

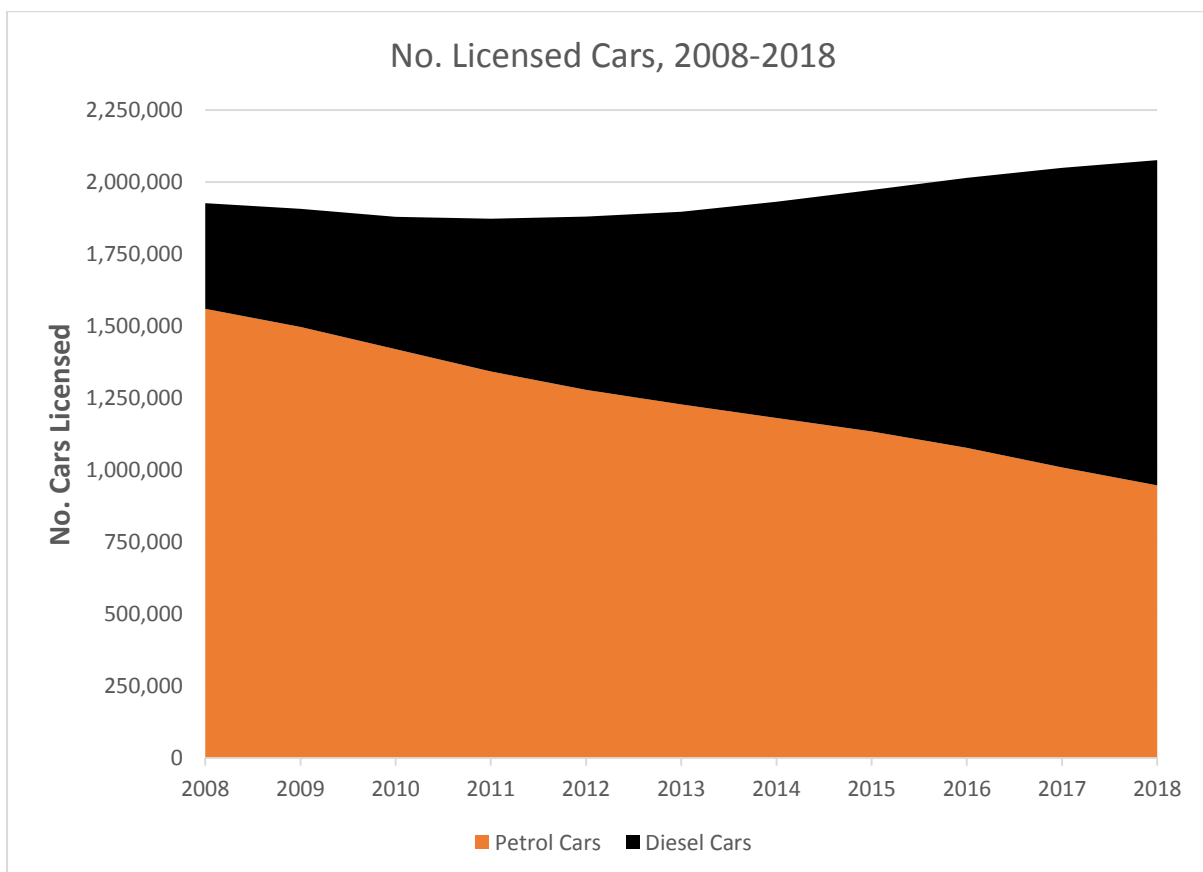
## Vehicle Registration Tax (VRT) NOx surcharge

