

Edinburgh Airport

The impact of reducing APD
on Scotland's airports

March 2015

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Foreword

Edinburgh Airport is one of Scotland's most important economic assets; it is where Scotland meets the world. We provide a growing number of international and domestic air routes that allow Scots to travel the world and Scottish businesses to move people, knowledge and goods quickly to global markets.

Today, we are putting our money where our mouth is by investing £150 million in new facilities for passengers and exploring every opportunity to bring more airlines and new routes to Scotland.

However, if we are to attract and sustain routes that will allow us to compete effectively in the global marketplace, it is important that the matter of Air Passenger Duty (APD) is addressed.

APD is the highest airport tax in the world, and we are an island economy on the western periphery of Europe. The logic behind such a huge tax has always been questionable, and this report demonstrates the growth potential that a 50% reduction in APD would deliver to Scotland.

APD is a significant barrier to growth but despite repeated calls for its reduction or abolition, Scotland's aviation industry and its passengers have had to endure continued increases in this damaging tax.

The evidence in this report speaks for itself. Our latest findings show that a 50% reduction would provide benefits to Scotland worth £200 million. It would bring considerable benefits to local communities across Scotland by protecting the jobs already dependent on Scotland's airports and creating 3,800 new jobs by 2020.

In addition, our latest findings show that the effect of not reducing APD by at least 50% would cost Scotland nearly one million passengers per annum and that, by 2020, APD would cost the Scottish economy up to £68 million in lost tourism expenditure every year.

And these numbers are not just well calculated estimates. They are tangible. Ryanair has publicly committed to delivering more than one million new passengers if APD is abolished in Scotland. Those kinds of commitments illustrate the size of a prize which is presently beyond our grasp. Our research now proves beyond doubt that reducing APD would pay for itself, and some.

Given Scotland's reliance on aviation, and the Scottish Government's appreciation of the role it plays in supporting our economy, it would be wrong for this tax to continue negatively impacting our economy. The findings in this report demonstrate clearly that significantly reducing APD would result in a healthy increase in Scotland's Gross Domestic Product and boost jobs across a broad range of sectors.

We now know that the power to reduce or abolish Air Passenger Duty will in due course be in the hands of Scottish politicians, and we call on the Scottish Government to act as soon as possible to outline a timetable for the swift reduction of APD, and for serious consideration to be given to its abolishment.

This will let Scotland compete more effectively on an international scale, strengthening our international connectivity and improving our economic prospects.



Gordon Dewar
Chief Executive

Key points

- Edinburgh Airport Limited has undertaken an outline assessment of the potential impact on passenger numbers at Scotland's airports and corresponding economic impact of a 50% reduction in Air Passenger Duty (APD) at Scotland's airports.
- This assessment builds on previous work undertaken examining the potential effects of reducing APD and on the detrimental effect that APD has had on growth at the main Scottish airports.
- This latest research has been undertaken in the light of the findings of the Smith Commission, which included a recommendation that the Scottish Government should have control over Air Passenger Duty on passengers flying from Scotland's airports.
- The reduction in APD results in around 0.7 million additional passengers passing through Scotland's airports in 2015, rising to around 0.8 million passengers in 2016. By 2020, the number of additional passengers would rise to around 0.9 million.
- There is an effect across all APD bands but the largest impacts in volume terms are on domestic and short haul traffic. This reflects the relative size of these markets in Scotland. Although, there is some variation in the extent to which different airports benefit, all the main Scottish airports would receive a boost from the reduction in APD.
- We estimate that the direct, indirect and induced impact of reducing APD in Scotland by 50% will initially support around 800 new jobs and £33 million in Gross Value Added (GVA). Over time as the number of additional passengers grows this will increase to around 1,100 jobs and £51 million in GVA.
- The impact on tourism expenditure could be between £56 million and £68 million a year, resulting in between 1,200 and 1,500 additional jobs and £47 million and £58 million in GVA.
- The estimates of the wider business impacts suggest that long term productivity benefits may support between £81 million and £90 million per annum in GVA.
- Overall, we estimate that air transport in Scotland could support around 3,800 additional jobs and £200 million per annum in GVA by 2020.
- Over the period to 2020, reducing APD by 50% would result in total discounted additional GVA of around £1 billion. Reducing APD rates would result in around £110 million per annum in tax revenue being lost in 2015. Over the period to 2020, we estimate the discounted value of lost APD to be around £650 million. When set against total GVA, this suggests a benefit cost ratio for reducing APD by 50% of around 1.6.

