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EXECUTIVE SUMMARY

Attendee total expenditure and expenditure patterns

- An estimated 15,000 out-of-state visitors attended the Ireland versus England rugby game held in the Aviva on 1st March, 2015. The following estimates refer to the expenditure associated with these out-of-state visitors.

- The estimated total spend of out-of-state attendees amounted to €11.5 million.

- Just over half of the total spend (55%; €6.3 million) was allocated to prepaid items including hotels and restaurants (25%; €2.9 million), transport to Ireland (16%; €1.9 million) and the cost of the game ticket (15%; €1.7 million).

- Just under half (45%, €5.2 million) of the total spend was allocated to out-of-pocket spending while in Dublin for the game.

- Alcohol represented the highest out-of-pocket spend item at €2.2 million which was followed by food (€1.3 million).

- On average game attendees spent €764 per person during their trip to Dublin.

- Attendees spent an average of 2.6 nights in Dublin during the event.

- The average per diem spend per attendees therefore equates to €293.

Economic impact of attendees

- The estimated direct spend of €11.5 million added €21.3 million to Irish GDP after accounting for multiplier effects including indirect, induced and Government recycling.

- Visitor spending contributed the equivalent of nearly 200 jobs over the course of a year.

- Direct attendee expenditure generated €9.2 million in value added and created an estimated €885,974 in exchequer revenue through product taxes.

- The income effect amounted to €4.7 million.
2 INTRODUCTION

Tourism in general and sporting events in particular have often been overlooked as generators of significant economic activity for the Irish economy. These activities, especially when they involve significant out-of-state spending, can add substantially to Gross Domestic Product (GDP) and employment creation, and can augment the exchequer in the form of both increased direct and indirect taxes. Indeed out-of-state spending of this nature can be considered an invisible export for the economy and is as tangible as the export of manufactured goods or financial services in monetary value.

In addition to the obvious contribution that sporting activities make to the general health and wellbeing of a nation, they also generate substantial economic benefits on a local and national level. A recent report has estimated that 38,000 people are currently employed in the sports sector which contributes €1,830 million to Irish economy value-added, equivalent to approximately 1.4% of GDP\(^1\). While the sports sector is eclectic in nature and formed of many diverse activities including voluntary sport, commercial sport, and commercial non-sport, large recurring international sporting events like the recent Ireland-England Six Nation’s rugby game in particular have considerable potential to generate a positive economic impact.

To capture the true economic impact of sporting events the well-established method of input-output modelling is employed. This method is apposite in calculating the total economic effect associated with injections of expenditure into an economy and uses visitor spending as an input to compute the full range of economic effects across GDP, unemployment, product taxes, income and value added. The multiplier effects of the initial spending are traced through the economy as they generate additional inter-industry purchases and additional spending through various rounds of income increases. This provides a comprehensive overview of the true economic effect of sporting events at both the local and the national level and is used here to estimate the tangible economic benefits of large sporting events in Ireland.

3 METHODS

3.1 SURVEY

Information on expenditure generated at the Ireland-England rugby game held in the Aviva on 1st March, 2015 was collected via an interview survey approach. A questionnaire was developed to collect both prepaid and out-of-pocket (OOP) spending incurred by out-of-state attendees to the rugby game. Prepaid items included the price of the ticket, the cost of accommodation and the transport cost of visiting Ireland. OOP spending items included domestic travel, food, beverages, alcohol, shopping, event merchandise, visits to tourist spots and ‘other’. The total number of respondents amounted to 304, all of which were included in the final analysis.

3.2 INPUT-OUTPUT MODEL

Direct expenditure collected as part of the survey was used as the key input in the economic impact analysis. This entailed the use of input-output (IO) modelling. The IO model is underpinned by an accounting framework which captures the interdependency that exists among producing and consuming sectors in the economy. Specifically, the framework indicates how each sector of the economy purchases goods and services from other sectors in the system and subsequently uses the inputs to produce goods and services sold to other sectors. Multipliers derived from this model are used to calculate the various rounds of economic activity generated by an injection of external expenditure, in this case out-of-state visitors to the Ireland-England rugby game held in Dublin.

Implementation of IO modelling entails subjecting a direct expenditure injection due to initial attendee spending to indirect, induced and government recycling multiplier effects.

Indirect effects

Indirect effects occur when sectors that are directly affected by attendee expenditure require additional inputs from alternate sectors which generates further rounds of economic activity. These purchases from supplying sectors require further purchases, and thus production from even more suppliers, which causes a multiplier effect.
Induced effects

Induced effects arise when the additional income generated by the direct and indirect effects is spent on goods and services. This in turn generates further rounds of expenditure and income which further stimulates economic activity.

Government recycling effects

This effect arises due to the expenditure of exchequer income earned as a result of additional out-of-state expenditure.

3.3 Economic Impact Modelling

The rugby game expenditure dataset yielded a 9-sector vector of final demand. Average per delegate expenditure estimates within each sector were multiplied by the number of out-of-state attendees at the game which was estimated at 15,000 to calculate aggregated expenditure totals for each category.

