The Economic Impact of Old Firm Football Spectators as Sports Tourists: 
An Input-Output Application to Glasgow and Scotland

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Section 1: Introduction

There is a growing interest in the economic impacts of small-scale sport event tourism (Daniels and Norman, 2003; Gibson et al., 2002; Matheson, 2004). In particular, such events might deliver economic benefits to the host community without the costs and burdens of hosting mega-events, such as the Olympic Games or the World Cup football tournament. This paper examines the extent of sports tourism generated by the Glasgow-based “Old Firm” football clubs, Rangers and Celtic, and the economic impact of that tourism expenditure on the Glasgow and Scottish economies 1.

The Old Firm football clubs are a symbol of Glasgow and Scotland, with supporters clubs in many cities across the world. The geography of season ticket ownership reflects this spatial dispersion with the majority of the season ticket holders of both clubs living outwith Glasgow and over 8 per cent living outwith Scotland. In this paper, we seek to quantify the net local economic impact of the sport tourism related to all matches involving either of the two Old Firm clubs played during the 2003–4 season. We focus on the direct, indirect and induced net effect of the expenditure generation and expenditure shifting characteristics of this tourist expenditure.

The study addresses three gaps in our current understanding of sports tourism. The first is the lack of information on the economic impact of the sports tourism associated with British football clubs. In this respect, the study is unique. The second concerns ignorance over the relative importance, for sports tourism impacts, of a football club’s participation in domestic and European competitions. The third relates to the geographical and sectoral impacts of sports tourism related to support for professional football teams.

1 The term “Old Firm” dates back to April 1904, when, according to Ross (2005, p.27), “Supporters of both clubs were highly suspicious of the number of draws when these clubs met in cup ties which resulted in replays which were lucrative for the clubs but costly for the fans. On the day of the final – April the 16th - the “Scottish Referee” published a cartoon depicting a man with a sandwich board upon which was written the legend ‘Patronise the Old Firm – Rangers Celtic FC’”. The term Old Firm has developed from this original meaning to describe, collectively, Rangers FC and Celtic FC.
In our study we have benefited from privileged access to the Old Firm’s databases of season ticket holders. These provided a source for our stratified survey of two thousand supporters per club. This survey provided information on the travel, accommodation and other expenditures of supporters at different types of matches involving these clubs. We are also fortunate in that the Scottish Executive provides official Input-Output tables for Scotland. These have been used to identify the indirect and induced economic impacts on the Scottish economy. In order to quantify the spatial impacts we disaggregate these tables into Glasgow and the rest of Scotland.

Section 2 discusses the concept of sports tourism and how this can be applied to spectators following the Old Firm football clubs. Section 3 examines the scale of these sports tourist attendances and the regional flows of spectators for matches involving the Old Firm. In Section 4, we outline expenditure profiles for the average spectator attending matches involving the Old Firm. Section 5 uses these expenditure profiles to estimate the net economic impact on Glasgow and the rest of Scotland of Old Firm related sports tourism. Section 6 then concludes.

Section 2: Football supporters as sports tourists

There is considerable debate over how to define both “sport” and “tourism” (Ritchie and Adair, 2004), and indeed the separate definition of “sport tourism” (Weed and Bull, 2004). “Sport” can include either formal or recreational activities, where formal sporting events are generally associated with a degree of structure and bureaucracy, record keeping and a referee or judge (Coakley, 2001). It is recognised that sport tourism can take active or passive forms. Standeven and De Knop, (1999, p. 12) define sport tourism as “all forms of active and passive involvement in sporting activity, participated in casually or in an organised way for non-commercial or business/commercial reasons that necessitate travel away from home and work locality”. Gibson (2002) categorises sports tourism into three separate elements: active, nostalgia (Gammon, 2002) and event sports tourism. Event sports tourism is further defined by Deery et al (2004) as involving competitive sport, rather than recreational activities, and intentional participation in the sporting event, either passively (through spectating) or actively (through playing the sport).
The tourism industry is seen as an important driver of economic growth and development for the Glasgow economy (Glasgow City Council et al, 2007). One of key elements in this strategy is through the attraction of major sporting events which could be used to “strategically position Glasgow on the national and international stage” (Glasgow City Council et al, 2007, p.17). Bidding for, and winning, major sporting events are an important part of the economic strategy for the city (Glasgow Economic Forum, 2006). For these reasons, it is important that research is able to demonstrate the impact that sporting events have on the city economy. Old Firm supporters are undertaking event tourism.

The vast majority of research on sports tourism concerns event sports tourism (Ritchie and Adair, 2004), with a considerable literature on “mega-events” such as the Olympic games, the Football and Rugby World Cup and other sporting tournaments with worldwide interest and exposure (Jones, 2001; Baade and Matheson, 2004; PWC, 2005; Matheson, 2006). Ritchie (2004) identifies a gap in the literature at the small-level sports tourism product. There is little empirical research into small-scale event tourism and its implications for destinations, and few studies examining or profiling sports tourists who attend small-scale sporting events. The existing research primarily investigates Australian college sports.

Small-scale sport events include “regular season sporting competitions (ice hockey, basketball, soccer, rugby leagues), international sporting fixtures, domestic competitions, Master or disabled sports, and the like” (Higham, 1999, p. 87). These small events are distinguished from mega-events through their use of existing infrastructure; their need for less public support to host; their avoidance of tourism seasonality (by running a league over the autumn to spring months of a year); and their more easily managed scale (Higham, 1999).

Unlike Grieg and McQuaid (2003), in this paper we examine the sectoral and regional, as well as national, impacts of gross sports spectator attendances. While, Johnstone et al (2000) focus on the local regional (Merseyside) economic linkages of the football clubs themselves, and less on the sports tourism expenditures of supporters attending matches. Accounting for the economic impacts of the clubs themselves, and assessing the direct, indirect and induced impacts on the regional and national economy of Scotland is an intended extension to this current piece, which is addressed solely at the expenditures made by the spectators at matches involving these two clubs outside the ground.

Among the passive sports tourism flows measured and profiled in these studies, we are typically examining those towards the “avid” end where team affiliation is the primary purpose for attendance at these games (Ritchie, 2004). In our application this is especially relevant, given the high number of spectators who purchase season tickets for each club – i.e. spectators who pay in advance for a seat at their clubs home ground for all the home (generally, league) matches in the season. Purchasing a season ticket also entitles its owner to the chance to buy a ticket for a number of away matches for the club over the season (currently four for Rangers FC). The large number of season ticket holders for both Old Firm clubs makes it difficult to purchase a ticket for either stadium in Glasgow on match days.

Section 3: Inter-regional flows of supporters over a season for matches involving the Old Firm clubs

Matches involving the Old Firm draw a significant number of spectators, far in excess of that enjoyed by any other professional sports club in Scotland: the Old Firm clubs dominate Scottish football. In each season from 1994-5 to 2004-5, the Old Firm clubs held the top two positions in the Scottish Premier League (SPL). In the 2003-4 season – the season that is the focus of this paper - Rangers played all their home games in front of an average of 47,130 spectators, whilst home Celtic matches attracted an average of 49,790 spectators. The all-seated capacity of Ibrox Stadium is

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2 2003/4 average attendances for their home matches in the SPL were 48,992 (Rangers) and 49,496 (Celtic).
50,444 and that of Celtic Park is 60,355 (Rollin and Rollin, 2004). The next largest SPL ground is at Pittodrie, home of Aberdeen FC, which has a capacity of 21,487.

### 3.1 Matches involving the Old Firm clubs in the season 2003-4

Over the course of the 2003-4 SPL season, which ran from the 8\textsuperscript{th} August 2003 to the 16\textsuperscript{th} May 2004, both clubs played 19 home matches and 19 away matches\textsuperscript{3}. Celtic’s competitive season, which followed an appearance in the UEFA Cup final in Lisbon in June 2003, actually began on the 6\textsuperscript{th} August when they played the first leg of the second qualifying round for the UEFA Champions League. Over the course of the season, Celtic played a total of sixteen matches in European competition, of which eight were played at Celtic Park. Rangers played eight matches in European competitions during this season. One qualifying game and three group matches in the UEFA Champions League made up the four home matches at Ibrox stadium in Glasgow.

