

Carbon offsets could help lower emissions without harming the economy

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Vapour trail. Credit: Richard Ashley via Flickr

Instead of harming the economies of developing countries, carbon offsets and taxes on shipping and aviation would have a minimal or even a positive economic impact if implemented wisely, according to a new study.

Carbon taxes, offsets and other market-based measures could effectively address the impact of CO₂ emissions from the aviation and international shipping industries, without significant [financial impact](#) to the world's poorest countries, according to a new study led by researchers from the University of Cambridge.

The study, prepared for the [climate policy](#) organisation Climate Strategies, concluded that market-based measures (MBMs) could be a key part of an overall emissions reduction strategy, while reducing GDP by less than 0.01 per cent on average.

Researchers from Cambridge University, CE Delft, Cambridge Econometrics, TAKS (Transport Analysis and Knowledge Systems) and Climate Strategies quantified the [economic impacts](#) of MBMs in shipping and aviation for ten selected countries, and determined the most effective and efficient tools to reduce these impacts.

The team found that economic effects were more pronounced in countries whose economies were heavily reliant upon tourism and trade by sea and air. Many of these countries have been resistant to mandatory MBMs for the aviation and maritime industries, as they will inevitably raise the cost of transport. However, the researchers also looked into ways of minimising the [economic effects](#) of MBMs on the often-volatile tourism industry, such as exemptions for certain routes, lump sum rebates, investments in infrastructure efficiency and the development of more efficient ships and aircraft.

The ten countries chosen for the study (Mexico, China, India, Trinidad and Tobago, Togo, Kenya, Maldives, Samoa, Cook Island and Chile) were selected because they are expected to be impacted more significantly by the implementation of global MBMs – either due to their dependence on these modes of transport, on international trade, on airborne tourism, or their remote location.

While there are numerous challenges associated with the implementation of MBMs, they could provide an important source of finance, especially for developing countries, to support climate change mitigation projects and programmes.

"On the one hand, there could be an exemption for poor, small island nations that are heavily reliant on tourism," says Dr Annela Anger-Kraavi, who completed the research while a member of the University's Cambridge Centre for Climate Change Mitigation Research, and is now at the University of East Anglia. "However, on the other hand, if it's a small island nation in the middle of the Pacific Ocean, adding a £30 carbon tax is not a make or break amount for a tourist who already pays £1000 for their long-haul flight, and that £30 could go towards developing climate solutions."

The implementation of MBMs has been modelled by the team to limit international aviation emissions to 10 per cent below their 2005 levels and international shipping emissions to 20 per cent below their 2005 levels, achieved through a combination of CO₂ reductions and offsets. The types of MBMs which the team considered included global emissions trading, mandatory [carbon offsets](#) and an international fund for greenhouse gas emissions.

International shipping and aviation together account for five per cent of annual anthropogenic, or human-induced, CO₂ emissions, and is projected to increase in the coming decades. MBMs have been proposed to the International Maritime Organisation (IMO) and the International Civil Aviation Organisation (ICAO), but need to be implemented globally in order to prevent shipping companies simply changing the flags on their ships in order to avoid incurring any extra costs to their business or airlines changing their flight routes to minimise the policy impacts.

The results of the study were recently presented at an informal stakeholder discussion with government officials, NGO and industry representatives and journalists in London.

Provided by University of Cambridge

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