

Impact of Tolling in Different Areas

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Verkehrsplanung / Consulting

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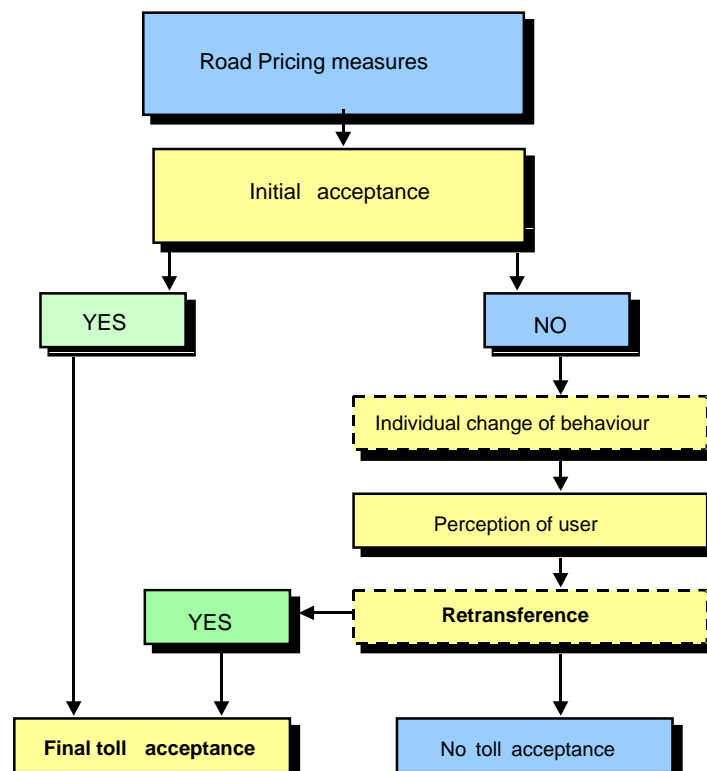
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Verkehrsplanung / Consulting