Introduction

Background

Edinburgh Airport Limited has undertaken an outline assessment of the potential impact on passenger numbers at Scotland's airports and corresponding economic impact of a 50% reduction in Air Passenger Duty (APD) at Scotland's airports.

This assessment builds on previous work undertaken examining the potential effects of reducing APD and on the detrimental effect that APD has had on growth at the main Scottish airports. This work uses the latest available data on passenger characteristics and flows at Scottish airports, taken from CAA Statistics and from the 2013 CAA Passenger Survey. It also takes in to account the proposed changes to long haul APD announced in the 2014 Budget.

This latest research has been undertaken in the light of the findings of the Smith Commission, which were published in late November 2014. The Commission's report included a recommendation that the Scottish Government should have control over Air Passenger Duty on passengers flying from Scotland's airports. Scotland's main airports are strongly supportive of this recommendation.

For the purposes of this report we have assumed that the transfer of control of APD to Scotland would result in a 50% reduction in the rates of APD changes on departure from Scotland's airports.

The scope for this report is the potential impact on Scottish airports and on the Scottish economy. Clearly, the lowering of rates in Scotland is likely to have a detrimental impact on some airports in England if APD rates are not lowered in England at the same time. While this effect is recognised and acknowledged, it was not within the scope of the work to consider these effects in detail. It should also be recognised that Scotland's airports are also competing with other airports across Europe to secure airline capacity and in this context reducing APD will help to even out differences in the competitive position. The analysis focusses primarily on considering the beneficial, stimulatory effect of reducing the cost of air travel in Scotland for passengers but some allowance has been made for a shift in market share between Scottish and English airports.

Methodology

Estimating the Potential Impact on Traffic

We use a two stage approach to estimating the impact of reduced APD on traffic. In the first instance we have used a simple price elasticity based model to consider the potential stimulatory impact on demand at Scottish airports from a lowering in the cost of travel. The second stage is a market share based model that adjusts the market share of each airport based on its relative change in size, which is assumed to feed through to its overall attractiveness¹.

It is through this latter mechanism that some account has been taken of the potential for Scottish airports to attract additional traffic from English airports. It also allows for some market share changes within Scotland, as the traffic makeup of some airports in Scotland is likely to result in greater growth than others. It should, however, be recognised that this latter stage is very much subsidiary to the first.

The price elasticity model considers the demand impact of a reduction in the price travel stimulated by a change in APD in 2015. Traffic in Scotland at each of the main airports and at a number of airports in the North of England is divided in to a number of passenger segments using CAA Passenger Survey data:

- UK Business;
- UK Leisure;
- Foreign Business;
- Foreign Leisure.

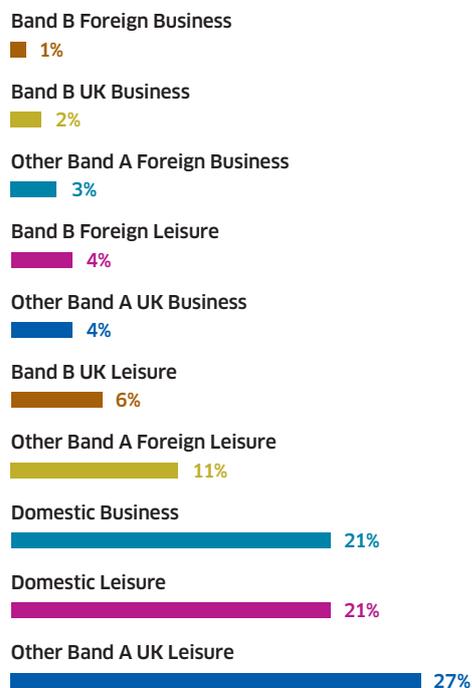
The passengers are then further divided in to those travelling to:

- UK domestic destinations;
- Other Band A destinations;
- Band B destinations².

