

Summary Report

Internalisation of external costs

-

Direct impact on the economies of the individual EU Member States, and the consequences on the European road haulage industry

Stefan Rommerskirchen

Markus Drewitz

Lutz Ickert

Simon Rikus

Contents

	page
1 Methodology	1
2 Quantification of road user charges including external costs	7
3 Consequences of the introduction of the internalisation of external costs	9
3.1 Surplus or deficit for study countries with regard to the national economy	9
3.2 Surplus or deficit for study countries with regard to road hauliers	12
3.3 Consequences	16
3.4 Comparison of scenarios for introducing external costs	17
4 Conclusion: Main study results	25

prog*trans*

1 Methodology

The European Commission proposed a revision of Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures¹ in August 2008 (hereinafter called “Revised Eurovignette Directive”), which introduces the “internalisation of external costs” as a potential future part of the road user charges. In the “Handbook”² published on behalf of the European Commission (EC) in early 2008, the scope of external costs is approached from a wide perspective. This handbook indicates examples of what the EC considers to be external costs and sets out cost rates for them in the form of possible road user charges, in addition to direct road cost related charges. Within the next few years, discussions with regard to elements and rates of additional charges coupled with various implementation proposals can be expected.

As a result, the International Road Transport Union (IRU) commissioned a scientific and independent study to be conducted by ProgTrans in order to analyse the impacts such proposals would have on:

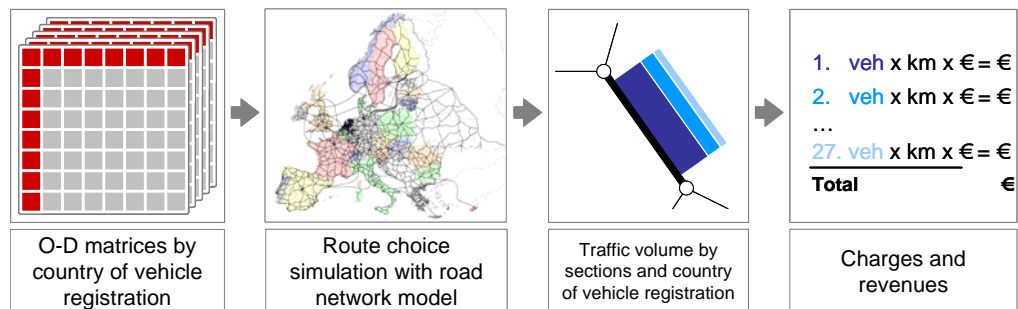
- the road user charge revenues collected by the individual EU Member States;
- the costs related to road user charges which have to be paid out of the economy of the individual EU Member States in the context of road freight transports; and
- the costs related to road user charges which have to be paid by the national road hauliers of the individual EU Member States.

As a first step in the calculation of the study’s findings, a traffic model was established, simulating the European traffic flows. The second step was to calculate the road user charges based upon the modelling results and assumed charge rates (cf. Figure 1).

¹ Cf. Commission of the European communities: Proposal for a Directive of the European Parliament and of the Council amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures. COM(2008) 436 final. Brussels, 8.7.2008; and COM(2008) 436 final/2. Brussels, 8.8.2008.

² Cf. CE Delft et al. (processors). Handbook on estimation of external costs in the transport sector, Version 1.1. Commissioned by the European Commission (DG TREN). Delft, February 2008.

Figure 1: General approach



The basis for the modelling and the calculations of the road user charges and external costs are traffic data taken from the European Union’s Statistical Office “Eurostat”, which provide the traffic demand per year reported in **O**igin-**D**estination matrices (O-D-matrices) differentiated by the reporting countries carrying out the transport. These matrices contain the exports and imports and their linkage (from all origins to all destinations). The matrices cover the 27 countries included in this study: the 27 Member States of the European Union excluding Cyprus and Malta plus the two non-EU-Member States, Norway and Switzerland. Before simulating the traffic on the network model, the tonnes transported were converted into vehicle trips by using country specific “load factors” (tonnes per HGV or tonne-kilometres per HGV-kilometre) which were also derived from official Eurostat statistics.

The traffic model was then used to simulate the route choice of the vehicle flows in the European road network for all heavy goods vehicles and not only the best or the shortest way (e.g. in Alpine crossing traffic the preference for the Brenner motorway, thus bypassing Switzerland, was put into the model). Therefore, all 27 matrices, disaggregated by country of registration, have been used as input for the simulation. The traffic model is calibrated by real traffic counting data from different surveys at some main locations in the European network. The result of the choice of route is the traffic volume shown as the number of vehicles for each link, disaggregated by country of registration.

In addition to the base year matrices and traffic assignment for 2007, matrices have been prepared for the two forecast years 2020 and 2030. For this purpose, the transport volumes of 2007 were extrapolated by growth factors taken from the ProgTrans European Transport Report 2007/2008.

The results of the modelling show, for the first time ever, the costs of road user charges paid by the European road hauliers in 2007, 2020 and 2030 from **three different perspectives**:

- The **road user charges paid by national road hauliers in inland transport and transport abroad** disaggregated by the countries of operation, or more precisely, the countries where the vehicles are registered disaggregated by countries where the costs arise;
- The **road user charge revenues by country from national and international road hauliers**, disaggregated by nationality of the vehicle fleets which have to pay the charges.
- The **total charge costs for the economy by country studied in national and foreign trade transport**, or in other words, the total road user charges in the respective countries which have to be paid for by their inland and international trade transport irrespective of the nationality of the vehicles conducting the transport.

In addition to these three perspectives, the road user charge surpluses or deficits were derived by comparing the charges collected and those paid, differentiated by the surplus or deficit for the economy and for the road hauliers of the individual countries:

- **Road user charge surplus/deficit for study countries with regard to the national economy**: This first view balances the total road user charge revenues collected by a country from all (national and foreign) trucks against the total road user charges paid for national and international transports out of the economy of that country, resulting in a net distribution effect of road user charges with regard to the whole economy. From an economic point of view the net distributional effects arise from the balance between the national revenues from road user charge and the burdening of the country specific economy from road user charges. In example of a negative distributional effect (deficit), the national income loss is equivalent to the amount of this deficit.
- **Road user charge surplus/deficit for study countries with regard to the road hauliers**: This second view accumulates the total revenues from road user charges collected by a country from all (national and foreign) trucks minus the total road user charges paid nationally and abroad by trucks registered in that country. A deficit signifies that the road

user charge revenues of a given country are inferior to the amount of road user charges paid by the trucks registered in that country. A surplus corresponds to more revenue being collected by a country than the charges paid by its vehicle fleet. The results from this view show the net distribution effect of road user charges with regard to road hauliers. From an economic point of view the net distributional effects arise from the balance between the national revenues from road user charges and the burdening of the country specific hauliers from road user charges for inland transport and transport abroad. In example of a negative distributional effect (deficit), the national income loss is equivalent to the amount of this deficit.

As the scope of road user charges and external costs varies according to the externalities being included, and in order to represent results on that basis, a Base Case and four scenarios were established:

- The **Base Case** was only used to produce calculations for 2007 – based on the current directive 2006/38/EC of 17th May, 2007³ – in order to calibrate the traffic model and the model for quantifying the balances.⁴
- The “**Base case plus**” scenario was built on the traffic demand of 2007, 2020 and 2030, calculating the situation of road user charging in 2009, 2020 and 2030. The charge rates have been changed to the level of 2009 and, additionally, the introduction of distance-related road user charges is assumed in those countries not yet having introduced distance-related road user charges.
- The additional three scenarios, namely: The “**European Commission case**”, “**Handbook minimum case**” and “**Handbook maximum case**”, are based on the 2008 European Commission proposal to revise the Eurovignette Directive and on the “Handbook on estimation of external costs in the transport sector”.

³ Cf. European Commission 1999. Directive 1999/62/EC of the European Parliament and of the Council on the charging of heavy goods vehicles for the use of certain infrastructures. COM(2008) 436 final/2. Commission of the European communities. Brussels 1999

⁴ Comment: Latvia, Estonia and Finland do not raise any road infrastructure charges in the Base Case 2007.

The results are calculated for the three perspectives in each of the four scenarios for the years 2009 as well as the two forecast years 2020 and 2030. Hence, the scenarios point out two different paths for the future development of road user charge revenues and costs:

- The first development path leaves road user charge rates unchanged, only transport demand and, hence, vehicle mileage will change up to 2030 (**time path**).
- In the second path, the impact of varying charge rates between the different scenarios is analysed (**scenario path**).

