ECONOMIC IMPACT OF SPORTING EVENTS

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Abstract: Major sporting events have their main economic impact via the direct expenditure of tourists associated with the event. Care is needed to count only that expenditure that would not have occurred in the absence of the event. This means avoiding expenditure by tourists who would have visited regardless, but who timed their visit to coincide with the event. When all such expenditure has been avoided, the net remaining expenditure can be assessed using an input-output model of the host economy. It is argued that, because of its climatic and cultural advantages, Australia may be able to capitalize on the economic benefits of tourism resulting from major sporting events. Keywords: sporting events, tourist attractions, tourism multipliers, economic impact.

Résument: L'impact économique des manifestations sportives. Les grandes manifestations sportives ont leur impact économique principal par moyen des dépenses directes des touristes associés à la manifestation. Il faut compter seulement les dépenses qui n’auraient pas été faites dans l’absence de la manifestation: il ne faut pas compter les dépenses faites par des touristes qui allaient visiter quand même mais qui ont décidé de faire coïncider leur visite avec la manifestation. Ayant évité chaque dépense de ce genre, on peut évaluer les dépenses nettes qui restent en employant un modèle d’échanges interindustriels de l’économie d’accueil. On soutient que l’Australie, grâce à ses avantages climatiques et culturels, pourra peut-être profiter des bénéfices économiques du tourisme qui résultent des grands événements sportifs. Mots-clés: manifestations sportives, attractions touristiques, multiplicateurs du tourisme, impact économique.

INTRODUCTION

The recent growth in world tourism (Fletcher 1989) has been reflected in an average 10 percent annual growth in foreign tourism to Australia over the past decade. Special sporting events have played an important role in this growth. Some of the more notable have been the Commonwealth Games in 1982 (6,000 foreign visitors), the America’s Cup Defence in 1986-87 (700,000 visitors), and World Expo in 1988 (427,000 visitors).

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With over 400 major sporting events conducted in Australia each year, many of which are international tournaments and world championships (Mazitelli 1989:195), it is an open question as to how much of Australia's tourism growth is attributable to this factor. In addition to their participants, sporting events often involve tourism numbers via spectators, participants' family and friends, media personnel, and officials.

Possessing a benign climate, relatively cheap land, and a culture steeped in sport, Australia has obvious advantages as a host to major sporting events. Historically, these advantages have had to contend with the disadvantage caused by the travel time and cost involved in getting to Australia from the main population centers of the northern hemisphere. However, rising world incomes and falling real airfares have reduced the travel cost dimension, and Australian sports administrators are keen to promote the advantages of visiting Australia for sporting events. Tourism authorities are also conscious of the potential for using sporting events as part of their promotion of Australia as a tourist destination. Australia is set to embark upon a program of "theme years" in tourist promotion, and 1993 has been earmarked as having sport as its theme.

As part of their campaign, the sports administrators have been keen to tell government authorities about the economic benefits that accrue from these events, often with a view to obtaining a contribution toward funding for their event. Many large sporting events face difficulties in covering their operating and capital costs from ticket sales, sponsorships, etc., and so some government grant or subsidy is often required if the event is to happen. Governments are acting as the agent of their constituents in deciding whether or not to provide such grants. They are more likely to be favorably disposed toward the notion of a grant if they are satisfied that the economic benefits that accrue to their constituents outweigh the cost of the grant. The statement of such economic benefits is often done using a multiplier that either explicitly or implicitly is heavily influenced by the expenditure of visitors who are in Australia specifically for the event.

It should be noted that it is not possible to make a general statement of the form "sporting events have an economic multiplier of 1.6." The multiplier's value depends not only on what economic variable is of interest (national income, household income, etc.), but also will differ between various events. Each event must be analyzed and assessed separately. Some assessments are not done correctly, and it is possible to improve upon them greatly with relatively few changes. This paper contains an outline of the nature and interpretation of economic multipliers, and a discussion of their application to sporting events. The general issue of tourism multipliers is discussed in Archer (1977, 1984, 1991), and in Archer and Fletcher (1990).

The concept of a multiplier derives from the decision by firms to hire workers, produce output, purchase intermediate inputs, etc., and assumes that these decisions are dependent upon the demand for their output. Expenditure on their output is what drives their production and creation of income. At the national level, the generation of output, income, and employment is thought of as being expenditure driven. It is
usual to classify expenditures into two types. First are those determined entirely within the economic system. These are known as endogenous expenditures. A typical example is total household consumption expenditure that is related largely to total household income (where total household income depends upon the level of economic activity in the economy). The second type are those determined (at least in part) by factors outside of the economic system being studied. These are called exogenous expenditures and include such items as government spending (determined by political factors), business investment (dependent upon business confidence), and export demand (dependent upon overseas events outside of the local economy).

