference in direct costs level for international passenger services.

4.5. Segmentation

The market segmentation is a necessary step before mark-ups can be calibrated. We have noticed that only a few countries consider international traffic as a criterion for segmentation. It is also important to review how European countries define international or high speed segment in more detail as a lot of international traffic is carried out by high-speed trains (like Thalys connections).

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The graph below describes the segmentation criteria used by European countries related to the passenger segments. This shows that, among the respondents, only six countries: Austria, Belgium, France, Italy, Lithuania and Switzerland use the criterion international versus domestic traffic in designing their market segments.

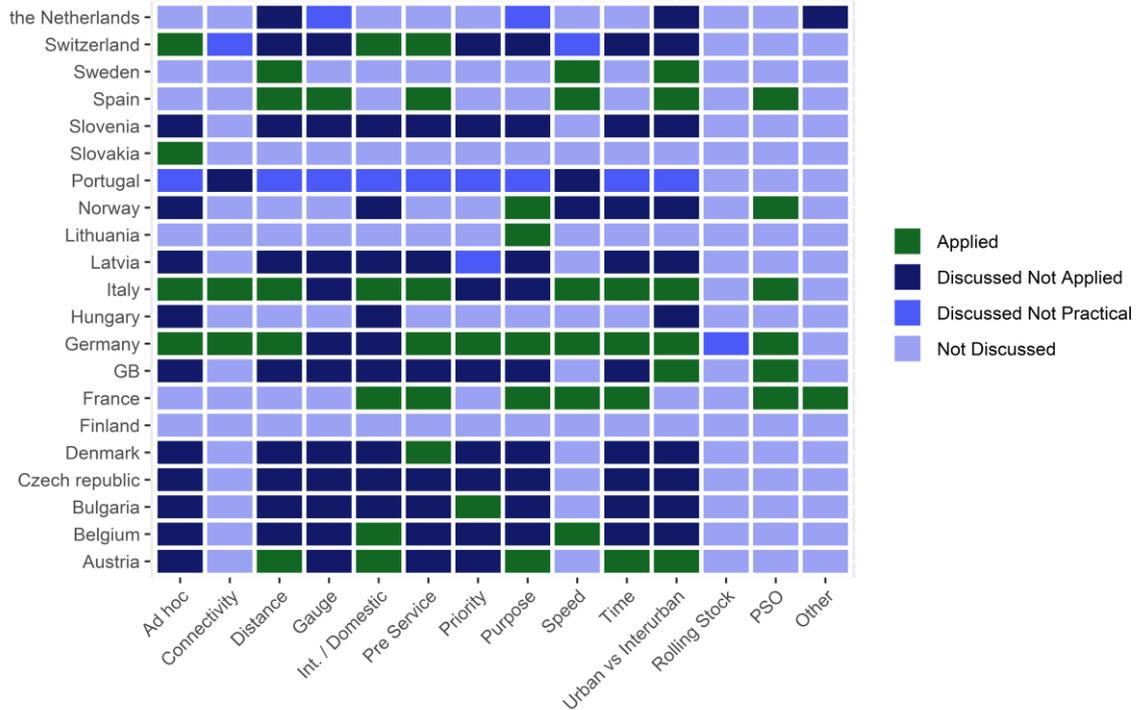


Figure 17: Heatmaps of Criteria for Passenger Services

4.6. **Level of Mark-up and Methodology of Market Can Bear**

In the data collection, we have also observed difference in mark-up level for international services across countries as shown in this graph.

