

# Commission study supports shift to clean transport modes like rail and proper internalisation of external costs

## The study

### TITLE

"Sustainable Transport Infrastructure Charging and Internalisation of Transport Externalities"

### MAIN QUESTION

To what extent are the principles of 'user pays' (for infrastructure) and 'polluter pays' (for air pollution, CO<sub>2</sub>, noise etc.) applied across the EU?

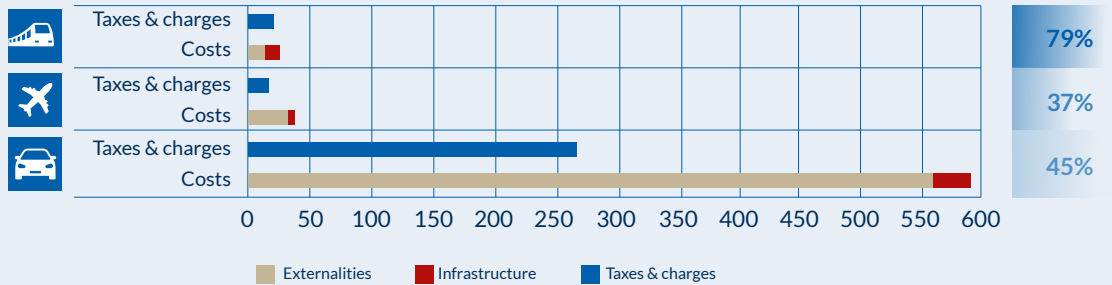
PUBLISHED BY THE EUROPEAN COMMISSION IN JUNE 2019<sup>1</sup>

## Three key insights<sup>2</sup>



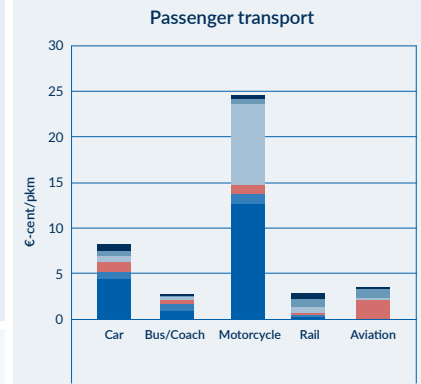
**Insight 1:** Rail leads transport in variable-cost coverage: 79%, against 45% for road and 37% for aviation

Total variable external and infrastructure costs vs. total variable taxes and charges (bn €)



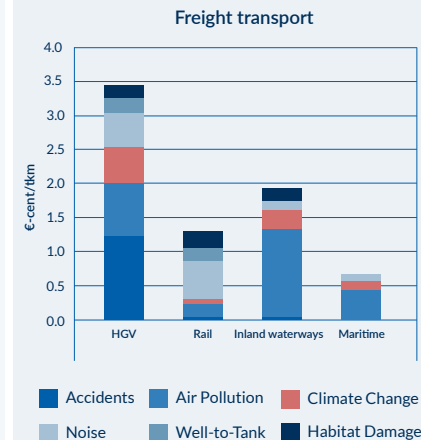
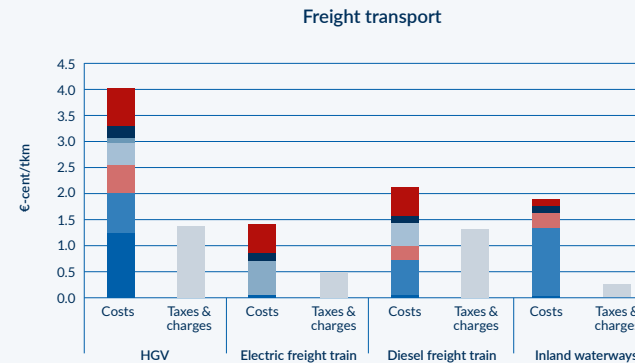
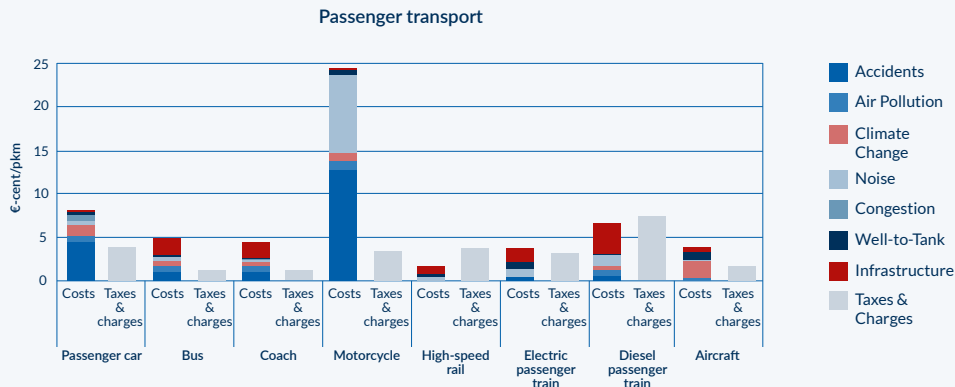
**Insight 3:** Rail's externalities are among the lowest, both for passengers and freight<sup>3</sup>

