FURTHER PASSENGER MARKET OPENING – SELECTION OF TARGET STATES FOR IMPACT ASSESSMENT

Methodology

The fundamental objective for the impact assessment work, as laid down in DG TREN's *Task Specification* is to "*assess the effects of the identified regulatory options on railway transport, on the economy, on social aspects, and environmental aspects in three Member States... By extrapolating the results obtained for the three selected Member States, the contractor will assess potential effects in the EU as a whole*".

The Task Specification listed eight areas against which potential market opening models should be assessed, this was expanded to the following eleven areas in the Consortium's proposal:

- safety;
- service levels on different market segments;
- quality and price for passengers;
- investment, turnover and profitability;
- state aids;
- market structure (development of low cost railway undertakings, concentration of the market?);
- passengers carried;
- modal share;
- infrastructure manager efficiency;
- regional cross-border services;
- service availability for different market segments (e.g. business users versus commuters and leisure market).

Section 6 of the Inception Report describes the methodology for undertaking the impact assessment work.

One of the cornerstones of the impact assessment work is the demand and modal share modelling work. This is being undertaken by Rapidis on behalf of the Consortium. This modelling work exceeds the requirement of the *Task Specification* in that it is being undertaken for all thirty states covered by the Study. There is therefore no need to select three sample states for this aspect of the work. Accordingly the focus in selecting the most suitable target states can be on other assessment aspects.

Evaluation Criteria

It is considered that the target states for the impact assessment should be selected according to the following criteria:

1. good balance of states for scaling up the results for the balance of the thirty states to be considered in the Study; thus
    i) there should be a mix of small/large states (geographically, population, and size of rail system);
    ii) there should be a reasonable geographic spread, including states in the "East" and "West", and across the "North/South split";
    iii) the economies of the target states should be developed to different levels (i.e. an ideal mix would be a state with an advanced economy, one whose GDP per capital is towards the EU average and one from a recent entry to the European Union), in the context of the Study the affluence of the population is the most critical factor;
    iv) the target states should be reasonably representative of the European passenger rail business, to permit the derived data to be applied in other states with similar characteristics; and
    v) the quantity of international and transit traffic should be low, since this part of the market will not be affected by domestic market opening, thus using a state with a high proportion of international and transit traffic would result in unacceptable distortions when the results are applied to other states;
    vi) the starting point for any enhanced market opening should ideally vary, although this Is not essential.
2. adequate data has to be available for the states in question.

The fourth criterion implies that three states chosen should also differ in the following areas:

- level of infrastructure charges;
- financial health of rail sector;
- scale of public funding provided;
- density of rail network;
- rural:urban split
- culturally, although this is less crucial than the other areas.

With three target states, it will be impossible to perform a regression analysis to assess the effects of all these parameters independently, but it is hoped that indicators of their effects can be obtained from the statistics collected.

Since the objective is to examine the impacts of possible market opening, it is a *sine qua non* that in a target state for impact assessment that the rail passenger market is currently dominated by incumbent.

The criteria discussed above are discussed in dedicated sub-sections below. To enable selection of an appropriate mix of target states for impact assessment in each case states have been classed into three groups. The delineation point between groups for each criterion has been pragmatic, so that, insofar as it is sensible and logical, the number of states in each group is broadly similar.

States Removed from Detail Consideration

Since the object of the exercise is to examine the impact of market opening on states where this has not occurred, states where significant rail passenger market opening has already occurred are not appropriate target states for the impact assessment work. Thus the Case Study states can be ignored:

- Germany
- Great Britain
- Italy
- Sweden

Similarly states that are not EU Member States cannot be representative of conditions in EU Member States, accordingly the following states are not suitable target states for the impact assessment work:

- Croatia
- Macedonia
- Norway
- Switzerland
- Turkey

Furthermore these states are very different from each other, thus none of these states can be regarded as being at all representative of all of the other non-EU Member States. Thus, no non-EU Member State can be selected as a representative of other non-Member States.

Finally, it is considered that two further states/regions can be immediately dismissed as suitable target states for impact assessment on the grounds of their unique characteristics and unusually small scale:

- Luxembourg
- Northern Ireland (although not a state in its own right it has a different regulatory structure for rail from the remainder of the United Kingdom, and was thus excluded from the case study that only considered Great Britain)

The location of both states adjacent to much larger neighbouring states makes the international dimension of passenger operations more significant than elsewhere in Europe, making the states atypical. Luxembourg had a rail network of 275 route km, 64 stations, and 316 million passenger km in 2007, 26.6% of which is international or transit. Northern Ireland had a rail network of 357 route km, with just 58 active stations, and 246 million passenger km in 2007-08. It would, however, be possible to examine the whole of the island of Ireland as a single impact assessment area (i.e. to consider Northern Ireland and the Irish Republic together).

