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POLICY PAPER

UK Tourists, the Great Recession and Irish Tourism Policy

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Abstract: Inbound tourism to Ireland fell sharply in 2009 and 2010. Visits to Ireland from the UK, the dominant country of origin of visitors to Ireland, did not fall faster than UK visits elsewhere. We use a pooled travel cost model for UK travellers to estimate price elasticities of tourism demand for various market segments. The proposed reduction in the travel tax, and the reduction in the VAT rate for "tourism goods and services" would lead to a modest increase in visitor numbers and expenditure. However, the increase in expenditure is small compared to the forgone tax revenue.

I INTRODUCTION

Like many sectors of the Irish economy, tourism was hit hard by the Great Recession. Between 1985 and 2008, the number of international visitors to the Republic of Ireland rose from 1.9 million to 8.5 million visitors per year, an average growth rate of 6.7 per cent per year. Between 2008 and 2010, the number of visitors fell to 6 million, an average rate of decline of 15 per cent per year. The Irish government is duly concerned. The VAT rate on "tourism" products was lowered from 13.5 per cent to 9 per cent from July 2011, and the

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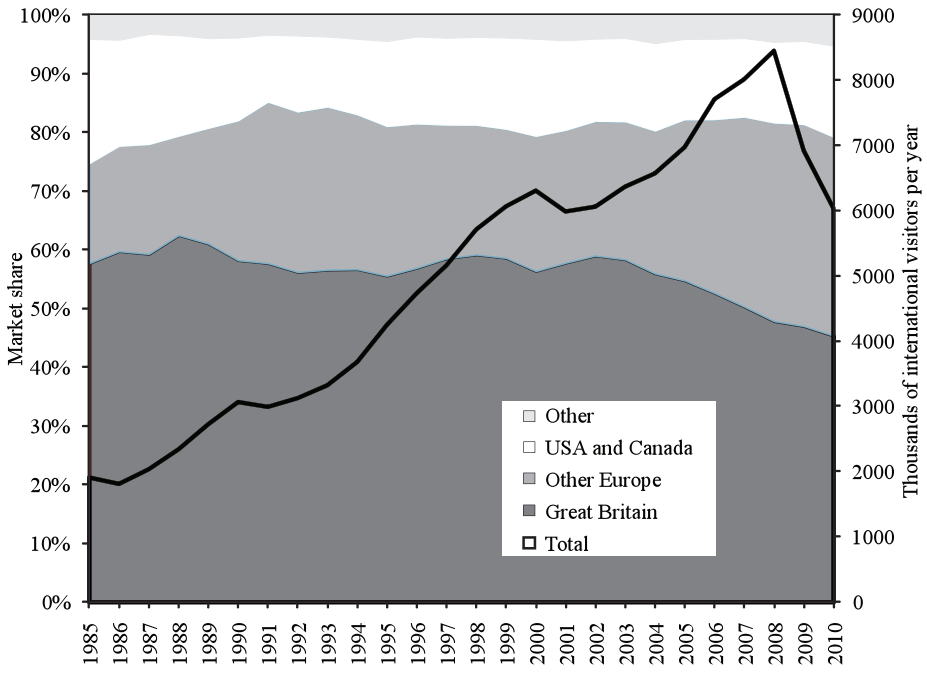
aviation tax was lowered from €10 to €3 from 1 March 2011. What is the effect of these measures?

Ireland, as the UK's closest neighbour and one of its main trading partners, is a key tourist destination for UK residents. Estimates for 2010 place the revenue generated by overseas visitors in Ireland at €2.7 billion, 32 per cent of which is attributable to British tourists (Fáilte Ireland, 2011). Figure 1 shows the total number of international visitors over the period 1985-2010. It also shows the country of origin of the visitors. Not surprisingly, British tourists are the largest group. Their market share is large, but falling. In the second half of the 1980s, 6 out of 10 visitors were from Great Britain. In 2010, this figure had fallen to 45 per cent of visitors. Figure 1 reveals that the market share of Great Britain in Irish tourism started to fall in 2003. In terms of the trend in market shares, 2009 and 2010 were not exceptional.