Both clubs also played in the two Scottish knockout cup tournaments. These are the CIS Scottish League Cup played in the earlier part of the season, with the final in March, and the Tennents Scottish Cup, which had its first round in November with the clubs in the SPL joining in the third round. These cup competitions in total provided Rangers with a further six matches and Celtic with a further seven. Two of Celtic’s matches, the semi-final and final of the Scottish Cup, were played at Hampden Park in Glasgow, while Rangers’ semi-final in the CIS League Cup was played at Easter Road in Edinburgh. The number of home and away matches, and the location of away matches, are given in Table 3.1.

\textsuperscript{3} The number of home and away matches is not necessarily the same in the SPL. The league is split into a top-six group and a bottom-six group once all teams have played each other three times. The SPL arranges the final five matches for each club in a season against the other clubs in the same half of the league, attempting to ensure that all clubs play an even number of home and away matches.
Table 3.1: The number of home and away matches and the location of away matches involving Old Firm teams in the 2003/4 season

<table>
<thead>
<tr>
<th></th>
<th>Home Matches</th>
<th>Away matches</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glasgow</td>
<td>Rest of Scotland</td>
<td>Rest of world</td>
</tr>
<tr>
<td>Celtic</td>
<td>29</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Rangers</td>
<td>25</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>

When the Old Firm play at the grounds around Scotland in the SPL and cup tournaments, attendances are generally significantly higher than when other teams visit these grounds. In part this is attributable to the travelling support taken by the Old Firm clubs themselves, which averages 4,000 for a typical SPL match but can be as high as 8,000. The number of spectators supporting the home club might also increase when the visitors are the Old Firm clubs, in part due to the status of the Old Firm. As can be seen in Table 3.2 below, the average home attendance for non-Old Firm clubs is significantly increased when the Old Firm are the visitors.

Table 3.2: Average SPL attendances for non-Old Firm clubs and when the Old Firm clubs visit

<table>
<thead>
<tr>
<th>Team</th>
<th>SPL home matches against non Old Firm</th>
<th>Home matches when Old Firm clubs visit</th>
<th>Percentage difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart of Midlothian</td>
<td>11,472</td>
<td>13,798</td>
<td>+20.3%</td>
</tr>
<tr>
<td>Aberdeen</td>
<td>9,294</td>
<td>16,205</td>
<td>+74.4%</td>
</tr>
<tr>
<td>Hibernian</td>
<td>8,883</td>
<td>10,868</td>
<td>+22.3%</td>
</tr>
<tr>
<td>Dundee United</td>
<td>7,325</td>
<td>10,187</td>
<td>+39.1%</td>
</tr>
<tr>
<td>Dundee</td>
<td>6,574</td>
<td>10,063</td>
<td>+53.1%</td>
</tr>
<tr>
<td>Kilmarnock</td>
<td>5,816</td>
<td>13,060</td>
<td>+124.6%</td>
</tr>
<tr>
<td>Motherwell</td>
<td>5,348</td>
<td>9,513</td>
<td>+77.9%</td>
</tr>
<tr>
<td>Dunfermline</td>
<td>5,376</td>
<td>8,778</td>
<td>+63.3%</td>
</tr>
<tr>
<td>Partick Thistle</td>
<td>4,041</td>
<td>8,465</td>
<td>+109.5%</td>
</tr>
<tr>
<td>Livingston</td>
<td>4,039</td>
<td>7,282</td>
<td>+80.3%</td>
</tr>
</tbody>
</table>

Source: Rollin and Rollin (2004) and authors’ calculations.
3.2 Spectator flows between Glasgow, rest of Scotland and rest of the World

How can the presence of the Old Firm lead to inter-regional tourism flows? Both clubs have their home stadium in Glasgow but mobilise support drawn from across Scotland and beyond. For both clubs, the number of season ticket holders with Glasgow postcodes account for just over a quarter of all season ticket holders: 66% came from the rest of Scotland and 8% from outwith Scotland. The large number of games each club plays in Glasgow, together with the substantial support that exists outwith Glasgow (both in the rest of Scotland and outwith Scotland), produces a considerable number of in-bound tourist trips to Glasgow.

We begin by calculating the football spectator attendances at all matches involving the Old Firm clubs over the course of the 2003-4 season. This comprises a number of different groups of spectators, which we also disaggregate by place of residence, to establish the region of origin and region of destination (Perdue and Gustke, 1985). The following groups were separately identified:

- Old Firm supporters attending matches at Celtic Park or Ibrox
- Non-Old Firm supporters visiting Celtic Park or Ibrox
- Old Firm supporters attending away matches, both in and outwith Scotland
- Non-Old Firm supporters attending their clubs’ home stadium to watch a visiting Old Firm team, both in and outwith Scotland.

The Old Firm clubs provided information on the total attendances at their home matches in the SPL and European competitions, together with the number of tickets sold to the visiting team’s spectators. The Old Firm also supplied the data for the total number of supporters that they took to away matches. Rollin and Rollin (2004) is the source for the attendance figures for home Old Firm domestic (League and Scottish) cup matches and for Old Firm away matches in all domestic and European competitions.

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5 Celtic Park and Ibrox are the home grounds of the Celtic and Rangers clubs.
Table 3.3 shows the total attendances at matches involving the Old Firm clubs during 2003-4, by region of residence and region of destination for the spectators. In total, there were 2,758,217 spectator attendances in Glasgow during season 2003-4 for matches involving the Old Firm. Of these, the vast majority are spectator attendances at Ibrox Stadium (43%) or Celtic Park (53%), although recall that during this season, four more (high attendance) European matches were played at Celtic Park than Ibrox Stadium. Just over 1% of total attendances in Glasgow for matches involving the Old Firm were for league and cup games against Partick Thistle at their ground at Firhill in Glasgow. The remainder consists of the two matches that Celtic played against Livingston and Dunfermline at Hampden Stadium in the semi-final and final of the Scottish Cup.

Table 3.3: Spectator attendances by region of residence and destination region

<table>
<thead>
<tr>
<th>Region of Origin</th>
<th>Region of destination</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glasgow</td>
<td></td>
</tr>
<tr>
<td>Glasgow</td>
<td>695,012</td>
<td>50,970</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>231,729</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>1,831,476</td>
</tr>
<tr>
<td></td>
<td>Rest of the World</td>
<td>389,761</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2,758,217</td>
</tr>
</tbody>
</table>

There were a total of 389,761 spectator attendances in the rest of Scotland for matches involving the Old Firm clubs. A slight majority of these attendances (51%) were for games involving Rangers. The 12 matches outwith Scotland involving the Old Firm clubs had a total attendance of 403,690. This high average attendance (over 33,000 per game) can be explained by the large capacities of the stadia that the Old Firm played in during this season. These included Manchester United (attendance: 66,707), Stuttgart (50,348), Bayern Munich (48,500) and Barcelona (80,000). However, note that in total these matches generated only 33,768 spectator attendances.

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6 Some assumptions about the residential location of the Old Firm and non-Old Firm football support were necessary in order to quantify the regional composition of each crowd. These assumptions are detailed in Appendix 1.
from Scottish residents. In terms of the residential location of supporters at all games involving at least one Old Firm team, note that 83% come from Scotland, with 61% coming from the rest of Scotland, that is, outwith Glasgow.

Following Perdue and Gustke (1985), we can calculate net inter-regional spectator attendances – those requiring travel across a regional boundary – to identify the regions that gain spectator attendances and those which are net “losers” of spectators. These are shown in Table 3.4.