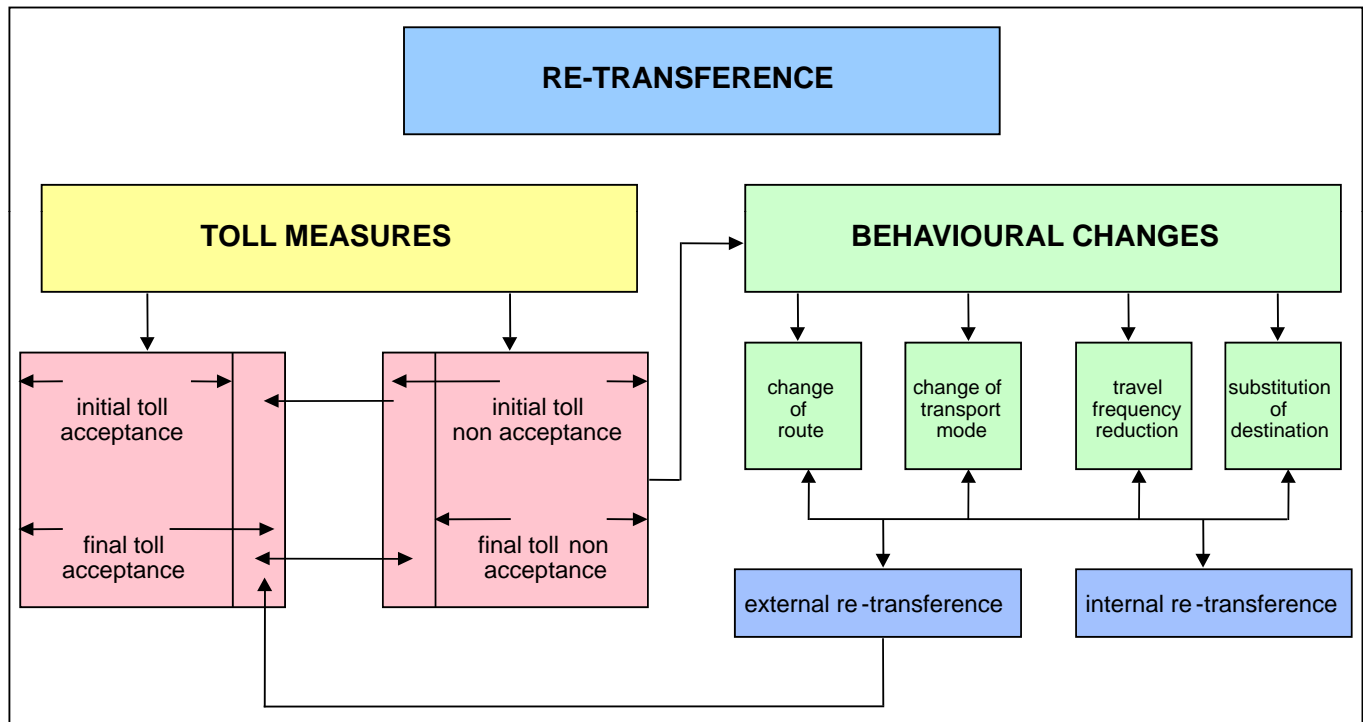
Introduction

- Existing different tolling principles (time, distance, etc.)
- Existing different “areas” covered (motorways, cities, all roads, etc.)
- Existing different vehicle types covered (Distinction between cars and HGV or based on gross vehicle weight or number of axles, etc.)
- Different political aims (money, environment, inhabitants, etc.)
- Different legal backgrounds (EU-Euro-vignette directive for HGV on motorways, national laws, regional regulations)

Principal measurement of possible reactions



Principal measurement of possible reactions



Principal measurement of possible reactions

Re-transference:
Up to 50% (person cars)!
➔ Political Relevance!
(political conflict potential:
„long time acceptance but with anger“)

Implementation of a vignette system in Bulgaria

▪ Background

- Decision of Bulgarian government to implement a vignette system in 2004
- For motorways and class I, II and III roads (in total 19.000 km)
- For all vehicles (3 types of vehicles classes)
- Accession to the EU was foreseeable (at the time of decision)
- Wish of price-differentiation between Bulgarians and foreigners

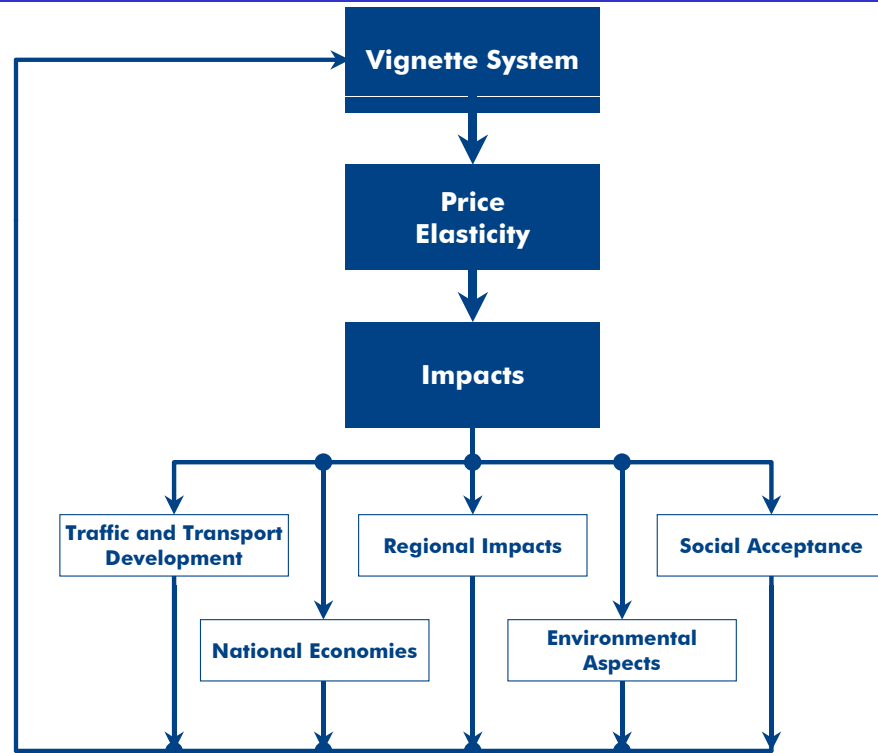
Implementation of a vignette system in Bulgaria