Figure 2: Scenario cases

Year	Base case	Base case+	EC case	Handbook minimum case	Handbook maximum case
2007	No. 1				
2009		No. 2	No. 5	No. 8	No. 11
2020		No. 3	No. 6	No. 9	No. 12
2030		No. 4	No. 7	No. 10	No. 13

The European Commission case as well as the two Handbook cases reflect, in addition to the road infrastructure costs, the integration of the external and congestion costs into the road user charging system. The charge rates for the external costs are taken from the Handbook and the 2008 proposal to modify the “Revised Eurovignette Directive”. These sources include a number of externalities and allocate costs to them. Table 1 gives a brief overview of the maximum and minimum charge rates for the relevant external costs:

Table 1: Charge rates for external costs from the Handbook and the proposal of the “Revised Eurovignette Directive” 2008

External costs	Handbook		EC Annex III	Comments
	minimum	maximum		
	EUR per vkm			
Congestion and scarcity costs	0.0000	3.1500	0.0200	
Accident costs	-0.0077	0.0077		Variation by country
Air pollution cost	0.0140	0.1490	0.0600	Variation by vehicle classes
Noise costs	0.0006	0.3098	0.0180	
Climate change	0.0030	0.0410		Variation by vehicle classes
Other external costs				
Soil and water pollution	0.0000	0.0105		
Up- and downstream proc.	0.0119	0.0273		Variation by vehicle classes
Total EUR per vkm	0.0218	3.6953	0.0980	

Source: CE Delft 2008, European Commission 2008

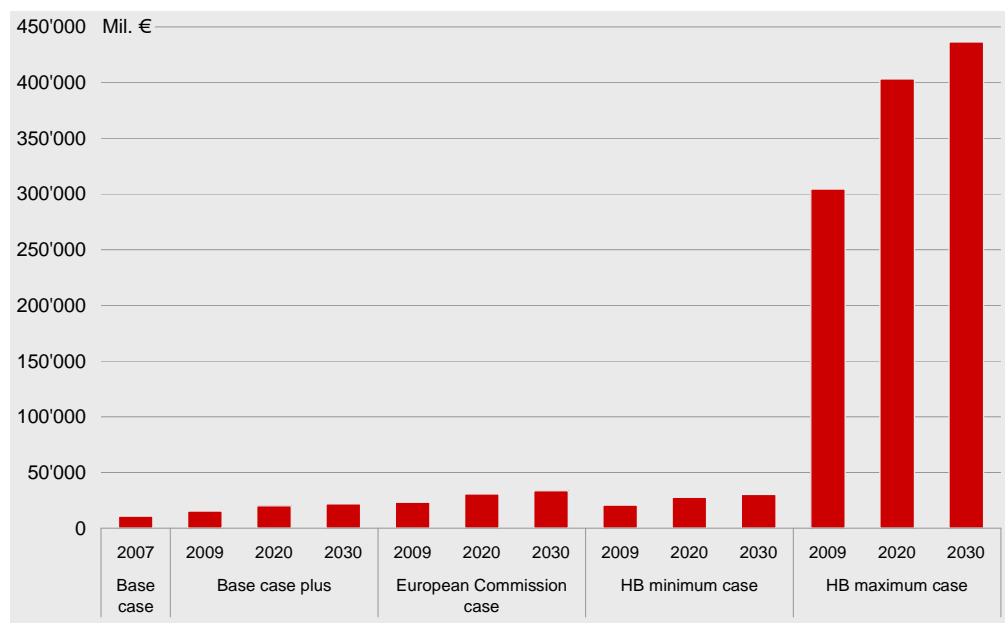
For the (negative) accident costs, published in the Handbook and shown in Table 1, the following assumptions by the authors of the Handbook were made: “For the lower margin [...] the average accident risk is internalised by the transport users. Based on this assumption and due to the under proportional increase in the number of accidents with increasing traffic volumes and the fact that payments of insurances and social security to traffic accident victims are considered, the results are negative marginal costs. The upper margin is calculated following the assumption that the average accident risk is **not** internalised.”⁵

⁵ Cf. CE Delft et al. (processors). Handbook on estimation of external costs in the transport sector, Version 1.1. Commissioned by the European Commission (DG TREN). p. 44, Delft, February 2008.

2 Quantification of road user charges including external costs

Based on the charge rates and the scenario definition, the road user charges have been calculated for the respective years and scenarios. Figure 3 provides the results of the analysis and simulation and, thus, an overview of the total road user charges for each scenario, for the base year 2007 and the study years 2009, 2020 and 2030.

Figure 3: Total road user charges for all 27 study countries by scenarios and years (in Mil. EUR)



The **European Commission** case is based on traffic demand and charge rates from the Base case plus scenario. In addition to the charge rates of that scenario, the relevant external costs for congestion, air pollution and noise presented in the 2008 Eurovignette proposal are included.

This also applies to the **Handbook minimum and maximum case**. The Base case plus scenario and the relevant charge rates provide the basis for the two Handbook cases but, in addition, the 7 external cost units shown in Table 1 are included.

The differences between the Base case plus scenario on the one hand and European Commission case and the two Handbook cases on the other reflect the **integration of the external and congestion costs** into the road user

charging system. These differences can easily be calculated from the data shown in Table 2:

Table 2: Overview of scenario results 2007, 2009, 2020 and 2030

Year	Road user charge revenues [in Mil. EUR]				
	Base case	Base case plus	European commission case	Handbook minimum case	Handbook maximum case
2007	10'655	-	-	-	-
2009	-	15'294	23'255	20'689	304'338
2020	-	20'031	30'679	27'581	403'272
2030	-	21'788	33'584	30'247	436'591

It can be seen that the implementation of the planned measures by the European Commission would lead to significant increases in charging costs compared to today's situation, i.e. the **Base case 2007**, in which the road hauliers already paid 10.5 billion EUR in road charges in the countries out of the 27 study countries which had already introduced road charges.

For 2009 (**Base case plus**), distance-related road user charges have been introduced for all countries, including those that have not yet introduced such charges. This results in an increase of 44 % compared to the Base case 2007, which brings the total road user charges to 15 billion EUR in 2009 and close to 22 billion EUR in 2030.

Because of comparably high charge rates in the **EC** and the **Handbook minimum** case, the charging results are reasonably close to each other. However, with 23.3 billion EUR in the EC and 20.7 billion EUR in the Handbook minimum case, the total road user charges will have more than doubled in 2009 as compared to the Base case 2007. By 2030 the total road user charges in both cases will have more than tripled, resulting in 30.3 and 33.6 billion EUR.

Due to the full internalisation of congestion costs of more than 3 EUR per vkm, as mentioned in the **Handbook maximum case**, the road user charge revenues for 2009 would be a staggering 29 times or 293 billion EUR higher than in the Base case 2007. If this scenario was to be introduced, road hauliers would be charged 304.3 billion EUR in 2009 and 436.6 billion EUR in 2030.

3 Consequences of the introduction of the internalisation of external costs

The road user charge surpluses or deficits have been derived from a comparison of the collected charges with those paid, differentiated by surplus or deficit for the national economy and for the road hauliers of the individual countries.

3.1 Surplus or deficit for study countries with regard to the national economy

The **Road user charge surplus or deficit** for the study countries has been calculated **with regard to the national economy**. The study balances the total road user charge revenues collected by a country from all (national and foreign) trucks against the total road user charges paid for national and international transports by the economy of the same country, resulting in a net distribution effect of road user charges on the national economy of the study countries. This means that a member state with a surplus could directly or indirectly (e.g. general tax reduction) refund (all) road user charges back into its own economy and achieve an extra “surplus” for covering the general state budget. For example, Germany could grant general tax refunds of up to 20 billion EUR and France up to 23 billion EUR without there being any influence on the general budget, these refunds being financed only by other economies. On the other hand, Member States with a deficit would need to consider that their national income would decrease by the amount paid abroad for road user charges and that there would also be a decrease in tax revenues, since the additional cost paid abroad by the national economy would erode profits and the taxation basis at home (cf. Figure 8).

Figure 4: Base case 2007: Road user charge surplus/deficit for the study countries with regard to the economy (in Mil. EUR)

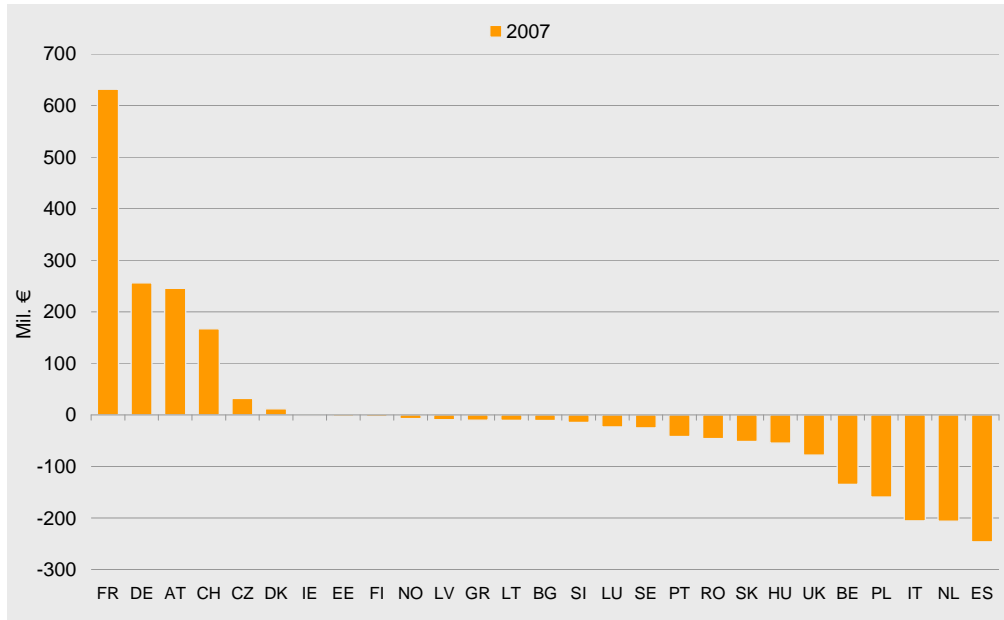


Figure 5: Base case+: Road user charge surplus/deficit for the study countries with regard to the economy in 2009, 2020 and 2030 (in Mil. EUR)