**Table 3.4: Net inter-regional spectator attendances by region of residence and destination**

<table>
<thead>
<tr>
<th>Region of Origin</th>
<th>Region of Destination</th>
<th>Glasgow</th>
<th>Rest of Scotland</th>
<th>Rest of the World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow</td>
<td>-</td>
<td>1,780,507</td>
<td>-221,994</td>
<td>-</td>
</tr>
<tr>
<td>Rest of Scotland</td>
<td>1,780,507</td>
<td>-</td>
<td>10,858</td>
<td>-</td>
</tr>
<tr>
<td>Rest of the World</td>
<td>221,994</td>
<td>-10,858</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Net Inflows</strong></td>
<td>2,002,501</td>
<td>-1,791,365</td>
<td>-211,136</td>
<td>-</td>
</tr>
</tbody>
</table>

Consider the first column in Table 3.4. This shows that in the season 2003-4, as a result of the games played involving either of the Old Firm clubs, there was a net flow of 2,002,501 spectator attendances into Glasgow. Of these, 1,780,507, almost 90%, come from the rest of Scotland and 221,994 from the rest of the world. Column two also indicates that the rest of Scotland has a negative net flow of 10,858 spectator attendances to the rest of the world. This implies that the net outflow of spectator attendances from the rest of Scotland is 1,791,365. Finally, column three shows that the net outflow of spectator attendances from the rest of the world (mainly Ireland and the rest of the UK) is 211,136. The net travel to Glasgow reflects the large attendances at Old Firm matches held in Glasgow combined with relatively small season ticket holder base living within the Glasgow City area.
Section 4: Spectator expenditure profiles by residence and match location

The first step in measuring the economic impact of this football tourism is to identify the aggregate expenditures made by these spectators in order to attend matches both in and outwith Scotland. These total expenditures are the aggregated values of the individual expenditures for each spectator attendance over the season at matches involving either of the Old Firm clubs. These data were collected using a postal survey carried out during autumn 2004. For each club, two thousand questionnaires were sent to a sample of season ticket holders in order to collect expenditure data across different consumption categories for various types of sports tourist. Season ticket holders were used as these comprise the vast majority of Old Firm supporters attending matches and each club holds a database of their names and addresses. Supporters living outwith Scotland were over represented in the survey, as this is the smallest group but the group that has the highest per capita sports tourism expenditure. However, of course the weight that these responses were given in the reported results was determined by their weight in the database, not their weight in the survey. The survey sent to the supporters is replicated in Appendix 1.

Each respondent was identified by postcode. This was used to allocate him or her into one of the three regions for our study – Glasgow, the rest of Scotland or the rest of the world. The same questions were then asked on method of transport (and expenditure on each type of travel), accommodation and other expenditures before, at and after the most recent match across three categories attended by the respondent. The three match categories covered were: home matches (at Celtic Park or Ibrox); away matches in Scotland; and away matches outwith Scotland. In all, 1034 survey replies were received, a 26% response rate. We will examine the results from these surveys for respondents from one of the Old Firm clubs in transport methods and costs, and then for supporters of the other Old Firm club for accommodation costs and other expenditures. The size and pattern of expenditure is similar across clubs but differs considerably by the supporter’s place of residence and the match location.

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7 Respondents were given an incentive to complete and return the surveys in the form of entry into a draw where the prize was a VIP package for two to a home match of their choosing. The Old Firm clubs provided these prizes.
4.1 Transport methods and expenditures

For each club, the survey replies were sorted by region of residence and match type to establish average expenditure profiles for each spectator attendance. Away matches in Scotland were divided into four zones. These are identified in Table 4.1, together with the SPL teams whose home ground is in each area. In Tables 4.2 and 4.3 we report figures relating to travel types and expenditures. These are given for supporters of one of the Old Firm teams. Tables 4.4 and 4.5 give data for accommodation and other expenditures. These are for supporters of the other Old Firm team.

**Table 4.1: Geographical zones and associated SPL teams for identifying away game expenditures**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Area</th>
<th>SPL teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edinburgh</td>
<td>Hearts, Hibernian</td>
</tr>
<tr>
<td>2</td>
<td>Glasgow</td>
<td>Celtic, Partick Thistle, Rangers</td>
</tr>
<tr>
<td>3</td>
<td>North</td>
<td>Aberdeen, Dundee, Dundee United</td>
</tr>
<tr>
<td>4</td>
<td>Lanarkshire</td>
<td>Motherwell, Kilmarnock</td>
</tr>
</tbody>
</table>

Table 4.2 gives the distribution of transport methods used by Old Firm supporters. These are reported for home and away matches, broken down by the residence of supporter. Away matches are further subdivided by location of ground. If a supporter used two modes of transport, ferry then public transport, for example, these would be counted as two entries.

Table 4.3 gives the corresponding average expenditure per Old Firm supporter on transport, broken down in the same way. Thus, for example, the first column of Table 4.2 shows that of Glasgow residents attending a home match, 33% used public transport. The first column of Table 4.3 reports that for those using public transport for this journeys, the average cost was £2.96.

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\(^8\) The data supplied by the supporters of each club were analysed separately before being aggregated.

\(^9\) If a supporter used two modes of transport, ferry then public transport, for example, these would be counted as two entries.
For home games, the private car was the most common method of transport for Old Firm supporters in each of the three residential categories. For supporters living in Glasgow, public transport was the second most popular transport type, whilst for supporters in the rest of Scotland and the rest of the world, the supporters’ bus was placed second. Supporters attending from outside Scotland used the most diverse methods of transport, with plane and ferry taking large shares of the total journeys (22% and 15% respectively). Not surprisingly, average transport expenditure made for attending home games increases with distance from the ground.

For away matches within Scotland played in Glasgow (Zone 2), the pattern of transport methods and expenditures is similar to home matches, except that a bigger proportion travel by supporters’ bus. For games played in Edinburgh (Zone 1) travel by supporters’ bus becomes the dominant transport mode, with over 50% of supporters residing in Glasgow and the rest of Scotland travelling in this way. For those supporters living outwith Scotland, 45% travel by car. Whilst for Glasgow residents travel costs to matches in Zone 1 are higher than for home games, for those supporters residing outwith Glasgow, the average travel expenditure can be lower for some transport types.

When the away games are in Lanarkshire (Zone 4), the private car becomes the principal means of transport, with over 50% of supporters in each residential location making this transport choice, rising to 71% for Glasgow based supporters. Again, compared to home matches, the transport costs are higher for Glasgow residents but are lower for Old Firm supporters for some transport types and locations. Finally for the more northern locations (Zone 3), the proportion travelling via car or supporters’ bus is 100% for Glasgow residents, 91% for residents in the rest of Scotland and 79% from supporters from the rest of the world. When compared to home matches, the transport costs are higher for supporters living in Scotland but are at about the same level for those from the rest of the world.

For away games played outwith Scotland, the situation is clearly quite different. In these cases, over 60% of the trips are made by plane and the average cost lies between £203.64 (for Glasgow residents) and £144.57 (for supporters living outwith Scotland). It might be expected that Glasgow and Scottish supporters would
pay slightly more for flights given the premiums charged for flying from Scottish airports.

[Table 4.2 here]

[Table 4.3 here]

4.2 Accommodation and other expenditures

The spectator survey returns identify the number of supporters, broken down by residential location, who stayed overnight when attending a match and the amount spent on accommodation (where this stay was not with friends or relatives). The figures for those who stayed in paid accommodation are given in Table 4.4. The survey also provides information about other expenditures that were made before and after the attendance at the match – such as food, drink and merchandise. These results are presented in Table 4.5. The data in both Tables 4.4 and 4.5 are taken from the survey returns from supporters of the other Old Firm club (i.e. not the one for which supporters’ journeys and expenditure on transport are reported in Tables 4.2 and 4.3. The figures given in Table 4.4 for the cost of accommodation are the average amounts that supporters in each category paid who included an paid overnight stay as part of their attendance at the specific match. The values in Table 4.5 for the other expenditures show the average amount paid by a typical (average) supporter from each area on each expenditure category.

[Table 4.4 here]

Table 4.4 reveals the following information concerning accommodation expenditure in Scotland generated by Old Firm matches. First, Old Firm supporters resident in Scotland very rarely stay in paid accommodation overnight when attending either home or away Scottish Old Firm games. Second, for either home or away matches in Glasgow, just over one half of Old Firm supporters travelling from outwith Scotland stay overnight, almost invariably in Glasgow. For Scottish Old Firm away games outwith Glasgow, the proportion is lower. Third, the average amount paid per night for accommodation is much higher in Zones 1 and 3 (Edinburgh and North Scotland) than in Glasgow or Lanarkshire (Zones 2 and 4).
For Old Firm games played outwith Scotland, the proportion of supporters staying in paid accommodation overnight is 69% for Glasgow residents, 76% for supporters from the rest of Scotland and 88% for those living outwith Scotland. The accommodation expenditure per night is also high, again with Glasgow residents the lowest, at £114.94, and rest of the world residents highest at £135.29.

Table 4.5 reports the other tourism expenditures associated with attending Old Firm games. The surveys asked for the amount spent by each supporter before, and after, the match. We have excluded the expenditures made in the ground, to focus solely on the expenditure that doesn’t go to the clubs themselves. First, consider matches involving the Old Firm played in Glasgow. Old Firm supporters from all residential categories spend over double when attending a home game than an away game. For these matches, expenditure by Glasgow and rest of Scotland residents are similar, but the average expenditure made by a resident from outwith Scotland is over twice the amount. All expenditures are heavily concentrated in Glasgow.