Other states which although it is proposed to consider their similarity as target states for the impact assessment, could be argued as being unsuitable are:

- Estonia
- Hungary
- Lithuania
- Latvia

The issue with Hungary as a representative state is its policy of offering all senior citizens unlimited free travel on public transport[1]. The issue with the Baltic States is the unique conditions that they face, e.g. natural hinterland cut off, physical separation from remainder of EU, technical divergence of their rail systems from the remainder of those in the EU, etc. Although all four states are considered further herein, it is considered that selection of any of them would be sub-optimal and should be avoided if possible.

Remaining States

After removal of the states listed above as being unsuitable as target states for the purposes of the present exercise, a total of twenty states remain as follows:

Belgium
Bulgaria
Czech Republic
Denmark
Estonia
Ireland
Greece
Spain
France
Lithuania
Latvia
Hungary
The Netherlands
Austria
Poland
Portugal
Romania
Slovakia
Slovenia
Finland

Size of State & Rail System

For the purposes of the study there are three ways in which the size of a state might be measured:

- by geographic area;

[1] The corollary to this is that modal share for passenger rail is abnormally high (12.6% in 2007 on Eurostat figures, some 80% higher than the EU-12 average), which also severely limits the usefulness of Hungary as a target state.

- by population; and
- by size of national railway network.

The first of these is the least relevant measure: population and size of national railway network are far more relevant parameters for use scaling the results of the impact assessment work from the target states to the remainder of the EU. Nevertheless, the ideal target states will be those that can be consistently classed as 'large', 'medium sized' or 'small' across a range of measures.

Notwithstanding the above, a degree of variation between the three target states in terms of population density and rail network density would be useful to examine how different models might fare in higher or lower density applications, PROVIDED that the variation is within typical norms.

It is considered that in terms of geographic size the twenty states under consideration can be disaggregated into three groups as follows:

Above EU Average

France	544 k km^2
Spain	506 k km^2
Poland	313 k km^2
Finland	305 k km^2
Romania	230 k km^2

Below EU Average

Greece	131 k km^2
Bulgaria	111 k km^2
Hungary	93 k km^2
Portugal	92 k km^2
Austria	83 k km^2
Czech Republic	77 k km^2
Ireland	68 k km^2
Lithuania	63 k km^2

Less than 40% of EU Average

Latvia	62 k km^2
Slovakia	49 k km^2
Estonia	43 k km^2
Denmark	43 k km^2
The Netherlands	34 k km^2
Belgium	30 k km^2
Slovenia	20 k km^2

It is considered that in terms of population size the twenty states under consideration can be disaggregated into three groups as follows[2]:

Above EU Average

France	64.4 M
Spain	45.8 M

[2] Based on Eurostat data for 2009.

Poland	38.1 M
Romania	21.5 M
Below EU Average	
The Netherlands	16.5 M
Greece	11.3 M
Belgium	10.8 M
Portugal	10.6 M
Czech Republic	10.5 M
Hungary	10.0 M
Austria	8.4 M
Bulgaria	7.6 M
Less than 40% of EU Average	
Denmark	5.5 M
Slovakia	5.4 M
Finland	5.3 M
Ireland	4.5 M
Lithuania	3.3 M
Latvia	2.3 M
Slovenia	2.0 M
Estonia	1.3 M

It is considered that in terms of size of their railway networks the twenty states under consideration can be disaggregated into three groups as follows[3]:

Above EU Average	
France	29,981 km
Poland	19,419 km
Spain	15,012 km
Romania	10,777 km
Czech Republic	9,588 km
Hungary	7,942 km
Below EU Average	
Finland	5,899 km
Austria	5,818 km
Bulgaria	4.143 km
Slovakia	3,629 km
Belgium	3.374 km
Less than 40% of EU Average	
Portugal	2,838 km
The Netherlands	2,776 km
Denmark	2,646 km
Greece	2,551 km
Latvia	2,265 km
Ireland	1,919 km
Lithuania	1,766 km
Slovenia	1,228 km

[3] Based on Eurostat data for 2007.

Estonia 816 km

Figures 1 and 2 below show that population and rail network size are more consistent (and relevant) measures of a state's size in railway terms than geographic area.