As visitors from Great Britain continue to dominate tourism in Ireland, we study their behaviour in this paper.[1] We specifically focus on the question of

Figure 1: *Inbound Tourism in Ireland*



[1] More accurately, we study UK tourists; where Irish statistics count visitors from Great Britain, UK statistics count departures from the UK.

prices and price elasticities. This requires detailed data, which are more easily obtained and analysed for a single country.

Although there is a vast literature on tourism, the number of studies that use (aggregated) micro-data to estimate a demand function is not that large, and there are only a few papers on the demands of UK tourists. Our data source is the International Passenger Survey, which has been extensively used to study migration (Findlay, 1988) and the spread of diseases (Phillips-Howard *et al*., 1990). Other studies use these data to study the effect of climate and weather (Agnew and Palutikof, 2006; Maddison, 2001), to forecast tourist numbers and travel patterns (Ashley, 1987; Graham, 2000; Grubb and Mason, 2001), or to analyse the impact of shocks (Coshall, 2005). Bojczuk (2008) studies the competition between coach and air trips to Poland. Lyssiotou (2000) estimates a demand system, but is primarily interested in habituation. Njegovan (2006) also estimates a demand system, with price and cross-price elasticities of airfares and other expenditure abroad and at home. Below, we also estimate price elasticities of British tourists' demand, segmenting the market by trip purpose and duration, and focusing on Ireland as a destination.

The paper continues as follows. Section II presents the data used and the results of the econometric analysis. Section III uses these findings to explore the implications for Ireland of recent tax changes. Section IV concludes.

II DATA, METHODS, AND RESULTS

2.1 *Data*

The main source of data is the International Passenger Survey[2] data by the UK Office of National Statistics (ONS). From this source, we obtained the number of visits, expenditures at destination and air fares to 52 countries for 11 years (1996-2010). International visitor data to Ireland were taken from the Central Statistics Office (CSO).[3] Note that the CSO counts tourists from Great Britain whereas the ONS counts tourists from the United Kingdom. Exports from the UK were provided by HM Revenue and Customs.[4] Area and GDP per capita of each destination country was obtained from the CIA Fact Book.[5] The distance between London and the capital city of each destination country was calculated as the great circles distance.

[2] http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14013
[3] http://www.cso.ie/statistics/TourismandTravel.htm
[4] https://www.uktradeinfo.com/index.cfm?task=data
[5] https://www.cia.gov/library/publications/the-world-factbook/

2.2 *Methods*

The average cost of a visit to each destination country was calculated by dividing the total expenditure at destination by the total number of visits. The average air fare from the UK to each destination country was calculated for each of the observed years and added to the average expenditure. The result is an estimate of the average cost of an entire trip abroad. The prices were then adjusted for inflation.[6] Two simple price indices were calculated. One compares the average costs for visits to Ireland over time. The other compares the weighted average of the average costs for visits to all other destinations, with visitor numbers serving as weights.

Price elasticities were calculated using univariate regression. This was done separately by purpose, trip length, and destination. Furthermore, more complete demand models were estimated to ascertain the robustness of the estimated price elasticity.

The following two demand equations were estimated:

$$\ln(V_i) = \alpha + \beta_1 \ln(P_i) + \beta_2 D_i + \beta_3 A_i + e_i \quad (1)$$

$$\ln(V_i) = \alpha + \beta_1 \ln(P_i) + \beta_2 \ln(EX_i) + \beta_3 \ln(G_i) + e_i \quad (2)$$

