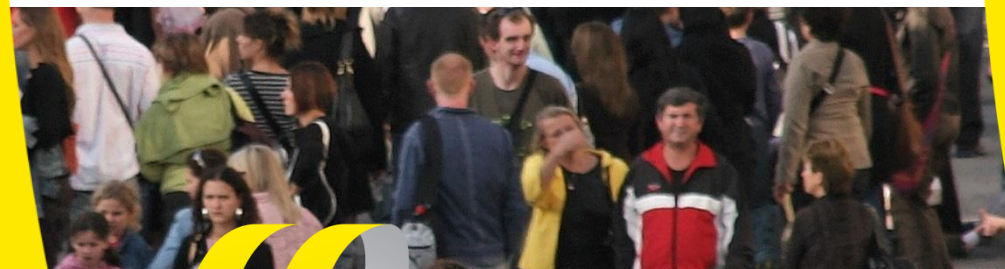




## Infrastructure and external cost coverage of road freight transport on EU28 motorways

Arno Schroten



# Objective and scope

## Objective of the study

- *To examine the extent by which the infrastructure and external costs of road freight transport on EU28 motorways are covered by revenue from taxes and charges related to the kilometres driven on these roads*

## Scope of the study

- Assessments for both HGVs and vans. Today: focus on HGVs.