Figure 1– Limited Correlation between State Area and Rail Network Size

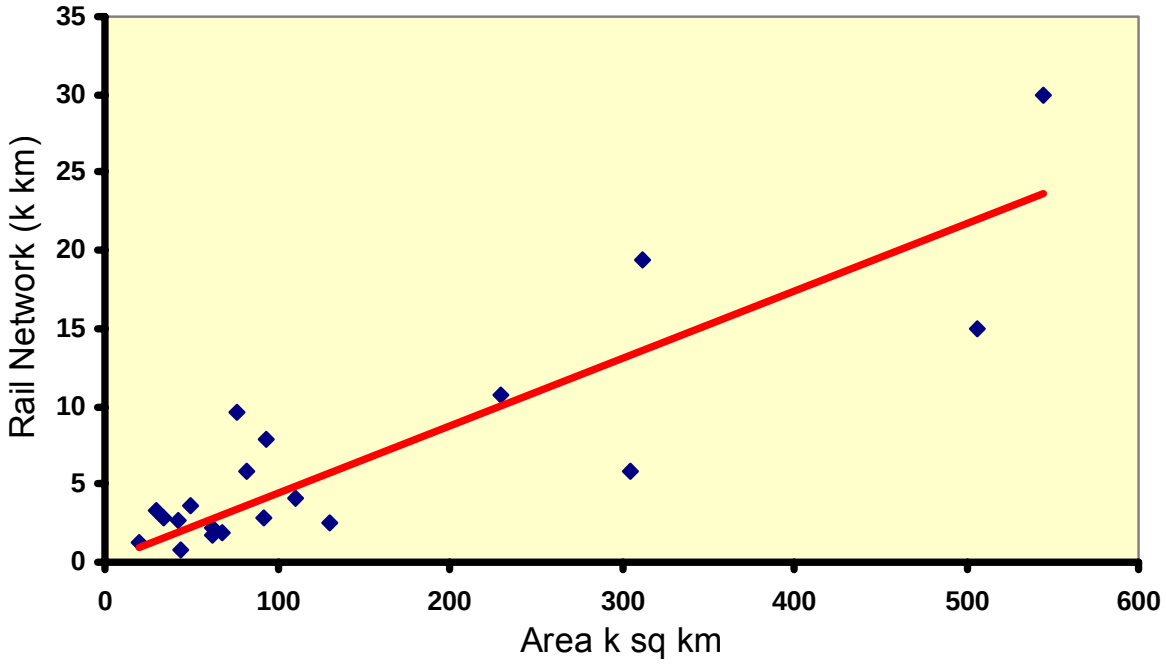
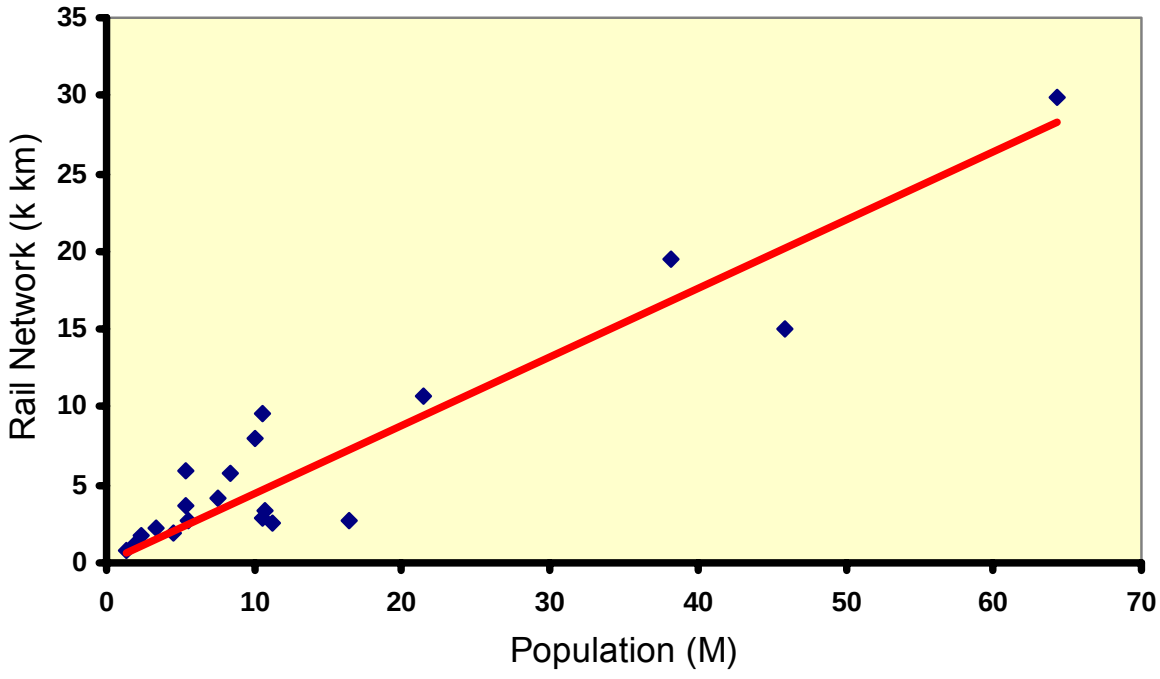


Figure 2 – Better Correlation between Population and Rail Network Size



On the basis of the above it can be seen that the states that most typically meet the criteria for being a large state in the context of the Study are:

- Spain
- France
- Poland
- Romania

The states that most typically meet the criteria for being a state of medium size are:

- Bulgaria
- Greece
- Hungary
- Austria
- Portugal

The states that most typically meet the criteria for being a state of small size are:

- Denmark
- Estonia
- Latvia
- Lithuania
- Slovenia

For the purposes of the Study, the remaining states can be classified as follows:

Belgium	Medium
Czech Republic	Medium
Ireland	Small
The Netherlands	Small-Medium
Slovakia	Small
Finland	Small-Medium

The following states have size characteristics that are particularly inconsistent when measured against the three criteria used:

- Finland
- The Netherlands

In consequence it Is considered that use of either Finland or the Netherlands as a target state would be sub-optimal and should be avoided.