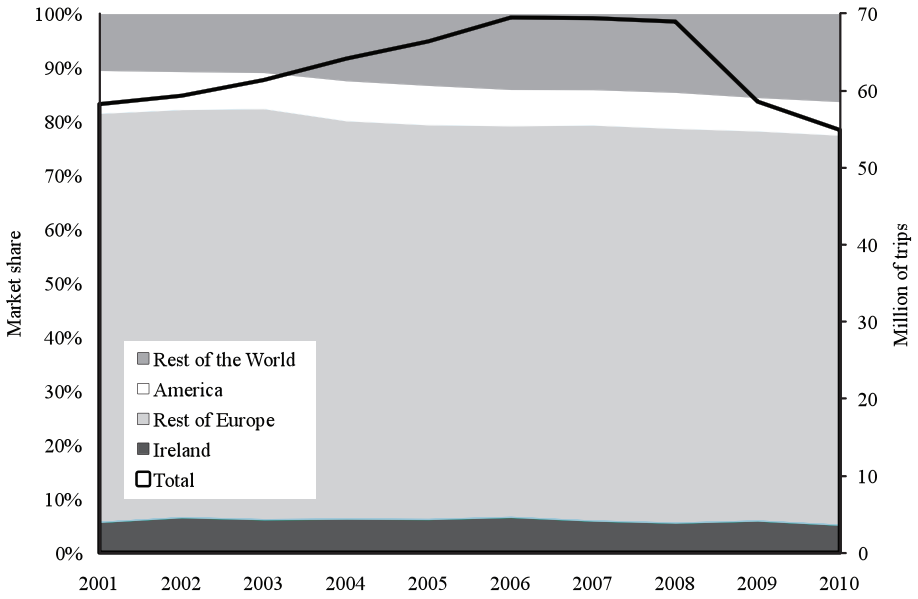
where: V_i is the number of UK tourists travelling to the analysed destination countries; P_i is the average price of the trip including travel costs; D_i is the distance from the UK to the capital city of the destination country; A_i is the area of the destination country; EX_i is the value of exports from the UK to the destination country; G_i is GDP per capita adjusted for purchasing power parity in the destination country.

2.3 *Descriptive Statistics*

Figure 2 shows that steady growth occurred in UK outbound tourism over the period 2001-2006. A downward trend developed in the subsequent years which may be attributed to the Great Recession. UK outbound tourism fell by 11 per cent per year between 2008 and 2010. Outbound tourism to Ireland fell by 14 per cent per year (15 per cent according to the Irish numbers; see Figure 1), suggesting that Ireland lost competitiveness. Interestingly, total outbound tourism fell by 15 per cent in 2009 and by 6.3 per cent in 2010; tourism to Ireland fell by 9.5 per cent in 2009 and by 18 per cent in 2010. A survey comparing consumer costs between 18 major international cities indicates that Dublin's ranking improved from sixth most expensive to ninth most expensive

[6] The prices were adjusted for inflation using the ONS Consumer Price Index: http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-223807

Figure 2: *Visits Abroad (Thousands) by UK Tourists 2001-2010 by Region*



city between 2009 and 2010 indicating that the capital city improved its cost competitiveness (Forfás, 2011). Irish competitiveness is now improving, due to internal devaluation, and the downward trend in inbound tourism figures can hopefully be reversed in the future. Tourism figures were not aided by the particularly bad weather conditions in 2010 combined with the ash cloud resulting from the eruption of an Icelandic volcano causing the cancellation of many flights.

Table 1 shows the market share of Ireland in UK outbound tourism by trip duration and by trip purpose. Due to the close proximity, Ireland is a particularly important destination for short trips. While the Irish market share was around 11-12 per cent (of expenditure) for 1999-2009, it fell to 10.7 per cent in 2010. UK tourists visiting friends and relatives (VFR) in Ireland comprise the most important contribution in terms of expenditures.[7] Business and holiday tourists are second and third respectively. Ireland maintained its market share in each segment in 2009, but VFR and holidays fell sharply in 2010.

