

# **Transport Research Arena - TRA Europe 2008**

***Strategic Session on Road Pricing and Tolling***

## **Evolution of Road User Charging Systems in Europe with a Focus on Poland**

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# Background

- In several CEE countries road expenditures amount to less than 0.8% of GDP, while 1% to 2% of GDP is generally considered necessary to maintain road networks and carry out a modest amount of new construction
- As vehicle fleet and road usage have increased, road networks have been fast deteriorating and vehicle operating costs increasing. In some countries, more than one third of the main road network is in poor condition
- As a result, several countries in the region are planning to establish RUC systems that would provide more funds for maintaining and expanding their road networks

# **Ideally Road User Charges (RUC) should be**

- economically efficient**
- equitable**
- collected at little cost**
- not easily evaded**

# Methods of Charging for Roads

- **Fuel taxes (do not reflect the higher damage done to roads by heavy vehicles)**
- **Vehicle licences (not use related)**
- **Charges for non-standard and overweighted vehicles (hard to control, relatively easy to evade)**
- **Charges on the purchase of new vehicles (not use related)**
- **...**

# Methods of Charging for Roads

- **Sales taxes (not use related)**
- **Vignettes (do not reflect usage, relatively easy to evade)**
- **Direct user fees**
  - **Vehicle-distance traveled fees (require substantial initial outlay, sophisticated administration)**
  - **Tolls (have significant capital and operating costs)**

# The Polish Case

## Budget Allocation

About 12% of revenues from excise duty on fuels is presently allocated to road expenditures

## National Road Fund

The so called “fuel charge” and revenues from vignette charge go directly to the NRF



**Ministerstwo Transportu**  
The Ministry of Transport



**MINISTRY OF TRANSPORT OF POLAND  
AND WORLD BANK**

***WORKSHOP ON ROAD USER CHARGING SYSTEMS***

**Warsaw, June 11 and 12, 2007**

**All workshop presentations are available at:**

**<http://www.worldbank.org/eca/transport>**

# **Some Key Workshop Conclusions**

- **Fuel tax is the most significant form of road user charge. However, there is no direct link between revenues from fuel tax and road expenditures – on average annual fuel tax collection is about 142% of a country's total expenditure on roads**
- **Relative to fuel tax revenues, the highest annual toll collection is in Norway (43%), followed by France (about 25%) and Italy (about 15%)**



# Road User Charges and Expenditures in Selected European Countries

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Annual expenditures (EUR/km)</b>	<b>89,900</b>	<b>9,700</b>	<b>255,000</b>
<b>Toll revenue (% of fuel tax)</b>	<b>7.4</b>	<b>0</b>	<b>43.3</b>
<b>Fuel tax (% of road exp.)</b>	<b>141.7</b>	<b>101.1</b>	<b>151.4</b>
<b>Road exp. (% of RUC)</b>	<b>66.4</b>	<b>47.2</b>	<b>93.3</b>

# **Distance-related Road User Charges Reflect Users Pay Approach**

- **Vignette charges for trucks have been replaced by electronic toll collection in Germany, Austria, Czech Republic**
- **Similar replacement under preparation in Hungary, Slovakia, Poland**

# Electronic Toll Collection (ETC)

- ETC systems charge tolls without causing stops and traffic jams - free flow
- ETC systems take advantage of vehicle-to-roadside communication technologies (traditionally via microwave or infrared communication, more recently via GSM technology)
- ETC systems require On Board Units (OBU), vehicle detection and classification as well as enforcement technologies

# Examples of ETC for Heavy Goods Vehicles

- **Switzerland** – trucks of total weight over 3.5 tons on all roads, based on microwave technology
- **Czech Republic** – trucks of total weight over 12 tons on selected sections of motorway and primary road network, based on microwave technology
- **Germany** – trucks exceeding 12 tons on motorway network, satellite-based (GPS) system

# Heavy Goods Vehicle Charging in Germany

- Since 1st January 2005, all trucks exceeding 12 tons pay for each kilometer of motorway traveled
- Fee is based on emission classes and number of axles
- GPS-based “on board unit” (OBU) mounted on a truck