With the above as background, the multiplier concept is best illustrated by way of a simple example. First, at the micro-level, suppose a foreign tourist spends $20 on a meal in a restaurant. This $20 may be represented as $5 on beverages, $5 on food, $6 on wages and profit, and $4 on rent, electricity, and overheads. Thus, the expenditure of $20 in a restaurant will stimulate demand in a number of other sectors (food manufacturing, agriculture, beverage manufacturing, and the like), as well as creating immediate household income (wages and profit). The stimulus given to those other sectors will in turn generate household income. Ultimately, the whole of the $20 will result in household income in the form of wages and profits at various stages of the production chain. Now suppose a sporting event in Australia attracts foreign spectators who spend $10 million in Australia during their visit. This spending by foreigners on Australian produced goods and services is an injection of new export expenditure, which has an immediate impact on the economy's output (Gross Domestic Product or GDP) of $10m. Now suppose that, as a result of the extra household income generated by the new export expenditure, household consumption rises by $6m. This will also be reflected in extra GDP of $6m.

Thus, a total of $16m of GDP has been created from an initial injection of new expenditure of $10m. If this process can be thought of as being strictly proportional, then $1 of new expenditure generates extra GDP of $1.6 (i.e., a multiplier of 1.6). In this case, the multiplier relates the total impact of an exogenous change ($16m) to the initial change that started the process ($10m). Such a multiplier is commonly known as a Keynesian multiplier, named after J. M. Keynes who was one of the founders of modern macroeconomics.

MULTIPLIERS AND MODELS

The usual Keynesian multiplier is found by dividing the total impact on GDP ($16m) by the initial exogenous impact ($10m). Other multipliers may be defined by altering the definition of either the numerator, the denominator, or both. For example, a household income (HI) multiplier may be of interest. If the $16m of GDP involves household income of $9m, then an HI multiplier of $9m, divided by $10m = 0.9 would relate the initial change in exogenous expenditure to the final change in HI. An alternative that is frequently used is to express both the numerator and the denominator in terms of HI.

Multipliers for employment, taxation, balance of payments, and
other economic variables may be defined if the economist is prepared to make some assumptions about how the $16m impact on GDP is reflected in changes in these other variables. The task of estimating the GDP impact and the associated impact on other economic variables is the province of economic models.

There is no general agreement among economists on how best to model an economy. Differences in approach to the problem arise because of different purposes that the modelers have in mind. At the broad national level, economists in the Federal Treasury and the Reserve Bank have developed models of the Australian economy that emphasize the impact on the economy of changes in the government's economic policy instruments (e.g., interest rates, tax rates, government budget). Because these models are highly aggregated, they are not well suited to measuring the impacts of particular, well-defined activities such as tourism, sport, and leisure.

The model that has been most popular in Australia for specific impact analyses has been the input-output model. It has been used in all states for regional analysis and has also been used nationally in tourism studies (Stanford and McCann 1979) and sport (Burns, Hatch and Mules 1986). Its use in tourism impact analysis is highly recommended by Fletcher (1989), and texts such as Richardson (1972) provide a detailed exposition of the model. It is a disaggregated model in which the different production characteristics of each industry are recognized. This attribute clearly gives the model advantages in dealing with the impacts of expenditure, which is highly concentrated in particular industries. Thus, expenditure by foreign spectators who visit Australia for a sporting event is typically tourism expenditure and is concentrated in the transport, accommodation, distributive trades, and entertainment sectors of the economy.

Not all of the economic impacts of tourism are captured by the input output model. When increased tourism causes an increase in input prices (e.g., wages), non-tourist sectors may be "crowded out" by higher labour costs. More sophisticated models such as computable general equilibrium (CGE) models, of which the Australian ORANI model (see Dixon, Parmenter, Sutton and Vincent 1982) is a particular type, are required in situations where this effect is likely to be important. However, most sporting events are likely to be too transitory and too localized to have any significant impact on input costs in other parts of the economy. Thus, the assumptions of the CGE model may not apply in the case of the typical sporting event.

CGE models are frequently used to measure the impacts of structural changes in an economy. For example, in Australia, the effects of changes in the level of import protection for the manufacturing sector on national employment and output have been studied, using the ORANI model. As the focus of study narrows, the less applicable are CGE models, and their use in tourism studies has not been widespread.