This provides a demand base at 2013 traffic levels. This base has then been adjusted to 2014 levels using CAA Statistics to provide a segmented demand base from which to project forward and to which potential elasticity effects can be applied.

Underlying growth in demand in future years has been estimated based on the rates observed within the Department for Transport (DfT) 2013 Aviation Forecasts.

Passenger Demand Base Segmentation at Scottish Airports in 2014



Source: analysis of CAA Passenger Survey and Statistics.

¹ Essentially we are assuming that larger airports are more effective at attracting passengers as they are able to offer a greater range and frequency of services.

² Long haul APD is set to be simplified in April 2015, with the current Bands B, C and D being amalgamated in to a single band.

We have identified a price elasticity for each market segment again taken from the DfT 2013 Aviation Forecasts. For long haul market segments an average of the DfT elasticities has been used.

Department for Transport Price Elasticities by Market Segment

UK Business Europe	-0.3
UK Business OECD	0.0
UK Business Newly Industrialised Countries	0.0
UK Business LDCs	0.0
UK Leisure Europe	-0.7
UK Leisure OECD	-0.3
UK Leisure Newly Industrialised Countries	-0.6
UK Leisure LDCs	-0.9
Foreign Business Europe	-0.2
Foreign Business OECD	-0.2
Foreign Business Newly Industrialised Countries	0.0
Foreign Business LDCs	0.0
Foreign Leisure Europe	-0.8
Foreign Leisure OECD	-0.3
Foreign Leisure Newly Industrialised Countries	-0.2
Foreign Leisure LDCs	-0.3
Domestic Business	-0.3
Domestic Leisure	-0.7
International to International	-0.7
Overall	-0.6

Source: DfT Aviation Forecasts 2013.

This analysis highlights the tendency for business travellers to be less sensitive to price than leisure travellers. This is important within our modelling as it will tend to mean that airports with higher business components within their traffic will be less affected by changes to APD.

An average fare for each airport for each APD Band was estimated using data within the CAA Passenger Survey for 2013. It should be recognised that the fare data within the survey does have significant gaps. However, the results in the main appeared reasonable. Where data is missing or where results appear to be anomalies some adjustments have been made. These adjustments have been based on observed fares where data is available and on what is known about the airline and demand base at the relevant airports.

The average fares at Scottish airports within the model have then been reduced by 50% of the relevant APD rate and the corresponding elasticity applied to provide an estimate of the stimulatory demand impact of the change in APD.

This initial change in passenger numbers then feeds a second round effect on market share. The market share of each airport in each CAA Passenger Survey district is adjusted by the percentage change in total traffic at the relevant airport. In other words, airports that experience growth following a change in APD become relatively more attractive, while those that stay the same (or do not grow as much) become relatively less attractive. This change is applied incrementally to the original market share and the new passenger totals in each district calculated and summed to provide the change at total airport level in each case. As described above, this process allows some account to be taken of the potential of the change in market share balance between Scottish and English airports and between Scottish airports that are affected differently by the change in APD due to their traffic make up. It is, however, subsidiary to the primary effect from market stimulation.

Estimating the Economic Impact in Scotland

Building on our estimates of the impact on traffic from a 50% reduction in APD, we have also considered some outline indicators of the potential economic impacts of the change in Scotland. The analysis builds on a range of economic impact studies of Scotland's main airports undertaken between 2008 and 2013. However, it also draws on work undertaken for Highlands and Islands Airports Limited in relation to Inverness and research undertaken by Oxford Economics for Transport for London³.