It is further considered that in view of the need to scale results and the desirability of minimising the inevitable errors in interpolation/extrapolation, the use of exceptionally large or

small states should be avoided; accordingly it is considered that the following states would be unsuitable for use as target states:

- Estonia
- France
- Latvia
- Lithuania
- Slovenia

The issue is that exceptionally large or small states have characteristics that are singular to an unusual degree and are thus unrepresentative of the majority of states. It should be noted that there is an inverse problem in that extrapolating results from "more typical states" to these exceptionally large or small states will tend to be produce larger inaccuracies in the results for this group of states. To an extent these greater inaccuracies would be inevitable, and as it would be confined to a small number of (mainly small) states the overall inaccuracy at an EU level should not be great. Furthermore, it is considered that it will be possible to mitigate the problem by being aware of the issue and taking particular care when extrapolating results to exceptionally large or small states

Geographic Location

To ensure that the choice reflects all types of state, it is considered that the target states should include a state from the new Member States in Central and Eastern Europe, one state from Northern Europe and one state from Southern Europe. It is considered that, for the purposes of the Study, that the twenty states under active consideration can be classed as follows:

Central & Eastern European States
Bulgaria
Czech Republic
Estonia
Latvia
Lithuania
Hungary
Poland
Romania
Slovakia
Slovenia

Northern European States
Belgium
Denmark
Ireland
France
The Netherlands
Austria
Finland

Southern European States
Greece

Spain
France
Portugal

It will be noted that France appears as both a Northern and Southern European state, reflecting its position as bridge between Northern and Southern Europe. Austria is listed as a Northern European state, despite its historic role as the capital of Central Europe, as its economy is more aligned with Northern European states than those of the Central European states that acceded to European Union in 2004.

Affluence

For the purposes of this exercise it is considered that the level of affluence can be measured by GDP per capita and can be divided into three groups as follows[4]:

Most Affluent (>115% of EU average)

Ireland	148%
The Netherlands	132%
Austria	123%
Denmark	121%
Finland	118%
Belgium	116%

Median (85%-115% of EU average)

France	109%
Spain	105%
Greece	93%
Slovenia	89%

Least Affluent (<85% of EU average)

Czech Republic	80%
Portugal	76%
Estonia	69%
Slovakia	68%
Hungary	63%
Lithuania	59%
Latvia	56%
Poland	54%
Romania	42%
Bulgaria	38%

In view of the need to scale results it is considered that states with unusually high or low GDP per capita levels should be avoided. Accordingly it is considered that the following states would be unsuitable for use as target states:

- Bulgaria
- Ireland
- The Netherlands

[4] Based on Eurostat data for 2007.

- Romania

Other Issues

Level of Infrastructure Charges

Comparison of infrastructure charges between states is a task that is particularly fraught, given the dissimilarity of charging structures and the different cost bases between states. There has been a considerable body of work undertaken on the subject, much of which has been confined to comparison of a few states. The issue is further confused by the wildly differing answers produced by different studies for the same state, driven in part by the complexity of charging structures, so that even the same type of train travelling on the same tracks can incur radically different charges. The most comprehensive, authoritative, study is considered to be *Charges for the Use of Rail Infrastructure 2008*, produced by Thompson Galenson and Associates for the International Transport Forum. Accordingly the values given this document have been used herein, which it should be noted are based on standardised assumptions in respect of train formation, journey length and stopping pattern; further assumptions were made about the mix of lines used where differential charges apply.

In respect of "regional, local and suburban" trains, the twenty states under consideration can be disaggregated into three groups as follows:

High Charges

Slovakia	5.20 euros/train km
France	4.95 euros/train km
Hungary	4.00 euros/train km
Latvia	3.98 euros/train km
Lithuania	2.77 euros/train km
Austria	2.77 euros/train km

Medium Charges

Belgium	2.61 euros/train km
Romania	2.54 euros/train km
Slovenia	2.30 euros/train km
Spain	1.50 euros/train km
The Netherlands	1.45 euros/train km
Portugal	1.40 euros/train km

Low Charges

Bulgaria	1.00 euros/train km
Czech Republic	0.80 euros/train km
Estonia	0.78 euros/train km
Poland	0.68 euros/train km
Finland	0.35 euros/train km
Denmark	0.26 euros/train km

In respect of "intercity" trains, the twenty states under consideration can be disaggregated into three groups as follows:

High Charges

Lithuania	4.60 euros/train km
Belgium	4.51 euros/train km

Latvia	3.88 euros/train km
Bulgaria	3.50 euros/train km
France	3.10 euros/train km
Romania	2.52 euros/train km
Medium Charges	
Hungary	2.50 euros/train km
Austria	2.40 euros/train km
Slovenia	2.20 euros/train km
Slovakia	1.80 euros/train km
Estonia	1.68 euros/train km
The Netherlands	1.62 euros/train km
Low Charges	
Spain	1.50 euros/train km
Czech Republic	1.40 euros/train km
Portugal	1.40 euros/train km
Poland	0.96 euros/train km
Finland	0.76 euros/train km
Denmark	0.26 euros/train km