It must be noted that neither input-output models, CGE models, nor any other economic model are evaluative tools. They are devices for measuring multiplier impacts of different stimuli. In order to conduct an economic evaluation of a sporting event, the analyst must first
identify all costs and benefits separately. Their respective multiplier effects may be measured, and they may all be brought together in a cost-benefit analysis. A discussion of cost-benefit analysis is beyond the scope of this paper. Interested readers are referred to texts such as Layard (1972), and Pearce (1971).

In the literature on the economic impacts of major events, it is universally accepted that the economic impacts are expenditure driven. The studies that have been done differ on how to measure and interpret the expenditure. Approaches to measurement seem to fall into two main categories: one, survey the recipients (i.e., the hoteliers, taxi drivers, retailers, etc.) and, two, survey the spenders (i.e., the visitors, organisational bodies, etc.). Some writers advocate the use of both approaches for purposes of verification (e.g., Davidson and Schaffer 1980); Ritchie (1984).

Australian studies have tended to rely upon surveys of the spenders, particularly the visitors. This approach is to be found in the study of the America’s Cup Defense in Perth (Centre for Applied Business Research 1987), the study of the Formula One Grand Prix in Adelaide (Burns, Hatch and Mules 1986), and the analysis of the World Cup Athletics held in Canberra (Department of Sport, Recreation and Tourism 1986). The Brokensha and Tonks (1984) report on the Adelaide Festival of Arts also used a survey of visitors' expenditures.

By way of contrast, the study of the impact of the Los Angeles Olympic Games relied upon information obtained from the lodging and restaurant industry in Southern California (Leonard and Goff 1984). It may well be that for a large, diverse event, such as the Olympics, surveying the recipients of the expenditure is the more efficient way of gathering the necessary information. Sampling variability is likely to be higher with this type of survey because of the difficulty that business houses experience in knowing whether their customers are visitors or locals.

Considerable differences exist in the literature of how to treat different items of expenditure. These differences revolve around what has become known as “expenditure switching.” There are several types of such switching, two types of which are of most importance for the analysis of sporting events. The first type is the switching by spectators, that is, if some visitors to Australia had already planned their visit, but simply switched the time of visit in order to take advantage of the sporting event, then their expenditure cannot be regarded as being attributable to the event. Such expenditure should be netted out of the analysis, and was for the America’s Cup and Grand Prix studies. However, this was not done for the Adelaide Festival of Arts study (Brokensha and Tonks 1984), nor the study of the Brisbane Commonwealth Games (Lynch and Jensen 1983). The second type is the switching of public capital expenditure. There is a tendency to regard all expenditure on an event as if it were an economic benefit (that is, attributable to the event). However, suppose a sporting event requires that the government build a stadium. If the stadium can only be built by switching government expenditure from other activities (e.g., road building), then the economy is no better off. This is definitely true where capital expenditure is restricted by borrowing limitations. Fore-
going other capital works, such as road building in order to build a stadium, is a classic case of expenditure switching. A slight impact might occur if the multiplier for stadium construction differs from that of road building. However, the impact will be the difference between the two, which is rarely likely to be large. This was not accounted for in the study of the Brisbane Commonwealth Games (Lynch and Jensen 1983) or the study of the Montreal Olympics (Iton 1976).

The America's Cup study and the Adelaide Grand Prix study tend to be conservative on the issue of capital expenditure, especially government capital expenditure. Because of the practical difficulty of knowing how much switching had occurred when government capital spending is involved, the Grand Prix study opted for an extreme position by treating it all as having been switched from other activities. This was also the position adopted by the Centre for South Australian Economic Studies (1988) model of the economic impacts of sporting events. This is the opposite extreme to the position of treating it all as a new expenditure.

The real position is somewhere in between. This is because the income generated by visitor spending on the event will result in new tax revenue. This will enable new government capital expenditure which would not have occurred without the event. However, economic models are not sophisticated enough to detect these effects and so analysts are forced to make some assumptions about the extent of switching.

A problem which is a feature of many studies is how to treat expenditure incurred in organizing, marketing, and running the event (i.e., the operational expenditures). If an event breaks even financially, revenue from ticket sales and other spectator revenue (food, drink, souvenirs) will finance the operational expenditure. Suppose 30 percent of the expenditure has been financed by locals switching from other activities and has no net benefit, only the 30 percent which is financed by foreigners is a net benefit which is attributable to the event.