### 1. Background

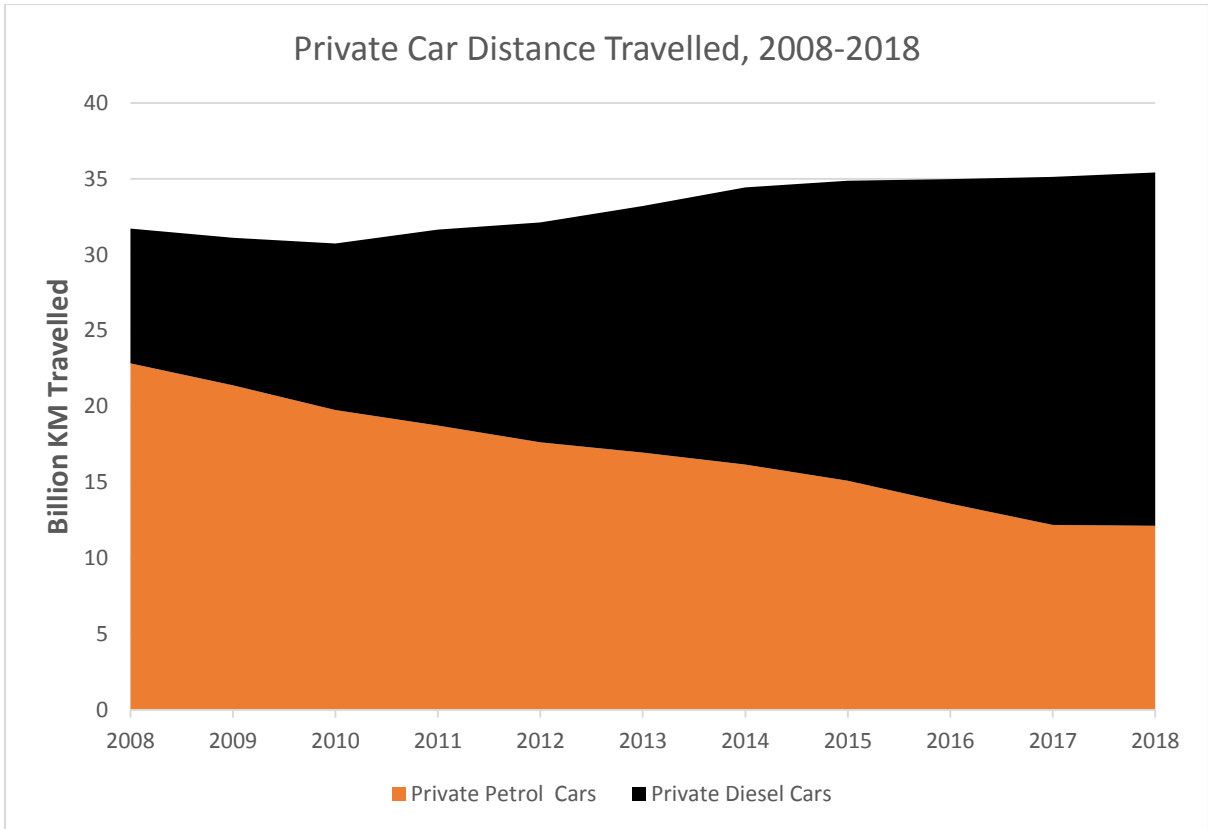
The tax system, in particular taxes on fuels, can play a complementary role to regulation and wider public policies that support clean transport in addressing negative externalities from road transport. Taxes on road vehicles can also support these wider environmental and public health objectives.

Ireland's VRT regime for cars is an emissions-based tax which is levied as a percentage of the open market selling price (OMSP) of a vehicle registering in the State for the first time. The higher the CO<sub>2</sub> emissions of the car the higher the charge.

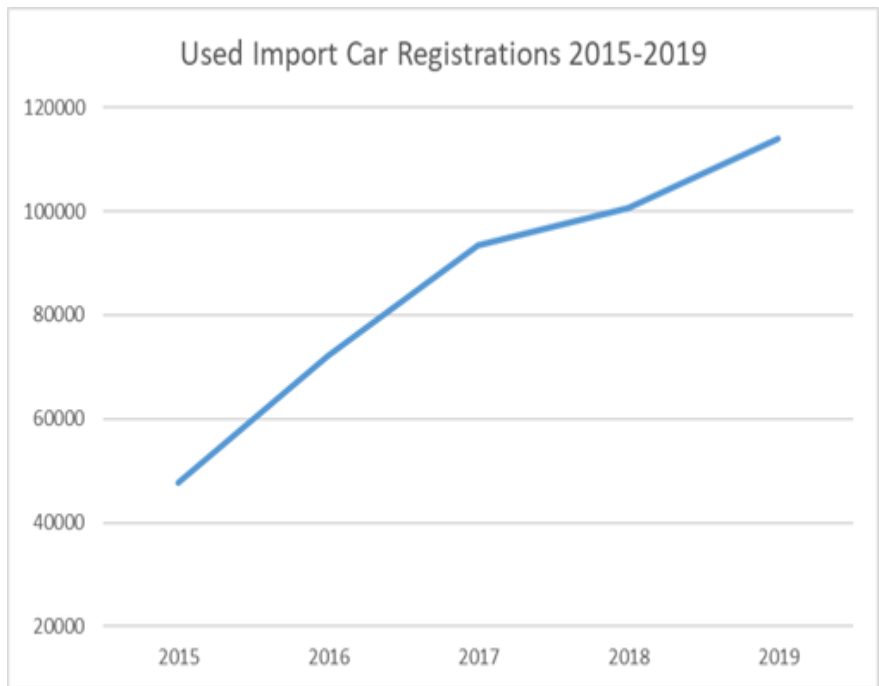
Vehicle taxes which are solely CO<sub>2</sub>-based have been criticised for their failure to recognise the specific contribution of other emissions such as NO<sub>x</sub> and PM to air pollution and to the detriment of public health and the environment. In this regard, the introduction of CO<sub>2</sub> based VRT and motor tax regimes in 2008 coincided with a dieselisation of the Irish car fleet. This is illustrated in the graphs below<sup>1</sup>.