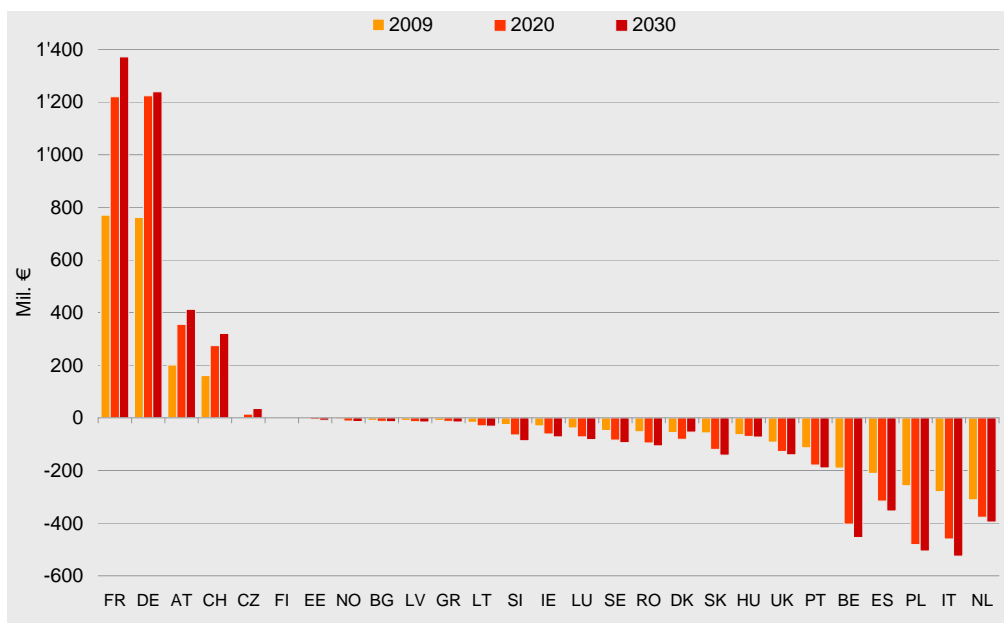


Figure 6: European Commission case: Road user charge surplus/deficit for the study countries with regard to the economy in 2009, 2020 and 2030 (in Mil. EUR)

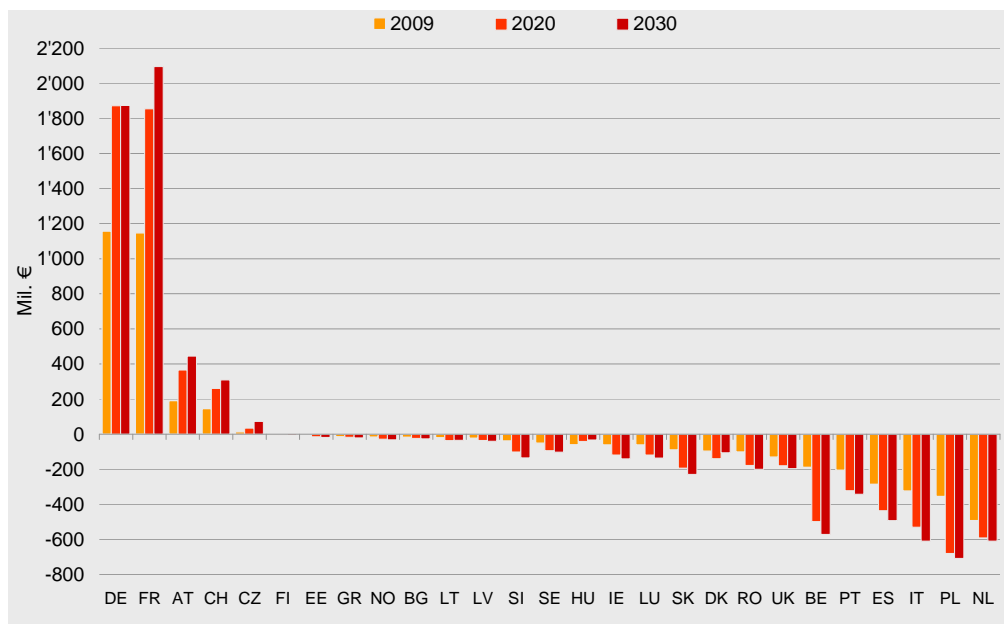


Figure 7: Handbook minimum case: Road user charge surplus/deficit for the study countries with regard to the economy in 2009, 2020 and 2030 (in Mil. EUR)

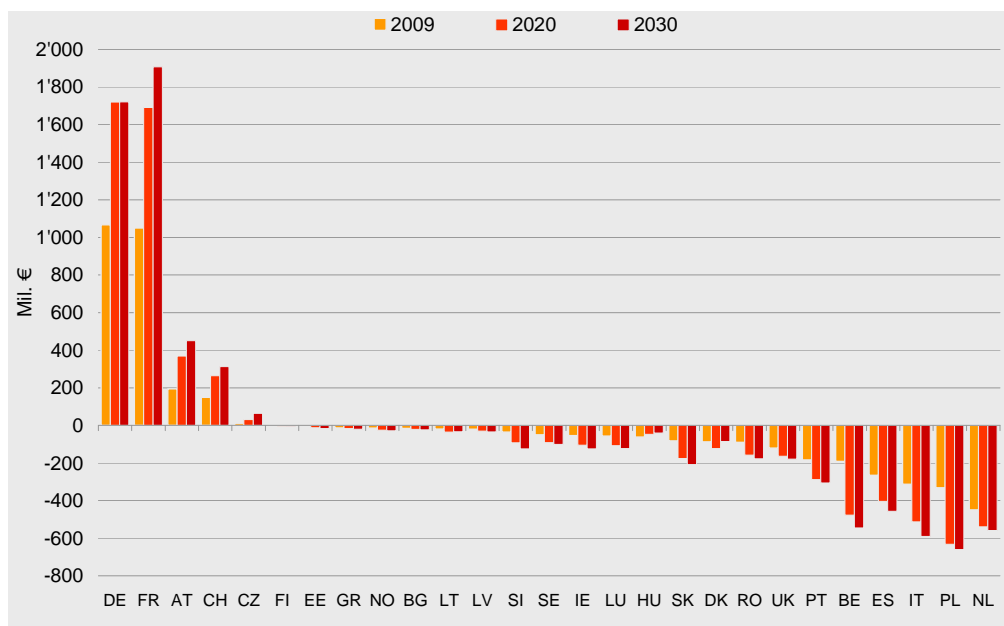
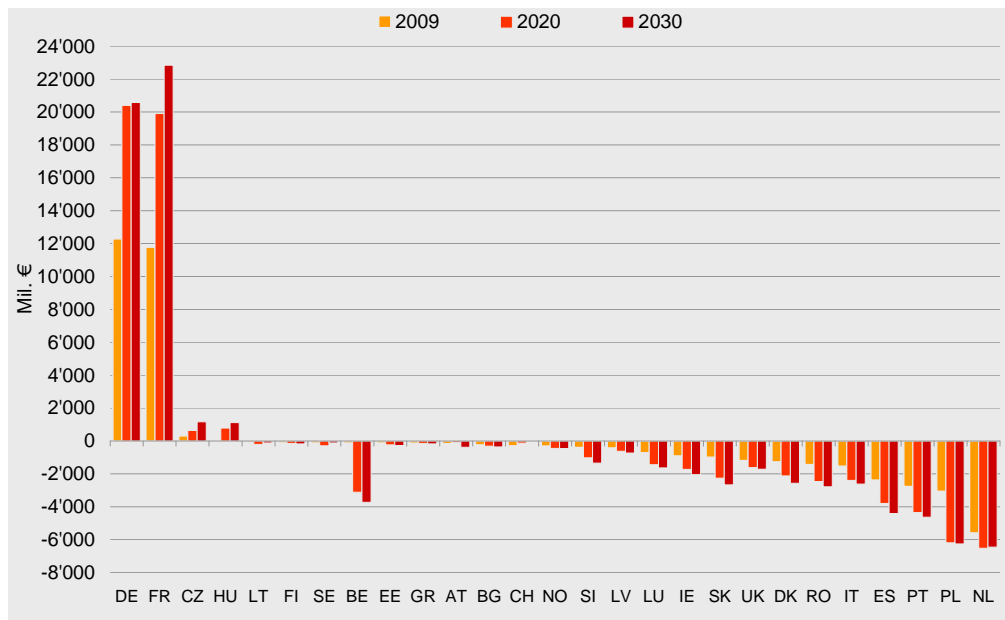


Figure 8: Handbook maximum case: Road user charge surplus/deficit for the study countries with regard to the economy in 2009, 2020 and 2030 (in Mil. EUR)



3.2 Surplus or deficit for study countries with regard to road hauliers

The **road user charge surplus or deficits with regard to the road hauliers** show the total revenues from road user charges collected by a country from all (national and foreign) trucks minus the total road user charges that have to be paid nationally and abroad by trucks registered in the same country.

A deficit signifies that the road user charge revenues of a given country are inferior to the amount of road user charges paid by the trucks registered on their territory. A surplus corresponds to more revenue being collected by a country than charges paid by its respective vehicle fleet. These data show the net distribution effect of road user charges with regard to the road hauliers.

Figure 9 to 13 show surpluses/deficits for the study countries concerning road hauliers in the **time** from 2009, 2020 and 2030 differentiated by years, scenarios and countries, pointing out the main winners and losers amongst the study countries.

