**Conclusions**

Governments are in the process of establishing strategies through which to transition their country’s car fleet away from conventional fossil fuel powertrains (i.e. diesel) and towards ultra-low emission vehicles. Strategies designed for this purpose will likely rely on Governments being able to control what types of car are bought and used within their jurisdictions. The mobile nature of the car can limited this control, as drivers are able to travel outside of a Government’s jurisdiction to take advantage of opportunities. A situation such as this exists for transport fuel, whereby drivers in the border region between two areas with different fiscal measures can refuel in the area that offers the lowest price.

In a case study of car fleet powertrain composition, this paper investigates whether the availability of cheaper diesel fuel in the Republic of Ireland is possibly contributing to the relatively high rate of diesel car ownership in Northern Ireland. Due to the friction of distance, the availability of cheaper diesel is hypothesised to be a more important factor in locations closest to the border as opposed to locations far removed from it. The spatial analysis reports evidence which supports this hypothesis, by demonstrating that nearness to the Republic of Ireland is associated with diesel car ownership. This association remains having controlled for the effect of socioeconomic, travel, and household characteristics.

A number of important interpretations can be made from this case study. First, fiscal policies that are enacted in one country may extend their reach into another. This can have implications over the ability of a Government to manage the car stock of their country and may restrict transition strategies. For example, the authority of the UK government to disincentives the ownership of diesel cars through alterations to fuel duty (i.e. raising it for diesel) could be hindered in Northern Ireland by the lower price of diesel available in the Republic of Ireland. Second, the car stock of one country is not a closed system and can be subject to exogenous factors (e.g. the price of fuel available in neighbouring countries). This means that vehicle stock models which do not take account of this potential coupling between countries are likely to produce biased forecasts. For instance, if the vehicle stock of Northern Ireland was to be simulated into the future without accounting for the effect of the Republic of Ireland’s fiscal measures, it is likely that the scenarios produced would not be accurate.