<sup>1</sup> Data source: CSO Road Traffic Volumes, Tables THA12 and THA17.



The increase in the share of diesel car registrations between 2008 and 2011 was highly significant, and in more recent years the high volume of diesel car registrations has been sustained due to sharp increase in used car imports, about 70-75% of which were diesel. This is illustrated in the chart below.



*Data sourced from SIMI website*

## **2. Negative externalities – non CO2 emissions**

Commentary in previous Tax Strategy Group Papers noted that research shows a causal link between exposure to pollutants emitted from vehicles, such as nitrogen oxides (NOx), sulphur oxides and particulate matter (PM), and a number of chronic conditions including respiratory, cardiac disorders and cancer.

The Department has also noted the Environmental Protection Agency (EPA) estimates of the number of annual premature deaths in Ireland attributable to air pollution; that around 34% of all NOx emissions comes from road transportation; that EPA research indicates that several areas in Dublin city centre, around the M50 and at either ends of the Dublin Port Tunnel exceed EU nitrogen dioxide limits (2017); and that the CSO has reported that Ireland has the worst performance of the EU 28 Member States in relation to NOx ceiling limits set under the EU National Emissions Ceilings Directive, exceeding limits by 70%.

## **3. Reforms to VRT to address environmental health concerns**

In Budget 2019 a 1% surcharge was introduced on all diesel vehicles in recognition of the environmental health costs caused by pollutants emitted in particularly high quantities by diesel vehicles. *Due to the car value component of the VRT charging formula*, this surcharge resulted in newer diesel cars paying more than cheap used imports, despite the fact that older imports were likely to emit higher levels of pollutants.

Budget 2020 replaced this 1% with a surcharge tied to nitrogen oxide emissions levels based on the polluter-pays principle, where the greater the level of non-CO2 toxic pollutants a car emits, the higher the surcharge.

The NOx surcharge structure is set out in the table below:

<b>Thresholds (NOx mg/km)</b>	<b>€ Rate per mg/km</b>
0-60	€5.00
61-80	€15.00
81+	€25.00

The surcharge is applied on a graduated basis, namely that if a car has NOx emission levels of, say, 90 mg/km then the charge is computed as follows:

First 60 mg/km @€5 =	€300
Next 20 mg/km @€15 =	€300
Final 10 mg/km @€25 =	<u>€250</u>
Total Charge =	€850

Where the NOx information cannot be obtained, the surcharge is applied at the rate equivalent of the max threshold for NOx for Euro 4 standards (this is the European vehicle compliance standards set in 2005). For petrol engines, this is equivalent to 80mg/km, i.e. €600. For diesel engines, this is equivalent to 250 mg/km, i.e. €4,850. These amounts also set the cap for the NOx surcharge. In all cases, the maximum amount of the NOx component of the VRT cannot exceed €600 for petrol and €4,850 for diesel.

#### **4. Impacts**

The surcharge is structured to levy a modest charge on the newest vehicles complying with the latest vehicle standards. For a typical new diesel car with NOx emissions of 43mg/km, the surcharge element of the VRT charge is €215. Likewise, for a new petrol with typical NOx of 23mg/km, it is €115. Levels of NOx emissions tend to be much higher among older cars, particularly diesels, which were not subject to more stringent Euro standard thresholds. As such, for an older diesel with 80mg/km NOx, the surcharge added to the regular VRT will be €600. In general the impact will be less severe on petrol cars, as petrol engines are typically associated with lower NOx emissions.

The introduction of the NOx surcharge is designed to correct an imbalance in VRT where the focus was purely on CO2 emissions. The environmental and public health impacts of other pollutants such as NOx are now recognised in the tax code and duly charged. It is envisaged this will have a positive impact in incentivising cars which are less harmful to our environment and in reversing recent trends in the proliferation of used diesels imported from the UK.

The surcharge only commenced on 1 January 2020 and therefore it will take some time before its impact can be properly assessed. However, the early indications are positive. According to SIMI data to 25/2/2020, while overall used car registrations are down 28%, used diesel car registrations are down 36% and used cars between 6 and 9 years old are down 46%.

#### **5. Limitations**

The Department is aware that the current level of NOx recorded on the registration documents for, in particular, diesel cars, may well understate the real world NOx emissions. It is aware that real world NOx emissions may in some cases be a high multiple of that recorded on the vehicle documentation and that there are further issues concerning the removal of diesel particulate filters.

This surcharge is a taxation measure and is introduced in the context of capturing the negative externalities of non-CO2 pollutants. It forms a mechanism to ensure a broader range of emissions (and thus environmental and health impacts) are reflected when cars are registering for the first time in the State. Regulatory measures and wider public policies that support clean transport will be the main drivers of improved air quality, particularly in urban areas. Taxation measures such as this can complement these policies going forward.

*Paper prepared by Department of Finance for UTRAP meeting 27 February 2020*