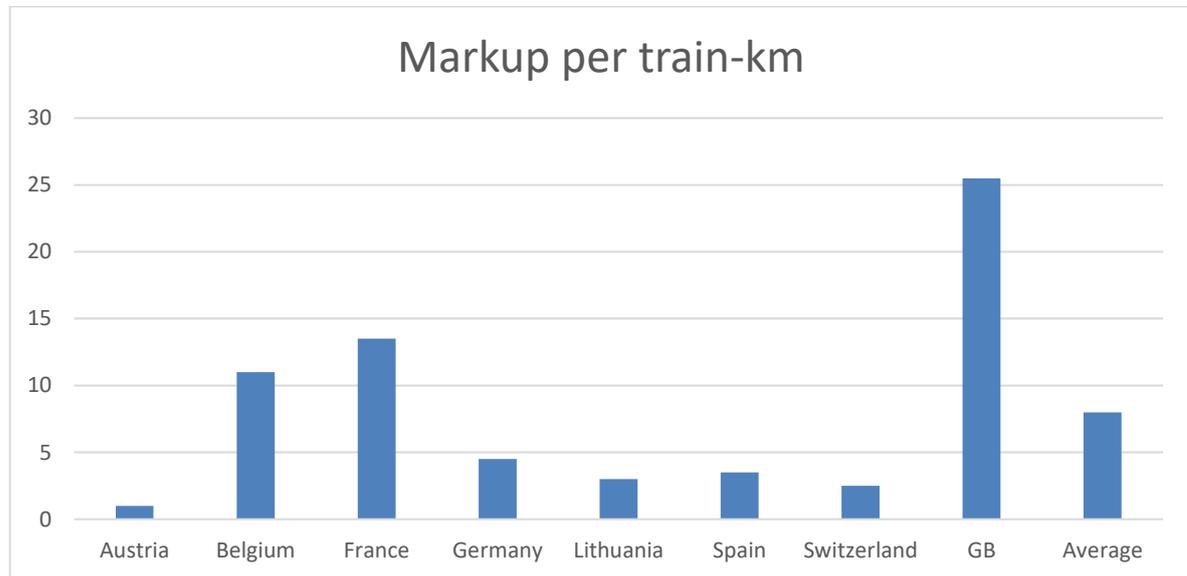


Figure 18 Mark-ups for international passenger services

We observe again important difference in mark-up levels with a level particularly high in GB and to a lesser extent in France and Belgium. This is important to notice that in GB, and, there is only one type of international service (Eurostar for GB, and Thalys for the Netherlands).

Many countries declared that a methodology based on Ramsey Boiteux is used in their country for calculating the mark up. The market is calibrated based on what the market can bear. However, estimation of what the market can bear in each side of the international route may differ. Given that the segmentation of many countries is not comparable, it could still be one factor that explains the difference in mark ups across countries. What we can observe by analyzing the cases presented below is the fact that several countries have a different assessment of what the market can bear and the level of the demand elasticity although for each case there is only one type of service and one railway undertakings operating those services which are not subsidized.

Hence, for countries using Ramsey Boiteux, we would need to know how was estimated what the market can bear, but for the time being this seems to be too early to collect such information on an origin destination level. This provide a better understanding about the rationale of such differences in assessment.

5. Case Studies

In order to illustrate this paper on charges for international services, we consider that it is interesting to analyze two kind of services. We have chosen to analyze night services and high-speed train services. For the night services, we have chosen to analyze the case the night services proposed by OEBB (Austrian incumbent rail operator). OEBB operates night services between Austria and some border countries. For the high-speed services, we will analyze the Thalys services. Thalys proposes high-speed international services from Paris to Belgian, Dutch and German cities. We present also a case study on special infrastructures (bridge between Denmark and Sweden, Figueiras Tunnel between Spain and France and Eurotunnel).

5.1. Night trains

OEBB Night Trains

OEBB proposes night international passenger services towards several destinations:

- Germany
- Czech Republic
- Croatia
- Switzerland
- Poland
- Romania

Some of those services are PSO, some are non PSO Services. OEBB proposes also international passenger day services but in this section, we will focus on international night services proposed by OEBB. OEBB proposes generally 1 train per day (7 per week) with one exception for the services between Prague and Linz for which 28 trains per week are proposed.