We have considered economic impacts in relation to three main areas:

- **Operational Impact** – the economic activity associated with the operations of air services and airports in Scotland. They are commonly classified in to direct (activities wholly or largely related to the operation of airports and air services and located at or close to airports), indirect (supply chain) and induced (income expenditure) effects. These impacts are amongst the commonly cited in airport economic impact studies. Our estimates are based on on-site employment densities taken from existing airport economic impact studies, a GVA per employee for Scotland from Scottish Statistics, and average indirect and induced GVA and employment multipliers taken from the published Scottish input output tables;
- **Tourism Impact** – activity in the wider economy generated by the additional expenditure in Scotland by new visitors coming to the country as a result of the reduction in APD. The additional expenditure injection is based on average spend per visit statistics from VisitScotland. This expenditure has then converted to a GVA and employment impact using relevant multipliers from the published Scottish input output tables;
- **Wider Business Impact** – we have also estimated the impact on Scotland's economy driven by improvements in long term productivity due to increased connectivity for business travellers. This uses a relationship between the number of business passengers in the UK relative to GDP compared to total factor productivity. This research identified that a 10% increase in the number of business passengers relative to GDP would result in a 0.5% increase in total GDP in the long term. We have applied this relationship to Scotland using the stimulated number of business passengers resulting from APD. We have also converted this impact to an employment effect. However, it should be recognised that this may to some degree be spurious as it is very hard to know whether the increase in GDP will lead to more employment or whether it will simply increase output per head.

The economic impact estimates presented should be considered as gross as they do not take account of displacement of other activity within Scotland. However, deadweight is accounted for as all impacts are considered compared to a base case in which APD is not changed and we would not anticipate significant leakage of benefits away from Scotland. Again, we would also emphasise that the scope for this work is Scotland. We have not considered potential negative effects from reduced passenger numbers elsewhere.

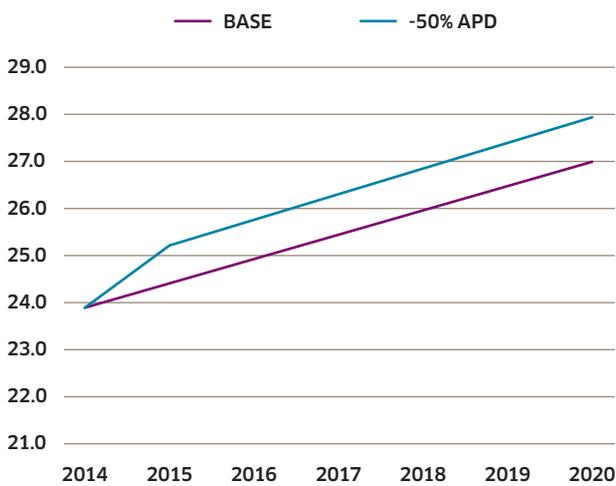
³ Impacts on the UK Economy through the Provision of International Connectivity – Oxford Economics for Transport for London (2013).

THE IMPACT ON TRAFFIC IN SCOTLAND

Traffic at Scotland's Airports

The graph below shows the total impact of a 50% reduction in APD in 2015 compared to a base case in which APD remains the same.

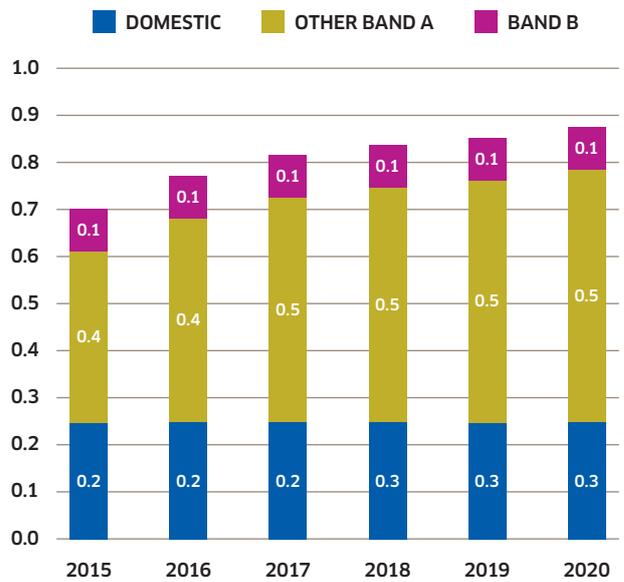
Passenger Traffic at Scottish Airports (millions)



The reduction in APD results in around 0.7 million additional passengers passing through Scotland's airports in 2015, rising to around 0.8 million passengers in 2016. By 2020, the number of additional passengers would rise to around 0.9 million. This represents a 3.2% increase compared to Base Case.

