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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

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

- ▶ Transport industry most efficient at abatement



PPP and efficiency

Scenario 2

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

- ▶ State most efficient at abatement



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 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



PPP and efficiency

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



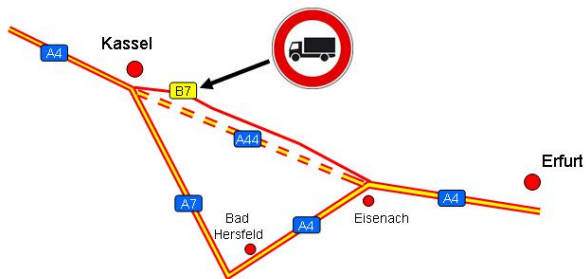
The Cheapest Cost Avoider Principle

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!