[Table 4.5 here]

For expenditures on Scottish away games outwith Glasgow, the expenditures tend to be lower but not invariably so. Also most of these expenditures occur outwith Glasgow. For away games outwith Scotland expenditures are much higher, with about 90% occurring outwith Scotland.
Section 5: Calculation of aggregate spending and allocation to regions

The information presented in Sections 3 and 4 can be used to calculate the total sports tourism expenditures made by supporters of the Old Firm clubs over the course of the 2003-4 season. The distribution of these expenditures across Glasgow, the rest of Scotland and the rest of the world can also be identified, together with the composition across goods and services. Similar estimates can be made of the size, commodity composition, and location of expenditures made by the supporters of teams involved in matches against the Old Firm clubs. In calculating the aggregate expenditures of non-Old Firm supporters, we assume that these supporters have the same average expenditures as the Old Firm supporters do when the Old Firm supporters travel to visit them. That is to say, Barcelona supporters visiting Scotland have the same average propensity to stay overnight in Glasgow and the same average expenditure per person on food and drink as Old Firm fans visiting Barcelona.10 The allocation of expenditures to regions used the information in Tables 4.4 and 4.5 for other expenditures and accommodation. The allocation of transport expenditures required more careful treatment, and this is detailed in Appendix 3.

Having made these aggregations from the original survey data, we can calculate the total expenditures by the region of residence of the sports tourists and by the region where their expenditures were made. These data are shown in Table 5.1.

Table 5.1: Gross sports tourism expenditures, disaggregated by spectator region of residence and region of expenditure, £, 000s.

<table>
<thead>
<tr>
<th>Region of residence</th>
<th>Region of expenditure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glasgow</td>
<td>Rest of Scotland</td>
</tr>
<tr>
<td>Glasgow</td>
<td>16,149.3</td>
<td>1,278.2</td>
</tr>
<tr>
<td>Rest of Scotland</td>
<td>32,447.8</td>
<td>30,065.6</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>17,453.8</td>
<td>7,703.3</td>
</tr>
<tr>
<td>Total</td>
<td>66,051.0</td>
<td>39,047.1</td>
</tr>
</tbody>
</table>

10 This assumption is rather crude. See Greig and McQuaid (2003) for the differences in the expenditures made by supporters from different national teams visiting Edinburgh for the matches in the Six Nations Rugby Union championship.
Table 5.1 identifies key characteristics of the sports tourism expenditures associated with matches involving one or both of the Old Firm teams in the season 2003-4. First, the sports tourism expenditures made in attending such matches in this one season are large – over £130 million in total. (The additional expenditure made in Manchester as a result of the 2002 Commonwealth Games was £22 million (Manchester City Council, 2005) – although this excludes the construction and other investment expenditures, as well as expenditures outside Manchester resulting from the Games. The total visitor spending figures used by Blake (2005) for estimating the impact of the London Olympic Games were £309 million for domestic visitor and £447 million for foreign visitors.) Second, almost 80% of these expenditures are made in Scotland, and around 50% in Glasgow. Looking along the rows, spectators from Scotland spend just over £89 million attending matches; with residents from the rest of Scotland making up just below 80% of this expenditure from Scottish residents. Identifying some of the key cells in Table 5.1, note from the first column that over 75% of the spending in Glasgow is made by non-Glasgow residents. Also, figures in the second row indicate that residents from the rest of Scotland spend more in total in Glasgow than in the rest of Scotland itself. The third row shows that expenditures in Scotland made by supporters resident outwith Scotland are strongly weighted towards Glasgow.

The net trade balance of spectator sports tourism expenditures can be calculated from Table 5.1 and these are shown in Table 5.2. This table replicates the information in Table 3.4, except in this case instead of the net balance of attendances between regions, we show the flow of expenditures.

Table 5.2: Net flows of expenditures by spectator residence and region of expenditure, £,000s

<table>
<thead>
<tr>
<th>Region of Origin</th>
<th>Region of Destination</th>
<th>£,000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow</td>
<td>Glasgow</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>-31,169.6</td>
</tr>
<tr>
<td></td>
<td>Rest of the World</td>
<td>-14,664.2</td>
</tr>
<tr>
<td>Rest of Scotland</td>
<td>Glasgow</td>
<td>31,169.6</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rest of the World</td>
<td>-1,041.7</td>
</tr>
<tr>
<td>Rest of the World</td>
<td>Glasgow</td>
<td>14,664.2</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>1,041.7</td>
</tr>
<tr>
<td></td>
<td>Rest of the World</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Net Inflows</strong></td>
<td>Glasgow</td>
<td>45,833.8</td>
</tr>
<tr>
<td></td>
<td>Rest of Scotland</td>
<td>-30,127.9</td>
</tr>
<tr>
<td></td>
<td>Rest of the World</td>
<td>-15705.9</td>
</tr>
</tbody>
</table>
Table 5.2 reveals that in the 2003-4 season, the sports tourism expenditure associated with attending Old Firm matches involved a clear net shift in direct expenditure to Glasgow. The biggest entry is for the net balance between Glasgow and the rest of Scotland. This implies that supporters resident in the rest of Scotland attending Old Firm matches made expenditures over the season in Glasgow that exceeded expenditures made by Glasgow residents in the rest of Scotland by over £31 million. A similar net expenditure injection to the Glasgow economy from supporters resident in the rest of the world equals £14.7 million.

6. Economic impacts of sports tourism and displaced expenditures

Whilst Table 5.2 shows the net direct expenditure flows across space associated with Old Firm sports tourism, measuring the total net impact on economic activity is rather more complex. The direct expenditure has subsequent knock-on (multiplier) impacts. For example, sports tourism expenditure on sectors such as restaurants and hotels leads to further local expenditure on the intermediate goods and services used in production in these sectors. Sectors producing these intermediate goods themselves make local intermediate purchases and so on. These effects are known as the indirect impacts. Similarly, workers in sectors that are directly supplying sports tourism undertake consumption expenditures, which also supports local economic activity. These are induced effects.

In measuring the full impact of the sports tourism associated with attending Old Firm matches we incorporate the direct, indirect and induced effects. These indirect and induced effects spread the impact of Old Firm sports tourism not only to other sectors not directly affected but also across other regions, through the purchase of the exports of these regions. However, it is important to note that where Scottish residents are the source of the sports-tourism expenditure, we need to account for the impact of the displaced household expenditure that otherwise would have been made locally.

We can quantify the economic impact that these sport tourist expenditures have on Glasgow and the rest of Scotland (ROS) through the use of Input-Output (IO)
analysis (Miller and Blair, 1985). We begin by taking the official Scottish IO table for 2002 (Scottish Executive, 2005), updating it to 2003-4 prices and disaggregating it for Glasgow and the rest of Scotland.11

The next step is to separately identify the sports tourist expenditures as exogenous elements of final demand. This is explained in greater detail in Appendix 4. With the IO method, if we accept a number of assumptions, we can attribute further economic activity to these elements of final demand. That is to say, we can quantify the additional and induced economic activity associated with those exogenous demands. The most straightforward case is where supporters resident outwith Scotland make this expenditure: here both the initial sports tourism expenditure and the indirect and induced effects are treated as additional. However, as argued earlier, where sports tourism expenditure is made by local residents, we need to take into account the “displaced” economic impact. This is the economic impact that would have occurred if these household expenditures had not been made on sports tourism, but in an alternative way. Essentially in this case, sports tourism generates expenditure shifting. The estimation of the two gross economic impacts – sports tourism and displaced household – allows us to estimate the net economic impact of the sports tourism expenditures associated with local spectators attending matches involving the Old Firm football clubs.

6.1 Economic impact of sports tourism expenditure

Table 6.1 shows the net sports tourism impact on Scottish GDP and employment generated over the course of the season 2003-4 through matches involving the Old Firm clubs. The fact that these are net impacts means that for Scottish residents we are measuring the effect of expenditure shifting: that is to say, we are incorporate any displacement effects. For sports tourism expenditure from residents outwith Scotland no displacement is required.

This sports tourism expenditure generated GDP valued at £45.78 million and 2,141 FTE jobs in Scotland. Table 6.1 separates these impacts into those related to

11 The method used follows that outlined in Allan et al (2007).
domestic and European competitions, and by the supporter’s place of residence. The effect on Scotland is further broken down into impact on the Glasgow and Rest of Scotland (ROS) economies.