The chart below sets out a breakdown of gain in traffic in Scotland by APD Band. This shows that there is an effect across all bands but the largest impact in volume terms is on domestic and short haul traffic. This reflects the relative size of these markets in Scotland.

Passenger Impact by APD Band (millions)



The largest increase is in short haul traffic at around 4.5% by 2020. This reflects the relatively particular role of low fares airlines in serving this market segment and the consequently large percentage impact on fares from the change in APD. Long haul traffic would increase by around 3.7% compared to the Base Case.

Within the scope of this work, we have not considered the potential impact of changes to APD on the pattern of route development in Scotland in coming years. However, the reduction in APD is likely to result in more direct routes from Scotland being developed. In relation to long haul routes, there is the potential for the reduction in APD to play a particularly strong role in supporting new routes in their early years, either by boosting the level of potential demand or by enabling airlines to capture higher yields (or a mixture of the two). In either case, a reduction in APD is likely to bring forward in time the viability point for a route and hence accelerate long haul route development. This effect could be particularly helpful in securing routes to rapidly growing emerging economies.

Passenger Impact by Airport

The table below shows the overall positive effect of a reduction in APD at Scottish airports.

Traffic Impact of a 50% Reduction in APD at Scotland's Main Airports (millions)

	Aberdeen	Edinburgh	Glasgow	Inverness	Prestwick
2014	0.000	0.000	0.000	0.000	0.000
2015	0.063	0.294	0.237	0.016	0.085
2016	0.043	0.317	0.261	0.017	0.147
2017	0.027	0.284	0.189	0.017	0.323
2018	0.027	0.290	0.193	0.018	0.331
2019	0.028	0.296	0.197	0.018	0.338
2020	0.028	0.302	0.201	0.018	0.345

The biggest gain is seen at Prestwick, where the ultra low fares offer of Ryanair combined with a heavily price sensitive, leisure focused market results in significant stimulation. By 2020, the airport is expected to gain around 0.3 million passengers.

Both Edinburgh and Glasgow make gains but these are not nearly so dramatic in percentage terms, reflecting the more balanced airline portfolios and the more mixed nature of demand. The airports gain 0.3 and 0.2 million passengers respectively. It should also be noted that Glasgow's gains are to some degree moderated in the long term by the resurgence of Prestwick.

Aberdeen Airport has a very high proportion of price insensitive business traffic and this limits the extent to which it gains from the reduction in APD. Furthermore, in the long term, its gains are moderated by the growth at Edinburgh in particular. By 2020, it would gain around 30,000 passengers.

Inverness Airport would make steady gains over the period, acquiring around 20,000 additional passengers by 2020.

Conclusions

Overall, it is clear that a 50% reduction in APD will increase traffic through Scotland's airports. By 2020, these gains will total around 0.9 million passengers per annum.

Although, there is some variation in the extent to which different airports benefit, all the main Scottish airports would receive a boost from the reduction in APD.

THE ECONOMIC IMPACT OF A 50% REDUCTION IN APD

Introduction

The potential economic impacts in Scotland from the increased traffic passing through Scotland's airports are detailed below.

Operational Impacts

As described in Section 2, these impacts reflect the additional economic activity that will be supported by companies at Scotland's airports, through their supply chains and through associated induced effects (commonly termed direct, indirect and induced effects). The estimates have been derived based on existing economic impact research undertaken at Scotland's main airports in recent years.

Our estimates of the impact additional jobs and GVA supported via these operational impacts from a 50% reduction in APD in Scotland are set out in the chart opposite.