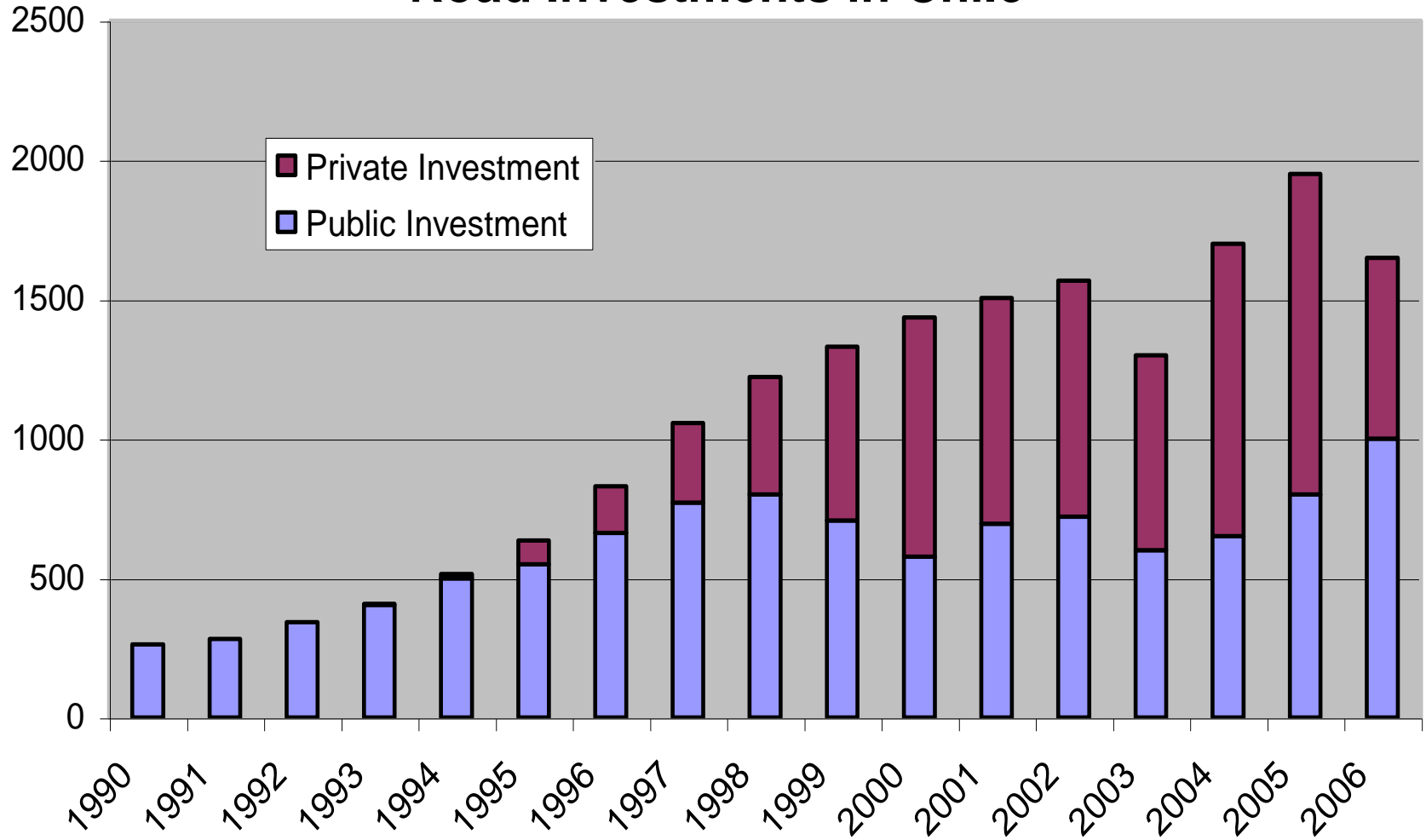


# Private Financing of Roads

- **Public-private partnership (PPP) schemes underutilized in CEE**
- **In CEE, only Hungary, Croatia and Poland have so far concessioned some motorway projects to private contractors**
- **Currently good progress toward launching a PPP program in highways (e.g., Russia, Serbia, Albania, Slovakia, Latvia)**