Figure 9: Base case 2007: Road user charge surplus/deficit for study countries with regard to the road hauliers (in Mil. EUR)

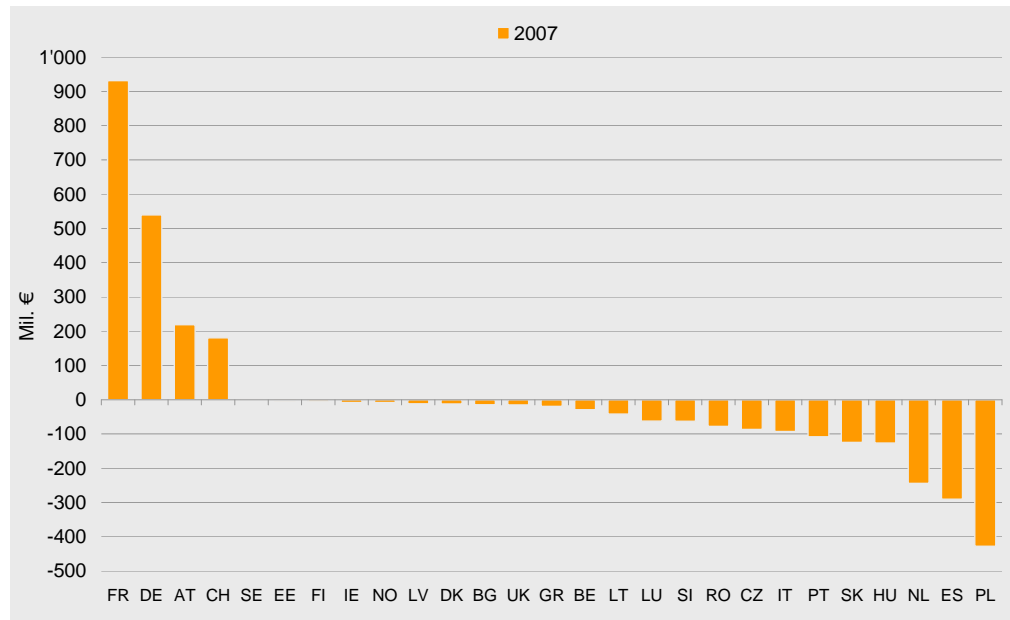


Figure 10: Base case+: Road user charge surplus/deficit for study countries with regard to the road hauliers in 2009, 2020 and 2030 (in Mil. EUR)

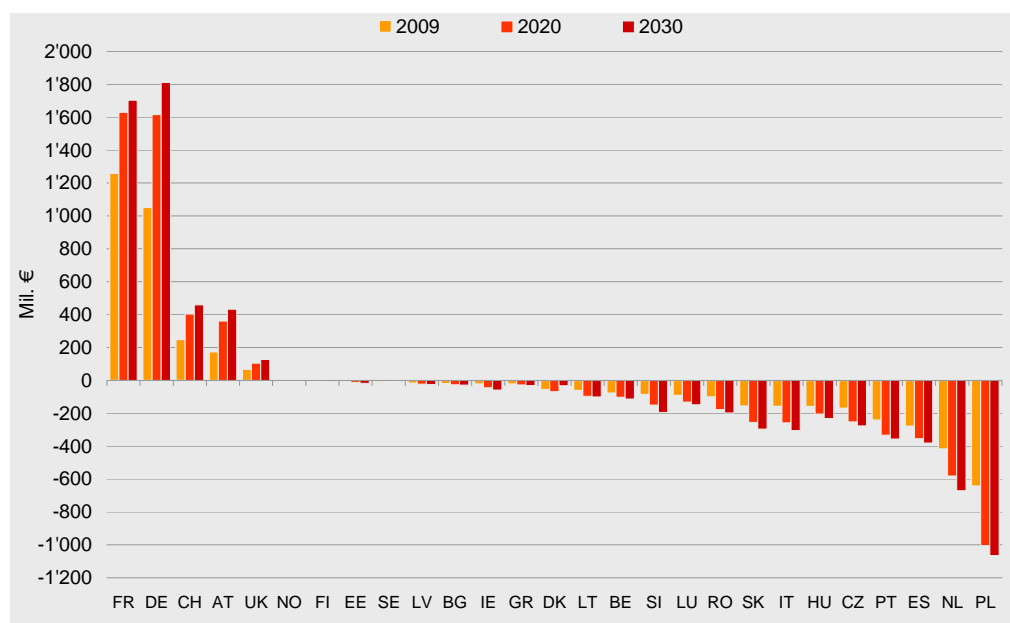


Figure 11: European Commission case: Road user charge surplus/deficit for study countries with regard to the road hauliers in 2009, 2020 and 2030 (in Mil. EUR)

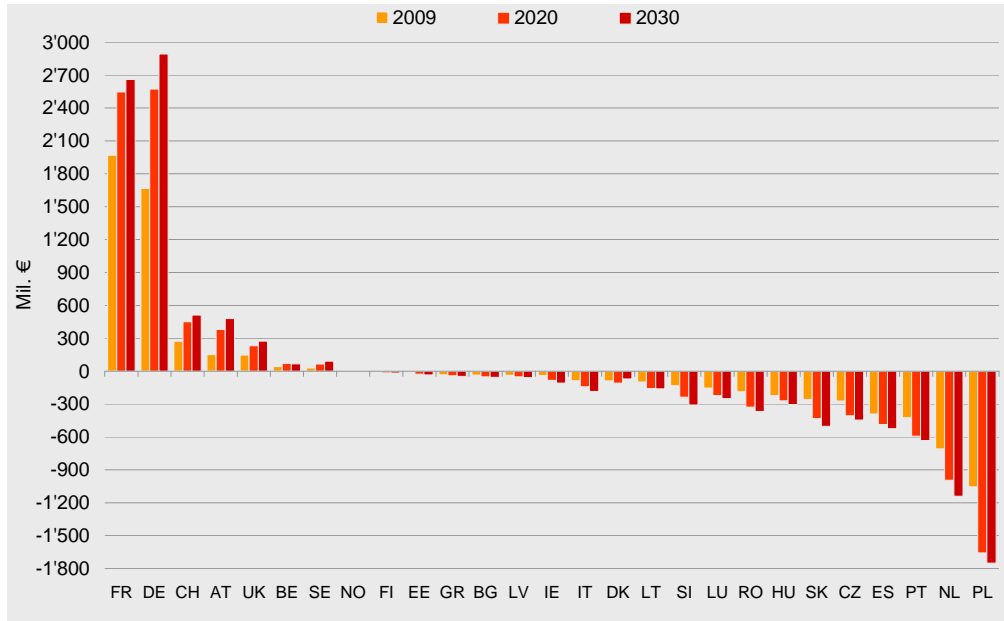


Figure 12: Handbook minimum case: Road user charge surplus/deficit for study countries with regard to the road hauliers in 2009, 2020 and 2030 (in Mil. EUR)

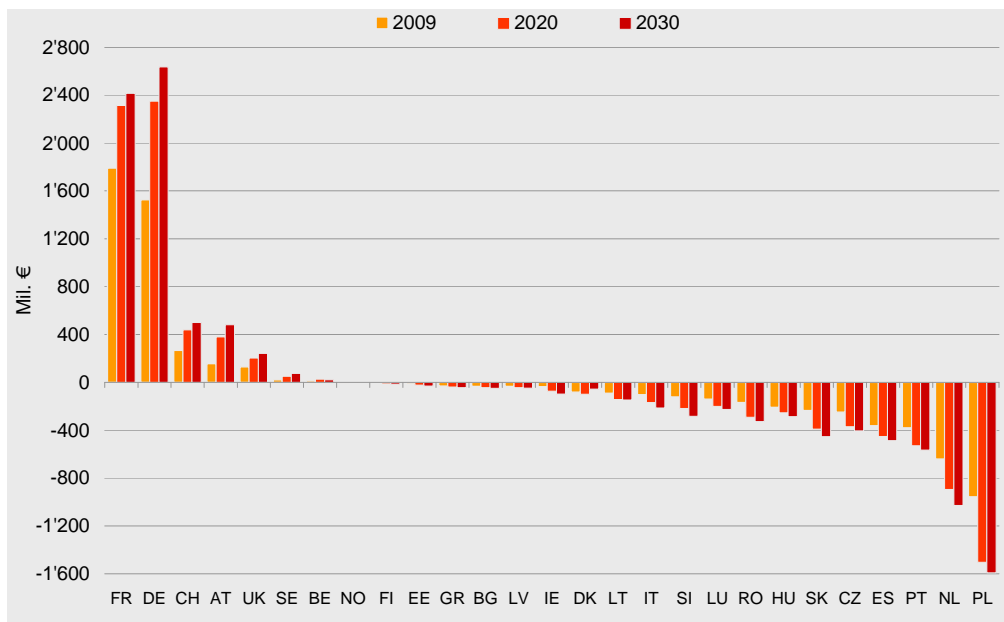
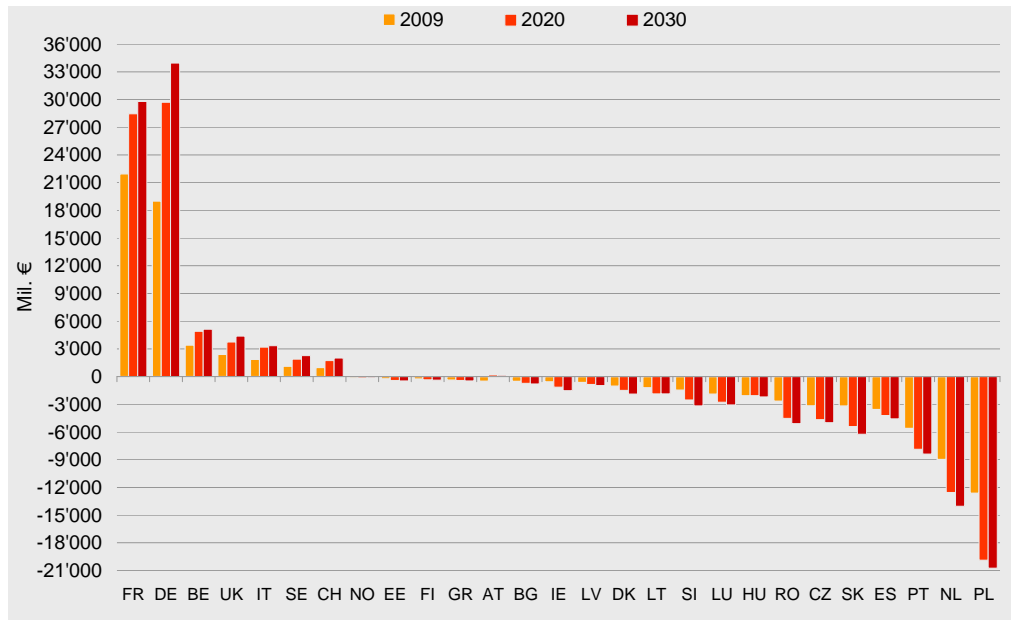