[Table 6.1 here]

The first point to note is that the total impact of the European games is much lower than the games played in the domestic competition. That is to say, the domestic competition accounts for over three quarters of the Scottish GDP and employment supported by sports tourism associated with the Old Firm games. Of course the number of games that the Old Firm play in the domestic competition is much greater than in European competitions. Moreover, whereas a home and away match in the domestic competition are both played in Scotland, one of the games will be played outwith Scotland in the European competitions.

However, when the supporters’ expenditures are broken down by their location of residence, ROW supporters generate the largest net impact. Combining the Scottish effects of sports expenditures made by ROW residents across both the domestic and European competitions identifies supported GDP and employment of £22.24 million and 1,063 FTEs respectively. This is very nearly 50% of the total net impact of Old Firm sports tourism. Further by far the biggest impact is from those living outwith Scotland who are Old Firm supporters - who attend games in both the domestic and European competitions - rather than the supporters of visiting clubs in the European competitions.

But this implies that the expenditure switching from domestic (Glasgow and ROS) supporters also has a major part to play in the Scottish economic activity supported by Old Firm sports tourism. The point here is that sports tourist expenditure is more concentrated on the purchase of local goods and services, than is average household consumption expenditure. Of particular importance are the ROS supporters who are more numerous and typically have higher per capita expenditures than Glasgow supporters.
Finally, Table 6.1 identifies the geographical distribution of activity supported by Old Firm sports tourism expenditure. This net impact is heavily concentrated on the Glasgow economy, with the net impact on the ROS broadly neutral: the Old Firm sports tourism generates a slight increase in ROS employment and fall in ROS GDP. Note that the impact of the domestic competition is positive for ROS but the European competition is negative. However, contrast the results in Table 6.1 with those in Table 5.2 where large net outflows of direct expenditure from ROS would suggest a significant negative effect on ROS economic activity. It is clear that incorporating geographically disaggregated indirect and induced effects is important to identify the true spatial impacts.

Table 6.1 presents the net impacts of expenditures from various types of Old Firm induced sports tourism. In Table 6.2, we break down this net effect into the two constituent gross effects: the total gross sports tourism expenditure and the total gross displaced expenditure. These gross impacts are disaggregated by region and sector.

Table 6.2 shows that the gross sports tourism expenditures associated with Old Firm matches generate a positive change in activity in both Glasgow and ROS. Whilst all sectors experience some increase, the impact is highest in Wholesale and Retail, and Hotels and Restaurants, Transport, and Private Business Services. Again although both Glasgow and the ROS benefit, just less than 60% of the increase in activity occurs in Glasgow, just over 40% in ROS.

[Table 6.2 here]

The displaced expenditure produces uniformly negative employment and GDP effects. There are three key facts about the displacement effects. First, the impact of the displacement expenditure on Scottish activity is much smaller, in aggregate, than the expansion produced by the sports tourism expenditure. There are two reasons for this. First, expenditure made by Old Firm supporters residing outwith Scotland has no corresponding negative displacement effect. Second, the expenditure on sports

12 The position of supporters of visiting clubs in European competitions is slightly different. Although their expenditure has no direct displacement effect, when the Old Firm team plays away from home in these competitions, there is a roughly matching displaced expenditure.
tourism has a much smaller import intensity than the displaced average household consumption.

Second, the negative impacts are strongly skewed towards ROS. This is because typically, most supporters at Old Firm matches, both supporters of the Old Firm and their opponents, are ROS residents. The displacement expenditure therefore falls especially heavily on the ROS. This explains the relatively neutral net impact on ROS employment and GDP (15 and £1.03 million respectively) but the large positive impact on Glasgow employment and GDP (2126 and £46.81 million).

Third, the sector that is most strongly affected by the displaced household expenditure is the Private Business Services, then Wholesale and Retail, with Public Services third. Again this means that some ROS sectors receive a net increase in activity: these are the Wholesale and Retail, and Transport sectors. For Glasgow, all sectors benefit, but the biggest net impacts, both in employment and GDP terms, are Wholesale and Retailing and Hotels and Catering.

It is useful finally to clarify how these results should be interpreted. The figures identify, as accurately as is presently possible, the activity that was supported in Scotland by the sports tourism generated by the games played by the Old Firm. This is a typical year in terms of the performance of the Old Firm teams, so that we would expect the economy to be appropriately adjusted to this expenditure stimulus. This means that we would expect this calculation to be a good estimate of the year on year net impacts of this tourism expenditure.

However, if the Old Firm were to somehow be removed, would this be the economic loss to Scotland as far as sports tourist effects are concerned? Two caveats have to be made. First, the IO model that we have used is solely demand driven: it has a passive supply side. If there were a drop in demand for sports tourism, we would expect some supply-side adjustment so that some of the resources freed in the relevant sectors would be reabsorbed into the local economy. However, over a longer time frame, in an open economy such as Scotland, we would expect falling local demand to produce disinvestment and outmigration so that the IO results are reinstated (McGregor et al, 1996).
The second caveat relates to the reaction in Scottish professional football itself. To interpret these results as indicating the impact of removing the Old Firm sports tourism requires a number of assumptions to be made. The SPL needs to be reduced from twelve to ten teams, none of these teams can play in European competitions and there is no adjustment in the support for other Scottish teams. None of these is wholly plausible, however, the wide geographic distribution of the Old Firm support, together with the Old Firm dominance of the Scottish game in terms of playing success, means that any replacement sports tourism demand would be much reduced.

6. Conclusions

In this paper we have examined the impact of football supporters as sports tourists. Rather than focusing on mega sports events, we have detailed the effect of the week to week attendances at matches played by Scotland’s two largest football clubs, Glasgow Celtic and Rangers, over the full season 2003-4. We have identified both the direct expenditures associated with this sports tourism and the indirect and induced effects. Moreover, we have tracked these expenditure and activity flows over space. The main findings are as follows.

The total gross expenditure within Scotland on sports tourism associated with attending Old Firm matches in the season 2003-4 was over £105 million. The majority of the Old Firm supporters live outwith Glasgow, so that there is a big net inflow of expenditure to Glasgow of almost £46 million, two thirds of which comes from the rest of Scotland. However, once the indirect and induced effects have been taken into account, the effect on the rest of Scotland is broadly neutral, whilst there is a big positive impact on the Glasgow economy, generating nearly £47 million in GDP and over 2,100 FTE jobs.

The Old Firm related sports tourists who are travelling from outwith Scotland plays the major role in generating additional Scottish economic activity. Especially important are the 8% of the Old Firm season ticket holders who are in this category. These supporters have bigger per capita sports tourism expenditures and have no
(partially) offsetting displacement expenditures. However, just over a half of the positive impact comes from the expenditure switching made by supporters resident in Glasgow and the rest of Scotland.

Care must be taken in interpreting these results. First it is most appropriate to approach them from an accounting perspective: they represent the economic activity in one year supported by sports tourism associated with attendance at Old Firm matches. If the Old Firm clubs were to suddenly disappear the detrimental impact on the Scottish economy is likely to be less than suggested here, for two reasons. First, there would be reconfiguration of the SPL, together with changes in the core support for other teams. Second, there would be some mitigating supply-side effects not identified in this model.
References


Tourism: Interrelationship, Impacts and Issues, Channel View Publications, Clevedon.


Table 4.2: Percentage breakdown of journeys by transport methods. Figures given by type and location of match, and supporter residence.

