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Paper

CO₂ emissions from passenger transport: A comparison of international trends from 1973 to 1992

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Abstract

This paper provides a comparative analysis of the changes in energy use and CO₂ emissions from passenger transport in nine OECD countries. Unlike most previous analyses, we base our analysis on a newly published international data set covering vehicle activity, passenger travel and fuel use by mode. We calculate how changes in activity, modal composition and the energy intensity of each mode contributed to changes in total energy use from travel in nine countries between 1973 and 1992. Increased travel activity and modal shifts boosted energy use, while reduction in modal energy intensities reduced energy use from automobiles in the USA and in air travel throughout the sample of countries. As a result, travel related energy use increased sharply in every country except in Denmark and the USA. Using these calculations, we

then show how activity, modal shift and modal energy intensities affected CO₂ emissions from travel. Noting that the shifts of fuels within transport has been small, even counting shifts in the fuels used to produce the small amount of electricity used for passenger transport in every country, we find that increased activity and modal shifts also raised CO₂ emissions from travel in every country except the USA. We discuss briefly how a change in fuel mix, lower transport energy intensities, or even reduced levels of travel might lead to restraining or reducing CO₂ emissions from travel. Recalling that real prices for road fuels have fallen to near their 1973 levels while energy intensities remain level or are falling slowly, we foresee continued increases in travel, particularly in cars and airplanes, pushing emissions even higher. We ask what could restrain CO₂ in the future, should stringent restraints become a clear policy goal.



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Keywords

CO₂ emissions trends; Passenger transport; Energy use

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