# ReadMe File for:

Environmental Regulation and Product Attributes: The Case of European Passenger Vehicle Greenhouse Gas Emissions Standards

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*codes.do* is a STATA do file that includes all codes to generate the estimation results, tables, and figures in the paper. The first part of this file generates the estimation results, tables, and figures in the main text. The second part generates the estimation results, tables, and figures in the Appendix.

The do-file references two data sets. The first is *data2.dta*. The data were obtained from IHS Markit. A unique observation in the data is a unique combination of country, year, and vehicle. Please see the paper for details of the data.

The second data set is *data.dta*, which does not include vehicles with prices exceeding 59,537 euros in *data2.dta*, which is the 99th percentile of the price distribution. Please see the Appendix for details of this data. This is the main data for the estimation.

The two data sets were constructed from data purchased under license agreement from IHSMarkit. Unfortunately, the license agreement prevents us from providing the data to other researchers. The data section in the paper and the appendix provides details on how to clean the IHSMarkit data to create the data sets used in the paper. We would be happy to assist anyone seeking to purchase the data and produce the two data sets.

One of the variables in the data sets is the fuel cost of each vehicle and country, which is measured in units of euros per 100 kilometers. The variable is computed by multiplying the vehicle's fuel consumption rate, which is included in the IHSMarkit data, by the fuel price. The file *fuel_price.xlsx* includes the price of gasoline, diesel, and electricity by year and country. The data were obtained from the Eurostat website. The fuel prices can be merged with the IHSMarkit data by country and year.

Note: please put *data.dta*, *data2.dta* and *codes.do* in the same folder before running the code.

**Key variables in the do file and the data files are:**

- logshare_jcy: log of the annual registrations of each vehicle in each country
- co2emit: $CO_2$ emissions rate (g $CO_2$/km)
- price: vehicle price (1,000 euros)
- tax: tax (1,000 euros)
- loghw: log of the engine horsepower to gross vehicle weight (hp/kg)

- logw: log of the gross vehicle weight (kg)
- logsize: log of the vehicle size
- enginecyl: number of engine cylinders
- energycost1: fuel cost (euros/100 km)
- fuelcons: fuel consumption rate (liters/100 km)
- enginehorsepower: engine horsepower (hp)
- vehicle: harmonized unique vehicle
- groupmodel2: harmonized vehicle model
- group_mdltrim: harmonized vehicle model-trim groups
- brand2: harmonized vehicle brand
- bodytype_harmonized4: harmonized vehicle body type
- trimlevel2: harmonized vehicle trim
- segment2: harmonized vehicle segment
- origin: origin of the vehicle, domestic, foreign non-Asian, foreign Asian
- gamma_*: estimated residual quality
- wtp_jcy_*: estimated quality normalized by the absolute value of price coefficient (or, willingness to pay for quality)
- elastic_price_*: estimated own-price elasticities
- logshare_cyjinso: log of the within segment-origin share
- logshare_cyoins: log of the share of origin within segment
- sum_*_diff, sum_*_same, sum_*_oins1, sum_*_oins2: BLP type instruments for vehicle price and within shares
- loghw3: log of the ratio of horsepower to weight, normalized by the absolute value of the price coefficient (or, the WTP for log ratio of horsepower to weight)
- logw2: log of vehicle weight, normalized by the absolute value of the price coefficient (or, the WTP for log weight)