This report employed the most up-to-date (at the time of writing) 2011 Irish IO tables published by the CSO\(^2\) to derive the economic impact multipliers. The tables include 58 sectors of inter-industry demand. This basic IO model was subsequently modified to integrate a consumption feedback mechanism to generate induced income effects and a Government recycling feedback mechanism.

Various multipliers are employed to generate a comprehensive view of the economic impact of the rugby game. These included: GDP/output, employment, income, value added and product taxes.

GDP/Output Multiplier

GDP/Output multipliers measure the amount of output generated in the economy by a €1 change in final demand expenditure, in this case by rugby game attendees.

Employment Multipliers

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Employment multipliers are based on employment data sourced from the CSO’s Quarterly National Household Survey\(^3\). Each multiplier estimates the number of Full-Time Equivalent (FTE) jobs generated from a 1-unit change in exogenous conference delegate spending.

**Income Multiplier**

Income multipliers measure the effect of an extra €1 of final demand expenditure on the changes in the income level of households residing in the host economy.

**Value Added Multipliers**

Value added multipliers are derived from compensation of employees, net operating surplus, consumption of fixed capital and taxes on production less subsidies. A distinct link exists between value added and the generation of income in a host nation.

**Product Tax Multipliers**

Product tax multipliers measure the effect of an extra €1 of final demand expenditure on the changes in the product tax take of the Government.

### 3.4 Dublin Impact

The proportion of the economic impact that may be specifically apportioned to Dublin is based on the regional distribution of both Gross Value Added (GVA) and employment within Ireland. In this case, based on 2011 figures for GVA and employment, 40.9% of additional output was apportioned to Dublin and 29.7% of additional employment was apportioned to Dublin (i.e. that impact that is in excess of the direct impact, which was assumed to accrue directly to the Dublin region) based on estimates derived from Irish Income and Regional Accounts and the Quarterly National Household Survey sourced from the CSO.

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\(^3\) The detail necessary to compute employment multipliers in the full 58 sector IO model is not available on the CSO website. Full detail on employment by sector in Ireland was provided through personal communication with Brian Ring, a statistician on the Quarterly National Household Survey.
4 RESULTS

4.1 OUT-OF-STATE ATTENDEE EXPENDITURE

The total spend of out-of-state visitors injected directly into the Irish economy includes both prepaid items and out-of-pocket (OOP) items.

Figure 1 stratifies prepaid expenditure into three distinct categories including spending on the game ticket, travel to Ireland (only that portion of fares which accrued to Irish carriers or ferries) and accommodation in Ireland. Of these items, accommodation is the largest expenditure category accounting for 45% of total prepaid expenditure. In total visitors spent an average of €421 on prepaid items per person.

Figure 1 Prepaid average rugby visitor expenditure per person

Figure 2 stratifies OOP expenditure into six distinct categories. Spending on alcohol is the largest category accounting for 43% of total OOP spending. This is followed by food and beverages (30%) and domestic travel around Dublin (12%). In total visitors spent an average of €343 on OOP items per person.
Figure 2: OOP average rugby visitor expenditure per person

Figure 3 shows the distribution of OOP expenditure across various spending classes. The majority of spending (68%) occurred in the range of €0-€399, however a minority of visitors (5%) did spend in excess of €800 per person.

Figure 3: Histogram showing the relative frequency distribution (%) of OOP spending across classes
Table 1 presents, in addition to the prepaid and OOP spending averages, estimates of average total spend per visitor (€764) and average per diem spend per visitor (€293). The per diem spend is based on an average length of stay in Dublin due to the game of 2.6 nights.

### Table 1: Summary of visitor spending patterns

<table>
<thead>
<tr>
<th>SPENDING CATEGORY</th>
<th>VALUE (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVERAGE PREPAID SPEND PER VISITOR</td>
<td>421</td>
</tr>
<tr>
<td>AVERAGE OOP SPEND PER VISITOR</td>
<td>343</td>
</tr>
<tr>
<td>AVERAGE TOTAL SPEND PER VISITOR</td>
<td>764</td>
</tr>
<tr>
<td>AVERAGE PER DIEM SPEND PER VISITOR</td>
<td>293</td>
</tr>
</tbody>
</table>

Figure 4 presents the results of the expenditure aggregation process based on an estimated attendance of out-of-state visitors at the game of 15,000. Following this, the top three categories of spending included hotels and restaurants (25% of the total), drink (alcohol) (19%) and sporting events (15%).

### Figure 4: Aggregated expenditure of 15,000 out-of-state visitors

- **Tourist sites**, €60,000, 1%
- **Groceries**, €162,000, 1%
- **Petrol**, €52,500, 0%
- **Shopping**, €753,000, 7%
- **Sporting events**, €1,702,500, 15%
- **Air Transport Services**, €1,626,000, 14%
- **Food**, €1,296,000, 11%
- **Drink**, €2,241,000, 19%
- **Hotel and Restaurants**, €2,869,500, 25%
- **Ferry**, €231,000, 2%
- **Taxi and Bus**, €547,500, 5%
4.2 National Economic Impact

At a national level the hosting of the Ireland-England Six Nation’s rugby game contributed an estimated €11.5 million of spending directly into the economy (Table 2). After accounting for multiplier effects this direct spending contributed €21.3 million to Irish GDP. The spending of international attendees generated the majority of this impact (85%) with carrier receipts accounting for the remaining portion (15%).

