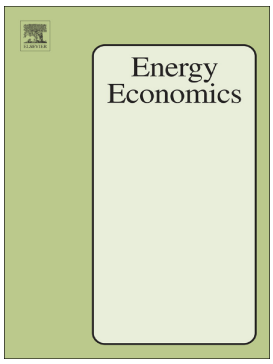

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The rebound effect in road transport: a meta-analysis of empirical studies*

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Abstract

The rebound effect is the phenomenon underlying the disproportionality between energy efficiency improvements and observed energy savings. In road transport, the effect reveals the extent to which energy savings from improved fuel efficiency are foregone due to additional car travel. We present a meta-analysis of 74 primary studies containing 1120 estimates of the direct rebound effect in road transport to evaluate its magnitude and identify its determinants. We find that the short-run rebound effect is, on average, about 10-12%, whereas the long-run effect about 26-29%. However, variation of estimates is large and can mainly be explained by differences in the time horizon considered, the elasticity measure used, and the type of data and econometric approach employed in primary studies. We also find that the rebound effect is declining over time and that lower per capita incomes, higher gasoline prices and higher population density are associated with larger rebound effects.

JEL codes: D12, Q41, Q48, Q58, R41, R48.

Keywords: Rebound effect; road transport; fuel efficiency; gasoline price; meta-analysis.

* The opinions expressed in this paper are those of the authors and do not necessarily reflect the official views of the OECD or of the governments of its member countries. An earlier version of this paper appeared in the OECD Environment Working Paper Series (see Dimitropoulos et al., 2016).

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