If the event does not break even, then an even higher percentage of operating expenses is financed locally and is subject to switching. Offsetting this is the possibility that some of the local expenditure has been switched in favor of the domestic economy. For example, suppose the 70 percent of local spectators contains a group of say 15 percent who, because the event is being held in Australia, refrain from going overseas to the same or similar event. The expenditure switching by these locals is clearly a gain to the domestic economy and should be added to the gain obtained from the 30 percent of foreign-financed operational expenses. Measurement of this last form of switching is very difficult in practice, and researchers on the Grand Prix and America's Cup studies conservatively set it at zero.

A SUGGESTED APPROACH

The study of the 1985 Adelaide Grand Prix provided a framework for the economic analysis of major events (Burns, Hatch and Mules 1986). This section draws on that framework and takes as given that the economic benefits arise from the injection of new expenditure that
would not have occurred in the absence of the sporting event. It should be noted that we assume in what follows that the economic impact study will be an \textit{ex post facto} one, which is to say that surveys will be conducted and analysis will be done \textit{after the event}. This situation does not always apply, as planners and administrators are sometimes interested in \textit{forecasting} the economic impact prior to the event. This is a more difficult task as it requires forecasts to be made of visitor numbers and their expenditure.

\textit{The Issue of Viewpoint}

The 1982 Brisbane Commonwealth Games attracted 5,000 visitors from other Australian States, plus an estimated 6,000 from overseas. From the viewpoint of the Queensland State economy, the expenditure by all visitors who came especially for the Games represents an injection of new expenditure. From a national Australian viewpoint, visitors from other states are simply switching expenditure from other activities (possibly in their home state) and only the expenditure by the 6,000 foreigners represents an injection of new expenditure.

The general point here is that in deciding whether some expenditure is new or simply switched from elsewhere, the decision must be made as to which region is of interest. Is the research study interested in the impacts of an event on the city in which it is held, on the state, or on the nation? The wider the viewpoint, the greater the proportion of expenditure that will have been switched from elsewhere and cannot, therefore, be regarded as an injection of new expenditure into the economy.

\textit{Classification of Expenditures into Costs and Benefits}

As has been mentioned above, there has been a tendency in some studies to treat all expenditures associated with an event as if they were economic benefits that were attributable to the event. Clearly, this approach overstates the worthiness of the event, as some expenditure on such things as construction and organization are properly regarded as costs of the event rather than benefits. When is an item of expenditure a cost and when is it a benefit?

The answer to this question depends upon the degree of switching and the viewpoint. If public funds are switched from road building in order to build a hockey stadium for a world hockey championship, then some road building has been foregone in order to have the hockey championship. This foregone road building is a cost of the championship that offsets the benefit of constructing the stadium. However, one may suppose that the viewpoint is the state of Western Australia, that the stadium will be built with Federal funds, and that Western Australians do not have to give up any road building or any other publicly funded services or facilities. The expenditure on the stadium is now a net gain to the Western Australian economy (albeit at the expense of Eastern Australians).

In practice, the situation is likely to be in between these two extremes, and is also complicated by the fact that the event is likely to
generate some tax revenue, which reduces the extent of switching. A simple example will illustrate these points if the world championships in touch football are to be held in Hobart, facilities need upgrading to the extent of $2m, of which the Commonwealth will contribute $0.7m, with the Tasmanian Government contributing the remaining $1.3m. It has been estimated that visitors to Tasmania will generate, via their expenditure, an extra $0.4m in tax revenue for the Tasmanian Government (payroll tax, stamp duties, fees, and charges). Thus, the net contribution to the capital costs by the Tasmanian Government is not $1.3m, but $0.9m. The remaining $1.1m of capital expenditure is an injection of new expenditure into the Tasmanian economy which is attributable to the championships.

A word of warning should be sounded here concerning the concept of double counting. Suppose that in the above example, the visitor expenditure generates new income in Tasmania of $1.6m, and that the $0.4m of tax clawback to the Tasmanian Government has to be paid out of this $1.6m. Clearly, it would be wrong to count both the $1.6m and the $0.4m as benefits. This would be counting the same benefit twice.

In practice it can sometimes be difficult to measure tax clawback ($0.4m in the above example). In such situations, erring on the side of conservatism and assuming it to be zero is recommended. This approach clearly understates the economic impacts of the sporting event, but it is preferable to the overkill that is involved in going to the opposite extreme and claiming all expenditures as benefits.

Which Economic Variables?

As noted earlier, it is possible to define multipliers for a wide range of economic variables. The most common multipliers used in assessing national impacts are national income (GDP) and employment multipliers, but balance of payments (or net exports) multipliers are also becoming important in these days of floating exchange rates.