On the basis of the above, it can be seen that the following states can be classed as having high infrastructure charges for passenger trains:

- Belgium
- France
- Hungary
- Lithuania
- Latvia
- Austria (note could also be classed as in the medium group)

On the basis of the above, it can be seen that the following states that have infrastructure charges in the median group for both categories of passenger trains analysed:

- Spain
- The Netherlands
- Romania
- Slovenia

On the basis of the above, it can be seen that the following states can be classed as having low infrastructure charges for passenger trains:

- Czech Republic
- Denmark
- Estonia
- Poland
- Portugal (note could also be classed as in the medium group)

- Finland

The following states have charging levels for passenger services that are inconsistent:

- Bulgaria
- Slovakia

In consequence it Is considered that neither Bulgaria nor Slovakia should be used as target states. The structure of infrastructure charges in Belgium are also considered to be somewhat inconsistent, accordingly this is considered to be a sub-optimal choice of target state.

It is not considered that any states can be excluded on the grounds that their infrastructure charges or either abnormally high or abnormally low, since although there is a difference of more than an order of magnitude between the highest and lowest charges, there is substantial compatibility within the highest and lowest group.

Financial Health of Rail Industry & Public Support

On the basis of the available information, it is considered that there are three aspects which are relevant to the ranking and selection of target states for impact assessment:

- level of funding (PSO + infrastructure support), this is a measure to indicate which states may be providing insufficient public support to rail;
- financial situation of the incumbent RU, this is based on the net operating profit and is indicative of the financial stress of the incumbent RU and the need for restructuring;
- the level of dependency on public funding.

Information for all EU states is available on the first bullet point above, but not for the others.

In respect of the level of funding, it is considered that the twenty states under detail consideration can be disaggregated into three groups as follows (the figure quoted is the percentage of the EU average funding per track km per annum)[5]:

High Level of Funding	
The Netherlands	367%
Belgium	352%
Denmark	208%
Ireland	183%
France	143%
Greece	112%
Moderate Level of Funding	
Slovenia	61%
Austria	51%
Finland	45%
Spain	44%

[5] Source CER paper 19 March 2010, itself based on Eurostat and OECD data.

Low Level of Funding

Hungary	38%
Slovakia	15%
Portugal	12%
Czech Republic	11%
Estonia	5%
Latvia	3%
Poland	3%
Bulgaria	2%
Lithuania	1%
Romania	0%

In respect of the financial situation of the incumbent, based on *Separation of accounts of railway undertakings and rail infrastructure managers" carried out on the request of the European Commission*, undertaken by RGL Forensics for the European Commission in July 2009, the financial position of the incumbent in each state can be categorised as follows

Good

Denmark
France
The Netherlands

Negative

Belgium
Bulgaria
Greece
Spain
Portugal
Romania

Critical

Czech Republic
Ireland
Lithuania
Latvia
Hungary
Austria
Poland
Slovenia
Finland

Information is not available for Estonia and Slovakia.

The information on the importance of public funding has also been derived from data given in the RGL Forensics report, from this data states can be disaggregated into three groups as shown below. The figures in the first column below is the percentage of total revenue provided from public funds, while that in the second column is the figure as a percentage of the average, the aim of this figure is to emphasise the importance of funding for PSOs and to indicate the possible impact of competition for PSO funding:

Heavy Dependency on Public Funding

Denmark	74%	276%

Slovakia	65%	243%
Estonia	50%	187%
Belgium	47%	175%
Lithuania	46%	173%
Ireland	45%	168%
Romania	43%	161%
Poland	31%	115%
Moderate Dependency on Public Funding		
France	24%	90%
Austria	23%	88%
Czech Republic	19%	73%
Spain	19%	71%
Portugal	13%	47%
Low Dependency on Public Funding		
Slovenia	12%	44%
Latvia	7%	27%
Hungary	2%	7%
Bulgaria	0%	0%
Greece	0%	0%
The Netherlands	0%	0%
Finland	0%	0%

It should be noted that the weakness of the above measure is that it does not recognise the heavy and growing debt burden being accumulated by the national rail system in some states (e.g. Greece and Portugal).

Overall, it is considered that for the purposes of this study that the passenger railway systems in the following states can be considered as being well funded and financially stable:

- Belgium
- Denmark
- France
- The Netherlands

Overall, it is considered that for the purposes of this study that the passenger railway systems in the following states can be considered as receiving a moderate level of funding funded and are in a reasonable financially condition:

- Bulgaria
- Ireland (moderate to poor financial situation)
- Spain
- Austria
- Slovenia (moderate to poor financial situation)
- Finland

Overall, it is considered that for the purposes of this study that the passenger railway systems in the following states can be considered as being underfunded and financially weak:

- Czech Republic
- Greece (ranked downwards to railway debt problem)
- Hungary
- Lithuania
- Latvia
- Poland
- Portugal
- Romania

Incomplete financial information is available for the following states:

- Estonia
- Slovakia

It is therefore considered that Estonia and Slovakia should not be considered as target states for the impact assessment work.