For those services, we can observe important disparities across countries related to the level of charges as shown in the following graph:

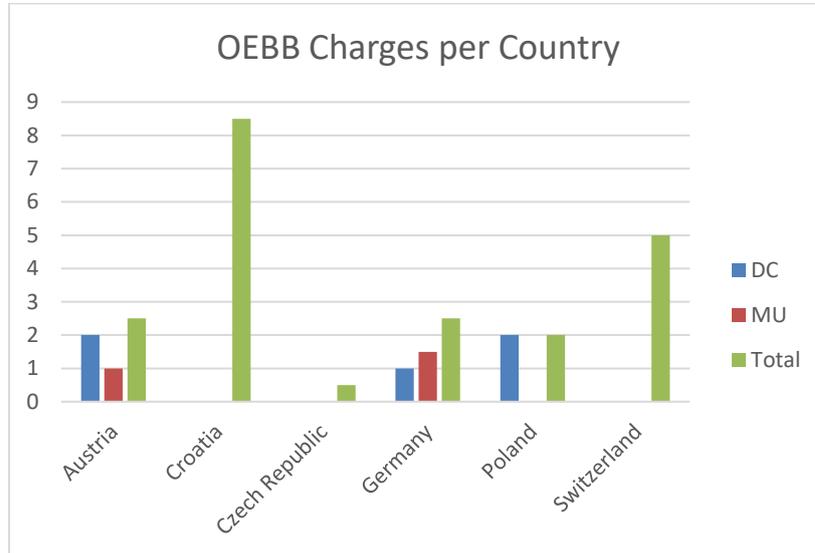


Figure 19 Average weighted total charges for OEBB night services across countries

We can also observe that the level of charges in the most expensive country (Croatia) is eight times higher than the level of charges in the cheapest country (Czech Republic).

It is also interesting to compare the charges of the PSO services with the charges of the non-PSO services. We can observe that the difference in the charge level between PSO and non-PSO is rather thin and in the range between 2.20 € and 3.60 € per train-km as shown in the graph below.

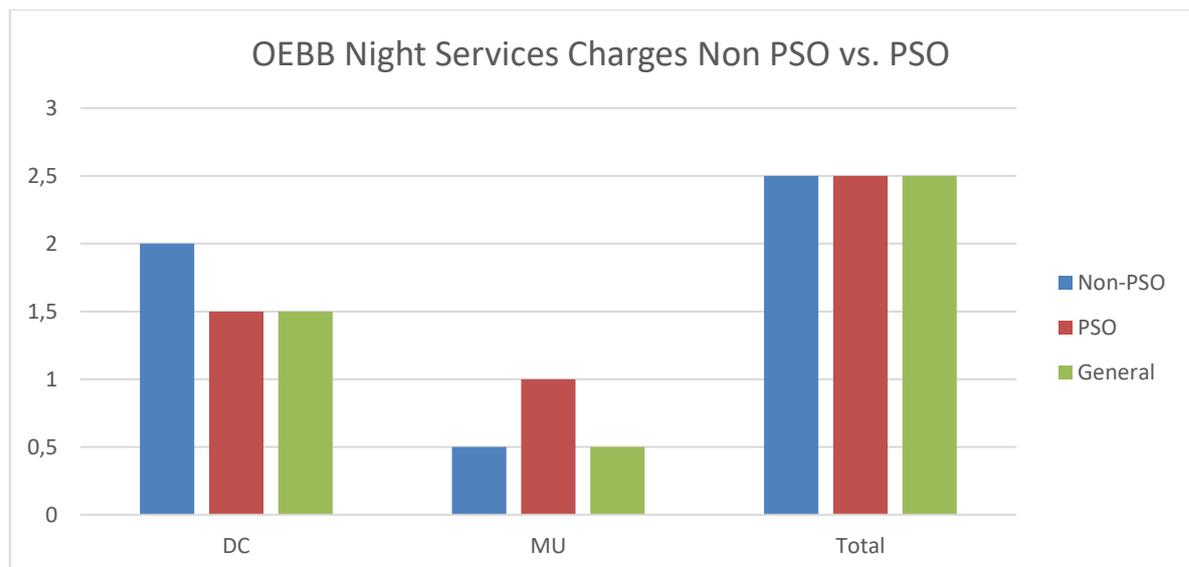


Figure 20: Average charges for OEBB night services by type of services

Finally, we will examine the detail of the charges for these services. Except for Poland, all the countries crossed by the OEBB night trains are charging mark-up.