Average external costs (excluding congestion)



**Insight 2:** Cost-coverage gaps (i.e. variable costs minus taxes and charges) in € per passenger-km or tonne-km are smaller for rail than any other mode. High-speed rail even 'over-pays' to society

Average variable external and infrastructure costs vs. average taxes and charges



<sup>1</sup> Accessible at [https://ec.europa.eu/transport/themes/sustainable-transport/internalisation-transport-external-costs\\_en](https://ec.europa.eu/transport/themes/sustainable-transport/internalisation-transport-external-costs_en)

<sup>2</sup> Charts reproduced from [State of play of Internalisation in the European Transport Sector and Sustainable Transport Infrastructure Charging and Internalisation of Transport Externalities: Main Findings](#), European Commission, 2019

<sup>3</sup> Besides heavy goods vehicles (HGVs) and buses/coaches, light commercial vehicles (LCVs) are also important. However, consultants decided not to include LCVs here, as they are used both for freight and passenger transport, so LCV transport performance for each could not be derived reliably.

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### Understanding the different costs

- **External costs (externalities):** the cost to society of running trains or trucks, e.g. the cost of accidents, air pollution, climate change, noise, congestion, etc.
- **Infrastructure costs:** the cost of building or maintaining tracks or roads
- **Variable vs fixed costs:** costs can be variable, i.e. increase and decrease according to the amount of trains or trucks a company is running; or fixed, i.e. remain the same no matter how many trains or trucks are operated. Fixed costs are 'sunk' (i.e. non-recoverable and independent of future costs) and therefore irrelevant for socially optimal pricing.
- **Marginal costs:** the cost of running an extra train or truck



### Why are variable costs most relevant when assessing cost coverage for 'user pays' and 'polluter pays'?



- Variable costs are a good proxy for marginal costs, i.e. the cost of running an extra train or truck.
- It is these 'marginal' or additional costs on society, which need to be paid by users and polluters so that they do not override the social benefit of running extra services.
- The European Parliament itself recognised this in item 18 of its [Resolution on low-emission mobility of 14 December 2017](#).<sup>4</sup>
- Accordingly, Marginal Social Cost Pricing is highlighted in the study as 'first-best approach' to internalisation and as the one "in line with the ambitions of the Commission to realise full internalisation of external costs, including wear and tear costs".

### Key takeaways

- Rail stands out with **low externalities and better variable-cost coverage** than any other motorised transport mode, both for passengers and freight.
- European railways **comply with 'user pays' and 'polluter pays'** better than any other motorised transport mode
- **A shift to rail would benefit the environment and citizens in Europe**
  - lowering the overall environmental impact of transport
  - relieving congestion on Europe's roads, a major issue according to the study

The study amounts to a call on governments to rebalance transport policy towards modes with low externalities such as railways.

### Recommended policy measures

- **External-cost charging for all transport modes** (polluter pays)
- **Distance-based infrastructure charging on all major roads** (user pays)
- **Robust investment**, both via the Connecting Europe Facility and national resources, in new and enhanced rail infrastructure including
  - TEN-T freight corridors
  - cross-border high-speed rail passenger lines with high EU added-value

Rail, the most energy-efficient motorised mode of inland transport, could then fully play its role as the **backbone of transport**, in an increasingly digitalised and seamless multimodal system.

