

HGV TOLL:

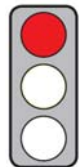
INTERNALISATION OF EXTERNAL COSTS

Status: 12 April 2010

MAIN ISSUES

Objectives of the Analysis: The aim of the analysis is to assess the possible impact on transport costs and final product prices that internalising the external costs of air pollution, noise pollution and time lost due to congestion in road freight transport would have, were this to happen.

Parties affected: HGV transport operators, their customers, consumers and providers of alternative modes of transport, such as railway companies.



Pros: –

Cons: (1) The results of the analysis of the impact the internalisation of external costs would have on transport costs and final product prices in Europe are not reliable.

(2) The presented macroeconomic benefits are based on assumed preconditions that do not apply to the policy project under discussion.

(3) The claim that the negative impact on employment is insignificant is not substantiated and also goes against the Commission's opinion.

CONTENT

Title

Analysis by the Joint Research Centre of the European Commission of 14 January 2010 on the **impacts of the Proposal COM(2008) 436** of 8 July **2008 for a Directive** of the European Parliament and the Council amending the Directive 1999/62/EC ("road infrastructure charging") **on the charging of heavy goods vehicles for the use of certain infrastructures**

Brief Summary

► Background of the Analysis

- Road traffic generates costs that can be split into those directly borne by road users (so-called private/internal costs, e.g. for fuel use or insurance) and those imposed upon other road users and the general public (so-called external costs, e.g. air pollution, noise pollution, time lost due to congestion).
- In July 2008, the Commission published the Proposal for amending the Directive on road infrastructure charging (1999/62/EC): It authorises Member States to incorporate the external costs of road freight transport into road tolls levied on vehicles having a laden weight of more than 3.5 tonnes (so-called internalisation) (cp. [CEP Policy Brief](#)).
- The European Parliament and the Council have not yet reached an agreement on said Proposal.
 - It is, for instance, at issue whether or not time losses due to congestion may be included in the calculation of road tolls (cp. [CEP Monitor](#) on the Debate of the Council on 8 December 2008, [CEP Monitor](#) on the first Reading of the Parliament on 11 March 2009, [CEP Monitor](#) on the Debate of the Council of 30 March 2009; *all three papers in German only*).
 - It is further under debate whether or not an internalisation would put too much of a strain on the transport sector and the economy as a whole.
- Therefore, in June 2009, the Council asked the Joint Research Centre of the Commission to draw up the present Analysis.

► Aims and structure of the Analysis

- The aim of the Analysis is to estimate the additional transport costs that are to be expected from internalisation in road freight transport, as well as the resulting increase in final product costs. The results of the Analysis are then to serve as a basis for further discussion on the policy project, in particular in the Council.
- In order to examine the impacts of an internalisation of transport costs the Analysis uses notional trucks (HGV) with a weight of 40 tonnes and which comply with the rules of the European vehicle standard Euro IV. In this scenario, these HGV provide notional freight services along six cross-border routes (corridors) throughout Europe. The Analysis calculates the expected transport costs for each of those corridors, both with and without internalisation.
- In order to analyse the impacts of internalisation on final product prices the Analysis first draws on earlier estimates of the share of transport costs in final product prices for eleven different final products. With the help of the previously calculated expected increase in transport costs, the expected increase of the final product price is then calculated.

► **Corridor choice**

- Experts from Member States chose six different cross-border corridors for which the transport costs are calculated by way of example. The main criteria behind their choice – which are not really explained – were the length (medium and long distance) and the geographic zone of the corridors.
- The authors of the Analysis admit that it is “not always” the case that the corridors chosen are “frequently” used by HGV transport operators (P. 9).
- The six chosen corridors are:
 - Sines (Portugal) – Paris (France),
 - Lyon (France) – Bratislava (Slovakia) via Italy, Slovenia and Hungary,
 - Catania (Italy) – Holyhead (Great Britain),
 - Milan (Italy) – Munich (Germany) – Lübeck (Germany),
 - Rotterdam (Netherlands) – Cologne (Germany) – Rotterdam (Netherlands),
 - Stockholm (Sweden) – Odense (Denmark).
- The corridor Rotterdam – Cologne and back was chosen to analyse the impacts on shuttle traffic.

► **Calculating impacts on transport costs**

- In calculating transport costs without internalisation the Analysis takes into account for each corridor the costs of fuel, driver costs, fees for the use of infrastructure (incl. ferries), costs of depreciation and the fixed costs. The costs assumed are “estimated average costs”, which are not explained in detail. According to the Analysis, actual costs can deviate “significantly”. (P. 41)
- In calculating transport costs including internalisation the Analysis totals the additional transport costs which would incur along each corridor pursuant to the Directive Proposal by the Commission and its calculation methods to the transport costs without internalisation (base scenario).
- The Analysis defines and examines five further scenarios, all differing in their calculation methods and in assumed user behaviour. However, these scenarios are not applied to further calculate the impacts of internalisation on final product prices.
- Since the range of transport costs varies depending on daytime and traffic volume, the Analysis used random sampling for each corridor in order to simulate the departure times of notional HGV: for each corridor 1,000 departure times were chosen randomly between 0:00 and 24:00 (so-called Monte Carlo Analysis).
- The allocation of transport costs resulting from the Monte Carlo Analysis provides a minimum, a maximum and an average value of transport costs for each corridor. The average and the maximum value are applied to further calculations. The maximum value is a result of those departure times leading to high congestion fees and thus to high transport costs.