- Total cost perspective
  - Eurovignette directive: combination of total and marginal costs

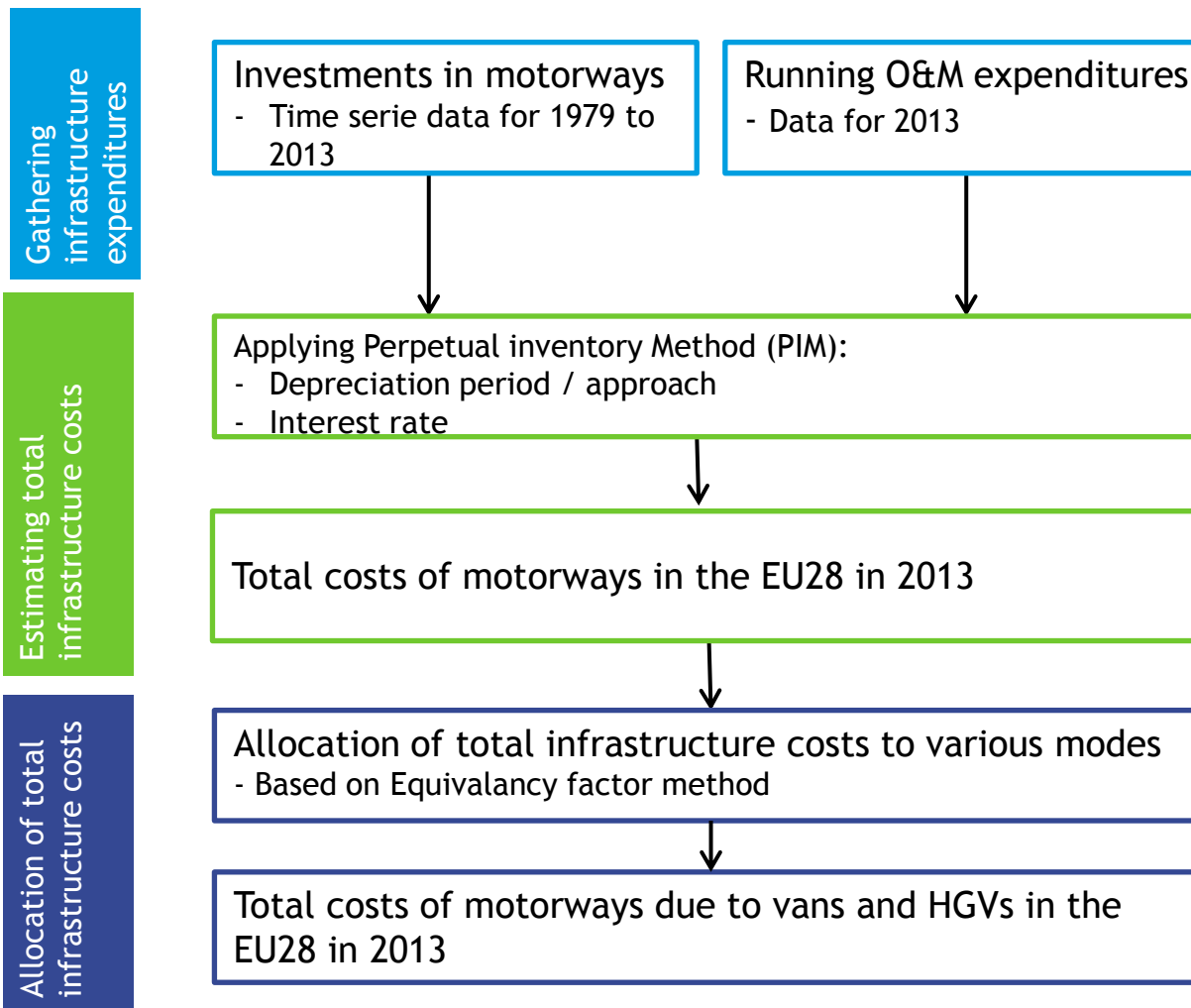
	<b>Total costs</b>	<b>Marginal costs</b>
Definition	Full costs in billion €	Costs caused by one vehicle entering an existing traffic flow
Usable for	<ul style="list-style-type: none"><li>• User-pays principle</li><li>• Polluter-pays principle</li></ul>	<ul style="list-style-type: none"><li>• Development of (theoretically) efficient pricing scheme</li></ul>