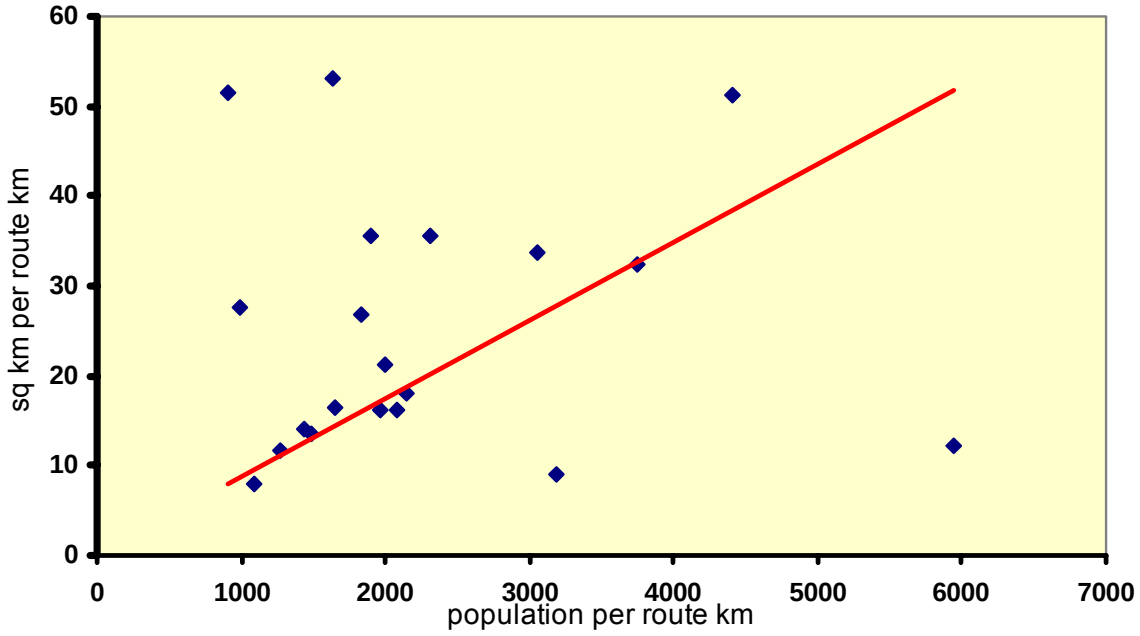
Rail Network Density

As noted above, it is desirable that the target states cover a range of network densities (for example open access options are more likely to be successful where the population density is highest, i.e. where potential traffic levels are greater). However, it is important to exclude any states with exceptionally high or low network densities, as this would increase the inaccuracies of data interpolation/extrapolation from the target states.

Rail network density can be expressed either in terms of landmass area or population. It is suggested that the latter is the more useful definition, since a state's rail networks tend to be most dense in the major centres of population, while large uninhabited tracts of land tend to have little more than the odd isolated line (e.g. Northern Scandinavia), thus the typical characteristics of a national rail network tend to be driven by more the more populous parts of a nation. Accordingly, rail network density per unit of population is used as the measure herein.

The lack of correlation between the two measures of network density, and hence the need to use only the most appropriate measure is shown in Figure 3. For the record the two furthest outlying states above the trend line are Estonia and Finland, while the two furthest outlying states below the trend line are The Netherlands and Belgium.

Figure 3 Population per Route km Plotted Against Area per Route km



On the basis of the data given above, the population density per network km, expressed as a proportion of the EU average, for the twenty states under active consideration is as follows:

Above EU Average	
The Netherlands	252%
Greece	188%
Portugal	159%
Belgium	135%
Spain	130%
Below EU Average	
Ireland	99%
France	91%
Denmark	89%
Romania	85%
Poland	83%
Lithuania	81%
Bulgaria	78%
Less than 75% of EU Average	
Slovenia	70%
Estonia	70%
Slovakia	63%
Austria	61%
Hungary	54%
Czech Republic	46%
Latvia	42%
Finland	38%

It is considered that any state outside the range of 50% to 150% of the average EU population density per rail network km would be undesirable for use as a target state. Accordingly the use of the following states should be avoided as a target state, insofar as this is possible:

- Czech Republic
- Greece
- Latvia
- The Netherlands
- Portugal
- Finland

Rural:Urban Split

States where higher proportions of the population are concentrated in urban areas naturally offer greater potential for point-to-point journeys, a market in which rail tends to be more competitive against rival modes. Furthermore states where the majority of the population is urbanised have a concentration on commuter services and express services between major centres of population in the passenger rail sector. In contrast, although commuter and express services are still important in states with a predominantly rural population[6], regional services form a much larger part of the rail offer than in heavily urbanised states, and the stopping pattern for express services tends to become more frequent. It is therefore desirable that the target states encompass examples of both states that are predominantly rural and states that are predominantly urban in nature.