► **Calculating impacts on final product prices**

- In order to estimate the impact of internalisation on final product prices, the Analysis uses
- in a first step, previous estimates of the share of transport costs in final product prices as an input for eleven different final products (biscuit, tuna, tomato, blouse, jeans suit, coffee pack, coffee pod, passenger car, mobile phone, pharmaceuticals) (cp. study “Energy use and COst in freight TRANsport chains (ECOTRA)”, 2005) and
 - in a second step, the previously calculated increase in transport costs in percentages.

► **Impact on transport costs and final product prices**

- The impacts of internalisation on transport costs are as follows:

Corridor	Increase in transport costs	
	Average value	Maximum value
Sines – Paris	2.7 %	3.0 %
Lyon – Bratislava	4.3 %	5.2 %
Catania – Holyhead	4.2 %	4.5 %
Milano – Lübeck	3.1 %	3.8 %
Rotterdam – Cologne – Rotterdam	5.2 %	8.6 %
Stockholm – Odense	1.9 %	2.7 %

- According to the Analysis, the impact of internalisation on final product prices is “negligible”. Only in the case of raw materials is the increase in transport costs perceivable in “extreme situations”: in the corridor Rotterdam – Cologne – Rotterdam, for instance, the price of tuna is increased by 0.49%, provided the increased transport costs are internalised at 100%. (P. 45-48)
- The Analysis bases its calculation on the average values of increased transport costs – though this is not stated explicitly – and not on the maximum values.

► **Estimates of the modal shift**

- The Analysis emphasises that the internalisation will “obviously” increase transport costs. However, there are also possibilities to “limit” such an increase. HGV transport operators can adjust their route choice and schedules to their loads, increase the efficiency of their transport operations by increasing the average load and minimizing empty trips, reduce tolls by using more environmentally-friendly vehicles and by shifting to other modes of transport. (P. 51)

- The Analysis estimates that the increase in transport costs will cause a decrease of 13.5 billion tonne kms (tkm) in road freight volumes or 0.7% of total road freight volume in 2007. According to the Analysis, the major part of it, namely 8.5 billion tkm, will be shifted to rail transport and 4.6 billion tkm will be shifted to maritime transport. 0.4 billion tkm will be saved.
- This estimate is based on the assumption that the chosen corridors are representative for the transport routes in Europe and that the average transport costs will increase by 3%.

► **Estimating the total savings of the internalisation of external costs**

- The Analysis stresses that internalisation will generate “significant” savings, for reduced congestion levels will lead to a reduction in time losses and reduced fuel consumption and thus to an assumed reduction of greenhouse gases by 8%.
- The Analysis estimates the net total savings of internalisation at Euro 2.3 billion per year, if HGV are to bear the external costs (for air pollution, noise pollution and time losses due to congestion) and if passenger cars for time losses due to congestion caused by them on all road types and in all Member States; Euros 1.1 billion could be saved through a reduction in time losses due to reduced congestion levels and Euros 300 million through gains in efficiency due to improved transport operations.
- In an Executive Summary prefixed to the Analysis the total savings, generated through the internalisation if only HGV are to bear the external costs caused by them, are estimated at Euro 1.8 billion per year. However, in the analysis itself this estimated sum is not at all mentioned – unlike the sum of Euro 2.3 billion per year which is explained in detail.
- These estimates are taken from a previous impact assessment of the Commission, in which the possible impacts of internalisation for the year 2020 were examined [SEC(2008) 2208, p. 188].
- These estimates explicitly do not take into account the negative impacts on employment, which, according to the Analysis, cannot be quantified with the data available. However, the inclusion of such impacts would probably not “change the overall picture significantly” (P. 54).
- The total benefits of internalisation could be “even higher” if external costs were levied on all modes of transport. In so doing, the same principles of calculation should be applied in order to ensure a level playing field (P. 54).

Policy Context

On 12 March 2009 the Commission (DG Energy and Transport) presented to the competent working group of the Council preliminary estimate results on traffic-specific impacts of internalisation on three corridors: Sines – Paris, Lyon – Bratislava and Catania – Holyhead. Following the subsequent debate with national transport experts, on 26 June 2009 the working group of the Council mandated the Joint Research Centre of the Commission to include three further case studies, namely: Milan – Munich – Lübeck, Rotterdam – Cologne – Rotterdam and Stockholm – Odense. In the present Analysis, for the first time the impacts of internalisation on final product prices are also estimated. In a previous impact assessment the Commission had already explored the macroeconomic impacts of internalisation, though without case studies. At the request of the internal Impact Assessment Board, the Commission emphasises that the complex interplay within traffic, in particular between the individual modes of transport, make it difficult to give reliable forecasts on the impacts of internalisation. This is to be considered when interpreting results [SEC(2008) 2208, p. 50-51].