Table 2: National Economic Impact: Contribution to GDP

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIRECT</th>
<th>DIRECT + INDIRECT</th>
<th>DIRECT + INDIRECT + INDUCED</th>
<th>DIRECT + INDIRECT + GOVERNMENT RECYCLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL ATTENDEES</td>
<td>€9,915,000</td>
<td>€13,459,801</td>
<td>€16,913,860</td>
<td>€18,219,255</td>
</tr>
<tr>
<td>CARRIER RECEIPTS</td>
<td>€1,626,000</td>
<td>€2,736,715</td>
<td>€3,012,663</td>
<td>€3,116,952</td>
</tr>
<tr>
<td>TOTAL</td>
<td>€11,541,000</td>
<td>€16,196,516</td>
<td>€19,926,523</td>
<td>€21,336,207</td>
</tr>
</tbody>
</table>

Direct spending due to the event also generated the equivalent of 194 full-time jobs\(^4\) for one year (Table 3). Similar to GDP, the majority of jobs were generated by international attendee spending (186) with a relatively small number (8) generated by carrier receipts.

Table 3: National Economic Impact: Contribution to Employment

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIRECT</th>
<th>DIRECT + INDIRECT</th>
<th>DIRECT + INDIRECT + INDUCED</th>
<th>DIRECT + INDIRECT + GOVERNMENT RECYCLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL ATTENDEES</td>
<td>100</td>
<td>155</td>
<td>177</td>
<td>186</td>
</tr>
<tr>
<td>CARRIER RECEIPTS</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>104</td>
<td>161</td>
<td>185</td>
<td>194</td>
</tr>
</tbody>
</table>

\(^4\) Full-time equivalent jobs (FTE)
Table 4 presents the effect of direct event spending on additional economic categories including income, value added and product taxes. The estimated income that accrued to households in the form of wages and salaries was €4.7 million. Value added (€9.2 million) generated by visitor spending was almost double the income figure and included profits that accrued to businesses. Finally, 0.9 million was generated in product taxes.

Table 4: National Economic Impact: Contribution to Income, Value added and product taxes

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIRECT + INDIRECT + INDUCED + GOVERNMENT RECYCLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCOME</td>
<td>€4,696,683</td>
</tr>
<tr>
<td>VALUE ADDED</td>
<td>€9,162,760</td>
</tr>
<tr>
<td>PRODUCT TAXES</td>
<td>€885,974</td>
</tr>
</tbody>
</table>
4.3 Dublin Economic Impact

The Dublin specific economic impact of the Ireland-England rugby game is presented in Tables 5 and 6. The contribution of the event to the Dublin region in terms of GDP was estimated as €15.5 million, which equates to 131 full-time jobs for one year.

Table 5. Dublin Economic Impact: Contribution to GDP

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIRECT</th>
<th>DIRECT + INDIRECT</th>
<th>DIRECT + INDIRECT + INDUCED</th>
<th>DIRECT + INDIRECT + GOVERNMENT RECYCLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL ATTENDEES</td>
<td>€9,915,000</td>
<td>€11,364,823.61</td>
<td>€12,777,533.74</td>
<td>€13,311,440.30</td>
</tr>
<tr>
<td>CARRIER RECEIPTS</td>
<td>€1,626,000</td>
<td>€2,080,282.44</td>
<td>€2,193,145.17</td>
<td>€2,235,799.37</td>
</tr>
<tr>
<td>TOTAL</td>
<td>€11,541,000</td>
<td>€13,445,106.04</td>
<td>€14,970,678.91</td>
<td>€15,547,239.66</td>
</tr>
</tbody>
</table>

Table 6. Dublin Economic Impact: Contribution to Employment

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIRECT</th>
<th>DIRECT + INDIRECT</th>
<th>DIRECT + INDIRECT + INDUCED</th>
<th>DIRECT + INDIRECT + GOVERNMENT RECYCLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNATIONAL ATTENDEES</td>
<td>100</td>
<td>116</td>
<td>123</td>
<td>126</td>
</tr>
<tr>
<td>CARRIER RECEIPTS</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>104</td>
<td>121</td>
<td>128</td>
<td>131</td>
</tr>
</tbody>
</table>
This report estimates the economic contribution of the Six Nation’s rugby game between Ireland and England held in the Aviva, 1\textsuperscript{st} March, 2015. In total, the direct spending generated by this event by 15,000 out-of-state visitors amounted to €11.5 million. Accounting for multiplier effects this contributed €21.3 million in GDP nationally and created the equivalent of nearly 200 jobs. For Dublin specifically, the comparable figures were €15.5 million in terms of GDP and 131 full time jobs. Results therefore highlight the value of large sporting events to both the local and the national economy.

The estimates presented here represent a minimum for the true economic impact of the event. Only spending generated by attendees was included in the analysis due to a lack of information on accompanying persons. Including these extra individuals would likely increase the estimates presented here considerable.