We can also observe important different level of charges as well for the direct costs that for mark-up. We have low level of direct costs in Croatia and Czech Republic and higher level of the other countries (slightly below 2 € per train km with the exception of Switzerland). For the mark-up, there are low level of mark-up in Austria, Czech Republic and Germany and much higher level in Croatia and Switzerland.

5.2. High Speed Trains Services -Thalys

Thalys is a rail operator controlled by the French incumbent SNCF, which holds 62% of Thalys stakes. Thalys has two other shareholders SNCB (38%) and Deutsche Bahn (10%). Thalys operates high-speed train services between France, Belgium, Netherlands and Germany. These are day services with a very high intensity. For instance, for the trains between Paris and Brussels there are at certain period of the day (between 7h and 12h30 and between 14h30 and 20h) two trains per hour in both directions.

We have also analyzed the level of track access charges for this service. The average TAC for Thalys services is 15.50 € and the weighted average TAC is at 19€. The following graph shows the level of charges for the Thalys and also the level of direct costs and mark-up related to this service.

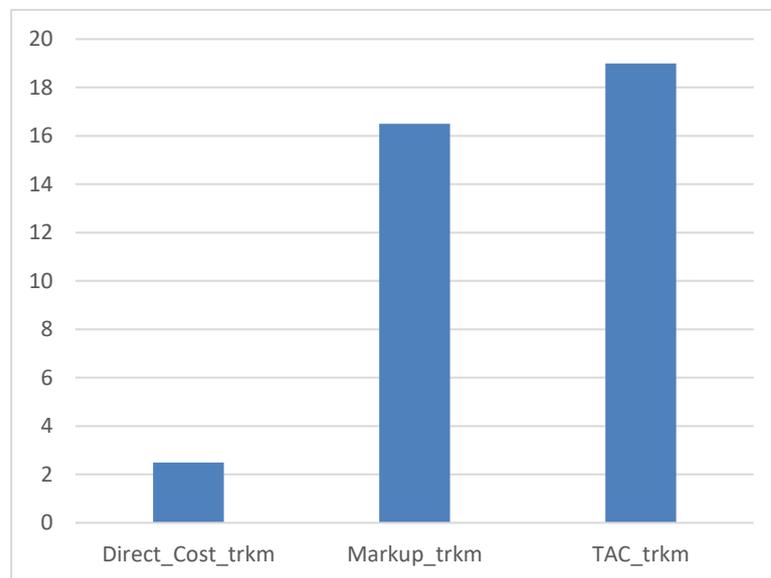


Figure 21: Average charges per category for Thalys

We can also notice differences in track access charges between countries although the service is similar across countries. The following graph shows these disparities.

