Daniel Borbely is a PhD student in the Department of Economics. In this post he examines the potential economic impacts of a reduction in the rate of Air Departure Tax in Scotland.

Following devolution of Air Passenger Duty (APD), the Scottish Government has set out its plan to introduce a new Scottish version of the tax, the Air Departure Tax (ADT).[1] The ADT would be levied on passengers departing from Scottish airports.

As part of this, the Government has committed to reduce ADT by 50% by the end of this parliament, and abolish it, in the long-run, "when finances allow". The aim is to increase the connectivity of Scottish airports and to make them more competitive.

But there remains debate over the evidence base to support (or argue against) the notion that cutting ADT will deliver the expected economic, budgetary and environmental benefits hoped for.

In December, the Government published an initial economic assessment of the proposed tax cut. The report aims to forecast the impact of three different ADT rates – with the key outcome of interest, the extent to which increased Gross Value Added (GVA) to the Scottish economy as a result of the tax cut compensates for the tax revenues foregone. In most of the forecast scenarios, GVA increases outweigh losses in tax revenues, making – according to this methodology – the *net* effect of the tax reduction positive.

As part of my PhD into devolved fiscal issues, I am looking at the impact of such tax cuts across Europe. In this blog, I'll draw on this evidence to review the results of the Government study. Ultimately, my conclusion is that the jury is still very much out on whether the ADT cut would deliver the desired benefits.

Possible ways in which a change in ADT could impact on the economy – demand side responses

If ADT is reduced, and this is passed through to consumers in the form of lower prices, an increase in demand for services from Scottish airports might come from several sources:

1. new passengers who did not choose to travel beforehand;
2. passengers who preferred alternative forms of transportation; and,
3. passengers who used other UK airports in the past but are now induced to fly from Scottish airports to realise a cost (tax) saving. There is some evidence from the

> Netherlands that cross-border differences in aviation taxes can lead to a displacement of passengers to the low-tax country. An air passenger tax was introduced at Dutch airports in 2008 and was abolished within a year due to its adverse effects on passenger numbers. It is likely that the decrease in passenger numbers resulted (in part) from the displacement of passengers to tax-free airports in neighbouring countries.

The question however remains as to how price-sensitive these passengers are: would they really change travel behaviour as a result of a £6.50 tax change (the proposed reduction on a short-haul flight)?

The impact report uses estimated elasticities from the empirical literature and, mainly, from the DfT's UK Aviation Forecasts 2013. Elasticities estimate the extent to which passengers respond to changes in the prices of flights. However, due to the complexities of demand responses, a number of different and/or additional elasticities might be of interest – for example,

- The extent to which passengers substitute between rail and air travel based on their relative prices i.e. the cross-price elasticity of rail and air travel for UK domestic travel
- The extent to which passengers substitute between short-haul and long-haul flights based on their relative prices (these might change if the tax cut is not uniform)
- The elasticity of substitution between Scottish and rUK airports (i.e. how much further are passengers willing to travel to realise cost savings);
- Differences in the price-sensitivity of passengers by market segment (holiday/leisure or business) and consumer types (leisure, business, visiting family, et cetera).

In the Government report it is unclear whether these elasticities are considered[2] in the forecasts, and if they are, to what extent the results are dependent on assumptions concerning their values. To get meaningful estimates of future passenger numbers (and resulting tax revenues) it is essential to try to take into account the possible behavioural responses different elasticities aim to measure.

Possible ways in which a change in ADT could impact on the economy – supply side responses

Airlines could also respond to the ADT cut in a number of different ways – with some budget airlines suggesting that they would do this. They could be incentivised by the anticipated increase in demand to add new destinations and/or increase frequencies on existing ones. On the other hand, they could just pocket higher profits and leave ticket prices unchanged if

they expect customers to be irresponsive to price changes.

Possible ways in which a change in ADT could impact on the economy – tourism

Naturally, if ticket prices do decrease as a result of the ADT cut, this would make flying to/from Scotland cheaper, increasing demand from both inbound and outbound tourism.

The Government report mentions both of these possible impacts, however only inbound tourism is modelled explicitly (as a channel through which the tax cut increase GVA) and no attempts are made to construct estimates of the outbound tourism effect.

There is also likely to be an impact on outbound tourism demand. The small monetary saving from the tax cut should only matter to those passengers who are price-sensitive. Typically, these are likely to be low-cost leisure/holiday passengers. With that being said, the supply side response will likely involve new flights by low-cost airlines to holiday destinations, further exacerbating the positive impact on outbound tourism. This should however impact Scottish GVA negatively as domestic tourists might substitute away to foreign destinations, consuming goods and services in the foreign country as opposed to Scotland.

On the other hand, since business services of airlines are unlikely to change (as business passengers are less sensitive to prices) the impact on business connectivity is likely to be marginal.

Summary of economic impacts

Returning to the report itself, it focusses upon three main transmission channels through which the ADT cut could lead to economic benefits: i) an increase in passenger numbers and airline supply leads to more aircraft based in Scotland; ii) an increase in inbound leisure tourism; iii) and an increase in business productivity from increased numbers of business passengers.

But as we have argued, the latter two channels could in fact have ambiguous outcomes for the Scottish economy. In particular, the positive boost from inbound tourism is likely to be offset by the negative outbound tourism effect (something not modelled by the report), while business passengers are unlikely to respond to small price changes due their lower price elasticities (and therefore a supply side response is also unlikely to favour business destinations).

Finally, in the report, ADT cut scenarios are deemed to be ‘beneficial’ to the Scottish

economy if resulting growth in GVA is higher than the amount of tax revenues foregone. But we need to remember that losses in tax revenues could also have a negative impact on GVA through reduced public spending and these should also be accounted for.

Conclusions

Overall, it can be said that the jury is still very much out on whether the proposed ADT cut will deliver the desired economic benefits to Scotland – at least on a scale sufficient to offset any reduction in revenues.

The Government's assessment rightly acknowledges the underlying uncertainties in forecasting the impact of an ADT cut, but it has tended to focus upon scenarios that lead to the more optimistic outcomes.

Interestingly, a 2014 study on the likely impact of an APD cut in Northern Ireland found that, even in the most optimal tax design scenario, the cut in the air passenger tax is likely to deliver only small economic benefits (and only in the short-run). Their results are driven by findings of minimal impact from tourism effects and from airlines retaining some or most of the losses in tax revenues in the form of profit.

Naturally, forecasts of this kind are highly dependent on the underlying assumptions of the modelling approach. And there may well be strategic and wider policy reasons why cutting ADT is appropriate.

But the presence of conflicting forecast results, and the complexity and ambiguity surrounding the underlying economic effects leads us to conclude that we need to be cautious about assuming that any reduction in ADT will act as a massive boost to the Scottish economy.

[1] The plans to introduce ADT are currently delayed by legal issues over the tax exemptions granted to the Highlands and Islands region. The Scottish Government plans to introduce the tax once these issues are resolved.

[2] It is not elaborated precisely which DfT elasticities are used and what they measure.