PROJECT

TRENEN II STRAN

Models for Transport Environment and Energy - version 2 - Strategic Transport Policy Analysis

**Funding:** European (4th RTD Framework Programme)

**Duration:** May 1996 - Jun 1998

**Status:** Complete with results

**Background & policy context:**

Analytical models can help policy-makers to identify the most promising directions for improvements in transport policy. A key area of interest has been the gap between present and optimum prices for transport - which prices are too low or too high, and which types of policy measure are the most efficient in achieving reform.

**Objectives:**

TRENEN aimed to develop a set of strategic models of urban and inter-urban passenger and freight transport, and to use these models in assessing pricing policy options for the European Union.

**Related Projects:**

- AFFORD - Acceptability of fiscal and financial measures and organisational requirements for demand management.
- CAPRI - Concerted Action for transport pricing research integration.
- EUROTOLL - European project for toll effects and pricing strategies.
- PETS - Pricing European transport systems.
- QUITS - Design and testing of an integrated methodology for the valuation of the quality of transport systems and services in Europe.

**Parent Programmes:**

[FP4-TRANSPORT - Specific research, technological development and demonstration programme in the field of transport, 1994-1998](#)

**Institute type:** Public institution

**Institute name:** European Commission; Directorate-General for Energy and Transport (DG TREN; formerly DG VII)

**Funding type:** Public (EU)

**Partners:**

NA

**Organisation:** Katholieke Universiteit Leuven

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**City:** Leuven

**Contact country:** Belgium

**Key Results:**

Econometric models have been developed, which compute optimum prices for transport in specific
cities and countries. These prices take account of external costs (such as congestion, pollution, noise and accidents) as well as taxes and resource costs. In a series of case studies, comparisons have been made between current and optimum prices.

Typically, the consumer price for using a car in a city in peak periods covers only one third to half of the full marginal social cost. There are two main sources for this discrepancy: unpaid parking and the external costs of congestion. In off-peak periods, prices and social costs are much closer. By comparison, for bus travel, prices are similar to social costs.

In an optimal pricing scenario, prices for car travel could typically rise by 100 - 250% in peak periods, depending on the city context.

Current transport taxes in European cities are more or less equal between peak and off-peak. This implies that society would benefit from raising the price of using a car in peak periods. Cordon pricing (for urban access, differentiated between peak and off-peak), combined with charging for parking at resource cost, is found to achieve the majority of the theoretical maximum benefit.

For inter-urban transport, pricing inefficiencies are generally less significant. Prices of peak period car and truck use do not cover congestion costs. Bus transport is typically heavily subsidised and under-priced. Rail freight and inland waterways have prices that are reasonably in line with social costs.

**Policy implications**

The case studies indicate the relative performance of different pricing policy instruments:

- Parking policies: making all road users pay for the resource cost of their parking place, plus an extra charge, can be very effective, achieving 1/3 to 2/3 of potential societal benefits and reducing congestion.
- Emissions taxes and standards: stimulating the use of cleaner cars is important for urban areas, but may not be cost-effective in non-urban areas.
- Fuel tax policies: higher fuel taxes could reduce car traffic in urban areas and on peak period inter-urban trips. However, other traffic (such as off-peak road freight) may also be unjustifiably inhibited. Fuel taxes are therefore not a good instrument for pricing reform, due to the lack of differentiation between different transport markets. Tax evasion may also result across international borders and through non cost-effective investment in highly fuel-efficient vehicles.
- Reduced subsidies to public transport: once the pricing of car transport can be corrected, public transport fares should not be set below the marginal social cost and should differ between peak and off-peak periods.
- Simple congestion pricing: cordon pricing in urban areas and congestion pricing on inter-urban highways can realise a substantial fraction of the benefits of optimum pricing.

Documents:
- [trenen.pdf (Final report)](trenen.pdf)

**STRIA Roadmaps:** Network and traffic management systems

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Decarbonisation, Societal/Economic issues