## Cost categories covered in this study

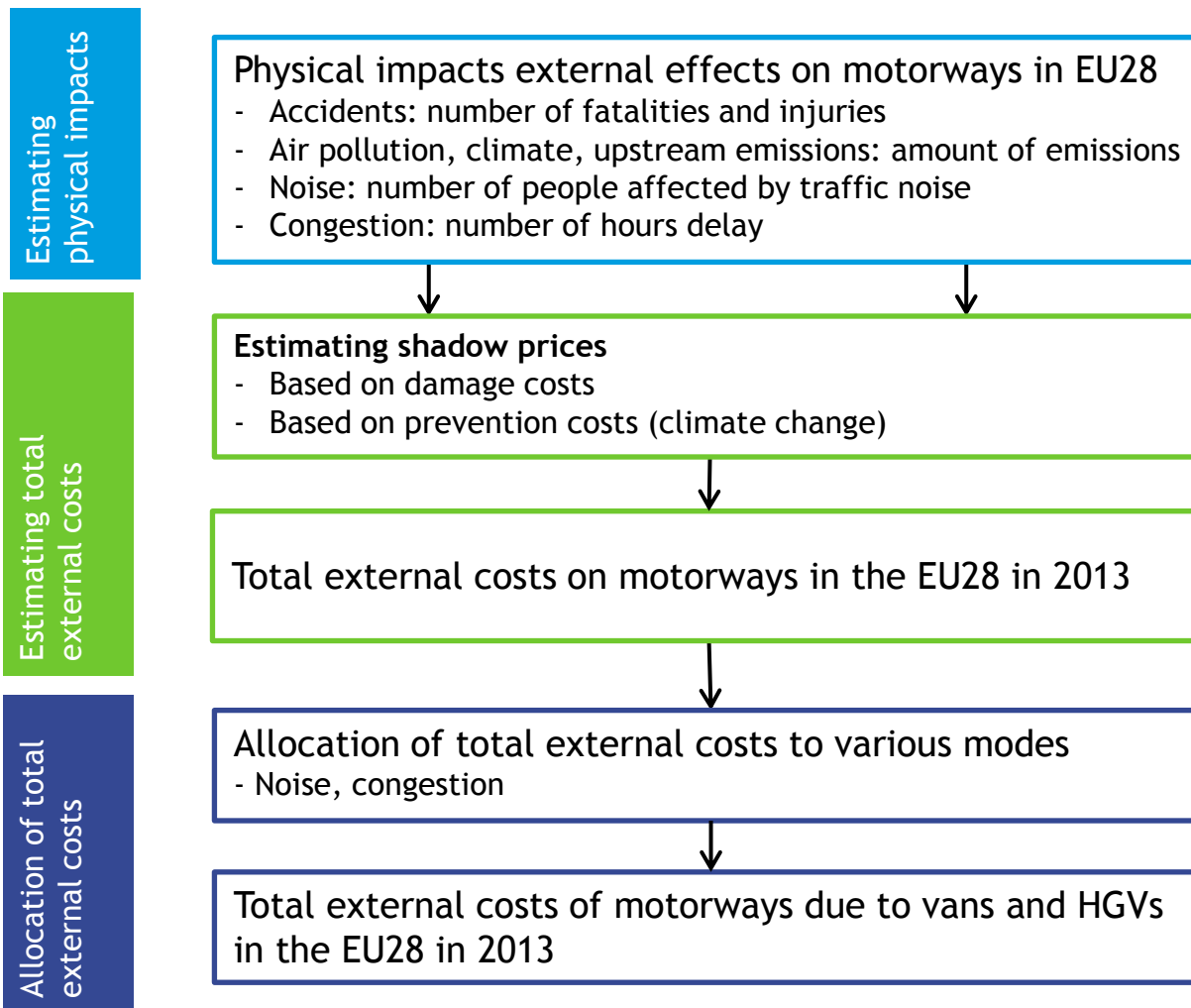
- Cost categories covered:
  - Infrastructure costs
  - Accident costs
  - Air pollution costs
  - Costs of climate change
  - Noise costs
  - Costs of upstream emissions
  - Congestion costs
- To what extent are congestion costs external?
  - From a marginal perspective: definitely external costs
  - From a total cost perspective: often debated, as congestion costs are borne by the transport sector itself.



