ONDIAL
E LA ROUTE
ARIS 2007

Impact of Road Prices on traffic: a Synthesis of Internaitonal Experience

Rico Maggi

- University of Lugano
- Professor
- rico.maggi@lu.unisi.ch

UNIVERSITÀ
DELLA
SVIZZERA
ITALIANA

Introduction

Economists agree on the usefulness of road pricing in general, but on very little beyond this

They agree that anything offered for free will create an excess demand and hence in our case congested roads.

With time varying demand, omnipresent in urban commuter traffic, peak load pricing is omnipresent in the economy, but almost completely absent in urban traffic

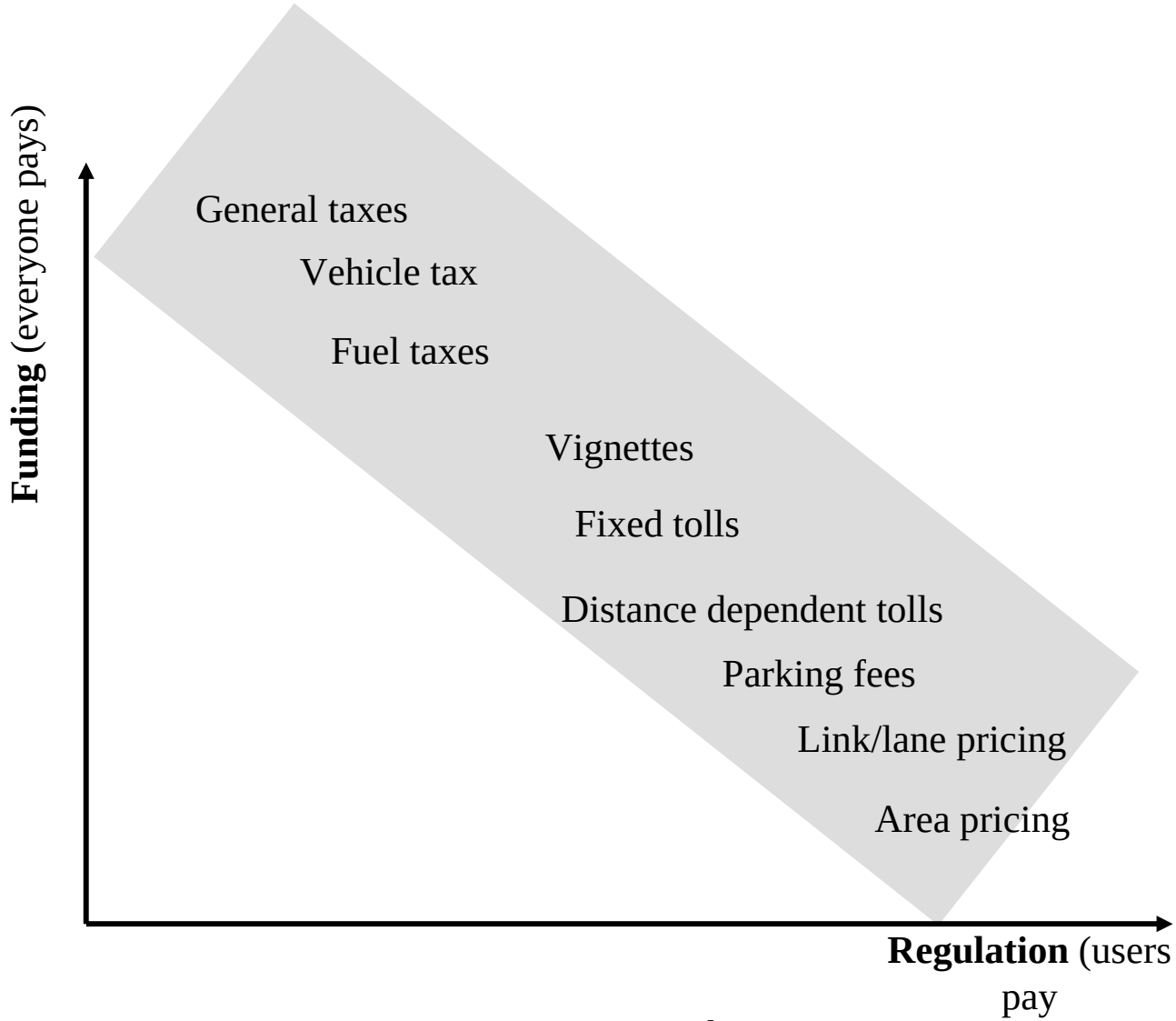
Introduction (cont.)

Road tolls date back to the 19th century

Concentrate on RP in a narrow sense, i.e. the pricing of (ideally) the marginal cost created by users of a road or a network in terms of congestion

Focus is on recent experiences in urban areas where the main goal has been to alleviate congestion.

Pricing?


Funding (everyone pays)
General taxes
Vehicle tax
Fuel taxes
Vignettes
Fixed tolls
Distance dependent tolls
Parking fees
Link/lane pricing
Area pricing
Regulation (users pay

Impacts?

Not Cost/Benefit but behavioral reactions

Introduction RP

Don't react and pay price
Change route or lane
Change mode
Change departure time
Change destination

Cases:

Singapore, Norway
London, Stockholm
Paris, US Pay Lanes

Singapore

1975 ALS	**- 3$ 7.30 – 9.30 am** **- 76% of traffic shifted to before and after and escape corridors** **- evening peak no change** **- note: only road bound PT as alternative**
1989	**- 3$ 7.30 – 10.15 am 4.30-7.30 pm** **- reduction to 1975 levels** **- increase in average speed**
(1994)98	**- 7.30 am – 6.30 pm with reduced shoulder prices** **- Lab continues**

Norway

By end 2006

- **44 toll projects including 6 urban toll rings**
- **purpose is to raise funds NOT to regulate traffic**
- **“smart way to supply ifrastructure, not smart demand management” (Fortun & Furuseth)**

Impacts

- **Better traffic conditions in any sense due to an enlarged road network**
- **Geography and diameter of toll rings help**
- **Price elasticity close to 0**

London

2003	- 5£ 7am to 6.30 pm inner city - Improved bus services - Significant traffic reduction - Increased revenues - Significant implementation and operation cost
2005 (2007)	- 8£ western extension of zone - traffic patterns around zone largely stable - further slight traffic reduction - increase in revenue
Long run	- Cost benefit positive? - Drivers adapt with increasing revenue and reduced generalized cost - Impacts difficult to measure (exogenous factors)

Stockholm

2006 (Experiment) - 10-20 SKR 6.30 am to 6.30 pm inner city

- Improved PT services
- Significant traffic reduction
- Reduction in pollution
- Increased public transport ridership
- Deviation of traffic on already congested bypass

Present and future ?

Paris

1992	- A1 (north) 25% increase of toll 4.30 – 8.30 pm on Sunday afternoon - 25% discount 2.30 – 4.30 pm and 8.30 – 11.30 pm - reduction of traffic in high toll period - peak shift to period 9 – 10 pm
Conclusion	- Shifting departure time works in leisure traffic

US pay lanes

Since 90ies	- Electronically tolled lanes (ex HOV) - Free on and off drive - Variable tolls - The alternative is the non tolled lanes - The objective is value for money
Impacts	- Higher efficiency of road system - Reduced travel time for who needs it and pays - No relevant distributional impact - No relevant impact on overall congestion unless pay lanes are built in addition to existing ones

Conclusions

Pricing is not the perfect instrument – this is no good reason not to use it

It should not be used as the only means

Alternatives matter and elasticity matters

Majority of drivers remains on the road

Important alternatives are change of mode and change of departure time

Detour traffic is always present