

## 38 – Decarbonising the Transport Sector: The External Costs Approach Applied to the Diesel Differential

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In many OECD countries, the so-called “diesel differential”, i.e. lower tax rates applied to diesel than to gasoline, is still into force.

This does not reflect both environmental and social external costs, as diesel emits more air pollutants per litre than gasoline, and diesel vehicles, due to the higher efficiency of their engines, might display a higher rebound effect in usage. Thus, the differential is not justified on this ground (Harding, 2014).

According to the official EU statistics, only Belgium and the UK (by February 2020) apply the same tax rate to diesel and gasoline. All the other countries still display lower tax rates for diesel (European Commission, 2020).

In Italy, current environmental costs (i.e. climate and well-to-tank costs) are still 10% higher for diesel than for gasoline. Despite this, the ordinary excise duty for diesel is 18% lower than gasoline. Moreover, the cost-coverage ratio, i.e. the amount of external costs internalised by current average taxes and charges, is around 66% (EC, 2019). Thus, a reform path would be desirable, but competitiveness and distributive issues are always at stake.

The current paper explores what could be the optimal tax rate for diesel and gasoline in Italy considering two dimensions: i) the external costs of road transport; ii) the distributional impact of diesel and gasoline.

Building on existing literature, the study proposes a new methodology for policymakers that provides an indicator of environmental effectiveness and the distributional impact of any envisaged reform. The scenario analysis unveils several interesting insights and concludes that the removal of the diesel differential *per se* is not enough to achieve environmental effectiveness.

The methodology is integrated with revenue effects including short and long-term price elasticities as proxies of beneficiaries’ reactions to the reform. Finally, the paper discusses several options for revenue reuse in the post-Covid era to decarbonise the transport sector.

### **Biographical note**

Gionata Castaldi is currently official at the Italian Ministry of Economy and Finance. He works on topics related to environmental taxation.

From 2016 to 2020, he was a senior Economist in Environmental Economics at the Italian Ministry of Environment – T.A. Sogesid. in the Environmental Economics Unit.

Specific areas of interests and activities include environmental fiscal reform, natural capital and accountability, sustainable finance, subsidies that have relevant environmental impacts.

He is part of the OECD Bureau at the Working Party on Integrating Environmental and Economic Policies (WPIEEP). Since 2016, he is the Italian delegate at the WPIEEP and the Joint Meeting of Tax and Environment Experts (JMTEE) at OECD.

In 2017, he was part of the scientific committee for the fifth annual conference of the Italian Association of Environmental and Natural Resource Economists.

In 2012-2015, he was a full-time Ph.D. student in Environmental Economics at the University of Rome “Tor Vergata” and achieved his Ph.D. on March 2018.

In 2011-2012, he was an intern at the Italian National Procurement Agency, Research and Development area, where he conducted research activities on the electronic market of public bodies for Italian e-procurement.