Figure 13: Handbook maximum case: Road user charge surplus/deficit for study countries with regard to the road hauliers in 2009, 2020 and 2030 (in Mil. EUR)



3.3 Consequences

For all countries and cases, the increase of road user charge revenues will be much stronger between 2009 and 2020 than between 2020 and 2030. In the first 11 years, the total growth – depending on the different scenarios – varies between 31 and 33 %, whilst in the following 10 years, the increase will be in the range of 8 to 10 %. This is due to a stronger increase of transport demand in the first time period 2009 to 2020 compared to the second period up to 2030.

From both the view of economy and road hauliers, the consequences of introducing external costs as part of the road user charges would be that mainly the states France and Germany would profit from this introduction in all three years and all four scenarios examined. On a much smaller scale, the states of Switzerland, Austria and, to some degree, the Czech Republic, would have a surplus from the introduction of road user charges, but at a much lower level.

For the road user charge surpluses/deficits concerning the economy in the Handbook maximum case, again Germany and France obtain the biggest surpluses. But this time the Czech Republic, Hungary and Lithuania follow (cf. Figure 8). Their road user charge surpluses result from a comparably low level of external trade in addition to short transport distances, mainly to the direct neighbouring states, and lead to only marginal amounts of road user charges being paid abroad. The big increase of the Belgian charge deficit between 2009 and 2020 (cf. Figure 8) (compared to the much lower increase in the following decade) is a result of a specific transport demand development caused by “globalisation transports”, which show high transport growth to Belgian seaports up to 2020, and afterwards until 2030 a wider spread to other European seaports.

Compared with the other scenarios for road user charge surpluses/deficits concerning the road hauliers, the Handbook maximum case would result in gains for countries other than France and Germany, i.e. Belgium, Italy and the United Kingdom (cf. Figure 13). The relatively large country size (IT and UK) and the central European location (BE) would lead to relatively large road user charge surpluses.

In absolute terms, the main losers from the perspective of the road user charge surpluses/deficits, regarding both economy and the road hauliers, would be Poland, Spain, Italy, Portugal and the Netherlands. At the least they obtain, in total, a deficit of about 900 million EUR (Base case 2007) increasing up to a

total deficit of a bit more than 44 billion EUR when introducing the Handbook maximum case.

This conclusion remains true for all scenarios and years, only the order of the countries varies. For Portugal, Spain, Italy and Poland the reason is their peripheral geographic location in the EU. Furthermore, the Netherlands as well as Poland dispose of large vehicle fleets performing large numbers of trips across Europe, but their charge revenues are relatively low because of the small country size (Netherlands) or the European location (Poland).

3.4 Comparison of scenarios for introducing external costs

The following six figures show the charging results of the surpluses/deficits from road user charges concerning the economy and the road hauliers for the various **scenarios** differentiated by year, scenario and country. Because of the exceptional position of the Handbook maximum case, each figure is shown twice; including and excluding the Handbook maximum case.

Figure 14a: Scenario comparison 2009 of road user charge surplus/deficit for the study countries with regard to the economy including the Handbook maximum case (in Mil. EUR)

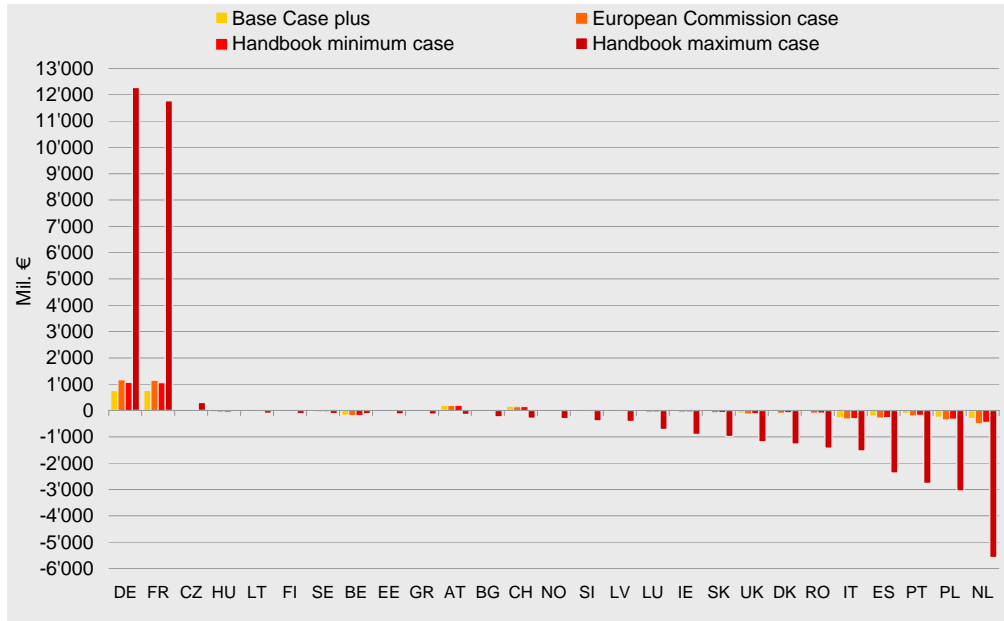


Figure 14b: Scenario comparison 2009 of road user charge surplus/deficit for the study countries with regard to the economy excluding the Handbook maximum case (in Mil. EUR)

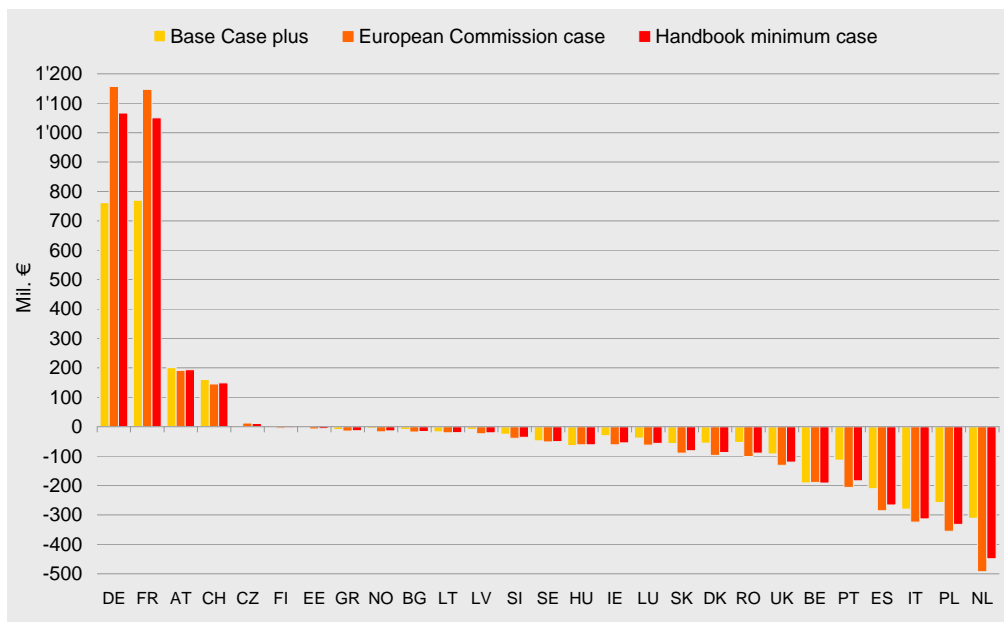


Figure 15a: Scenario comparison 2009 of road user charge surplus/deficit for the study countries with regard to the road hauliers including the Handbook maximum case (in Mil. EUR)