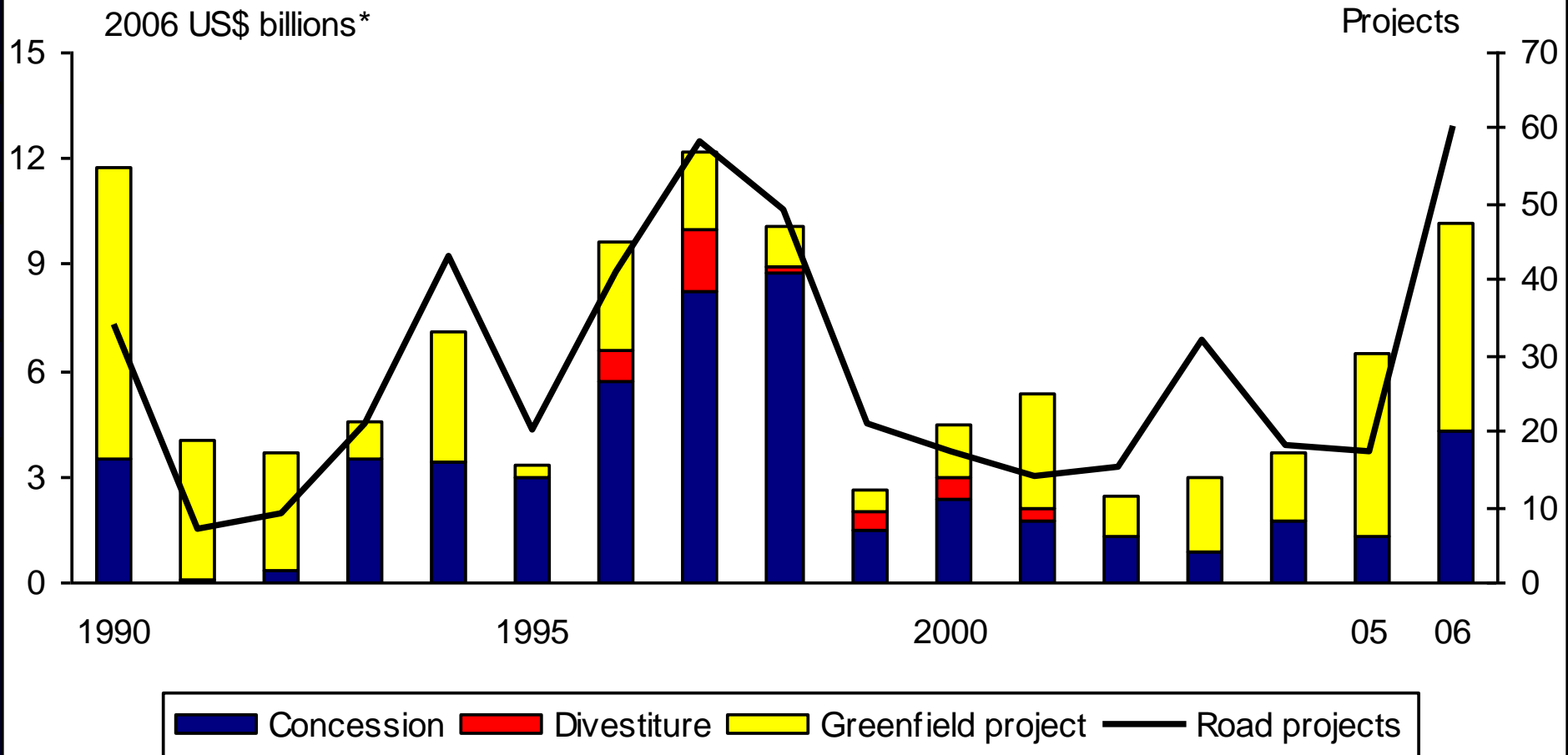
US\$ millions

## Road Investments in Chile



# PPP Revival in Transport in Recent Years

Investment commitments to transport projects with private participation in developing countries by subsector, 1990-2006



Source: World Bank and PPIAF, PPI Project Database.

\* Adjusted by the 2006 US CPI.



**Thank you!**

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