Internalisation of external Costs - The Example of the Swiss Heavy Goods Vehicle Fee

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Driver for Introduction: Transit Traffic
1994 Two Decisive Votes

- Alpine Initiative accepted
  - Protection of the Alps
  - Goods Transit Traffic mandatorily by Rail
  - No extension of Road Network
- Constitutional Bases for HVF accepted
  - Heavy Goods Vehicles (>3.5 tonnes)
  - Polluter Pays principle
International Implications

• Position EU
  • Mandatory Shift is discriminating
  • Requests admission of 40 tonne-lorries

• Swiss Economy
  • Claims to be handicapped
    • Non member of European Space (refused 1992)
  • Non member of EU
  • Demands better access to European Market
The window of opportunity

Bilateral Treaties
Requested by Swiss Economy

40t Limit
Non discrimination
Requested by EU

Shift to Rail
Requested by Swiss People

HVF
1998: Law for HVF accepted

Objectives:

- Polluter pays Principle
- Environmental Protection
- Transfer to Rail
Uncovered Costs

Total 750 Mio € (in 1993)
Calculation of the Rate

Total uncovered Costs (750 Mio €)
Total Transport Performance 47 (Bio tkm)

\[
\text{Rate} = \frac{750 \text{ Mio } \text{€}}{47 \text{ Bio tkm}} = 1.6 \text{ Ct/tkm}
\]
Design of the Fee

- Vehicles with admissible Weight > 3.5t
- For Use of all Roads
- Performance-related
  - Distance
  - Weight (Vehicle and Trailer)
  - Emissions (Situation since 2009)
    - Euro 0/1/2: 2,4 €Cts/tkm
    - Euro 3: 2,1 €Cts/tkm
    - Euro 4+: 1.8 €Cts/tkm (add. Rebate for Euro 6)
Implementation

• 1.1.2001
  • Introduction HVF (Rate 1.3 Ct/tkm)
  • Replacement of flat Fee (similar Eurovignette)
  • Increase Weight Limit from 28 to 34t

• 1.1.2005
  • Raise HVF Rate to 1.9 Ct/tkm
  • Increase Weight Limit to 40t

• 1.1.2008
  • Raise HVF to 2.1 Ct/tkm
Effects of the Fee

- Road Transport Business
- Costs
- Vehicle Kilometres
- Transalpine Trips
- Rail
- Rail Infrastructure
- Environment
Impact on Road Transport Business

- Adjustments of the Fleet Composition
  - Cleaner = cheaper
  - Lower Weight = Lower Fee
- Changes in the Haulier Business
  - Concentration due to
    - Better use of Logistics (less empty Trips)
    - Fleet Adaptation can better be realised
- Employment: stable (14‘000 employees)
Impact on Costs

- Impact on Road Transport Costs: small
  - Fee equal to about 20% of Costs, but
  - Outbalanced by Productivity gains
    - Higher weight limit
    - Less empty trips
- Impact on final customer price: neglectable
  - Transport Costs: on average only 1-2% of final price
  - Impact on Inflation: Only 0.11% (According to Federal Office for Statistics)
Effects on Vehicle Kilometers

![Bar chart showing vehicle kilometers from 1997 to 2007]
Effects on Alpine Trips

- Gr.St.Bernhard
- Simplon
- Gotthard
- San Bernardino

Heavy vehicles in 1000

Year:
- 1981
- 1986
- 1991
- 1996
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
Impact on Rail

- No significant Shift due to:
  - Rail Share traditionally high
    - Over all 40%
    - In Transalpine Transport 65%
  - Higher weight limit for trucks
  - Pricing is one element among others
    - Reliability
    - Simple Procedures
    - Modern Infrastructure
Use of Income:
2/3 For new Rail Infrastructure
Impacts on Environment (Aggregation effects Road/Rail)

Old Regime

New Regime

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<th>NOx</th>
<th>PM10</th>
<th>CO2</th>
<th>Energy</th>
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<td>100.00%</td>
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<tr>
<td>New Regime</td>
<td>84.1%</td>
<td>89.7%</td>
<td>96.3%</td>
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Outlook

• Adaptation of External Costs
  • Tool for adaptation of already calculated costs
  • Revision of the whole scheme
• Additional measures to support Transfer to Rail
  • New Infrastructure (Gotthard Base Tunnel)
  • Measures on Feeder Lines (Corridor for semi trailers with 4-metre corner height)
  • Co Financing of new Terminals abroad
• Alpine Crossing Exchange
  • Aim: limit the number of transitting trucks to 650‘000/a
  • Number converted into Crossing Rights
  • Price determined by supply and demand
  • Concerted Approach throughout Alpine region necessary
Conclusions

- System Works well
- Road Transport has become more efficient
- Truck traffic has been reduced
- Environment: Positive Balance
- Rail: Share maintained - Significant Shift possible only in Context with other Measures
- Impact on consumer price neglectable (0.11%)
- Last but not least: No detour traffic!
Final Remarks

• For more information see: http://www.are.admin.ch/themen/verkehr/00250/00461/index.html?lang=en

Thanks for your attention