▪ Method

- To estimate possible price levels for and impacts (traffic, revenues, environment etc.) of a vignette system in Bulgaria the conduction of user acceptance survey was essential
- Survey gives information about political acceptance to the politicians → one relevant part for the decision on the price levels
- Results of the acceptance survey lead to price elasticities specific for the Bulgarian situation
- Price elasticities are the basis for estimation of impacts

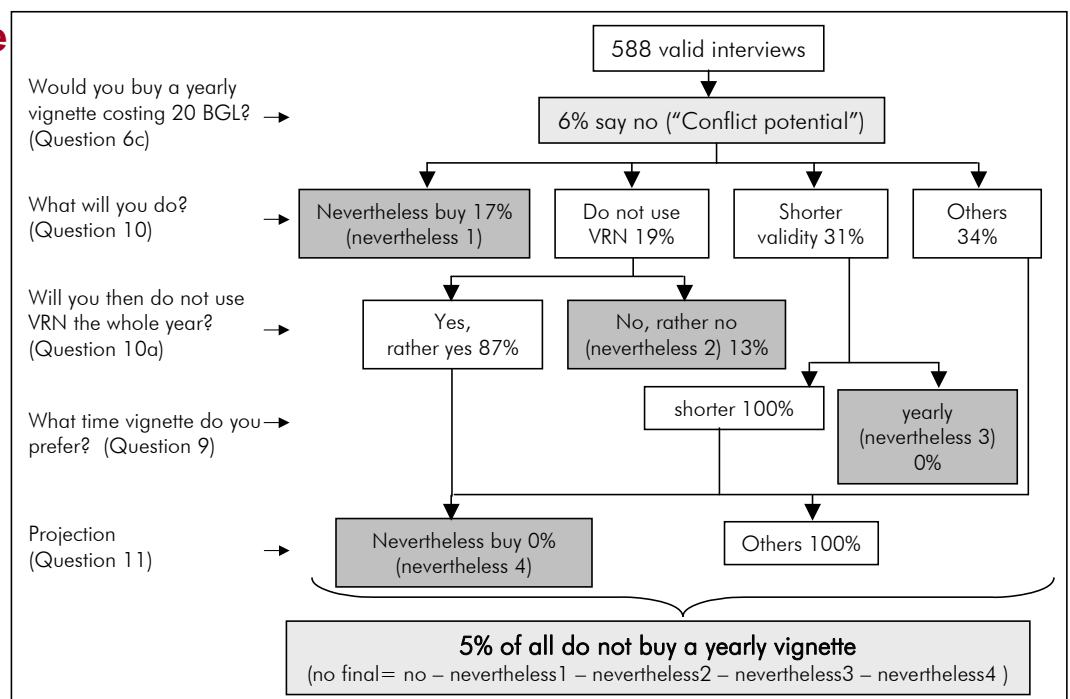
Implementation of a vignette system in Bulgaria

Method



Implementation of a vignette system in Bulgaria

Survey scheme with results - example for Category 1 (passenger vehicles up to 8+1 seats), yearly vignette price: 20 BGL