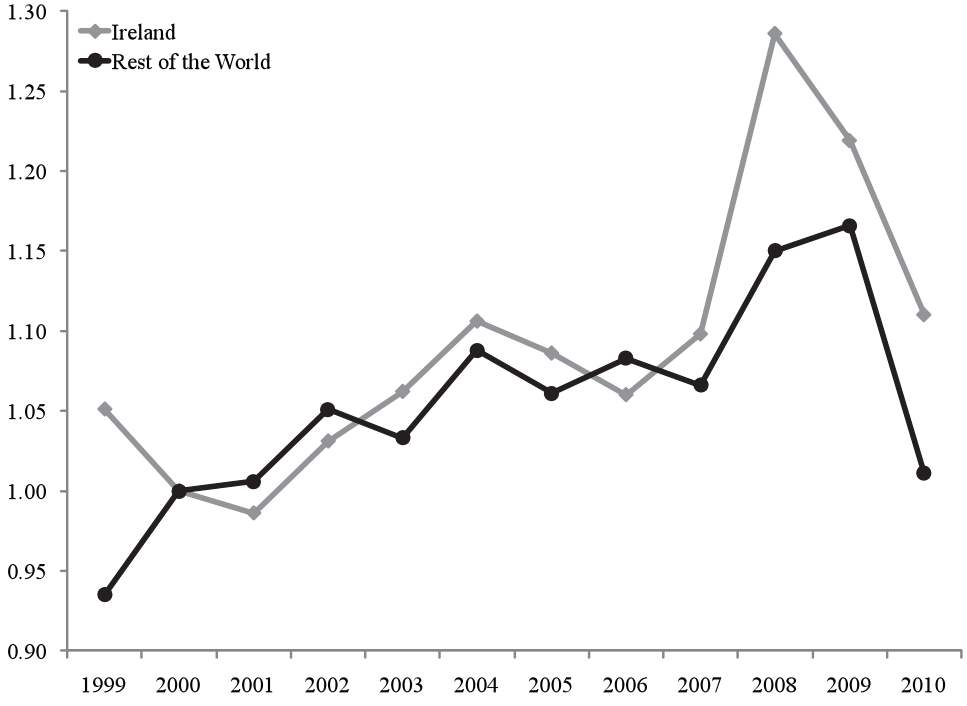
Figure 3 shows the price index of holidays in Ireland and holidays elsewhere. Table A1 has the data. Tourism prices in Ireland roughly track

[7] Note the IPS is based on residence in the UK. Many of these visitors may be Irish working or studying in the UK.

Table 1: *Irish Market Share (%) of UK Outbound Tourism Expenditure By Duration of Visit and Purpose*

	1-3 Nights	*4-13 Nights*	*14-27 Nights*	*28-90 Nights*	*3-6 Months*	*6-12 Months*	*Business*	*Holiday*	*Study*	*VFR*
1999	12.13	5.50	1.52	1.42	1.48	0.52	5.20	3.68	0.77	8.95
2000	11.92	4.51	1.22	1.00	0.89	0.08	4.84	2.88	0.39	8.70
2001	11.42	4.40	1.24	1.49	1.80	0.20	4.67	2.58	0.23	9.24
2002	12.63	4.47	1.17	2.44	0.41	0.26	5.31	2.72	0.32	9.06
2003	12.29	4.49	1.15	1.91	1.34	0.00	5.31	2.52	0.87	9.68
2004	12.15	4.33	1.02	1.36	1.43	0.00	4.75	2.62	0.40	8.84
2005	12.16	4.23	0.86	1.11	2.44	0.00	4.53	2.67	1.39	8.08
2006	11.22	4.07	1.00	1.44	0.30	0.37	4.29	2.62	2.02	8.15
2007	10.73	3.51	0.95	2.38	0.22	0.01	5.13	2.33	0.37	7.55
2008	11.52	3.65	0.88	1.18	0.54	1.05	4.54	2.68	0.85	7.30
2009	12.21	4.01	1.10	0.90	0.36	0.00	4.63	2.32	0.63	8.25
2010	10.29	3.05	1.04	1.48	1.81	2.13	4.84	2.01	0.74	6.92