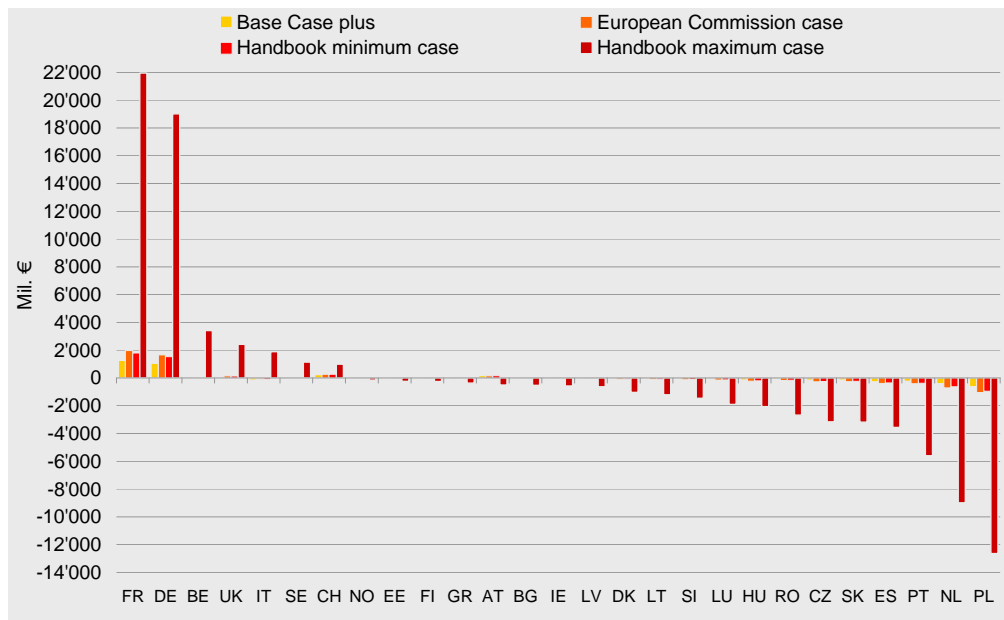


Figure 15b: Scenario comparison 2009 of road user charge surplus/deficit for the study countries with regard to the road hauliers excluding the Handbook maximum case (in Mil. EUR)

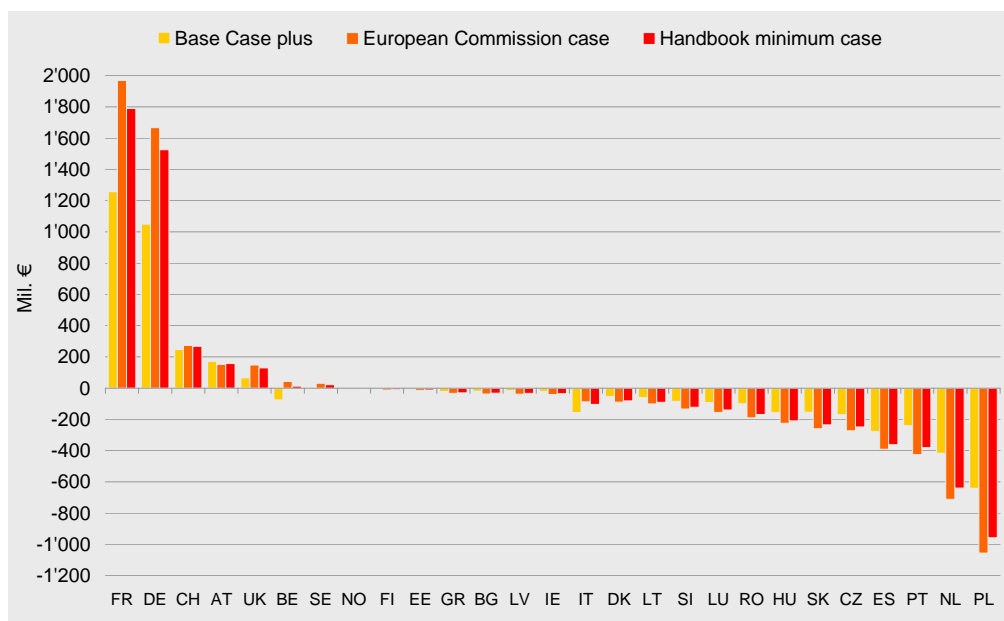


Figure 16a: Scenario comparison 2020 of road user charge surplus/deficit for the study countries with regard to the economy including the Handbook maximum case (in Mil. EUR)

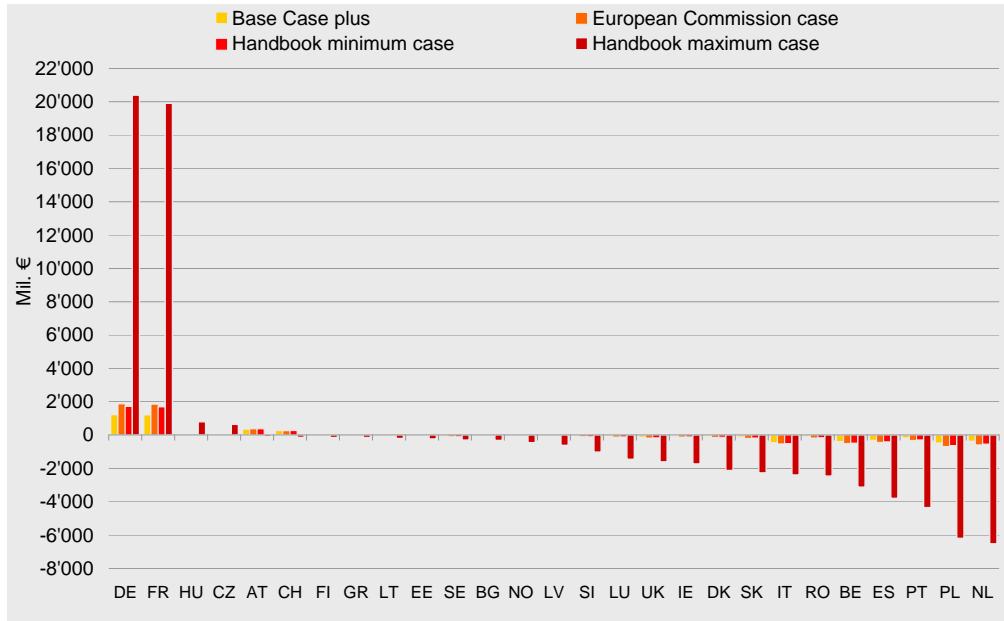


Figure 16b: Scenario comparison 2020 of road user charge surplus/deficit for the study countries with regard to the economy excluding the Handbook maximum case (in Mil. EUR)

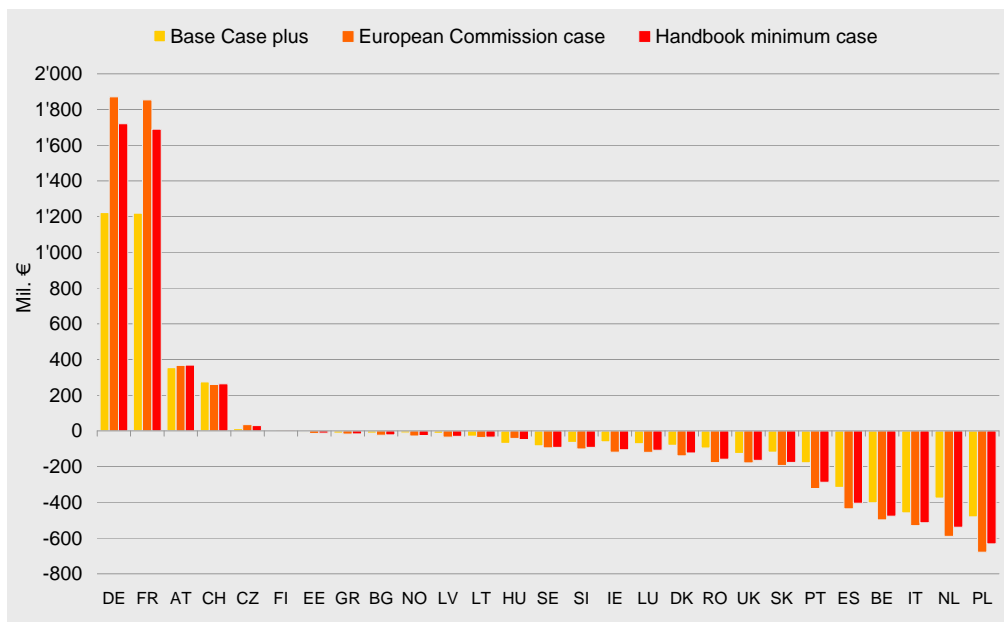


Figure 17a: Scenario comparison 2020 of road user charge surplus/deficit for the study countries with regard to the road hauliers including the Handbook maximum case (in Mil. EUR)

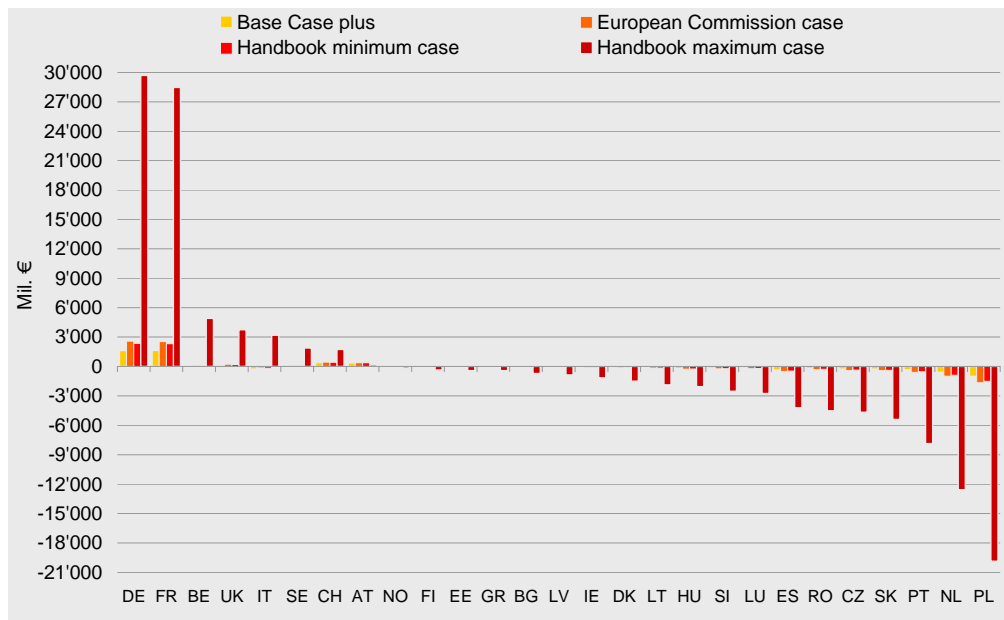


Figure 17b: Scenario comparison 2020 of road user charge surplus/deficit for the study countries with regard to the road hauliers excluding the Handbook maximum case (in Mil. EUR)