Operational Economic Impacts



This analysis suggests that the direct, indirect and induced impact of reducing APD in Scotland by 50% will initially support around 800 new jobs and £33 million in GVA. Over time as the number of additional passengers grows this will increase to around 1,100 jobs and £51 million in GVA.

Over the period between 2015 and 2020, reducing APD by 50% will support around £271 million of GVA with a discounted present value⁵ of £247 million.

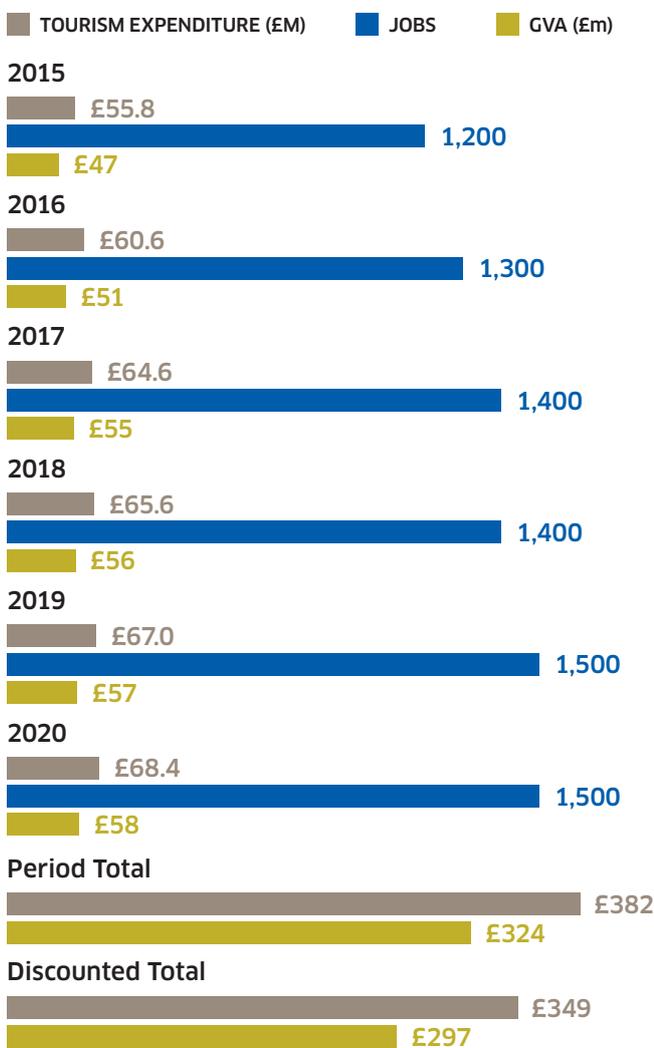
⁵ At a discount rate of 3.5% as recommended by HM Treasury Green Book.

Tourism Impacts

By stimulating new visitors both from overseas and other parts of the UK to visit Scotland, a reduction in APD will support an injection of additional expenditure in to the economy, which will in turn support new jobs and GVA.

In the chart below we have set out our estimates of the initial injection of tourism expenditure and consequent impact on GVA and employment in Scotland for each of the years through to 2020.

Tourism Economic Impacts



This again shows that reducing APD has the potential to offer significant economic benefits to Scotland. The impact on tourism expenditure could be between £56 million and £68 million a year, resulting in between 1,200 and 1,500 additional jobs and £47 million and £58 million in GVA.

The total additional GVA supported over the period to 2020 would around £324 million with discounted present value of around £297 million.

Wider Business Impacts

Reducing the cost of air travel by decreasing APD in Scotland by 50% will result in additional business travel to and from the country. While business passengers are, in the main, less price sensitive than leisure passengers, they will still be encouraged to fly by reduced costs. In the long term, we would expect this to be beneficial to the Scottish economy, improving its ability to trade and to attract inward investment and exposing indigenous companies to greater competition, new ideas, methods and suppliers. This will ultimately be reflected in increased productivity in the long term and a boost to Scotland's GDP.