Figure 3: *The Price Index (2000=1) for Tourism in Ireland and the Rest of the World*



those in the rest of the world, except in 2008 when Irish prices jumped 17 per cent (compared to 7.9 per cent elsewhere). This large increase in prices may be partially attributed to the significant weakening of the British pound against the euro during this period. The exchange rate peaked in September 2008 at 108.4. Figure A1 in the Appendix shows the fluctuations in the UK sterling/euro exchange rate over the decade from 1999-2009. From 2009 onwards, Ireland cut its prices sooner and faster (–7.0 per cent per year versus –6.2 per cent) than competing destinations.. The Tourism Barometer report (Fáilte Ireland, 2011) warns that Ireland has developed a reputation as an expensive destination in the eyes of UK tourists and that such a label may be difficult to lose.

Fáilte Ireland statistics[8] show that the arrival of UK tourists to Ireland was shared equally among air and sea passengers in 2000. Since then with the help of ever decreasing air fares, the fraction of passengers travelling by air rose to 84 per cent in 2008. This point illustrates the importance of air travel as a source of revenue especially with regard to the UK market.

2.4 *Regression Results*

Table 2 reports the price elasticity for holiday and business trips to all destinations. Both trip purposes are price inelastic but business trips more so. This result is intuitive as business trips are generally deemed more necessary and the costs are generally borne by a company rather than an individual. Price elasticities for different trip durations were also estimated. The results in Table 2 indicate that shorter trips are significantly more price sensitive. As short trips dominate for Ireland, its price elasticity is thus quite high.

Table 2: *Price Elasticities*[a]

	Price Elasticity		*N*	*Adj. R^2*
Holiday	–0.655	(0.051)***	696	0.19
Business	–0.576	(0.032)***	696	0.32
1-3 Nights	–1.11	(0.053)***	696	0.39
4-13 Nights	–0.869	(0.057)***	696	0.25
14-27 Nights	–0.565	(0.064)***	694	0.10
28-90 Nights	–0.00200	(0.00003)***	688	0.07

[a] Number in parentheses are standard deviations. Parameters that are significantly different from zero at the 1 per cent level are denoted by three asterisks***.

[8] http://www.failteireland.ie/FailteCorp/media/FailteIreland/documents/Research%20and%20Statistics/Tourism%20Facts/2009/British_Visitors_and_Holidaymakers_1999-2009.pdf

Table 3 displays the results of the estimated demand models and highlights the factors affecting the choice of destination for UK business tourists. The two models suggest that business tourism is price inelastic with an approximate value of 0.5. Table 3 reports that distance has a negative effect and area a positive effect on the level of business tourism. These findings are in line with the gravity model of trade in the international economic literature (Tinbergen, 1962). The second model demonstrates the importance of exports and income per capita. UK tourists are more likely to travel to countries to which they export goods and services. The level of imports from the destination country to the UK proved to be insignificant suggesting that the majority of business trips are undertaken in search of export contracts as opposed to sourcing imports. GDP per capita of the destination country has a negative effect perhaps signifying that business travel to poorer countries is more beneficial.[9] Most importantly, Table 3 shows that the univariate regressions (Table 2) do not bias the price elasticity estimates.

Table 3: *Business Purpose Regression Results for Equation (1)*[a]

Price Elasticity	*Distance*	*Area*	R^2	*N*
–0.493 (0.042)***	–0.108 (0.023)***	0.08 (0.007)***	0.42	685
Price Elasticity	*Exports*	*GDP per capita*	R^2	*N*
–0.513 (0.037)***	0.111 (0.007)***	–0.055 (0.012)***	0.63	253
Price Elasticity				*N*
–0.576 (0.032)***				696

[a] Number in parentheses are standard deviations. Parameters that are significantly different from zero at the 1 per cent level are denoted by three asterisks***.

