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Fuel Taxation, Emissions Policy, and Competitive Advantage in the Diffusion of European Diesel Automobiles

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USEFUL LINKS: Full Article

BACKGROUND

- Non-tariff trade barriers have become increasingly more popular, coinciding with the large number of trade agreements (aimed at reducing tariffs) that have been signed over the past few decades.
- Despite being routinely blamed for creating unfair conditions for trade, the actual impact of non-tariff trade barriers remains mostly unmeasured.
- Sometimes these barriers consist of national standards, safety guards, agency certifications of compliance, or – as in the case of our study – favourable tax treatment of products complementary to other locally produced goods and, more importantly, environmental regulations.

METHODOLOGY

- We estimate a discrete model of demand for automobiles in an oligopolistic industry using Spanish vehicle registration data from the 1990s that distinguishes by type of engine (i.e. gasoline and diesel).
- This estimation addresses for the first time the rapid diffusion of diesel vehicles in Europe, with market penetration growing from less than 10% to sometimes over 70% in less than a decade.
- Counterfactual analysis – where firms adjust their pricing decisions to change in policy – allows us to uncover the implicit tariff protection effect of light diesel fuel taxation and nitrogen oxide (NOx) lenient emissions policy characteristic of Europe for many decades.

KEY FINDINGS

- We show that preferences for diesel vehicles increased during the 1990s. Thus, changes in any policy will differ depending on the degree of market penetration of diesel vehicles.
- Focusing on our last year of data, we evaluate the impact of a fuel-neutral taxation policy that reverts back to the 1970s legacy taxation (which favoured diesel) and proceed to

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approximate the current policy proposal of implementing a more stringent NOx emission policy by comparing the strict NOx emission standards of the US with the CO2-centered emissions goals of the EU by evaluating the new market configuration after European vehicles face both a fuel-neutral taxation and are retrofitted to meet the stricter US NOx emission levels.

- We show that lenient European NOx emissions (more difficult to eliminate for diesel engines) act as an implicit 26% import tariff, a substantial amount when compared to the explicit 10.4% import tariff.

POLICY ISSUES

- For decades, the environmental goal of the EU has been to combat global warming. Reducing the amount of CO2 emissions is an effective means of achieving such a goal and, since diesel vehicles have better mileage and lower CO2 emissions, pursuing this goal was complementary to protecting the European automobile industry, the only one manufacturing small diesel engines to power non-commercial vehicles.
- Diesel, however, produces more NOx, with more acute local effects in densely populated areas under cold temperatures, and it is far more expensive to capture, thus calling into question the long-term viability of diesel vehicles. The current debate on diesel engines does not recognize the trade-off between CO2 and NOx emissions and ignores the negative impact that more stringent NOx emission standards will likely have on the European automobile industry and jobs.
- Consumers will be the winners of the new policies as stricter NOx standards will reduce effective protection against foreign automobile imports, thus increasing the choice of products available as well as limiting prices and fostering local competition. Local air quality might also improve but at the cost of additional global warming due to increased CO2 emissions.

ABOUT CCP

The Centre for Competition Policy (CCP), at the University of East Anglia, undertakes competition policy research, incorporating economic, legal, management and political science perspectives, that has real-world policy relevance without compromising academic rigour.

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