<table>
<thead>
<tr>
<th>Residence</th>
<th>Home games in Glasgow</th>
<th>Away games in Zone 1</th>
<th>Away games in Zone 2</th>
<th>Away games in Zone 3</th>
<th>Away games in Zone 4</th>
<th>Away games outside UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G</td>
<td>ROS</td>
<td>ROW</td>
<td>G</td>
<td>ROS</td>
<td>ROW</td>
</tr>
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<td><strong>Transport Method</strong></td>
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<td></td>
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<td>33</td>
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</tr>
<tr>
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<td>12</td>
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</tr>
<tr>
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<td></td>
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<td>0</td>
<td>0</td>
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<tr>
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<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>100</td>
<td>100</td>
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</tr>
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Table 4.3: Average expenditure per supporter journey: Figures given by type and location of match, and supporter residence

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<th>Residence</th>
<th>Home games in Glasgow</th>
<th>Away games in Zone 1</th>
<th>Away games in Zone 2</th>
<th>Away games in Zone 3</th>
<th>Away games in Zone 4</th>
<th>Away games outside UK</th>
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<td>Method of transport</td>
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<td>OS</td>
<td>G</td>
<td>ROS</td>
<td>OS</td>
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<td>Car</td>
<td>3.94</td>
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<td>9.96</td>
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<td>34.55</td>
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<td>Supporters bus</td>
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<td>On foot</td>
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<td>Motorbike</td>
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<td>-</td>
</tr>
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<td>Other</td>
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<td>-</td>
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<td>-</td>
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</tbody>
</table>
Table 4.4: The proportion of supporters staying overnight and their average accommodation costs; Figures given by type and location of match, and supporter residence

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<tr>
<th>Residence</th>
<th>Home games in Glasgow</th>
<th>Away games in Zone 1</th>
<th>Away games in Zone 2</th>
<th>Away games in Zone 3</th>
<th>Away games in Zone 4</th>
<th>Away games outside UK</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>G ROS OS</td>
<td>G ROS OS</td>
<td>G ROS OS</td>
<td>G ROS OS</td>
<td>G ROS OS</td>
<td>G ROS OS</td>
</tr>
<tr>
<td><strong>ACCOMODATION</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Total % staying overnight</strong></td>
<td>0% 4% 52%</td>
<td>0% 0% 33%</td>
<td>0% 4% 52%</td>
<td>0% 8% 14%</td>
<td>0% 0% 29%</td>
<td>69% 76% 88%</td>
</tr>
<tr>
<td>% staying in Glasgow</td>
<td>- 4% 48%</td>
<td>- - -</td>
<td>- - 4% 48%</td>
<td>- - -</td>
<td>- - -</td>
<td>0% 0% 0%</td>
</tr>
<tr>
<td>% staying in rest of Scotland</td>
<td>- - 4%</td>
<td>- - 33%</td>
<td>- - 4%</td>
<td>- 8% 14%</td>
<td>- - 29%</td>
<td>0% 0% 0%</td>
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<tr>
<td>Overnight cost (£s per person per night)</td>
<td>- 53.71 58.69</td>
<td>- - 118.33</td>
<td>- 53.71 58.69</td>
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<td>114.94 119.64 135.29</td>
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Table 4.5: Average other match related tourism expenditures: figures given by type and location of match, and supporter residence

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<tr>
<th></th>
<th>Pre-match in Glasgow</th>
<th>Post-match in Glasgow</th>
<th>In the rest of Scotland</th>
<th>Outside Scotland</th>
<th>Total</th>
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<td>Food and drink</td>
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<td>11.86 112.06 33.11</td>
<td>118.69 113.02 139.47</td>
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32
Table 6.1: Net GDP and employment impacts of sports tourism expenditures on Glasgow, the rest of Scotland and Scotland, £millions and jobs

<table>
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<tr>
<th></th>
<th>Domestic competition</th>
<th>European competition</th>
<th>Total all competitions</th>
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<td></td>
<td>Glasgow residents</td>
<td>ROS residents</td>
<td>ROW residents</td>
</tr>
<tr>
<td>Glasgow GDP</td>
<td>4.91</td>
<td>20.21</td>
<td>9.17</td>
</tr>
<tr>
<td>Glasgow Employment</td>
<td>220</td>
<td>864</td>
<td>461</td>
</tr>
<tr>
<td>Rest of Scotland GDP</td>
<td>0.47</td>
<td>-4.22</td>
<td>4.45</td>
</tr>
<tr>
<td>Rest of Scotland Employment</td>
<td>23</td>
<td>-120</td>
<td>197</td>
</tr>
<tr>
<td>Scotland GDP</td>
<td>5.37</td>
<td>15.98</td>
<td>13.62</td>
</tr>
<tr>
<td>Scotland Employment</td>
<td>243</td>
<td>744</td>
<td>658</td>
</tr>
</tbody>
</table>
Table 6.2: Sectoral GDP and employment impacts of sports tourism expenditures and displaced expenditures on Glasgow, the rest of Scotland and Scotland, £millions and jobs

<table>
<thead>
<tr>
<th>Sector</th>
<th>GDP impact of</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sports tourism expenditure</td>
<td>Displaced expenditure</td>
</tr>
<tr>
<td>Glasgow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary and manufacturing</td>
<td>0.98</td>
<td>-0.33</td>
</tr>
<tr>
<td>Utilities and construction</td>
<td>1.19</td>
<td>-0.65</td>
</tr>
<tr>
<td>Wholesale and retail</td>
<td>32.64</td>
<td>-2.18</td>
</tr>
<tr>
<td>Hotels and restaurants</td>
<td>8.31</td>
<td>-0.78</td>
</tr>
<tr>
<td>Transport</td>
<td>4.33</td>
<td>-0.27</td>
</tr>
<tr>
<td>Private business services</td>
<td>6.58</td>
<td>-3.35</td>
</tr>
<tr>
<td>Public services</td>
<td>1.65</td>
<td>-1.31</td>
</tr>
<tr>
<td><strong>Total Glasgow</strong></td>
<td>55.69</td>
<td>-8.88</td>
</tr>
<tr>
<td>Rest of Scotland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary and manufacturing</td>
<td>2.03</td>
<td>-2.33</td>
</tr>
<tr>
<td>Utilities and construction</td>
<td>0.85</td>
<td>-1.83</td>
</tr>
<tr>
<td>Wholesale and retail</td>
<td>16.88</td>
<td>-10.27</td>
</tr>
<tr>
<td>Hotels and restaurants</td>
<td>1.93</td>
<td>-2.17</td>
</tr>
<tr>
<td>Transport</td>
<td>7.17</td>
<td>-1.60</td>
</tr>
<tr>
<td>Private business services</td>
<td>6.86</td>
<td>-14.44</td>
</tr>
<tr>
<td>Public services</td>
<td>2.01</td>
<td>-6.13</td>
</tr>
<tr>
<td><strong>Total Rest of Scotland</strong></td>
<td>37.73</td>
<td>-38.77</td>
</tr>
<tr>
<td><strong>Total Scotland</strong></td>
<td>93.43</td>
<td>-47.65</td>
</tr>
</tbody>
</table>
Appendix 1: The assumptions made concerning the regional composition of spectators at games against different teams

The following assumptions were necessary given the prohibitive cost of sampling each crowd for the two Old Firm clubs and the opposing team, at every match played over the course of the season.

- The distribution of the regional residence of Old Firm supporters at either home or away matches corresponds to the regional distribution of season ticket holders.
- The non-Old Firm supporters at either home or away matches are assumed to be geographically distributed as follows:
  - Hearts and Hibernian: 5% Glasgow residents, 95% rest of Scotland.
  - Kilmarnock: 10% Glasgow residents, 90% rest of Scotland
  - Motherwell: 15% Glasgow residents, 85% rest of Scotland.
  - Partick Thistle: 40% Glasgow residents, 60% rest of Scotland
  - All other Scottish clubs: 100% rest of Scotland
  - Non-Scottish clubs: 100% outwith Scotland.
Appendix 2: Spectator survey for season ticket holders

IMPACT OF CELTIC ON THE SCOTTISH AND GLASGOW ECONOMIES

Please provide your postcode ____________________
Are you: Male   Female
How old are you?
Below 15    15-20          21-30           31-40         41-50          51-60
          Over 60

1  Home games at Celtic Park

1.1 Travelling Expenditure

How much money do you typically spend on each of the following types of transport in order to attend a Celtic home match at Celtic Park?

<table>
<thead>
<tr>
<th>Car</th>
<th>Supporters bus</th>
<th>Public Transport</th>
<th>Plane</th>
<th>Ferry</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2 Accommodation

1.2a Do you ever stay overnight in hotel or B&B accommodation when you attend Celtic matches at Celtic Park?  Yes  No

1.2b Do you ever stay overnight with friends or relatives when you attend a Celtic match at Celtic Park?

Yes  No

If you answered “Yes” to question 1.2a or 1.2b, how many nights do you stay for?

1 2 3 Over 3

1.2c If you answered “Yes” to question 1.2a, how much do you typically spend in total on hotel or B&B accommodation?

1.2d If you answered “Yes” to question 1.2a, do you typically stay at hotel or B&B accommodation in Glasgow?  Yes  No

1.3 Other Spending

When you attend home Celtic matches, how much do you typically spend on the following categories?

