A modern economic approach to internalise external costs

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Two approaches to the internalisation of external cost

- Traditional view (Pigovian): Polluter Pays Principle (PPP)
- Modern view (Coasean): Cheapest Cost Avoider Principle (CCAP)
Traditional View (Pigovian)

- Formulation of the problem: market failure due to externalities – impact of transport on environment not reflected in pricing of transport
  Note: Only **one** generator of external cost
- Identification of measures internalising the environmental costs to transport services:
  - services reduce environmental harm or
  - pay for harm (tax or compensation of victims)
- Selection of measure (set of measures) presumptively cheapest to internalise externality.
Modern View (Coasean)

- Formulation of the problem: conflict in resource use – use of the environment for
  - purposes of transport
  - residential, recreational, aesthetic or productive purposes

  Without rivalry, no external costs.
  Consequently, external costs are **jointly caused**.

- Identification of policy options to reduce conflict of resource use:
  - transport services reduce environmental harm or pay tax/compensation
  - other users of the environment reduce harm or pay transport services to reduce harm
  - government invests in infrastructure

- Selection of proposal (set of proposals) which presumptively resolves conflict of resource use at cheapest cost.
External cost drivers

**Context: Congestion**
Costs: Climate change, health problems, noise, etc.

Cost drivers: cost will increase with ...
- The number of vehicles: increased emissions
- Scarcity of roads: increased emissions
- Number of residents: increased health and noise problems

Costs influenced by:
- Transport industry
- State
- Others
PPP and efficiency

Aim: Reduce external costs by 25 million €

**Scenario 1**

<table>
<thead>
<tr>
<th>Actor</th>
<th>Measure</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Industry</td>
<td>Cleaner Engines</td>
<td>20</td>
</tr>
<tr>
<td>State</td>
<td>Build Motorway</td>
<td>60</td>
</tr>
<tr>
<td>Residents</td>
<td>Move Away</td>
<td>80</td>
</tr>
</tbody>
</table>

Transport industry most efficient at abatement
### Scenario 2

<table>
<thead>
<tr>
<th>Actor</th>
<th>Measure</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Industry</td>
<td>Cleaner Engines</td>
<td>80</td>
</tr>
<tr>
<td>State</td>
<td>Build Motorway</td>
<td>20</td>
</tr>
<tr>
<td>Residents</td>
<td>Move Away</td>
<td>60</td>
</tr>
</tbody>
</table>

- State most efficient at abatement
Scenario 3

<table>
<thead>
<tr>
<th>Actor</th>
<th>Measure</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Industry</td>
<td>Cleaner Engines</td>
<td>80</td>
</tr>
<tr>
<td>State</td>
<td>Build Motorway</td>
<td>100</td>
</tr>
<tr>
<td>Residents</td>
<td>Move Away</td>
<td>90</td>
</tr>
</tbody>
</table>

- Cost of abatement (80) higher than benefit (25)
- No abatement!
### Scenario 4

<table>
<thead>
<tr>
<th>Actor</th>
<th>Measure</th>
<th>Single</th>
<th>Joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Industry</td>
<td>Cleaner Engines</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>State</td>
<td>Build Motorway</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>Residents</td>
<td>Change habits</td>
<td>80</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td></td>
<td>20</td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

- Most Efficient Solution: Sharing Costs
Findings and implications:

- Polluters (transport services) might be the highest cost avoiders.
- PPP cannot guarantee efficiency and an efficient transport system.
- Commission’s proposal based on PPP.
- Contradicts Lisbon goal: sustainable growth, better jobs and competitiveness.
- Regulatory failure possible.
The Cheapest Cost Avoider Principle

Cheapest Cost Avoider Principle (CCAP) based on Ronald Coase (Nobel Prize)

- Avoid externalities if cost \( \leq \) benefits
- Action must be taken by whoever can do so *most cheaply*
- **No waste**, welfare enhancement
- Designation of who is to take action by a complete cost-benefit analysis
Example: Missing A44 near Kassel
Example: Missing A44 near Kassel

1. Problem: HGVs make a 42km detour (motorway), causing extra externalities, out of pocket and opportunity costs

2. Objective: Minimise costs

3. Policy options:
   ▶ Re-open B7
   ▶ Detour
   ▶ Build motorway
Advantages of the Cheapest Cost Avoider Principle

- Cheapest Cost Avoider Principle: guarantees efficiency for growth, jobs and competitiveness (Lisbon goals)
- It studies a broader set of options
- CCAP is generally applicable. That the polluter should pay is one possible result of the CCAP analysis among others.
- The CCAP’s administration costs are inferior to the benefit that it conveys
Thank you very much for your attention!