USA vs. EU: Vehicles, Emissions Standards, and Congestion Charges

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Environmental Policy in the EU

Agenda

- USA Emissions Standards
- EU Emissions Standards
- Congestion Charges in EU Cities
- Congestion Charges in USA?
- Difficulties with Standards, Congestion Charges (purpose, effect)
- Policy Recommendations

Emissions Standards

- What are they?
  - Requirements that limit the amount of pollutants released in the air
  - Can be set for vehicles, factories, utilities, and various other sources
  - Regulate pollutants such as carbon dioxide (CO2), sulfur dioxide (SO2), etc.
- Used to promote clean environment, sustainability, and control global climate change
- We will focus on vehicle emissions standards

USA Emissions Standards

- Managed by the Environmental Protection Agency (EPA)
  - Recently, Massachusetts challenge to EPA compels them to regulate greenhouse gas emissions as well
  - First time this has been allowed, for CO2 emissions as well
- Set to promote health and well-being
- California has special permission to have more stringent standards

USA Emissions Standards II

- Two sets of Tiers were defined by Clean Air Act Amendments of 1990
  - Tier I: phased in 1994-1997
  - Tier II: phased in 2004-2009
  - Tier II includes uniform standards for automobiles and light trucks, which were previously different
- President Obama announced new plan last year; new phase will raise fleet average to 42 mpg by 2016 (17.85 kpl), which will indirectly reduce CO2 emissions
- Goal of 250 g/mile of CO2 emissions for passenger cars, light-duty trucks, and medium-duty passenger vehicles (April 2010)

EU Emissions Standards

- Set by a series of EU directives that become increasingly stringent over time; apply to new vehicles sold in EU
- The series of regulations are called Euro 1, Euro 2, Euro 3, **Euro 4**, Euro 5
- CO2 began to be regulated in 2009; goal of 95 grams of CO2 per kilometer by 2020
- EU also complies with Kyoto Protocol; USA does not
- Emissions from transport sector have rapidly risen in the EU over the past 10 years

EU Emissions Standards II

- Current CO2 standards:
  - Light vehicles 130 g/km
  - Partially as of 2012 and completely as of 2015
  - Light commerical vehicles/vans 175 g/km
- Also large labeling campaign, to attack market from supply and demand sides

USA vs. EU CO2 Emissions

- CO2 regulated at 250 g/mi (156/km) now
- Standards set by EPA, an agency
- Aims to cut CO2 emissions by 2020, allowing for the fact Americans drive more

- CO2 regulated at 130 g/km (208/mi) now
- Standards set by EU Council directives
- Aims to cut CO2 emissions by 2012, imposing harsh fines if non-compliance

Emissions Policy Recommendations

- Uniform Standards
  - What are we measuring? What is important?
  - What should we measure with?
- Regulation of Heavy-Trucks
  - Pros and Cons to Industry
- More demand-side measures to make consumers aware
  - Labeling and Clubs
  - Promotion in the Media
- Fleet Averages vs. Minimum Standards vs. International Differences in Driving Habits

A Growing European Problem

- With the emergence of the European Union and the increased development of many European countries, more and more people are living in urban areas
- This has caused an increase in the number of cars, making getting from one place to another more difficult and harming the environment at the same time
- Several countries are trying to curb this use of cars through congestion pricing

What is a Congestion Tax?

- Congestion charges are a system of charging users of a certain traffic network
- Types:
  - Charge when car passes through, regardless of time
  - Charge whenever car passes into zone during rush hour
  - Charge once a day if car passes into zone during rush hour
  - Toll booths
  - License recognizing cameras
- Electronic Road Pricing in Singapore was the first city in the world to implement a road pricing scheme for purposes of lowering congestion, but environmental issues were not the concern

Congestion taxes in Europe

- Trondheim Toll Scheme (Norway)
  - Implemented between 1991 and 2005
  - Wanted environmentally friendly travel, less congestion, fewer accidents, more accessibility to the city
  - Money made from toll went to finance new roads and help several environmental projects
- Ecopass (Milan, Italy)
  - Milan had a high rate of car ownership and high pollution, so Ecopass was started with the purpose of reducing traffic and air pollution
  - Started as a one year trial in 2008 and then became permanent
  - Amount people get charged depends on the emissions of their car
  - High polluting cars are charged, several alternative fuel vehicles are exempt, and the highest polluting cars are banned