# Methodology estimating infrastructure costs



# Methodology estimating external costs

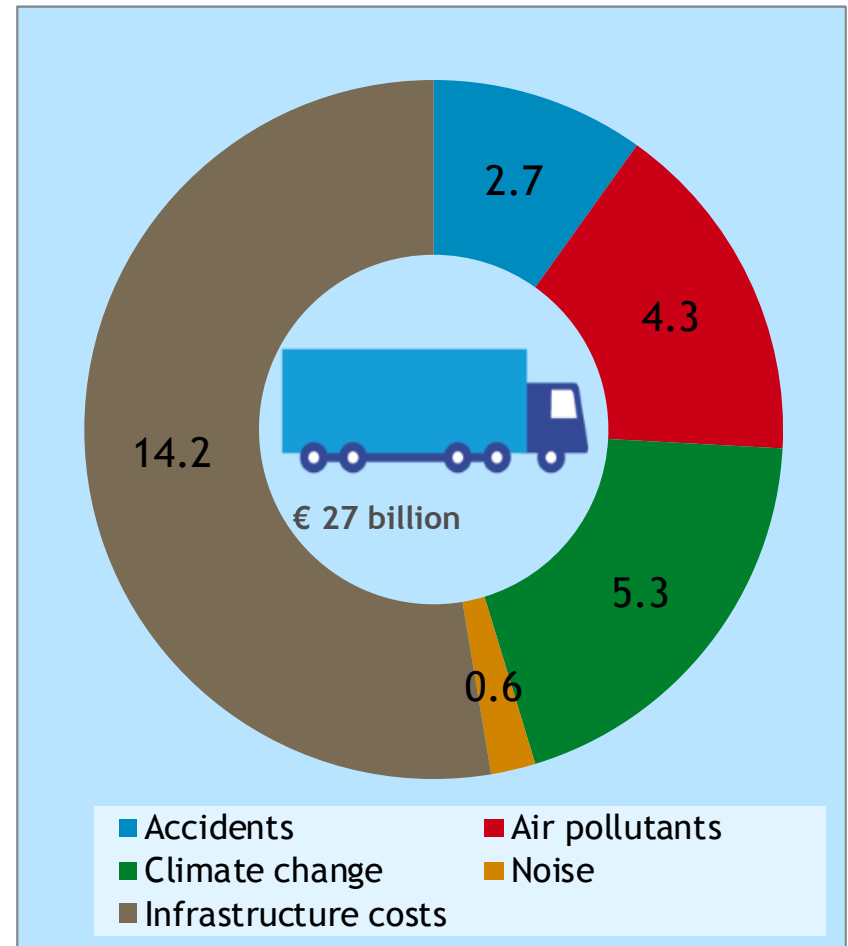


## Main uncertainties

- Congestion costs: no consistent EU set of congestion indicators available
- GHG emissions: CO<sub>2</sub> price is uncertain due to uncertainty on impacts of climate change
- Infrastructure costs: availability of data on infrastructure expenditures differ widely between EU countries
- Accident costs: valuation of immaterial impacts is uncertain
- Air pollution/noise: not all health impacts are included in shadow prices

# Results infrastructure and external costs

- Total infrastructure + external costs (excl. congestion and upstream): € 27 billion
- Congestion costs: € 2.0 to 6.8 billion)
- Upstream emissions: € 3.0 billion



# Taxes and charges HGVs

## Vehicle taxes:

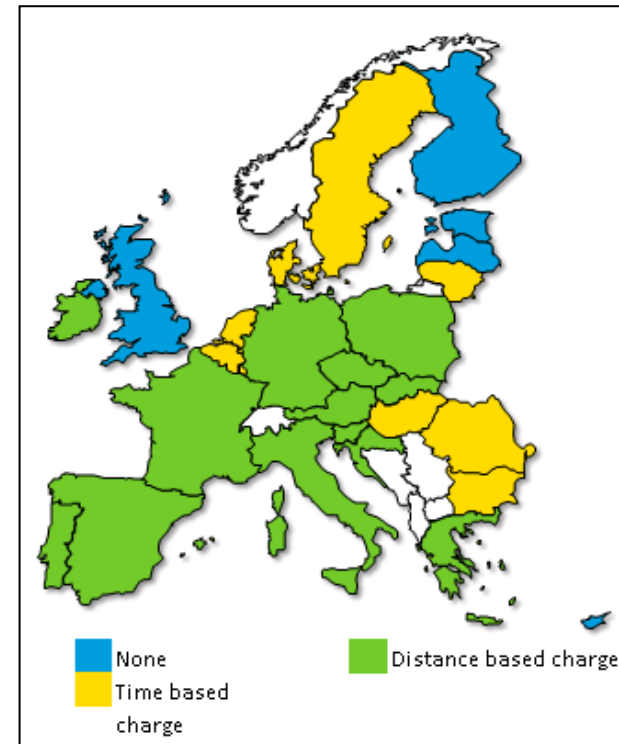
- Registration tax
- Ownership tax
- Insurance tax