III IMPLICATIONS FOR IRELAND

Table 4 shows the impact of an abolition of the €3 travel tax. Using the estimated price elasticity of Table 2, removal of the tax would have resulted in approximately 34,000-51,000 additional UK tourists in Ireland in 2010. This is a modest increase: 0.4-0.9 per cent.

These tourists would have spent an additional €9-16 million. The increase in producer surplus and tax revenue would be a fraction of this. However, the lost tax revenue amounts to €16 million. The abolition of the travel tax thus

[9] This may be in search of new markets etc.

Table 4: *Effect of the Abolition of the €3 Airport Tax on Trips and Revenues**

	Elasticity –	*ΔDemand* %	*ΔVisitors*** *Number of People*		*ΔRevenue*** *€000*		*Exchequer Cost €000*
Business**	–0.655	0.44	4,883	(380)	2,019	(157)	–3,357
Holiday**	–0.576	0.39	6,130	(341)	2,495	(139)	–4,725
Study	–0.655	0.12	9	(1)	15	(1)	–23
VFR	–0.576	0.56	12,788	(710)	3,469	(193)	–6,842
Miscellaneous	–0.576	0.27	2,439	136	875	49	–1,675
Total		0.39	26,249	885	8,872	289	–16,622
Day trip	–1.11	2.59	11,723	(560)	1,505	(72)	–1,356
1-3 nights**	–1.11	0.94	26,113	(1,247)	9,230	(441)	–8,315
4-13 nights**	–0.869	0.63	12,822	(841)	5,267	(345)	–6,061
14-27 nights**	–0.565	0.25	508	(58)	348	(39)	–616
28-90 nights**	–0.002	0.00	0	(0)	0	(0)	–205
3-6 months	–0.002	0.00	0	(0)	0	(0)	–7
6-12 months	–0.002	0.00	0	(0)	0	(0)	–63
Total		0.92	51,167	(1,606)	16,350	(566)	–16,622

* The analysis is based on observations for 2010.
** Price elasticity was estimated (see Table 2); other price elasticities were imputed.
*** Numbers in brackets are standard deviations.

results in a net welfare loss for the Republic of Ireland, and in a net loss for the exchequer.

As taxes distort the market, the abolition of the travel tax must have a larger effect on consumer surplus, but these consumers are UK residents. This result is intuitive, and independent of the exact assumptions.

The travel tax is a fraction of the total air fare; and the air fare is a fraction of total travel costs. Therefore, a modest change in the travel tax (€3, the price of a cup of coffee at the airport) will have a modest impact on traveller numbers. With demand so price inelastic, air travel is a reliable source of tax revenue.

If the price elasticities in Table 4 are multiplied by a factor 1.9, then the change in tourism expenditure is greater than the change in tax revenue. If producer surplus and tax revenue are 10 per cent of tourism expenditure, then the price elasticities in Table 4 have to be multiplied by a factor 19 for the abolition of the travel tax to improve welfare in Ireland.

Table 5 repeats the analysis of Table 4 for a reduction of the VAT rate (from 13.5 per cent to 9.0 per cent) for accommodation, restaurants, and recreation. This reduces prices by 4 per cent, but as these expenditures make up about half of total tourist expenditures (see Table A2), the cost of a holiday in Ireland

