8th Global Conference on Environmental Taxation

Munich, 18-20 October 2007

Environmental policy, congestion and land use

Alberto Majocchi
President of ISAE , Rome
University of Pavia

Land use as an environmental problem

- One of the main environmental problems human beings have to face regards the use of land
- Land is a scarce good, especially in areas with high population density
- In other areas - especially in developing countries - the scarce good is productive land
- The price of land is determined by demand and supply, disregarding the environmental impact - and the opportunity costs - of an excessive use

Why land scarcity is growing

- The scarcity of land is growing around the world due to:

  - population growth

  - concentration in the urban areas

  - desertification of an increasing share of agricultural land (two thirds of arable land could disappear in Africa before 2025)

Congestion in urban areas

- In metropolitan areas a growing problem is represented by congestion due to the use of private cars
- Alternative modes of facing mobility demand are confronted with many difficulties:
- the building of the needed infrastructure is costly
- new technologies find difficult to enter the market
- the finance of urban governments is normally constrained
- the shifting from private to public transport requires a long term perspective

Facing mobility demand without cars

- The final goal is to exclude [decrease?] the use of private cars for urban mobility
- The problem is: How to fill the gap of mobility during the transition?
- It is in this perspective that the use of road pricing seems particularly justified

The double impact of Road Pricing

- Road pricing has a first-round effect of rationing the use of private car

- But in the same time it provides the funds needed:
- to enlarge the network of public transport
- to support research efforts for the implementation of new technologies

The use of Road Pricing is spreading, mainly in Europe

- Cordon pricing has been adopted in Bergen, Trondheim, Oslo, Singapore and London
- In Milan it will be introduced from January 2nd, 2008 with a daily ticket varying from zero to 10 euro according to the amount of emissions
- Season ticket is foreseen for residents and not residents

Continous pricing and further constraints on the use of private cars

- Continuous pricing represents a further evolution of road pricing
- As far as the network of public transport is completed - and new modes of transport are adopted - road pricing should be backed by more and more compelling constraints on the use of private cars

New technologies and mobility

- The restrictions on the use of private cars through an increased cost due to road pricing provide an important stimulus to the adoption of new technologies in guaranteeing urban mobility
- A larger use of walking and safe cycling could play an important role in guaranteeing mobility, with positive effects on health and a corresponding reduction in social costs (and obesity…)
- But policy choices regarding mobility by themselves are unable to guarantee the achievement of an environmental-friendly city

The role of urban planning

- The use of private cars is largely dependent from the structure of urban planning
- Most important are the choices regarding residential and working places
- But equally important is the location of commercial sites

Commercial sites and the structure of the city

- The diffusion of big boxes is one of the main reason explaining the rise of labour productivity in the US
- It is due also to many features characterising American cities (low density of population, public policy favouring a widespread diffusion of residential sites)
- In Europe the structure of the cities is different (historical centres, constraints on the building of urban highways, preference for shopping in small shops in the pedestrian areas)

Environmental costs of big boxes

- Things are changing also in Europe since prices for consumers are lower in the big commercial sites
- External costs of mobility from the city centre to outside the urban area are not considered
- more traffic with an ensuing increase in energy consumption and congestion
- difficulties for old people that do not use car
- reduced security in the inner city due to the closing of small shops

Internalization of environmental costs

- These costs must be internalised through environmental taxes
- High parking fees in the commercial sites could be levied by the municipalities
- External urbanization costs must be covered by the promoters of the commercial sites

The social costs of tourism

- The conservation of historical centres within Europe is endangered by an increasing flow of tourists
- They provide large benefits to private firms, but rising costs to municipalities
- External costs is linked to the increasing amount of wastes or the investments needed in the transport network, not covered by prices paid by tourists

How to cover the external costs of tourism

- These costs could be internalised through the use of a tax levied on tourists
- An example of this tax is the *Aufenthalts Abgabe* introduced in Trentino-Südtirol in 1988
- The introduction of this tax in the Italian cities has been proposed by 42 Mayor
- Price differentiation could be introduced for residents and not residents in the transport system (an example is found in Venice)

Environmental friendly agriculture

- Land conservation is largely dependent from agricultural policy
- Intensive use of land and climate changes favours desertification
- Price policy must be backed by taxes hitting more heavily environmentally unfriendly modes of agricultural production
- Measures for controlling climate changes are particularly important in environmentally fragile areas like Africa

The consequences of the use of bio-fuels

- The EU wants to replace 10 per cent of its transport fuels with bio-fuels by 2020
- The distorsions in agricultural production are startling
- The increasing costs of animal feed is raising the prices of dairy and poultry products

Environmental risks of bio-fuels

- The use of bio-fuels could cut down CO_2 emissions, but increase land acidification, use of pesticides and fertilizers, and endanger bio-diversity
- Oecd warns of a possible increase – between 20% and 50% - of agricultural prices
- Bio-fuels production should be not be supported through subsidies, but using "technology-neutral" carbon taxes

A global policy package is needed

- The use of environmental taxes alone is unable to solve all these kinds of problems
- Taxation is an important key for internalizing social costs of land use
- But it must be backed by regulations and constraints on private behaviours

The role of land use policy

- Land use control must play a decisive role in the framework of climate change policy, but also to avoid urban sprawl and the loss of natural habitats and biodiversity
- The quality of life is largely dependent from policy choices regarding urban growth, agricultural development and sustainable use of natural resources