## Infrastructure charges

- Distance-based charges
- Time-based charges

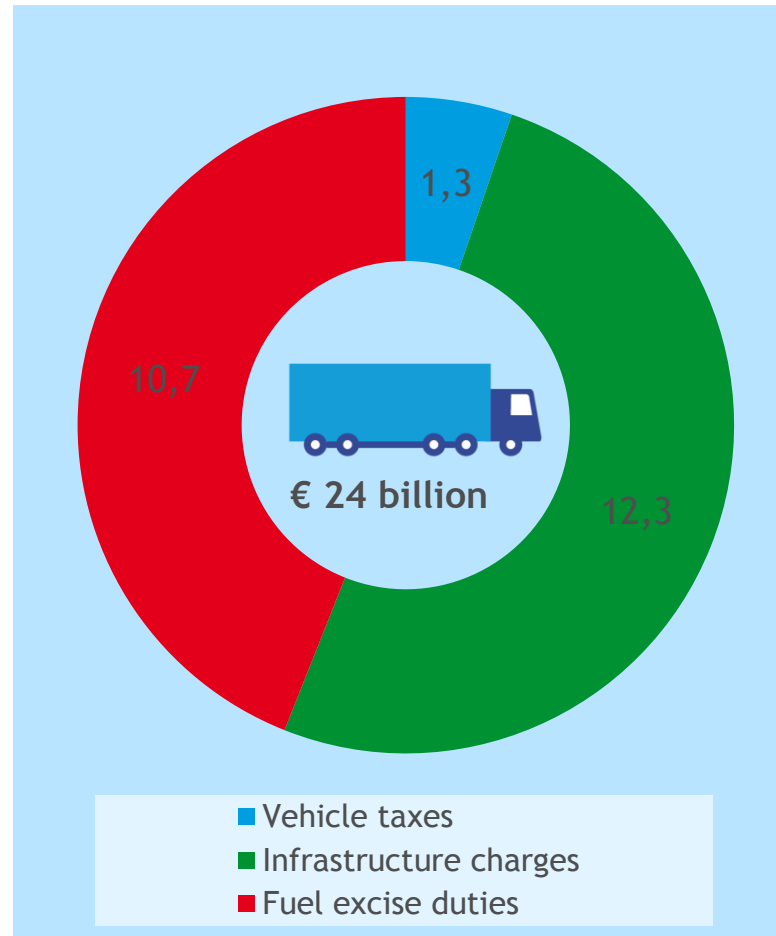
## Fuel taxes

- Excise duties



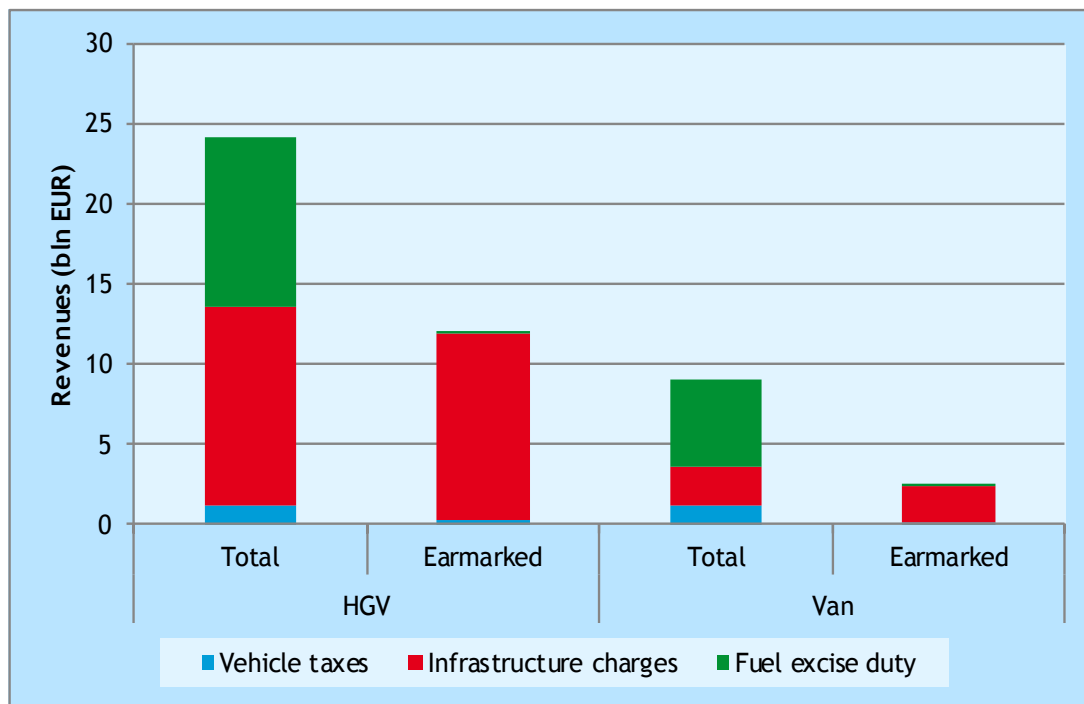


# Results: revenue from taxes and charges

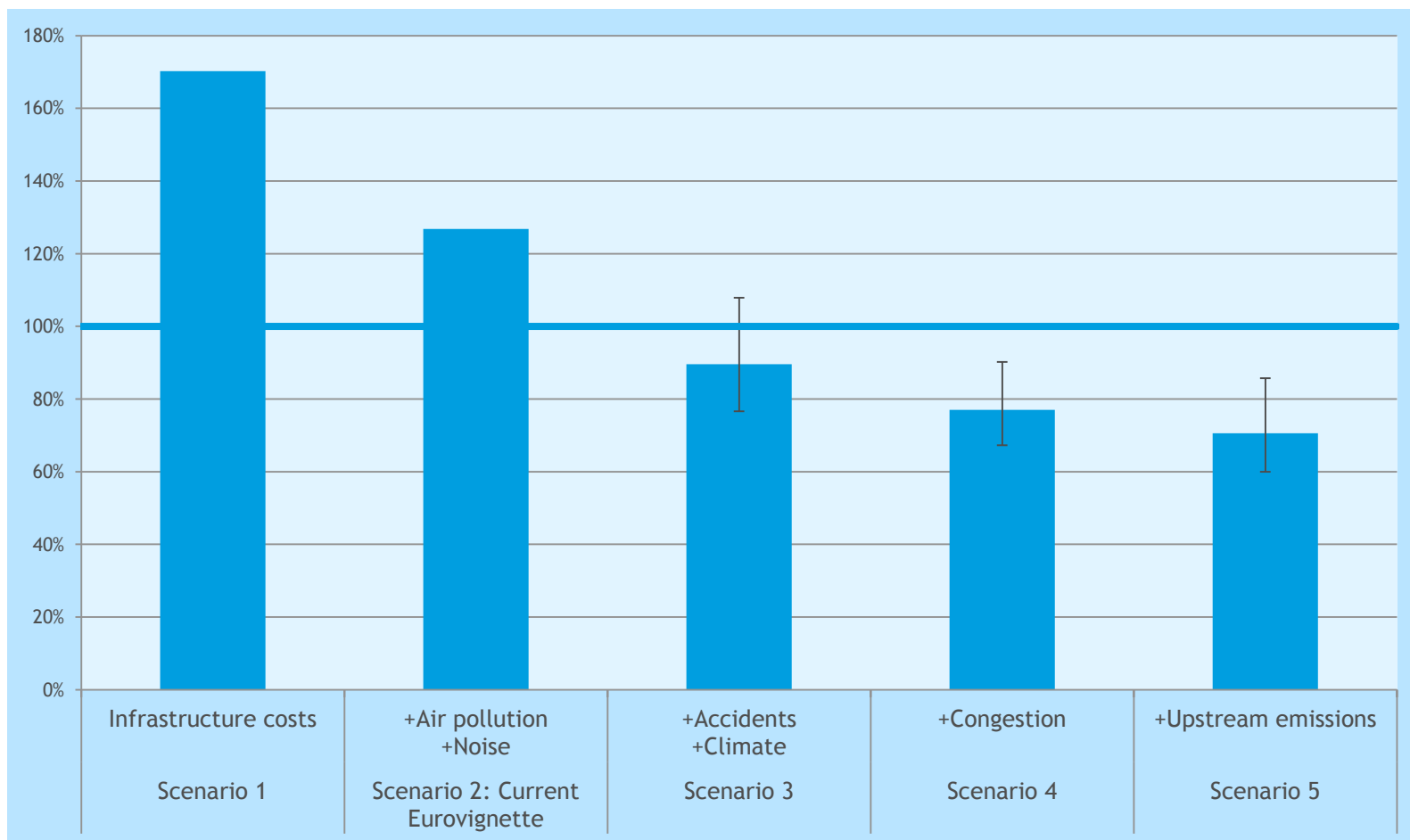


## Earmarked revenues

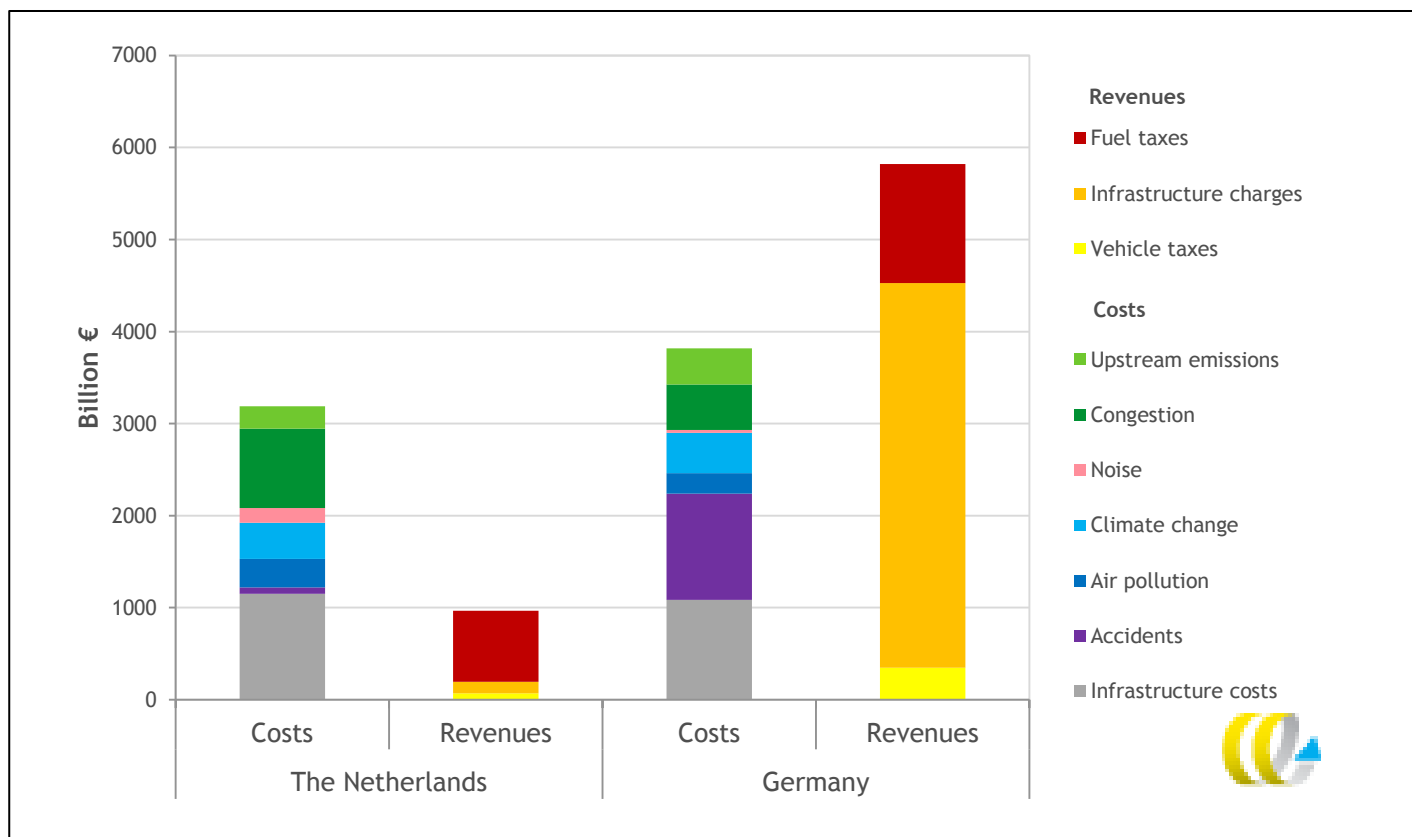
- Earmarked taxes/charges: (share of) the revenue must be spent by law to investments in road infrastructure and/or to mitigate external costs
- Infrastructure charges are largely earmarked, other taxes are not.



# Cost coverage ratios HGVs



# Large differences between countries



# Conclusions

- Tax/charge revenue of road freight transport on EU28 motorways exceeds the infrastructure and external costs covered by current Eurovignette Directive.
- All infrastructure and external costs of road freight transport on EU28 motorways exceeds the tax/charge revenue.
- There are, however, large differences between countries.
- Although there are some important uncertainties in the infrastructure and external cost figures estimated, the main conclusions of this study are robust.