Table 5: *Effect of the VAT Reduction on Trips and Revenues**

	Elasticity –	*ΔDemand* %	*ΔVisitors*** Number of People*		*ΔRevenue*** €000*		*Exchequer Cost €000*
Business**	–0.655	1.18	13,206	(1,028)	5,459	(425)	–10,305
Holiday**	–0.576	1.04	16,324	(907)	6,644	(369)	–14,280
Study	–0.655	1.26	97	(8)	159	(12)	–282
VFR	–0.576	1.00	22,694	(1,261)	6,156	(342)	–13,781
Miscellaneous	–0.576	1.00	5,732	(318)	2,052	(114)	–4,461
Total		1.04	58,045	(1,890)	20,471	(669)	–43,109
Day trip	–1.11	1.55	7,016	(335)	642	(31)	–921
1-3 nights**	–1.11	1.95	54,076	(2,582)	17,116	(817)	–19,543
4-13 nights**	–0.869	1.61	31,359	(2,057)	11,723	(769)	–16,824
14-27 nights**	–0.565	1.06	2,154	(244)	1,396	(158)	–2,965
28-90 nights**	–0.002	0.00	3	(0)	3	(0)	–1,885
3-6 months	–0.002	0.00	0	(0)	1	(0)	–597
6-12 months	–0.002	0.00	1	(0)	1	(0)	–374
Total		1.17	94,609	(3,327)	30,882	(1,113)	–43,109

* The analysis is based on observations for 2010.
** Price elasticity was estimated (see Table 2); other price elasticities were imputed.
*** Numbers in brackets are standard deviations.

falls by 2 per cent only. We assume that the VAT reduction is passed onto customers, and that customers do not change the composition of their expenditure. These assumptions are incorrect, but may cancel each other. Although the VAT reduction is effective from July 2011 onwards, we consider the effect it would have had on 2010 tourism.

The VAT reduction has a bigger effect on holiday costs than the travel tax abolition. Still, trip numbers and tourism revenue increase by a modest 1.1-1.7 per cent. Tourists would have spent €20-31 million less in 2010 had the VAT been left unchanged. This compares to forgone exchequer revenues of €43 million.[10] The reasons are as above.

The results in Table 5 assume that the number of tourists change but expenditure per tourist remains constant. This assumption is incorrect (O'Hagan and Harrison, 1984). (Divisekera and Deegan, 2010), using data that we do not have access to, estimate the price elasticities of visitors to Ireland for different groups of goods and services frequently bought by

[10] Note that this figure omits the forgone revenues from recreation spending by Irish residents.

tourists. Table A2 shows the results for all tourists and for tourists from Great Britain. Table A2 also aggregates the estimated elasticity to the elasticity for overall spending. The resulting price elasticity is –0.34 for all tourists and –0.37 for British tourists. Using the latter value, we change the expenditure per tourist. In 2010, tourists would have spent an additional €135,000-201,000. This number is so small due to the magnitude of both the price change (2 per cent) and the price elasticity (–0.37).

IV DISCUSSION AND CONCLUSION

In this paper, we consider the impact of recent and proposed tax reforms on the UK demand for tourism in Ireland. The UK is by far the largest source of visitors to Ireland, and Ireland is the largest tourist destination for UK tourists. Visitor numbers to Ireland have dropped sharply in recent times. The main reason is that tourism numbers have fallen everywhere, although Ireland has also lost market share in the UK holiday and visiting friends and family segments. Using a pooled travel cost model, we estimate price elasticities of UK tourism demand for various market segmentations. Short trips are more sensitive to changing prices than long trips, and holiday travel is more price sensitive than business travel. We apply these estimates to assess the impact of the abolition of the travel tax (proposed but not enacted) and the reduced VAT rate for tourism products (enacted). We find that the impact is small on total trip costs and hence on visitor numbers and expenditures. The impact of tax revenue is small too, but larger than the impact on visitor expenditures (let alone on the taxes and profits generated by that expenditure). A reduction of taxes on visitors is thus a net transfer from Ireland to the United Kingdom.

Tourism tax breaks are thus comparable to export subsidies: Although the sector benefits from increased visitor numbers (export), this comes at the expense of the taxpayer. The trading partner benefits from lower prices.

Although the analysis here is limited to UK visitors, the same results would obtain for visitors from further afield. The travel tax has a smaller effect as it is a smaller proportion of the total air fare, and as people who stay longer are less sensitive to price. The VAT reduction probably has a larger effect as the length of stay is longer for visitors from further afield (although travel costs are higher too). However in this case, the price change is less than 2 per cent.