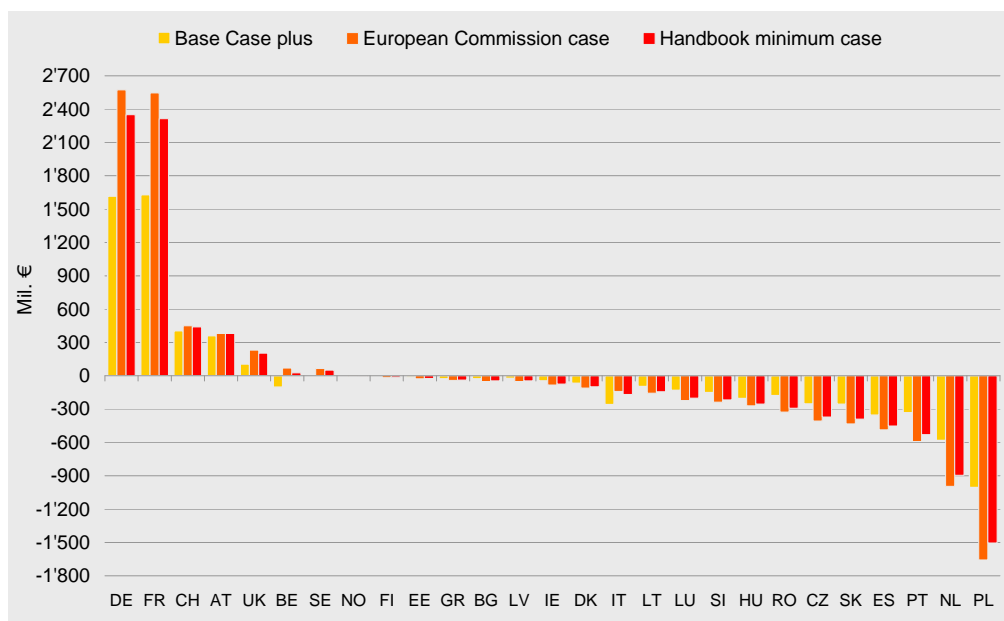


Figure 18a: Scenario comparison 2030 of road user charge surplus/deficit for the study countries with regard to the economy including the Handbook maximum case (in Mil. EUR)

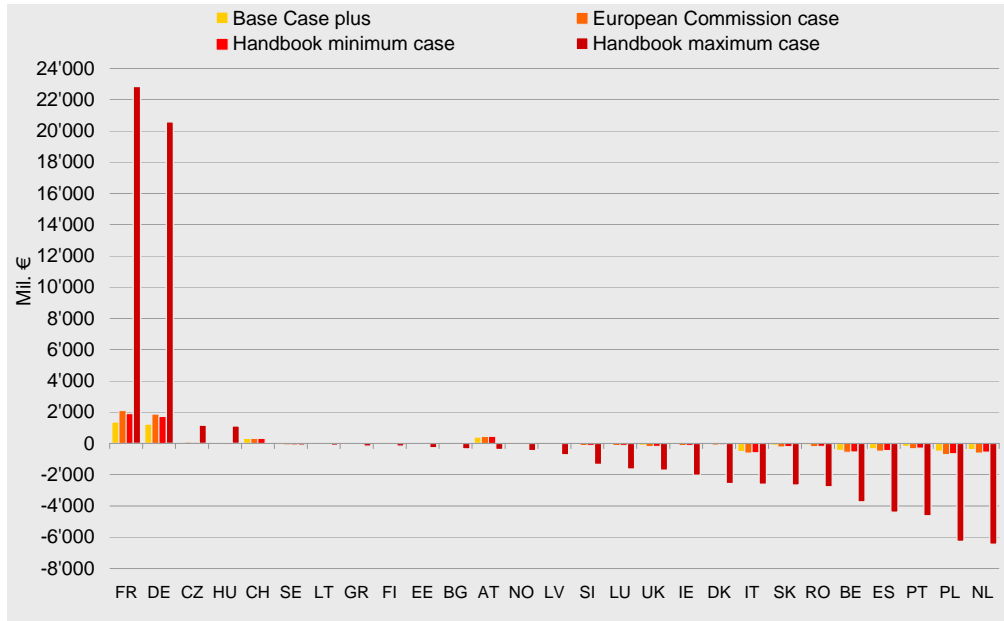


Figure 18b: Scenario comparison 2030 of road user charge surplus/deficit for the study countries with regard to the economy excluding the Handbook maximum case (in Mil. EUR)

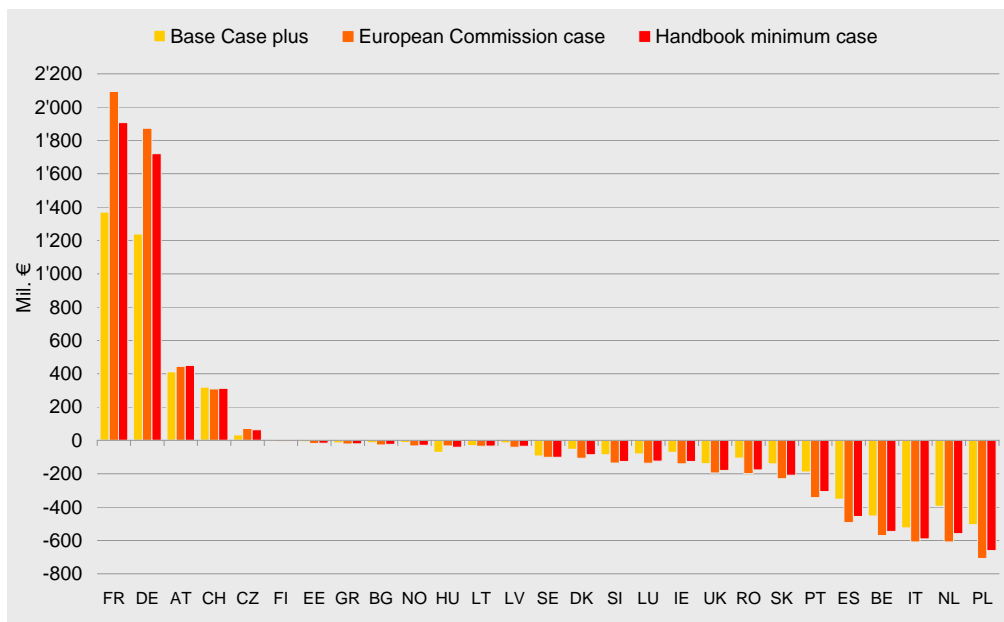


Figure 19a: Scenario comparison 2030 of road user charge surplus/deficit for the study countries with regard to the road hauliers including the Handbook maximum case (in Mil. EUR)

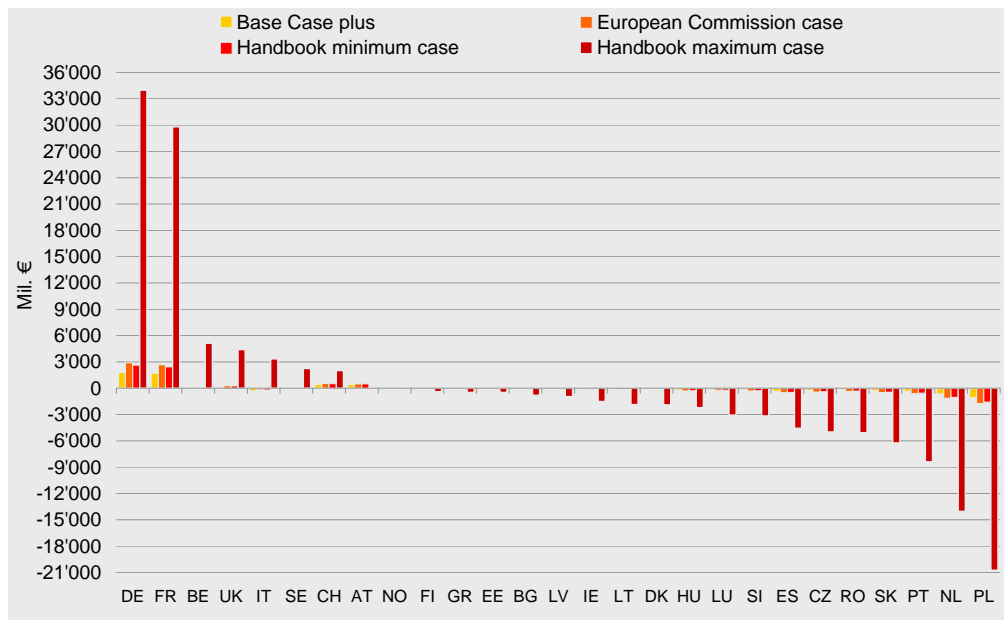
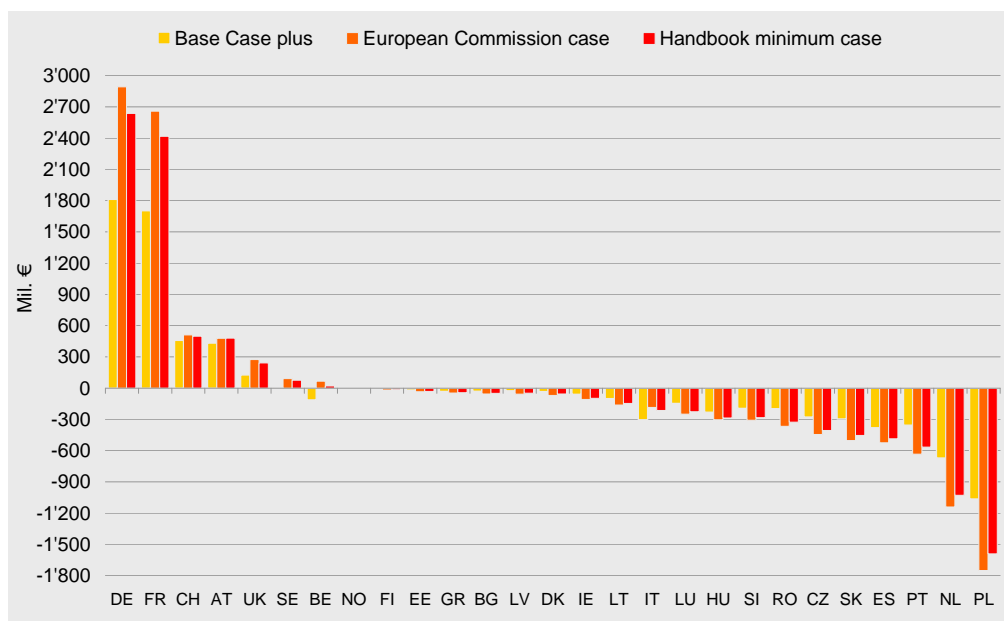