<table>
<thead>
<tr>
<th>Food</th>
<th>Drink</th>
<th>Merchandising</th>
<th>Other- Please specify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>In Glasgow</th>
<th>Elsewhere in Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before match</td>
<td>In the stadium</td>
<td>After match</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

2 Away games in Scotland
2.1 What was the last Celtic away league match in Scotland you attended that was not in Glasgow? If you have not attended a Celtic away league match outside Glasgow, please go to question 3.

Name of team

2.2 Travelling expenditure and accommodation

2.2a How much money did you spend on each of the following modes of transport in order to attend the above match?

<table>
<thead>
<tr>
<th></th>
<th>Car</th>
<th>Supporters bus</th>
<th>Public Transport</th>
<th>Plane</th>
<th>Ferry</th>
</tr>
</thead>
</table>

2.2b Did this trip involve an overnight stay in hotel or B&B accommodation?

Yes  No

2.2c If you answered “Yes” to question 2.2b, how many nights did you stay for? Please tick one of the boxes below.

1  2  3  4  5  More than five

2.2d If you answered “Yes” to question 2.2b, how much did you spend on accommodation in total?

2.3 Other Spending

At the last Celtic away league match in Scotland, how much did you spend on each of the following categories?

<table>
<thead>
<tr>
<th></th>
<th>In Glasgow</th>
<th>Outside Glasgow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Drink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchandising</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other- Please specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 Away games in Europe

3.1 What was the last away Celtic European game you attended (that was not in England – and excluding the UEFA Cup Final of 2003 in Seville)? If you have not attended a Celtic away European game that was not in England or the 2003 UEFA Cup Final in Seville, please go to question 4.

Name of team

3.2 Travelling expenditure and accommodation

3.2a Could you indicate the amount you spent on each of the following types of transport in order to attend the above match?

<table>
<thead>
<tr>
<th></th>
<th>Car</th>
<th>Supporters bus</th>
<th>Public Transport</th>
<th>Plane</th>
<th>Ferry</th>
</tr>
</thead>
</table>

3.2b Did this trip involve an overnight stay?  Yes  No
3.2c If you answered “Yes” to question 3.2b, how many nights did you stay for? Please tick one of the boxes below.

1 2 3 4 5 More than five

3.2d If you answered “Yes” to question 3.2b, how much did you spend on accommodation in total?

3.3 Other Spending
At the last away European game you attended, how much did you spend on the following categories?

<table>
<thead>
<tr>
<th></th>
<th>In Glasgow</th>
<th>Rest of Scotland</th>
<th>In Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Drink</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchandising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ticket</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other- Please specify</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Celtic Games in England

4.1a Have you ever attended a match in England to watch Celtic play against a Premiership team?

Yes No

4.1b If you answered “Yes” to question 4.1a, what match did you attend?

4.2 Travelling expenditure and accommodation

4.2a If you answered “Yes” to question 4.1a could you indicate the amount you spent on each of the following modes of transport in order to attend the above match?

<table>
<thead>
<tr>
<th>Car</th>
<th>Supporters bus</th>
<th>Public Transport</th>
<th>Plane</th>
<th>Ferry</th>
</tr>
</thead>
</table>

4.2b Did this trip involve an overnight stay? Yes No

4.2c If you answered “Yes” to question 4.2b, how many nights did you stay for? Please tick one of the boxes below.

1 2 3 4 5 More than five

4.2d If you answered “Yes” to question 4.2b, how much did you spend on accommodation in total?

4.3 Other Spending
At this Celtic away game in England you attended, how much did you spend on the following categories?

<table>
<thead>
<tr>
<th></th>
<th>In Glasgow</th>
<th>In the Rest of Scotland</th>
<th>In England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Drink</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchandising</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. **Prize Draw entry**

If you would like to be entered in the prize draw, please write your telephone number below. Note that we will only use this information to contact the prize draw winner.

Telephone number ______________________________

THANK YOU VERY MUCH FOR YOUR ASSISTANCE
Appendix 3: Geographical allocation of transport costs

All the transport expenditures of Glasgow-resident supporters attending matches in Glasgow were assigned as being made in Glasgow. For residents from the rest of Scotland visiting Glasgow, one half of their non-car travel expenditures were allocated to Glasgow, while the rest were treated as being made in the rest of Scotland. For residents from outwith Scotland visiting Glasgow, one half of non-car travel expenditures were allocated to the rest of Scotland, whilst one-half of all car travel expenditures were treated as being made in Scotland (split equally between Glasgow and the rest of Scotland). Thus, one half of all transportation expenditures by residents from outwith Scotland were made outwith Scotland.

A similar procedure was followed in allocating transport expenditures for away matches in Scotland. For Glasgow residents, all transport expenditures were divided equally between Glasgow and Scotland. For spectators from the rest of Scotland, one quarter of car travel expenditures were treated as being made in Glasgow (refuelling at petrol stations in the city on route to matches), and all other transport expenditures were allocated to the rest of Scotland. For spectators from outwith Scotland, we treated one half of non-car transport costs as being made in Scotland, as were one half of car transport costs, split equally between Glasgow and the rest of Scotland.

For away matches outwith Scotland, all of the car transport expenditures were treated as being made in the region of residence of the supporter, along with one half of the non-car expenditures. The remaining transport element was treated as being made outwith Scotland. All transport expenditures by residents outwith Scotland were allocated to the rest of the world region.
Appendix 4: The regionally-disaggregated I-O accounts and modelling

A schematic representation of the regionally disaggregated I-O set of accounts is presented in Table A4.1. The multi-regional disaggregation is standard (Miller and Blaire, 1985). The non-standard aspect is the disaggregation in the final demand sectors to appropriately identify the sports tourism expenditures that are associated with the matches in which the Old Firm participate.

Table A4.1: A schematic representation of the regionally-disaggregated I-O accounts

| \(X_{GG}\) | \(X_{GR}\) | \(H^*_{GG}\) | \(H^*_{GR}\) | \(T_{GG}\) | \(-D_{GG}\) | \(T_{GR}\) | \(-D_{GR}\) | \(F^*_G\) | \(T_{GROW}\) | \(Q_G\) |
| \(X_{RG}\) | \(X_{RR}\) | \(H^*_{RG}\) | \(H^*_{RR}\) | \(T_{RG}\) | \(-D_{RG}\) | \(T_{RR}\) | \(-D_{RR}\) | \(F^*_R\) | \(T_{RRROW}\) | \(Q_R\) |
| \(W_G\) | | | | | | | | | \(W_G\) | |
| \(W_R\) | | | | | | | | | \(W_R\) | |
| \(O_G\) | \(O_R\) | | | | | | | | \(O_S\) | |
| \(M_{XG}\) | \(M_{XR}\) | \(M^*_{HG}\) | \(M^*_{XR}\) | \(M_{TG}\) | \(-M_{DG}\) | \(M_{TR}\) | \(-M_{DR}\) | \(M^*_{FS}\) | \(M_S\) | |
| \(Q_G\) | \(Q_R\) | \(H_G\) | \(H_R\) | \(T_G\) | \(-T_G\) | \(T_R\) | \(-T_R\) | \(F_S\) | \(T_{ROW}\) | |

D are the nx1 column vectors of displaced household expenditure
F are nx1 column vectors of other final demands and the corresponding scalar
H are scalars of total household expenditure
H are nx1 column vectors of household expenditures and the corresponding scalars.
M 1xn row vectors and scalars representing import demand from outwith Scotland.
O are 1xn row or nx1 column vectors of other value added
Q are 1xn row or nx1 column output vectors
T are nx1 column vectors of sport tourism expenditures and the corresponding scalars
W are 1xn row vectors of wage payments and the corresponding scalars
X are nxn matrices of intermediate demands

Superscript

* indicates a sports-tourism-lite value

Subscripts
D represents displaced expenditure; F, final demand; G, Glasgow; R, the rest of Scotland; ROW, the rest of the world; S, Scotland; T, sports tourism; and X intermediate demand.

The most straightforward adjustment is to separately identify the vectors of sports tourism expenditure, $T_{GROW}$ and $T_{RROW}$, from those supporters who live outwith Scotland. This expenditure is conventionally treated as exogenous and would be included in the tourism final demand vector in the Scottish IO tables. The adjustment that is made in this case is simply to extract these vectors sports tourism vectors from the corresponding total final demand vectors. Therefore:

$$
\begin{bmatrix}
F_G^* \\
F_R^*
\end{bmatrix} +
\begin{bmatrix}
T_{GROW} \\
T_{RROW}
\end{bmatrix} =
\begin{bmatrix}
F_G \\
F_R
\end{bmatrix}
$$

where F represents an nx1 column vector of other final demands, which is the total final demand vector excluding household consumption demand.

