

The Internalisation of External Costs in Transport: From the Polluter Pays Principle to the Cheapest Cost Avoider Principle

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Outline

EU framework

External Costs

Reducing external costs: PPP vs. CCAP

Application

Conclusion



EU goals



- ▶ Lisbon strategy (2000): Sustainable growth, better jobs, and competitiveness
- ▶ Growth and job creation difficult to conceive without an efficient transport system
- ▶ Göteborg (2001) Internalisation of social and environmental costs of transport
- ▶ Eurovignette Directive (2006/38/EC)
- ▶ Handbook on how to assess external cost



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- ▶ The generator pays the bill for the external cost he causes
- ▶ Incentive mechanism: Pigovian tax or regulation
- ▶ Pigovian tax: polluter is faced with a tax equal the marginal externality cost. New cost function: social optimum
- ▶ Social optimum comprises only Pareto irrelevant externalities
- ▶ Reducing External costs is costly!



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Central questions

⇒ Is the PPP compatible with the Lisbon strategy?



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- ⇒ **Is the PPP compatible with the Lisbon strategy?**
- ⇒ **Are there better alternatives?**



Fundamentals of external cost

- ▶ External costs: impact of an action on someone else
- ▶ Main external costs generated by transport:
 - ▶ Congestion
 - ▶ Accidents
 - ▶ Air pollution
 - ▶ Noise
 - ▶ Consequences of climate change
- ▶ Impact: not taken into account by the actor



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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
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PPP and efficiency

Aim: Reduce external costs by 25 million €

Scenario 1

Actor	Measure	Cost
Transport Industry	Cleaner Engines	20
State	Build Motorway	60
Residents	Move Away	80

- ▶ Transport industry most efficient at abatement



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Scenario 2

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PPP and efficiency

Scenario 3

Actor	Measure	Cost
Transport Industry	Cleaner Engines	80
State	Build Motorway	100
Residents	Move Away	90

- ▶ Cost of abatement (80) higher than benefit (25)
- ▶ No abatement!



PPP and efficiency

Scenario 3

Actor	Measure	Cost
Transport Industry	Cleaner Engines	80
State	Build Motorway	100
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PPP and efficiency

Scenario 4

Action Costs

Actor	Measure	Single	Joint
Transport Industry	Cleaner Engines	20	10
State	Build Motorway	60	3
Residents	Change habits	80	2
Total Cost		20	15



PPP and efficiency

Scenario 4

Action Costs

Actor	Measure	Single	Joint
Transport Industry	Cleaner Engines	20	10
State	Build Motorway	60	3
Residents	Change habits	80	2
Total Cost		20	15

- ▶ Most Efficient Solution: Sharing Costs



Action vs. Financing: who is to pay?

Actor	Measure	Cost
Transport Industry	Cleaner Engines	80
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- ▶ Assumption: no transfer
- ▶ Transfer possible for reasons of
 - ▶ Fairness, political reasons
 - ▶ Efficiency
- ▶ However: Financing is *independent* of action
The cheapest cost avoider should take the measures



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\Rightarrow **Transfer can enhance welfare, but not necessarily**



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



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CCAP and Regulatory Impact Assessment

Impact Assessment Guidelines SEC(2005) 791



Key analytical steps in impact assessment

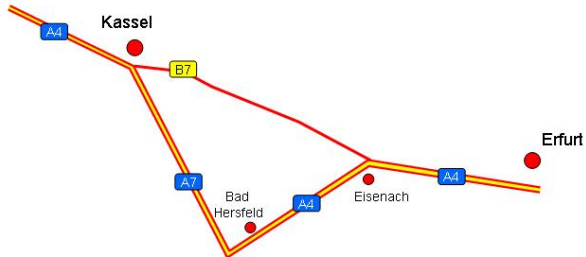
1. Identify the problem.
2. Define the objectives.
3. Develop main policy options.
4. Analyse their impacts.
5. Compare the options.
6. Outline policy monitoring and evaluation.

Stakeholder consultation & collection of expertise can run throughout the process.

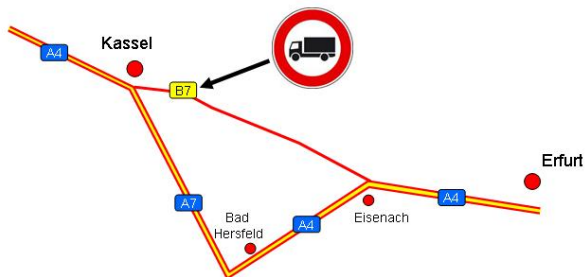
Steps 1-5 of RIA = CCAP: welfare maximisation



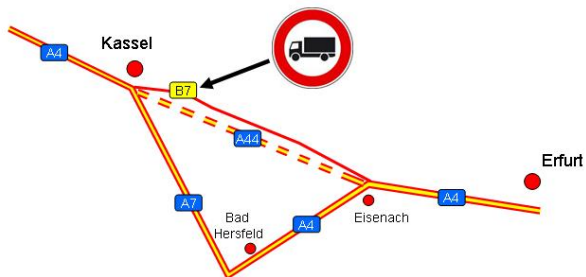
Example: Missing A44 near Kassel



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3. Policy options:



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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



Impact Assessment A44

4. Impact Analysis:

- ▶ Costs of HGVs on B7
- ▶ Extra costs of detour: time⁺, fuel⁺, externalities⁺
- ▶ Costs of A44: building motorway⁺, time saved⁻

5. Comparison of the options:

- ▶ B7 \geq Motorway $>$ detour
- ▶ The relevant court findings use cost-benefit reasoning in the spirit of the cheapest cost avoider principle (also EJC in different case)



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The CCAP and Art. 174

- ▶ Art. 174, EC Treaty: "... the polluter should pay"
Two possible interpretations:
 - ▶ Polluter entirely responsible for reduction of externality: PPP
 - ▶ Polluter has financial responsibility (possible transfer)
⇒ *Open question*: which measures should be taken?
- ▶ However, "the Community shall take account of (...) available scientific and technical data"
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- ▶ Cheapest Cost Avider Principle: guarantees efficiency for growth, jobs and competitiveness
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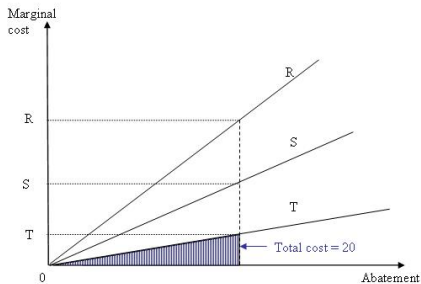
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Thank you very much for your attention!



Unilateral abatement of external costs



Unilateral avoidance of an externality



Shared abatement of external costs