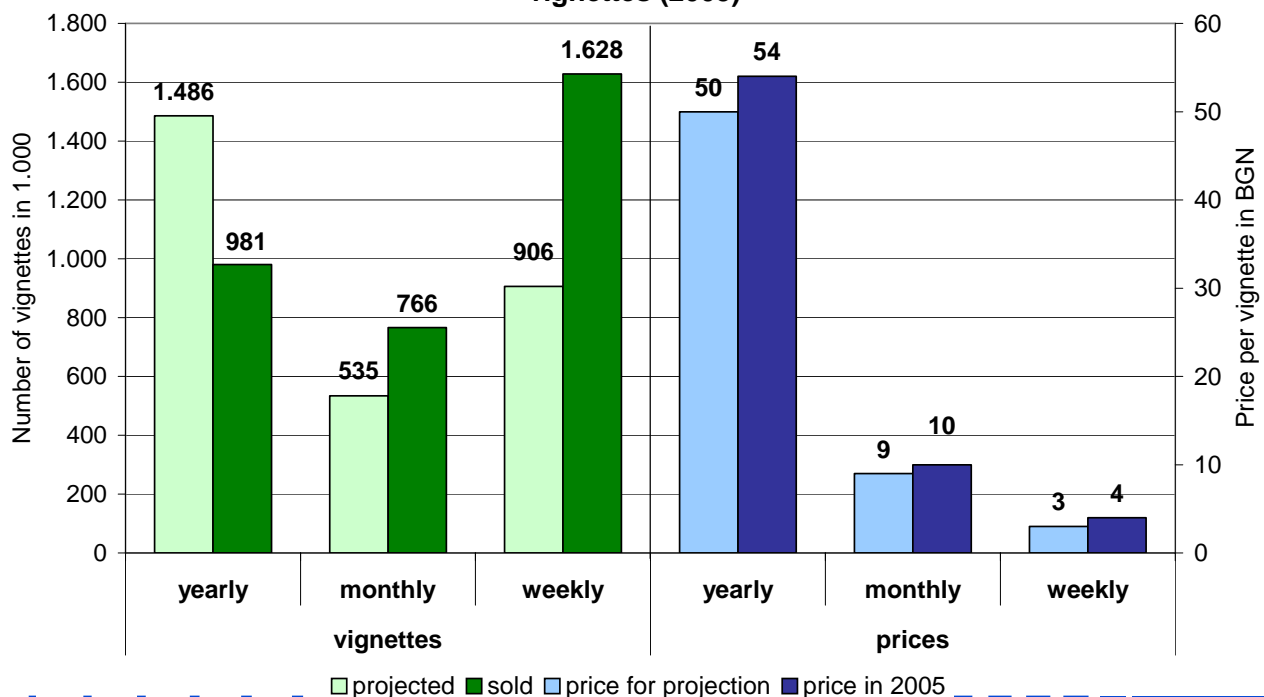
Implementation of a vignette system in Bulgaria

Results

- The initial non-acceptances (short-term) of the Bulgarians for a yearly vignette increases strongly with the vignette price
- The final acceptances for a yearly vignette are essential higher for all vehicle categories and price classes
- Both facts are an indication of a rather high conflict potential (low initial acceptance, but rather higher end acceptance („I do not want it, but I have to accept it“).
- Foreign vehicles and busses are more or less captives with a high (enforced) acceptance.
- The most important expectation of the vignette user is the improvement of the roads, this condition is very important for the reduction of the conflict potential
- The reduction of the traffic (and according to this the CO2 reduction) is estimated with about 10%.

Implementation of a vignette system in Bulgaria

Comparison of projected vignette buyers (Bulgarian Pkw) with sold vignettes (2005)



Possible HGV-Tolling-System for all roads in Austria

▪ Background

- Study of the Impacts of a HGV-Tolling-System for all roads in Austria
- Commissioned by the Ministry of Transport, Innovation and Technology, 2008
- Team: HERRY Consult GmbH (Project Leader) and Institut für Volkswirtschaftslehre / Wegener Zentrum, Universität Graz
- Herry (Project Leader) / Sedlacek / Steininger / Tobin

Possible HGV-Tolling-System for all roads in Austria

▪ Principal impacts

- Impacts on transport
- Economic impacts
- Environmental impacts
- Social impacts (depending on the use of the additional revenues)

Possible HGV-Tolling-System for all roads in Austria

▪ Possible impacts on transport

- Route change (within Austria and to non Austrian areas)
- Changes of transport mode
- Optimization of loading (increase of load factors)
- Reduction of empty trips
- Optimization of routes and tours
- Substitution of destinations

Possible HGV-Tolling-System for all roads in Austria

▪ Example for impacts on transport: Distance related toll for vehicles more than 3.5 t gvw in Austria (2004)

- Route change to non Austrian areas: 2% of transport volume (vehicles)
- Route change within Austria: 2% of transport volume
- In total about 2% of motorway transport performance
- All other effects have been negligible

▪ BUT: Example Hungary (M1)

Possible HGV-Tolling-System for all roads in Austria

▪ Projected impacts on transport

- Higher reduction of vehicle performance (v-km) than of transport performance (t-km)
- ➔ Most important reaction is an increase of efficiency within in the handling of transport
 - Increase of load factors
 - Reduction of empty trips
- Other possible reactions are not so important