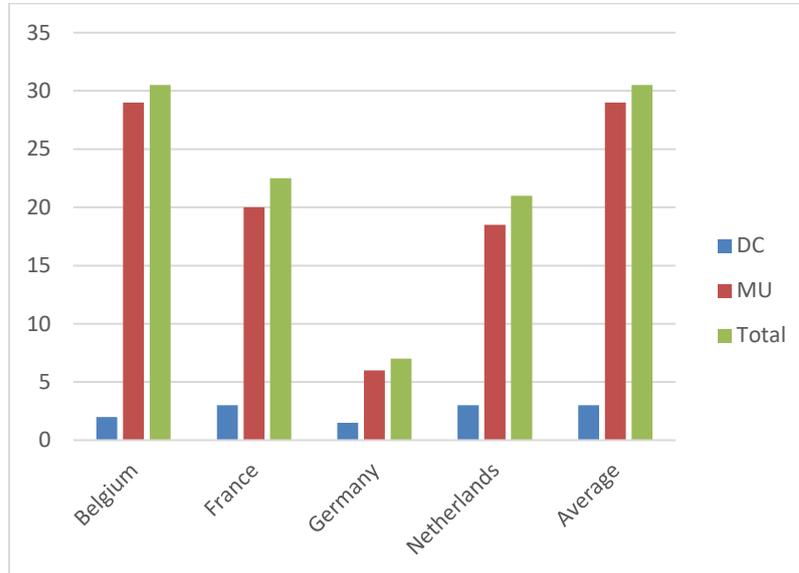


Figure 22: Average charges for Thalys per country

The TAC in Germany is much lower than in the other countries. We notice also that France and the Netherlands have the highest level of track access charges and markup¹⁰. For the country, the weighted and unweighted average of track access charges are rather similar

It is also interesting to compare the level of direct costs and mark-up of each country for these services. For the direct costs there is no difference between the weighted and unweighted average. The lowest level is the German one and the highest level are the Dutch and the French one. The Belgium level is in the middle.

If we look at the mark-up levels we can observe that like for the direct costs, the German level is the lowest and the French and the Dutch have the highest level¹¹.

It is interesting to notice that for a same service with the same type of track (high speed track), there are relatively important difference in the level of mark-ups. It would be interesting to investigate the reasons which explain the difference. We do not have information about the cost elasticities in each country for this service operated by the same operator; that would be interesting to obtain this information. There might also be different view across countries about what the market can bear.

¹⁰ For Netherlands, the direct costs and the total track access charge for the high speed line are estimated by the Dutch RB. We consider, for sake of simplicity and consistency the difference between total track access charge and direct costs as a mark-up although it is not qualified as such by the Netherlands.

¹¹ See previous footnote, for the Netherlands the difference between the total TAC and the direct costs are not classified as mark-up.

5.3. **Special Infrastructures**

We have also examined the track access charges for specific infrastructures, which are by nature more expensive. These types of rail infrastructures comprise bridges or tunnel. Managers of such infrastructures aim to retrieve the long-term costs as referred to in article 32(3). Figure 23 graph below shows the track access charges in such infrastructure¹²:

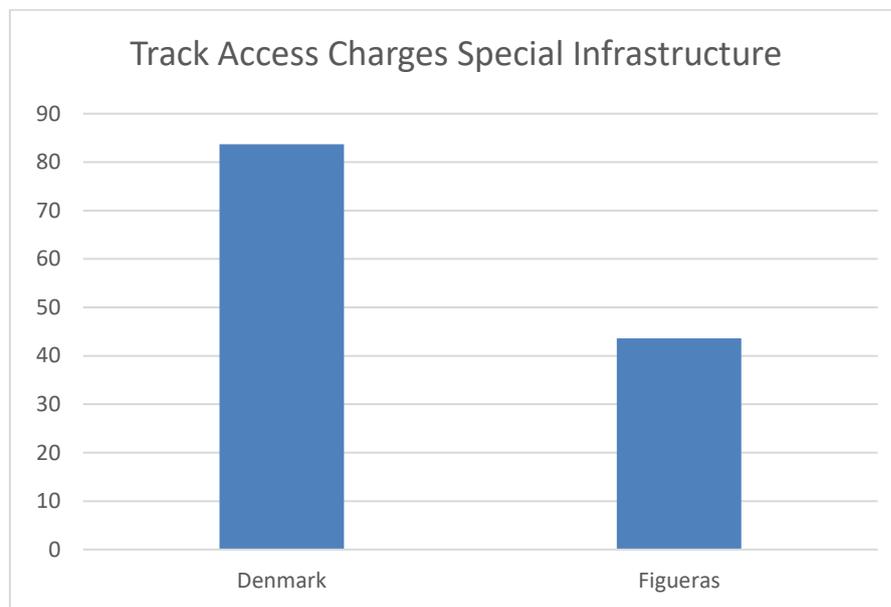


Figure 23: Track Access Charges for Special Infrastructure

We observe much higher track access charges than the charges shown in the previous graph for reasons explained above.

¹² For Denmark, there is also one international service on specific infrastructure (bridge).