Figure 19b: Scenario comparison 2030 of road user charge surplus/deficit for the study countries with regard to the road hauliers excluding the Handbook maximum case (in Mil. EUR)



The countries gaining and those losing are the same as shown before in the time path. The states France and Germany would be the main winners with a clear margin, mostly followed by Austria and Switzerland. The Austrian and Swiss positions are mainly due to the relatively high present charge rates, their small vehicle fleets which only generate small amounts of road user charging costs at home and abroad, whereas their central European location as the main alpine transit countries will lead to relatively high road user charge revenues from foreign road hauliers. If the high charges in the Handbook maximum case are levied, the present relatively high home charge rates and the low user charges paid abroad will each be equalized and their surplus will become a deficit.

The Netherlands, Poland, Portugal and Spain would be the main losers, with significant deficits from road user charging both in regard to the road hauliers and the economy.

The comparison of the scenarios clearly shows that the Handbook maximum case would bring exorbitantly high costs to the road haulage industry and have large negative effects on the economy in the vast majority of study countries, leaving mainly the states of France and Germany to gain from this internalisation of external costs in all scenarios.

4 Conclusion: Main study results

In general, the **charges paid by national road hauliers** are influenced by three main aspects, namely the size of the vehicle fleets of the individual countries, their vehicle mileage and the amount of toll charges to be paid at home and in the main foreign countries travelled in.

The **costs for the economy** are mainly determined by the volume of foreign trade and the distance of the foreign trade partners from their location. High volumes and long distances apply to Germany, France and Spain whilst the East European countries do not match these criteria and hence obtain lower revenues and pay lower costs.

Examined from the perspective of **revenues from national and international hauliers**, two main reasons are responsible for different revenues: The central European location of the countries with the highest revenues coupled with their size and the length of their road infrastructure network.

The **surplus/deficit of road user charges including external costs for the study countries with regard both to the economy and the road hauliers** will be mostly positive in large countries with extensive road networks such as Germany and France. In the case of Switzerland, what matters are the relatively high charge rates in comparison to other countries and the fact that charging applies to the entire road infrastructure network and not only to the higher-ranking roads.

As can be seen in the figure below, there is a clear lack of balance between countries if the concept of internalisation of external costs is introduced, both as regards costs for the national economy and for road hauliers. There are only a few winners – those that experience a surplus (green) and many losers – those that experience a deficit (red). The surpluses or deficits of countries coloured in yellow vary according to the different scenarios and/or years, but are also negative overall for the clear majority.

Figure 20: Surplus or deficit for all study countries



Key to symbols: white: not considered; green: surplus; red: deficit; yellow: variation according to scenario and/or time [mainly negative]

Source: ProgTrans

Figure 20 clearly points out that only two countries i.e. Germany and France would profit from the introduction of an internalisation of external costs in all scenarios and years. Against that, 15 countries would face serious deficits from such an introduction in all scenarios and years. The remaining 10 coun-

tries would have varying degrees of surpluses and deficits depending on the scenario and year, but are also negative overall for the clear majority.

The following table shows the impact in absolute figures from the introduction of the internalisation of external costs in the road charges on the surplus or deficit for the respective study countries. It shows them from the point of view of the national economy as well as from the road hauliers over the different years examined.

Table 3: Range of surplus or deficit by study country (in Mil. EUR)

Country	Range of surplus or deficit for			
	national economy		road hauliers	
	Minimum	Maximum	Minimum	Maximum
	in Mil. EUR			
AT	-386	450	-501	481
BE	-3'738	-124	-114	5'114
BG	-355	-10	-803	-15
CH	-296	321	181	2'004
CZ	3	1'164	-4'985	-86
DE	256	20'577	540	33'964
DK	-2'568	12	-1'893	-12
EE	-280	-3	-478	-4
ES	-4'406	-211	-4'563	-279
FI	-174	-0	-383	-4
FR	632	22'841	931	29'785
GR	-173	-10	-470	-19
HU	-73	1'108	-2'202	-126
IE	-2'044	-2	-1'521	-8
IT	-2'619	-206	-305	3'345
LT	-207	-11	-1'872	-42
LU	-1'639	-23	-3'072	-63
LV	-736	-9	-956	-12
NL	-6'527	-206	-14'045	-244
NO	-464	-6	-153	1
PL	-6'265	-159	-20'742	-428
PT	-4'631	-42	-8'399	-108
RO	-2'782	-46	-5'090	-78
SE	-295	-25	-9	2'254
SI	-1'342	-15	-3'162	-63
SK	-2'673	-52	-6'247	-124
UK	-1'717	-78	-15	4'399

As mentioned before, in all scenarios, the states of **Germany** and **France** will especially profit from the internalisation of external costs (cf. Figure 20 and Table 3); in return their hauliers will also have to pay the most. In the end, however, a clear surplus will result for both countries. The large amount of revenues can be attributed to their central European location, their size, their extensive road network and the strong linkage in foreign trade.

The state of **Spain** would receive substantial revenue from road user charges but suffer a clear deficit from the internalisation of external costs in all years and scenarios. This is mainly due to Spain's geographically peripheral position and fewer revenues from transit and cross-border traffic.

Because of their central European location as the main alpine transit countries, both states of **Switzerland** and **Austria** would profit from the internalisation of external costs. Their road haulage industry would not have to pay as much because of their relatively small vehicle fleets and this would lead to a surplus from road user charges in most scenarios and years.

The importance of **Poland** will increase over the years to come. Their growing vehicle fleet and, hence, their vehicle mileage will lead to rising charging costs. As their revenues will not increase at the same level, the deficit between revenues collected and charges paid will widen. Poland would be one of the countries with the largest deficits in all scenarios and years, together with the **Netherlands**.

The still low importance of foreign trade and the location of the **Baltic States**, **Bulgaria** and **Romania** on the EU periphery explain their low revenues and costs.

Some states, particularly in the context of the Handbook maximum case, denote surpluses in the study year 2009 or only small deficits, whereas they expect sizeable deficits in the years 2020 and 2030. Next to country specific developments as in Belgium (see chapter 3.2), this is due to the overall stronger transport performance increase between 2009 and 2020, as compared with the following decade up to 2030. In addition, cross-border transport will increase more strongly than national transport, due to the overall increase in globalisation and the relocation of manufacturing bases to Eastern Europe leading to longer transport distances. These developments will result in a greater increase of road user charges paid abroad than in revenues collected by these states from inland transports conducted by national and international hauliers.

The **Handbook Maximum Case** also shows that the allocation effects of road user charges between the European countries vary significantly: The revenues of centrally located countries will increase faster than the expenses of their economic sector and their road haulage industry. Such countries would have a larger margin for financing fiscal compensation measures, but this margin would be reduced in the peripheral countries, in particular if they have a high level of external trade and their trucks are carrying out more international transports.

To conclude, it is clear that adding the internalisation of external costs to today's road user charges for the road freight transport sector will dramatically affect the individual EU Member States, their road hauliers and their national and foreign trade economy in very different ways, pointing clearly towards a negative impact and a serious internal problem for the EU as a whole.

In all scenarios, the internalisation of external costs leads to substantially increasing costs for the road freight transport industry as well as for the foreign trade economy. This, in the end, will not remain without consequences for European competitiveness and will harm the internal aim of equal opportunities for economic development, employment and competitiveness.

ProgTrans AG Basel

prog*trans*

Prognoses and strategy consulting
for transport and traffic

Gerbergasse 4
CH-4001 Basel
Telefon +41 61 560 35 00
Fax +41 61 560 35 01
E-mail info@progtrans.com
www.progtrans.com

Summary Report
Internalisation of external costs – Direct impact on the economies of the individual EU Member States, and
the consequences for the European road haulage industry

Stefan Rommerskirchen

Markus Drewitz
Lutz Ickert
Simon Rikus

Basel, 2nd August 2010

Commissioned by:
International Road Transport Union (IRU)

PT 127
© 2010 ProgTrans AG