

Aviation and greenhouse gases: Policy in the present and future

Jon Strand

Development Research Group
Environment and Energy Team
The World Bank

Responsibility for the ideas and opinions expressed here are the
author's alone.

The current situation:

Overall, international aviation is lightly taxed:

- No tax or charge on **international aviation fuels** (but: aviation is now being embedded in the EU-ETS)
- No **VAT nor other turnover taxes** for international aviation
- Same basic situation prevails for the international maritime sector

What types of charges are paid today for international air travel?

- **Departure and arrival charges:** Vary a lot by country: high in the U.K.; substantial also in the U. S., some Latin countries; low in most others.
- **Airport charges:** These include take-off and landing charges, airline slot charges. They also vary widely, by country and airport, and can to a large extent be considered as payments for services provided to airlines and passengers. (U.S. also has a 7.5 % “homeland security charge”)

Are market-based measures (carbon-related charges) for aviation fuels reasonable, and why?

- Aviation emissions have **climate forcing effects that need to be part of a global solution**
- Emissions from aircraft have **other climate effects than carbon, in particular at high altitudes**

Are MBMs for aviation fuels reasonable (cont.)?

- **MBMs will enhance the efforts airlines already do to increase fuel efficiency, by giving additional such incentives to airlines**
- **MBMs will reduce fuel consumption also by holding back travel demand (pure fuel efficiency improvements increase travel demand, by making it cheaper)**

Are MBMs for aviation fuels reasonable (cont.)?

- MBMs imply a “**polluter pays principle**”, by many viewed as fair
- Many argue that international aviation should **contribute more than today to countries’ tax bases**

Long-run effects on the aviation industry of uniform, international fuel charges:

- Must be recuperated by airlines in the long run, through higher ticket values
- Will lead to a somewhat higher share for fuels in airlines' total costs
- Could lead to a shift of aviation demand away from “no-frills” airlines, since their costs will rise relatively more

Aviation is being embedded in EU-ETS:

- **From 2012 for both European and other operators.**
- Measure will have **limited short-run negative impact on airline activity and profits:**
 - in part because allowance price is low, and
 - in part because most of the allowances are handed out for free to airlines.
 - Estimates indicate that airline profits will increase (since fares will increase, and most of airlines' costs are covered).

World Bank/IMF “climate finance” work for G-20:

- Discusses options for **raising \$100 billion for climate finance annually by 2020 (and transferred from rich to poor countries)**, as promised at COP 15 in Copenhagen, 2009
- Considers charges on fuels used in international aviation and maritime activity, **equivalent to \$25 per tonne CO₂ by 2020**

A \$25/tCO₂ charge on aviation and maritime fuels by 2020 will:

- Raise **about \$12 billion from aviation** and about \$26 billion from shipping.
- \$0.07 per liter increase in price of aviation fuel
- Air ticket prices would increase by 2-3 %
- Emissions from aviation and shipping might be reduced by 5-10 %

Climate finance implications of an aviation/shipping fuel charge:

- Out of the overall total of \$36-40 billion in annual global fuel charges on aviation/shipping by 2020, about **\$10 billion might be raised for climate finance purposes (if rich countries give up half their tax revenues raised from the scheme). \$3-4 billion of this might come from aviation.**
- 30-40% of the aviation revenue would come from travel originating in developing countries, and be retained there.

Challenges to Implementation:

- Implementing a carbon charge on aviation (through a tax on fuel or tickets) is difficult today since **a great many bilateral air service agreements rule them out.**
 - These agreements would need to be changed.
- Charges as part of comprehensive **cap-and-trade schemes seem less difficult to implement** in aviation, but still meet stiff resistance.
- Implementing carbon charges would be **easier in the maritime sector.**
 - Opposition also seems lower in that sector.