Options for Influencing the Political Process

Leading Directorate General: DG Energy and Transport (in cooperation with the Joint Research Centre, JRC)

ASSESSMENT

Economic Impact Assessment

Ordoliberal Assessment

It is questionable whether the Analysis could serve as a basis for the Council to further discuss the policy project: In fact, the case studies provide useful insights into the additional transport costs to be expected *regarding the analysed corridors*; however, the assumption and methodology of the Analysis demonstrate that its results fail to reflect in a realistic manner the impacts of internalisation *throughout Europe*.

The chosen corridors are not representative for the actual European traffic flows. Firstly, the Analysis admits that not each of the chosen corridors is a representative traffic route. Secondly, the HGV short-distance traffic, which can be particularly affected by congestion-prone route sections, is not taken account of at all in the chosen corridors.

The Analysis fails to explain in detail how the individual parts of the estimated costs were calculated for the transport costs without internalisation, such as for instance driver costs or fixed costs. **This cost pool is, however, decisive for calculating the impacts of internalisation:** the lower (the higher) it is, the higher

(lower) the percentual increase of transport costs is, and in turn of final product prices. The Analysis itself explicitly admits that reality can “deviate significantly” from the estimated values. A model calculation made by the CEP for the corridor of Rotterdam – Cologne – Rotterdam on the basis of the data given by the Analysis shows that in the case of 20% lower absolute transport costs, internalisation leads to an increase in the average transport costs of 6.5% (instead of the 5.3% given in the Analysis) and to an increase in the maximum transport costs of 10.7% (instead of the 8.6% given in the Analysis) (cp. [CEP Summary Table](#) – *in German only*).

Moreover, it is not comprehensible that the Analysis implicitly applies to the average values of increased transport costs in order to calculate the impacts on the final product prices. Such an approach would, however, presuppose that HGV transport operators can choose just any departure time between 0:00 and 24:00. In reality, however, they depend on the opening hours of loading ramps of retailers and industry. Therefore, they are partially forced to use roads also during congestion-prone and thus expensive times. This necessity can also be clearly seen in current traffic behaviour: even without congestion charges HGV do not choose to get stuck in congestion, as this causes additional time and operating costs. Therefore, it is the maximum value reflecting higher congestion costs that should be applied to calculate the impacts of internalisation on final product prices, rather than the average value used in the Analysis (cp. [CEP Summary Table](#) for CEP calculations – *in German only*). If the maximum value is applied to calculations as the CEP did – based on the data given in the Analysis – the price of tuna on the corridor Rotterdam – Cologne – Rotterdam is increased by 0.82% (instead of 0.49% as claimed by the Analysis).

Impact on Efficiency and Individual Freedom of Choice

The efficiency potential of internalisation described by the Analysis is not comprehensible, for even without internalisation it is very much in the interests of the HGV transport operator to optimize their operational procedure, avoid empty trips and increase the average load. If the efficiency potentials really have not yet been realised, this is not due to the lack of internalisation but a lack in entrepreneurial understanding.

Impact on Growth and Employment

The predicted macroeconomic net savings in the annual amount of Euro 2.3 billion are based on an already known long-term and therefore stressed uncertain estimate by the Commission [SEC(2008) 2208, p. 188]. They **are based on the assumption that** beside the external costs levied on HGV **costs incurred by time losses due to congestion are levied also** on lighter HGV and in particular **on all passenger cars. Such road tolls for lighter HGV and passenger cars are not at all under debate.** Consequently, these data do not constitute any added-value to the consultations in the council.

It is not comprehensible why the estimated Euro 1.8 billion per year, based on the assumption that external costs are levied only on HGV having a laden weight of more than 3.5 tonnes, is mentioned solely in the Executive Summary while being ignored anywhere else.

The blanket statement of the Analysis **that the negative impacts on employment would not probably “change the overall picture significantly” is not substantiated; it also opposes the opinion of the Commission.** For in the same Impact Assessment Study, from which the estimates on the macroeconomic benefits are taken, the Commission refers to possible negative employment impacts in many economic sectors [SEC(2008) 2208, p. 172].

Alternative Policy Options

The Council should not make any decisions regarding the internalisation of external costs in road transport on the basis of the present Analysis.

Possible Future EU Action

Further consultations of the Council on policy projects are expected to take place in the second half of 2010 under the Belgian Presidency.

Conclusion

The chosen corridors are not representative for the actual European traffic flows. Furthermore, the applied estimates on transport costs in the individual corridors are not comprehensible, although their volumes are vital for the calculation of the percentual increase in transport costs and thus in final product prices. The presented macroeconomic benefits generated through internalisation are based on assumptions which are not relevant to the discussed policy project. The statement that the possible negative impacts on employment are insignificant is not substantiated and even goes against the Commission’s own opinion. To this end, conclusions as to the impacts of internalisation on transport costs and on final product prices throughout Europe should not be drawn.