We have sought to provide an estimate of this effect based on a relationship between the level of business air travel and total factor productivity, estimated by Oxford Economics. It should be recognised that methodologies in relation to these effects are highly complex and consequently care needs to be taken when considering the results. It may for instance take some time for the impacts to be observed. However, we believe that the assessment provides a useful indicator of the potential scale of the effect on GVA.

We have also provided an estimate of the impact in terms of job numbers. This again is open to a considerable degree of uncertainty as, by definition, improved productivity means being able to do more with less and hence it is not clear whether the observed GVA effect will in fact result in more jobs. However, we have included an assessment of jobs here based on a relatively high GVA per employee, reflecting high productivity activities, that we feel is a helpful scalar in understanding the economic impact of the change.

The results of our assessment of the wider business impacts are set out in the chart below.

Wider Business Impacts



The estimates of the wider business impacts suggest that long term productivity benefits may be the most important impact resulting from a reduction of APD in Scotland, supporting between £81 million and £90 million per annum in GVA. The total additional GVA supported over the period is around £527 million with a discounted present value of £483 million.

The impact on jobs is estimated to be equivalent to be between 1,100 and 1,200 jobs between 2015 and 2020.

Impact on Tax Revenue

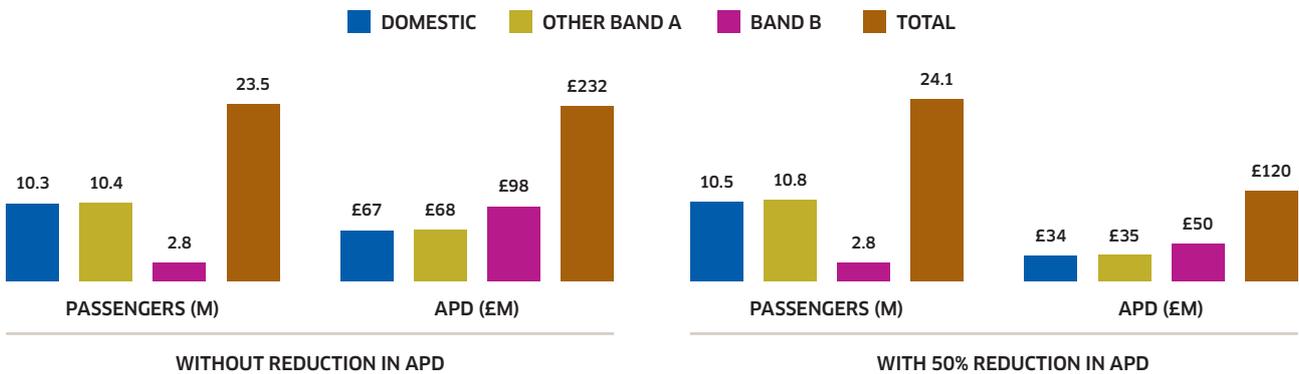
In addition to considering the potential impact on employment and economic activity, we have also considered the potential impact on tax revenue from a 50% reduction in APD.

Estimating the current tax revenue from APD does present some issues:

- APD is based on the end destination of the passenger and not the immediate airport to which they are travelling. We do not have access to definitive information on final destinations. We have therefore assumed that the CAA Passenger Survey provides a reasonable reflection of patterns of onward travel
- the rate of APD paid is also dependent on the class of ticket purchased. Again, definitive information on this issue is not available and here the level of information within the CAA Passenger Survey can be unreliable. We have therefore assumed that all passengers pay the reduced rate associated with economy class tickets. This will produce an underestimate but is probably the safest assumption
- a small number of services to the Highlands & Islands airports are exempt from APD. Within the scope of this exercise we have not adjusted for these flights, this will result in some overestimation of the tax revenue but we would not expect this to be significant.

In the chart below we have set out our estimates of APD revenues in 2015 from passengers departing Scotland's airports with and without a 50% reduction in APD. The lost revenue where rates are reduced is offset by the increase in passenger numbers described above.

APD Revenues from Passengers Departing Scottish Airports in 2015



NB. Columns may not sum due to rounding.