The classification of the rural:urban split follows the approach adopted by Eurostat which disaggregates states and their population into as being in either a *densely populated area*, an *intermediate area*, or a *thinly populated area*. Essentially, densely populated areas equate to cities, intermediate areas as suburban areas surrounding cities and large towns, while thinly populated areas can be considered as predominantly rural in nature.

For the purposes of the present exercise, it is considered that the twenty states under detail consideration can be disaggregated into three groups as follows (the first figure quoted after each state relates the percentage of the population living in *thinly populated areas*, the second gives the percentage living in *intermediate areas*, and the third the percentage living in *densely populated areas*)[7]:

Predominantly Urban			
The Netherlands	2.3%	34.3%	63.4%
Belgium	4.9%	40.2%	54.9%
Portugal	24.4%	31.7%	43.9%
Spain	27.3%	21.1%	51.5%
France	34.8%	19.8%	45.3%
Greece	38.9%	11.9%	49.2%

6 Not least because these are segments of the market in which passenger rail is most competitive.

7 Eurostat data largely based on 2001 census data. Note that in most EU states there is a tendency towards increasing urbanisation of population; accordingly the figures given are likely to result in slight overstatement of the rural population.

Mixed			
Denmark	36.4%	29.1%	34.6%
Czech Republic	39.8%	24.9%	35.3%
Austria	40.0%	25.3%	34.7%
Poland	42.8%	16.4%	40.9%
Hungary	45.4%	22.4%	32.2%
Slovenia	46.7%	34.1%	19.2%
Slovakia	49.0%	27.1%	23.9%
Predominantly Rural			
Estonia	52.0%	2.0%	46.0%
Latvia	52.9%	1.3%	45.8%
Finland	56.5%	16.8%	26.8%
Lithuania	58.4%	0.0%	41.6%
Ireland	58.7%	6.2%	35.2%

The following states have an urban bias that is wholly unrepresentative of the remainder of the potential target states:

- Belgium
- The Netherlands

It is therefore considered that Belgium and The Netherlands should not be considered as target states for the impact assessment work.

Transit Traffic

As noted above a state with a high level of international and transit traffic is undesirable as a target state in view of the distortions that this would cause when trying to extrapolate the impact of domestic market opening. It is considered if 10% or more of a state's passenger traffic is international or transit in nature then it would be unsuitable as a target state, and if the value is only slightly below 10% then its selection would be undesirable. Based on the values given in DG TREN's 2009 report on rail market monitoring: the proportion of international and transit traffic for the states under detail consideration are as follows:

Above Threshold	
Slovenia	15.0%
Austria	14.0%
Close to Threshold	
Estonia	9.9%
Lithuania	9.8%
France	9.2%
Belgium	9.1%
Slovakia	9.0%
Latvia	8.8%
Satisfactory	
Denmark	6.9%
Czech Republic	5.6%
Ireland	5.4%
Hungary	4.3%

Greece	4.0%
Spain	3.1%
Poland	2.9%
Finland	2.7%
Bulgaria	2.6%
Romania	2.0%
The Netherlands	1.6%
Portugal	1.4%

Therefore neither Austria nor Slovenia should be used as target states, while Belgium, Estonia, France, Lithuania, Latvia and Slovakia would be sub-optimal choices.

Development of Structures for Market Opening

Not all states would start any enhanced market opening process from the same position; it would therefore be interesting to explore target states starting from differing positions, although it is nevertheless a prerequisite for a target state that market opening either has not taken place or is limited in extent.

As instructed by Commission Services, the position in each state has been assessed using the proportion of the total rail passenger market held by the incumbent, which can derived from Annex 12b to the Commission Staff Working Document of 18 December 2009, accompanying the Report from the Commission to the Council and the European Parliament on Monitoring Development of the Rail Market.

The twenty target states under detail consideration have been disaggregated into three groups, as follows (all figures rounded to nearest 1% for data consistency reasons):

Total Domination by Incumbent (98-100% share)

Belgium	100%
Ireland	100%
Greece	100%
Spain	100%
France	100%
Lithuania	100%
Hungary	100%[8]
Slovenia	100%
Slovakia	100%
Finland	100%
Bulgaria	99%
Romania	99%
The Netherlands	98%

Domination by Incumbent (85-97% share)

Denmark	91%
Latvia	91%
Poland	89%
Austria	88%

[8] Figure includes GySEV, which is effectively an incumbent.

Significant Market Penetration by non-Incumbents (Incumbent Share <85%)

Estonia	42%

Data is not available for the Czech Republic or Portugal; however, the consortium consider that for the purposes of the current exercise the Czech Republic can be considered as being totally dominated by the incumbent (only two very small standard gauge rivals to ČD in 2009), while Portugal can be classed as being dominated by the incumbent.