Possible HGV-Tolling-System for all roads in Austria

▪ Investigated macro economic impacts

- BIP
- Labour market
- Private consummations
- External costs of Transport

▪ Correlation between toll prices and degree of impacts

- BIP: over proportional decrease
- Unemployment: under proportional increase
- Private consummations: over proportional decrease
- External costs of Transport: high over proportional decrease

Possible HGV-Tolling-System for all roads in Austria

▪ Projected macro economic impacts

- The allocation of macro economic impacts (added value, production- and price level, labour market, import and export) are different within the different economic sectors
- The population is directly effected by the toll, if the transport sector as well as the shippers include the toll in their prices to the customers
- The level this toll transfer to the customers depend on the degree of monopolisation of the economic sector
- Sectors with a developed market power will transfer higher parts of the toll to the customers then other sectors
- Relative strengthening for the Austrian economic

Possible HGV-Tolling-System for all roads in Austria

▪ Investigated micro economic impacts

- Cost for production (direct and indirect)
- Additional Revenues due to the toll
- Change in Rail-IBE revenues (due to change of transport mode)

▪ Evaluation of impacts is

- Very different
- Most of the time “ex ante”, rather seldom “ex post”
- Most of the time theoretical, rather seldom with empirical background

Price elasticity of vignette prices in Austria

▪ Background and method

- A time related vignette system was introduced in 1997 for motorways in Austria
- A discussion about the increase of the price level was started in 2000
- A study based on a user survey was conducted to elaborate respective price elasticities (Herry Consult, GfK)
- Different possible price levels have been checked by general and in depth interviews with a multi-step approach
- Model calculations based interview results differentiated for different user groups (nationalities, vehicle types)
- Differentiation between short and long term effects



Price elasticity of vignette prices in Austria

▪ Method

- Multi-step approach (direct and indirect questions concerning the behaviour due to increase of prices):
 - Direct question to price increase
 - First call-back (what will you do instead?)
 - Second call-back (will you really renounce driving on motorways)
 - Projection question (what will the others do?)
 - Discussion of the last trip (check possibility to not use motorways)

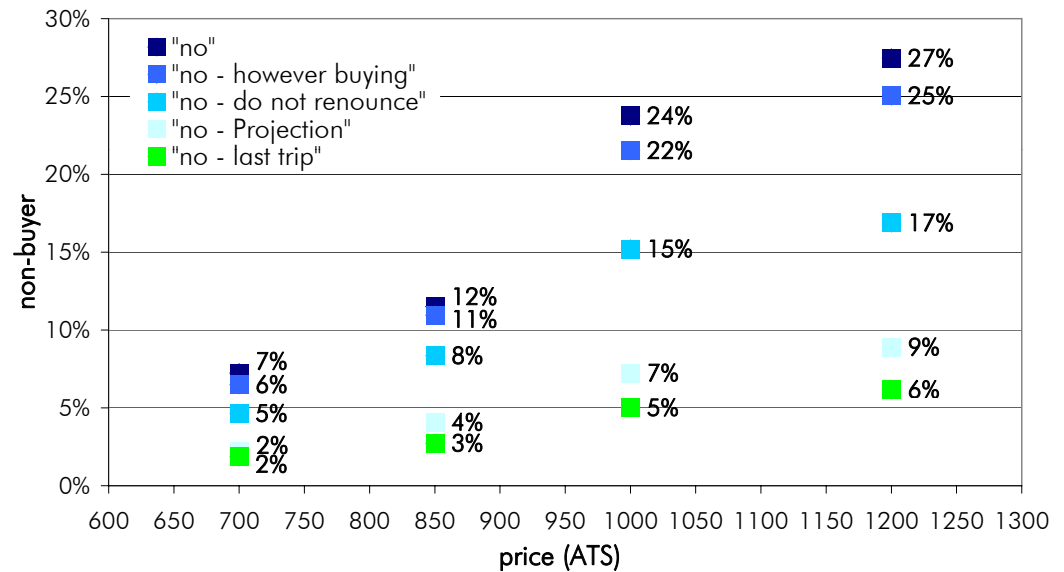


Price elasticity of vignette prices in Austria

Results

(Austrian cars)

Development of the reaction "not buying a yearly vignette" due to higher prices



- Projection for ATS 1.000: 12% less buyers of yearly vignettes after one year

- Sales in 2001 (price of yearly vignette: ATS 1.000): -11% to year 2000

Thank you!

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