



UNIVERSITY OF
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Economic instruments for aviation GHG emissions

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Aviation: Post Kyoto Control Structures

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<http://www.electricitypolicy.org.uk>

Questions

- What are the implications on carbon pricing?
 - Impacts at different C price levels
- How would cap-and-trade work?
- How would allocations be made?
- What are potential conflicts and distortions?
- What is the international prognosis?

GHG emissions

- Using <http://www.chooseclimate.org/>
- US-UK flight in 747 80% full uses 328 kg fuel producing 1.02 t CO₂ or 3.06 t CO₂e for 4278km (economy) = 0.7 t CO₂e /'000km
- at 20 euros/t CO₂e = 14.3 euros/'000 km
 - not a lot, unlikely to discourage air travel
- Amsterdam-Rome: 1.3 t CO₂e /'000km = 34 euros for the 1,300 km

How to charge aircraft

- aircraft files flight and fuel log on landing
 - compute GHGe for time, height etc
 - => compute cost for flight
- aircraft charged (in addition to landing fee)
 - => airlines plan cost-minimising trajectory
- predict cost, charge included in ticket
 - => encourages efficient planes, routings
 - => encourages airports to improve ATC

Cap and trade allocations

- no need to allocate any EUAs
 - tradeable, hence included in ticket prices
 - allocating permits grants extra windfall and risks perverse incentives
- => solves the problem of which country is debited with GHG emissions - EUAs bought in relevant market (EU, US?)

Conflicts and distortions

- conflicts over treaties with those outside ETS
 - Is it a tax or a charge?
 - Does the charge reflect infrastructure cost?
- Would it encourage diversion to neighbours?
 - Not if they are within ETS
- Would it encourage over-flying?
 - To escape transit carbon charge?

International prognosis

- easy if EU imposes once treaties resolved
 - eliminates unfair competition between MSs
 - Easyjet, Ryanair support
 - airlines buy in carbon market
 - adjust for GHG quota if $\text{GHG}_e > \text{GHG}$?
- Critical to gain US and OECD support
 - does not require them to agree to reciprocate
 - merely to accept higher prices to access EU

Conclusions

- Window of opportunity with US election
- Simple to operate post 2012
 - when electricity faces full auctioning
 - could be introduced earlier on CO₂ emissions only based on distance and average fuel consumption of aircraft on that route
 - with discounts for better flight plans
- Removes complaint that aircraft untaxed
- cost is modest, gain considerable