Focus on costs and ethical considerations: assessing the impacts of regulating vehicle emissions and safety

ITF-OECD
Roundtable on
Assessing regulatory changes in the transport sector
(6-7 October 2016, Stockholm)

Bert van Wee
Delft University of Technology
<table>
<thead>
<tr>
<th></th>
<th>Transport volume</th>
<th>Modal split</th>
<th>Technology</th>
<th>Efficiency of using vehicles</th>
<th>Driving behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Prices</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Land-use planning</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>infrastructure</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Information and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>communication</td>
<td>and</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
Economists: often preference for pricing. But …
Which project, policy?

Many countries: SCBA

Mainly: infrastructure, way less: regulations.

This paper: discussion pros and cons SCBA for regulations
Criteria for ‘good’ policies

- effectiveness
- efficiency
- fairness/equity

Van Wee (2009)
- ease of implementation
- flexibility
- long term robustness


Conclusion: not ‘all you need to know’.
REGULATIONS FOR SAFETY AND ENVIRONMENT AND THE USE OF CBA

Focus of paper
Vehicles, speeds
DIRECT COSTS: CHALLENGES

1. Unit costs change over time, mainly due to scale and learning effects
2. Scale effects depend on regulations in other (groups of) countries

3. There are not general values for the decrease in the effects of scale and learning effects

4. The assumption of constant costs is almost per definition wrong
5. We need to know the alternative, the reference case
6. Marginal costs should be considered, not total costs
7. Safety regulations for road vehicles have several indirect effects

- More weight – energy, CO2
- More expensive – car ownership and use
- More comfortable
- Impact on other cars
- Speed limits
8. Speed limits have welfare costs

- Travel time savings / congestion levels
- Reliability
- Fun of driving
- Should time savings of speeding be counted?
9. Cars are positional goods, which reduces the welfare loss of a shift to smaller cars.
10. Regulations can have advantages in the area of transaction costs

Policy making costs money

First time regulations: time consuming. But less than pricing?

Further tightening: relatively cheap?
BENEFITS: CHALLENGES
11. Tests often poorly match real world conditions

12. Manipulation undermines effects
13. Unit prices of emissions and safety improvements change over time, preferences for the environment and safety are not constant.

Same applies to the marginal value of travel time savings.

Higher incomes? Higher value for safety, environment.
14. The performance of technologies may change over time
IMPLICATIONS FOR CBA
1. Estimate unit costs based on literature of comparable technologies, and expert judgments

2. Include a margin for possible future unit costs, and estimate the impact on CBA outcomes

3. Make an estimation of the ‘break-even’ points of unit costs: how low should they be in which year to have ‘positive’ results?

4. Consider indirect effects
6. Make a decent analyses of the reference case, which is often not ‘do nothing’, or ‘no change’.

7. Consider increases in future preferences for the environment and safety

8. Improve tests, so that these match real world conditions as well as possible, and cover all regular driving conditions.
9. Reduce options for manipulations as much as possible

10. Environmental regulations: increase the focus on inspections and maintenance
ETHICAL CONSIDERATIONS

1. Distribution effects

2. Long term effects hardly count in a CBA but can be very relevant
3. Safety: impact on other road users
4. Poor versus rich
5. How to value safety effects?
6. Not only consequences are relevant
CONCLUDING REMARKS

• Regulations can in several ways have an impact on determinants for the environmental and safety impacts of the transport system. These determinants are: volume, modal split, technology, and the way vehicles are used.

• A CBA is a potentially useful instrument to ex ante evaluate effects of regulations in the area of road safety and the environment.
• Estimating direct costs of regulations can be difficult, and especially estimating changes in unit costs over time can be problematic. Also changing preferences for the environment and safety can be very relevant.

• Regulations can have indirect effects, and these can both be very important in policy debates, as well as be substantial from a welfare perspective.

• Ethical considerations are not included in CBA, but can be relevant for policy making and the wider public.