Therefore, it appears that the Irish government is wrong to seek to stimulate inbound tourism through tax breaks. While effective, the costs exceed the benefits. It would be better, in fact, to increase travel taxes and VAT

for tourism products. This would harm visitors and the tourism industry, but it would benefit the general population in the form of an increased tax take.

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APPENDIX: ADDITIONAL RESULTS

Table A1: *Tourism Price Indices for Ireland and Rest of the World*

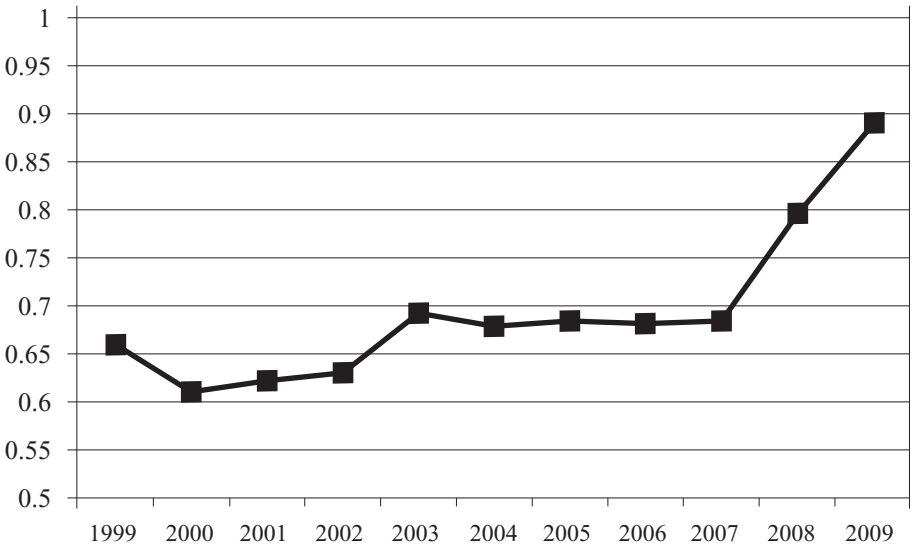
Year	*Ireland*	*Rest of the World*
1999	1.051	0.935
2000	1.000	1.000
2001	0.986	1.006
2002	1.031	1.051
2003	1.062	1.033
2004	1.106	1.088
2005	1.086	1.061
2006	1.060	1.083
2007	1.098	1.066
2008	1.286	1.150
2009	1.219	1.166
2010	1.110	1.011

Table A2: *Expenditure Pattern and VAT Rates*

	*Expenditure**		*VAT*		*Price*	*Elasticity***	
	Mln Euro	*Share (%)*	*Old (%)*	*New (%)*	*Change (%)*	*All*	*British*
Accommodation	672	18.5	13.5	9.0	–3.96	–0.34	–0.41
Food and drink	932	25.6	13.5	9.0	–3.96	–0.38	–0.39
Transport	1,062	29.2	21.0	21.0	0.00	–0.07	–0.27
Travel agents	12	0.3	21.0	21.0	0.00	–0.07[a]	–0.27[a]
Recreation	197	5.4	13.5	9.0	–3.96	–0.15[b]	–0.13[b]
Miscellaneous	169	4.7	21.0	21.0	0.00	–0.14	–0.15
Non-specific	593	16.3	21.0	21.0	0.00	–0.18[c]	–0.72[c]
Total	3,637				–1.96	–0.34[d]	–0.37[d]

* 2000; *Source:* (Fáilte Ireland, 2005).
** *Source:* [a] Assumed equal to "transport"; [b] Assumed equal to "sightseeing";
[c] Assumed equal to "shopping"; [d] Weighted average for the VAT scenario.

Figure A1: *UK Pound Sterling/Euro Reference Exchange Rate 1999-2009*[11]



[11] ECB reference exchange rate.
Source: European Central Bank.