Adjusting for the sports-tourism expenditures, $T_{GG}$, $T_{RG}$, $M_{TG}$, $T_{GR}$, $T_{RR}$ and $M_{TR}$, made by supporters residing in Scotland (which we will refer to as domestic sports tourism expenditures) is a little more complex. These are included in the corresponding household consumption vectors for Glasgow and rest of Scotland households, $H_G$ and $H_R$. We therefore need to separately identify these expenditures by subtracting them from the corresponding household consumption vectors.

There are two complications here. First, in the analysis we regard this domestic sports-tourism expenditure as exogenous but other elements of household expenditure as endogenous. Second, we want to treat this domestic sports tourism expenditure as displacing other household expenditure. We therefore need to construct vectors of displaced consumption, $D_{GG}$, $D_{RG}$, $M_{DG}$, $D_{GR}$, $D_{RR}$ and $M_{DR}$, that correspond to the sports-tourism expenditures.

We assume that the sports tourism expenditure displaces household expenditure that has the average composition once the sports tourism expenditure has been deducted.
The level of the displaced expenditure is equal to the level of the corresponding sports travel expenditure. Therefore the displaced consumption expenditure vector for residents of region Z (Z=G or R) is given as:

\[
\begin{bmatrix}
D_{GZ} \\
D_{RZ} \\
M_{DZ}
\end{bmatrix} = \left[ K_Z \right] \begin{bmatrix}
H_{GZ} - T_{GZ} \\
H_{RZ} - T_{RZ} \\
M_{HZ} - M_{TZ}
\end{bmatrix}
\]

where \( K_Z \) is a \((2n+1)\times(2n+1)\) diagonal matrix where each diagonal element takes the value \( T_Z/(H_Z-T_Z) \) and each off-diagonal element takes the value zero.

The sport-tourism-lite household expenditures for each of the two Scottish regions have the following interpretation. They are the household consumption vectors that would occur if the present expenditure on Old Firm related sports tourism expenditure were replaced by an equal level of expenditure with the same sectoral composition as the non sport-tourism household expenditure.

These vectors are calculated in the following way:

\[
\begin{bmatrix}
H^*_{GZ} \\
H^*_{GZ} \\
M^*_{HZ}
\end{bmatrix} = \begin{bmatrix}
H_{GZ} \\
H_{RZ} \\
M_{HZ}
\end{bmatrix} - \begin{bmatrix}
T_{GZ} \\
T_{RZ} \\
M_{TZ}
\end{bmatrix} + \begin{bmatrix}
D_{GZ} \\
D_{RZ} \\
M_{DZ}
\end{bmatrix}
\]

An alternative way of calculating the sport-tourism-lite household expenditures for region Z is as

\[
\begin{bmatrix}
H^*_{GZ} \\
H^*_{GZ} \\
M^*_{HZ}
\end{bmatrix} = \left[ L_Z \right] \begin{bmatrix}
D_{GZ} \\
D_{RZ} \\
M_{DZ}
\end{bmatrix}
\]

where \( L_Z \) is a \((2n+1)\times(2n+1)\) diagonal matrix where all the diagonal elements have the value \( H_Z/T_Z \).

Where we have attributed economic activity to individual elements of final demand we have used a Type II multiplier. This means that household consumption by
residents in each region is endogenised and driven by their wage income. The household consumption vectors used for region $Z$ are the sports-tourism lite variants $H^*_GZ$, $H^*_RZ$ and $M^*_HZ$ ($Z = G,R$). Generating the direct coefficients matrix, $A$, in the conventional way (Miller and Blair, 1985), the accounting identities embedded in table A4.1 can be expressed as:

\[
(A4.5)
\begin{bmatrix}
A_{GG} & A_{GG} & A_{GG}^{H*} & A_{GG}^{H*} \\
A_{RG} & A_{RR} & A_{RG}^{H*} & A_{RG}^{H*} \\
A_{WG} & 0 & 0 & 0 \\
0 & A_{WR} & 0 & 0
\end{bmatrix}
\begin{bmatrix}
Q_G \\
Q_R \\
W_G \\
W_R
\end{bmatrix}
+ 
\begin{bmatrix}
F_G \\
F_R \\
0 \\
0
\end{bmatrix}
= 
\begin{bmatrix}
Q_G \\
Q_R \\
W_G \\
W_R
\end{bmatrix}
\]

where:

\[
(A4.6)
\begin{bmatrix}
F_G \\
F_R \\
0 \\
0
\end{bmatrix}
= 
\begin{bmatrix}
T_{GG} & -D_{GG} & T_{GR} & -D_{GR} & T_{GROW} & -D_{GROW} & F_G^* \\
T_{RG} & -D_{RG} & T_{RR} & -D_{RR} & T_{RROW} & -D_{RROW} & F_R^*
\end{bmatrix}
\]

Creating the Leontief inverse, using the conventional matrix inversion techniques produces the result:

\[
(A4.7)
\begin{bmatrix}
(I - A_{GG}) & -A_{GG} & A_{GG}^{H*} & -A_{GG}^{H*} \\
-A_{RG} & (I - A_{RR}) & A_{RG}^{H*} & -A_{RG}^{H*} \\
-A_{WG} & 0 & I & 0 \\
0 & -A_{WR} & 0 & I
\end{bmatrix}^{-1}
\begin{bmatrix}
F_G \\
F_R \\
0 \\
0
\end{bmatrix}
= 
\begin{bmatrix}
Q_G \\
Q_R \\
W_G \\
W_R
\end{bmatrix}
\]

where

\[
\begin{bmatrix}
(I - A_{GG}) & -A_{GG} & A_{GG}^{H*} & -A_{GG}^{H*} \\
-A_{RG} & (I - A_{RR}) & A_{RG}^{H*} & -A_{RG}^{H*} \\
-A_{WG} & 0 & I & 0 \\
0 & -A_{WR} & 0 & I
\end{bmatrix}^{-1}
\]

is the Leontief inverse.

Equation (A4.7) is an accounting identity. It shows that all the final output and wage payments can be attributed to final demand through the Leontief inverse. Similarly if
the output vector is multiplied by the appropriate average sector specific employment output and GDP-output coefficients, the total employment and GDP of the region can similarly be attributed to final demand.

The Leontief inverse is a means of incorporating all the domestically produced intermediate inputs and domestic household consumption to elements of the vector of final demands. This also means that if the final demand vector is subdivided, as in equation (A4.6), then the outputs attributed to those individual subdivisions of final demand can be identified separately. We report such a subdivision in the text. This is where we separately identify the impact of sports-tourism expenditure and the displaced household expenditure. For example, the output and wage income attributable to sports tourism expenditure, indicated here with T superscripts, is calculated as:

\[
\begin{bmatrix}
(I - A_{GG}) - A_{GG} - A_{GG}^{ij*} - A_{GG}^{ij*} & -A_{RG} (I - A_{RR}) - A_{RG}^{ij*} - A_{RG}^{ij*} & -A_{WG} & 0 I 0
\end{bmatrix}
\begin{bmatrix}
T_{GG} + T_{GR} + T_{GROW} & T_{RG} + T_{RR} + T_{ROW}
0 & 0
\end{bmatrix}
= \begin{bmatrix}
Q_G^T \\
W_G^T
\end{bmatrix}
\]

The corresponding attributed employment (E) and GDP (V) are given as:

\[
\begin{bmatrix}
E_G^T \\
E_R^T
\end{bmatrix} = \begin{bmatrix} E_G & 0 \\
0 & E_R
\end{bmatrix} \begin{bmatrix} Q_G^T \\
Q_R^T
\end{bmatrix},
\begin{bmatrix}
\nu_G^T \\
\nu_R^T
\end{bmatrix} = \begin{bmatrix} \Omega_G & 0 \\
0 & \Omega_R
\end{bmatrix} \begin{bmatrix} Q_G^T \\
Q_R^T
\end{bmatrix}
\]

where E and \( \Omega \) represent diagonal matrices in which the \( i \)-th diagonal element is the \( i \)-th sector’s employment-output and GDP-output ratio respectively. The off diagonal elements are zero.