Congestion taxes in Europe

- Stockholm Congestion Tax (Sweden)
  - Seven month trial period in 2006
  - Voters voted by referendum and the tax became permanent in 2007
  - "*Environmental fees/congestion tax means that fees will be charged in road traffic with the purpose to reduce queuing and improve the environment. The income will be returned to the Stockholm region for investments in public transport and roads.*"
  - Cars that operated on electricity or a fuel other than petroleum are exempt

Congestion taxes in Europe

- London congestion charge
  - Started in Central London in 2003 and spread to West London in 2007
  - The largest system when it was created
  - Main objective was to reduce congestion and raise money to invest in the city's transportation system
  - Alternative fuel vehicles are exempt
  - An emissions-based charge was proposed in 2006 where vehicles that emitted more carbon dioxide would be charged a higher fee, but this change was never enacted

Effects of the Taxes

- Norway: toll reduced traffic but no studies done on environmental impact
  - Logically, a decrease in the number of cars traveling into the city should have reduced overall emissions
  - Used money raised for public projects like bike paths and free bicycles for people to use, so hopefully people will be encouraged to ride these rather than cars
  - In the years after the tolls were closed, some environmental activists and politicians have talked about reopening the toll ring, but nothing solid has been planned
- Sweden: reduced traffic, better air quality, more efficient cars
  - Traffic reduced by 18%, CO2 emissions by 14-18%, and the number of cars exempt for being hybrid or using alternative fuels almost tripled
- London: levels of carbon dioxide and nitrous oxide decreased, as well as particulates
  - Although improving the environment was not an original objective of the tax, this effect was a welcome outcome
  - There were conflicting studies and differing opinions about the impact of the proposed emissions-based charge, which was a large part of why it was never implemented
- Italy: levels of particulates, CO_2, and NH_3 were reduced and lower numbers of high emission vehicles going into the city

In the United States?

- Michael Bloomberg, mayor of New York City, has been advocating a congestion tax for a few years but the New York state government has decided not to vote on it
  - Bloomberg called the London congestion charge "the best in the world"
  - He envisioned it in large part to deal with climate change; called it PlaNYC
  - Wants to reduce carbon emissions by 30% by 2030
  - New Yorkers support it, but government officials did not
- In 2006, New York and New Jersey announced lower tolls for hybrid vehicles
- San Francisco has a proposed congestion tax and is studying the possible traffic and environmental impacts
  - Found that car-related greenhouse gas emissions could be reduced by 15%

Problems with Congestion Tax

- Some politicians in London said implementing the emissions-based tax would confuse citizens who thought it was supposed to be for traffic congestion.
- If green or alternative fuel cars are exempt from the tax, this leads people to buy those cars so they can travel for free. This can result in increased congestion and pollution.
- The area outside of the taxed area can experience higher pollution due to drivers of higher polluting cars being forced to avoid the congestion zone.
- An assumption of congestion taxes is that it would force more people to use public transportation. Large cities like New York City already use public transportation to capacity, so more people probably cannot be accommodated.
- The tax could be seen as unfair to poorer citizens who cannot afford to buy a fuel efficient car. The hope is that they would use public transportation in place of a more polluting car.

Solutions?

- While the congestion charge system is not perfect, it has seen success wherever it has been implemented
- Implementing the system was controversial and met with much opposition in every city that eventually adopted it. After time passed and people became used to it, the congestion charge became more popular
- Policies involving congestion and the environment are difficult because many different groups are interested in the outcome
  - Local businesses, people who drive, environmental groups, city officials
- There is probably not a solution that completely satisfies everyone, but current systems have shown that loss in revenue for businesses is not significant, people who drive get used to the charge and appreciate the reduced congestion, and the environment is improved
- For these systems to operate in the United States, politicians must understand that most citizens favor reduced traffic and better air quality
- Framing it as a tax might scare people off at first, but with the successes in other countries, this should not automatically disqualify a congestion tax from consideration

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