It is considered that Estonia would not be a suitable target state as it since, as noted above, market domination by the incumbent is a *sine qua non*, Estonia can therefore be regarded as a market that has already been opened; accordingly it has been deleted from further consideration herein.

Appraisal

The analysis described above is presented in matrix format in Table 1. In this table the grouping applied above for each combination of criterion and state is given. In general the group is marked as "H", "M" or "S", which stand for "high"/"large", "medium" and "small" in accordance with the assessment above. The convention for geographic location is: E = Central and Eastern Europe, N = Northern Europe, and S = Southern Europe. "X" indicates that no data is available for the state for the criterion concerned (e.g. failure to publish infrastructure charges). The convention for rural:urban split is U = predominantly urban, M = mixed, and R = predominantly rural. The convention for transit traffic is: Y = suitable for selection as target state, ? = would be a sub-optimal selection as a target state, and N = not suitable for selection as target state.

In most cases these groups are marked in green, indicating that there are no issues with selection of the state in question in respect of the criterion in question; however, in a few cases the mark is applied in orange or red. Orange letters indicated that that there is an issue that makes it undesirable to select the state in question, for the reasons discussed above, while red letters indicate that there is a factor that would make the use of the state in question unsuitable as a target state for the impact assessment work.

Table 2 removes the states with aspects that make then unsuitable as target states for the impact assessment work, leaving a total of seven states available for selection, of these a further four states (Czech Republic, Hungary, Portugal, and Finland) have aspects that make it undesirable to use them as target states. There are thus three states remaining that would make the best target states: Denmark, Spain and Poland.

Table 1 – Initial Appraisal Matrix

State	Size	Geographic Location	Affluence	Infrastructure Charges	Finances	User Density	Rural:Urban Split	Transit Traffic	Developmt of Mkt Structs
Belgium	M	N	H	H	H	H	U	?	L
Bulgaria	M	E	S	M	M	M	X	Y	L
Czech Rep.	M	E	S	S	S	S	M	Y	L
Denmark	S	N	H	S	H	M	M	Y	M
Ireland	S	N	H	X	S-M	M	R	Y	L
Greece	M	S	M	X	S	H	U	Y	L
Spain	H	S	M	M	M	H	U	Y	L
France	H	N-S	M	H	H	M	U	?	L
Lithuania	S	E	S	H	S	M	R	?	L
Latvia	S	E	S	H	S	S	R	?	M
Hungary	M	E	S	H	S	S	M	Y	L
Netherlands	S-M	N	H	M	H	H	U	Y	M
Austria	M	N	H	M-H	M	S	M	N	M
Poland	H	E	S	S	S	M	M	Y	M
Portugal	M	S	S	S	S	H	U	Y	M

State	Size	Geographic Location	Affluence	Infrastructure Charges	Finances	User Density	Rural:Urban Split	Transit Traffic	Developmt of Mkt Structs
Romania	H	E	S	M	S	M	X	Y	L
Slovakia	S	E	S	M-H	X	S	M	?	L
Slovenia	S	E	M	M	S-M	S	M	N	L
Finland	S-M	N	H	S	M	S	R	Y	L

Table 2 – Appraisal Matrix with Unsuitable States Removed

State	Size	Geographic Location	Affluence	Infrastructure Charges	Finances	User Density	Rural:Urban Split	Transit Traffic	Developmt of Mkt Structs
Czech Rep.	M	E	S	S	S	S	M	Y	L
Denmark	S	N	H	S	H	M	M	Y	M
Spain	H	S	M	M	M	H	U	Y	L
Hungary	M	E	S	H	S	S	M	Y	L
Poland	H	E	S	S	S	M	M	Y	M
Portugal	M	S	S	S	S	H	U	Y	M
Finland	S-M	N	H	S	M	S	R	Y	L

In the case of Hungary, Portugal and Finland either the nature of the national passenger railway system or the environment within which it operates is so singular that it is considered that it would be wholly undesirable to use any of these three states as target states.

States Recommended as Target States for Impact Assessment

As can be seen from Tables 1 and 2 there are only three states that meet all the required criteria without reservation:

- Denmark
- Spain
- Poland

These three states also provide a good cross-section of the diverse characteristics required from the three target states:

Size:	2 Large, 1 Small
Geographic Spread:	1 Central & Eastern European, 1 Northern, 1 Southern European
Affluence:	1 Most affluent, 1 Median affluence; 1 Least affluent
Infrastructure Costs:	1 Median infrastructure charges, 2 low infrastructure charges
Finance & Public Support:	1 Well funded & financially stable. 1 moderately well funded & moderately stable, 1 underfunded & financially weak
User Density:	1 High, 2 Medium
Rural:Urban Split:	1 Predominantly urban, 2 Mixed
Development of Structures:	1 Poorly developed, 2 Weakly developed

Fortuitously, these three states are also considered to be feasible states to gather data for: the Consortium is well placed to gather data as its principals are based in Denmark and Spain. It is considered possible to gather the necessary information in Poland as well through the Consortium's contacts.