At 2015 APD rates, we estimate that passengers departing from Scotland's airports will pay around £232 million in APD. A 50% reduction in rates results this figure falling by just under half to around £120 million.

Over the period to 2020, the amount of APD revenue forgone grows slightly each as the market grows. The discounted total of APD foregone over the period to 2020 is around £651 million.

In addition to the offsetting effect of the growth in passenger numbers resulting from the reduction in APD, it should also be recognised that the spur to economic activity provided by increased traffic is also likely to result in increased tax revenue from other sources.

Estimating the potential size of the offsetting effect from other tax revenues is highly complex and it was not within the scope of this work to consider the issue in detail. However, work undertaken by PwC on behalf a group of UK and Irish airlines on the potential economic impact of abolishing APD in the UK did use a complex economic model that analysed the net impacts on overall tax revenue.

The results of this analysis for the UK as a whole are set out in the chart below.

Results of PwC Analysis of the Abolition of APD on UK Tax Revenue (2012/13 to 2020/21)

Year	Lost APD (£ billion)	Change in Other Taxes (£ billion)	Net Impact on Total Tax (£ billion)	% Margin
12/13	-£2.90	£3.38	£0.48	16.6%
13/14	-£2.98	£3.49	£0.51	17.1%
14/15	-£3.06	£3.37	£0.31	10.1%
15/16	-£3.15	£3.38	£0.23	7.3%
16/17	-£3.23	£3.37	£0.14	4.3%
17/18	-£3.32	£3.42	£0.10	3.0%
18/19	-£3.41	£3.48	£0.07	2.1%
19/20	-£3.51	£3.56	£0.05	1.4%
20/21	-£3.60	£3.64	£0.04	1.1%

Source: PwC.

The offsetting positive effects on tax revenue in the PwC model come from:

- higher tax receipts from indirect taxes such as VAT
- higher tax receipts from corporations linked to greater activity
- higher tax receipts from individuals as employment grows.

Given these findings, it would seem reasonable to suggest that the loss of direct revenue from APD could be at least matched by increases in tax revenues from other sources. If similar patterns to those identified for the UK by PwC were observed in Scotland following a 50% reduction in APD, a discounted increase in total tax revenue of around £64 million might be observed over the period to 2020.

Conclusion

The increased traffic at Scottish airports associated with a reduction in APD has the potential to support significant additional economic activity. We have summarised the potential impacts below.

Summary of Economic Impacts from a 50% Reduction in APD

	Jobs				GVA (£m)			
	Operational	Tourism	Wider Business	Total	Operational	Tourism	Wider Business	Total
2015	800	1,200	1,100	3,100	£33	£47	£81	£161
2016	900	1,300	1,200	3,400	£39	£51	£87	£177
2017	1,100	1,400	1,200	3,700	£49	£55	£90	£193
2018	1,100	1,400	1,200	3,700	£49	£56	£90	£195
2019	1,100	1,500	1,200	3,800	£50	£57	£90	£197
2020	1,100	1,500	1,200	3,800	£51	£58	£90	£200
	Total				£271	£324	£527	£1,123
	Discounted				£247	£297	£483	£1,028

This suggests that air transport in Scotland might support around 3,800 additional jobs and £200 million per annum in GVA by 2020. Over the period to 2020, reducing APD by 50% would result in total discounted additional GVA of around £1 billion.

This total impact can be set against the cost of lost tax revenue from the reduction in APD. We estimate that currently passengers departing from Scottish pay around £232 million in APD per annum. Reducing APD rates would close to halve

this revenue⁶, with around £113 million per annum being lost in 2015. Over the period to 2020, we estimate the discounted value of lost APD to be around £651 million. When set against total GVA, this suggests a benefit cost ratio for reducing APD by 50% of around 1.6. It should also be recognised that the direct loss of APD revenue is likely to be offset by increases in other tax revenues as economic activity increases. Research by PwC at a UK level suggests that the impact on tax revenues may ultimately be positive.

⁶ Growth in passenger numbers resulting from the reduction means that revenue lost is actually slightly below half.

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