For all but the very largest sporting events (such as the Olympics), the use of employment multipliers is not recommended. Such multipliers usually assume a fixed relationship between output and employment. Since sporting events are short term, it is highly unlikely that any permanent jobs are created. Any employment creation that does occur is likely to be short term and casual. Since policymakers are prone to think of all employment effects as if they were full-time jobs, it is safer not to calculate any employment effects and avoid running the risk of being misinterpreted.

The Adelaide Grand Prix study (Burns, Hatch and Mules 1986) found that despite the event resulting in over $20m in income being generated, business houses did not put on extra staff. Restaurants, hotels, car rental firms, etc., all reported that they responded to the short-term increase in demand by working existing staff longer hours, extra rosters, overtime, etc. This means that the income generated goes to profits and wages of existing business proprietors and workers, rather than going to new job holders. Clearly, an employment multiplier would be inappropriate, but a household income multiplier, or a
wage income multiplier is most appropriate in the case of sporting events.

At the national level, multipliers for Gross Domestic Product (which is the same as national income) are clearly desirable. The authors have tended to call these "value added multipliers" in their own work in this area. They have the same meaning as a national income or GDP multiplier, but the name "value added" has two advantages: it has meaning at the state or substate level (GDP does not); and it distinguishes the concept from the gross output multiplier which is common in input-output analysis.

The gross output multiplier is characterized by doubling counting. For example, if a visitor to Melbourne for the Australian Open Tennis buys a bottle of Victorian wine and, as a result, the winery increases its purchases of local grapes, the gross output multiplier counts the grape content twice, once in the value of the wine and again in the grapes themselves. The value added multiplier counts only the extra value contributed by each stage of the production process; thus, it is a preferable measure of the net impact on total production (and income).

In choosing variables for impact measurement, analysts must also be careful not to confuse economic impacts with financial outcomes. As the sporting events model shows (Centre for South Australian Economic Studies 1988), it is possible for an event to earn less revenue than it costs to stage (i.e., makes an operating loss), but at the same time makes a positive contribution to the economy. In fact, the Adelaide Grand Prix regularly makes a financial operating loss of from $1m to $2.6m, but generates over $20m in extra income in South Australia. At the national level, if sporting events are able to attract sufficient foreign visitors, they may be worth staging even at a loss, in order to obtain the income that would flow from the visitor expenditure.

On the positive side, sport and sporting events raise the community's interest in sport and lead to greater participation. This has obvious community health benefits. A major sporting event may also have longer-term tourism promotion benefits for the region. On the negative side, large numbers of visitors in a region for a short time period during a sporting event impose costs on the community in the form of traffic congestion (Burns, Hatch and Mules 1988:chapter one), crime and vandalism, and disruption to lifestyle of existing residents. These problems are typical of a region experiencing a sudden, significant increase in visitor numbers. Where a sporting event is a recurring phenomenon, the civic authorities make contingency plans based on experience. But where the event is a one-off, such as the Olympic Games, the short-term congestion problems may be difficult to plan for.

It is often possible to put monetary values on some of these impacts. For example, where traffic congestion due to the Adelaide Grand Prix causes longer travel times, the use of surveys to measure length of time, and average earnings to measure the value of time, is a technique used by transport economists to put monetary values on such impacts. Clearly, if it is possible, these non-multiplier impacts should always be taken into account in order to provide a comprehensive analysis.
Large events that result in international attention being directed at the host region often seem to have positive psychological benefits in the local community. The citizens of Brisbane were proud of their city's efforts in hosting the 1982 Commonwealth Games, and enjoyed a feeling of importance as a result of media attention and the presence of internationally acclaimed athletes. Economists refer to this as "psychic income." It may be manifest in civic pride, self confidence, or a festival atmosphere. The usual way of putting monetary values on such effects is known as "contingent evaluation" and involves surveying the population with questions of the "how much are you prepared to pay" variety.

CONCLUSIONS

This paper has outlined the difficulties involved in measuring the economic impacts of major sporting events on their host region. Since such economic impacts relate mainly to expenditure associated with tourists who are attracted by the event, care is needed in measuring the amount of expenditure that would not have occurred in the absence of the event. Visitor surveys can be used to identify those tourists who merely switched the time of their visit in order to coincide with the event (i.e., those who would have come even if no event had taken place).

A more daunting task is the identification of public expenditure on facilities that is new, that is, not switched from other income-generating activities such as construction of public infrastructure or the provision of services. A refinement is needed to the economic models used in assessing economic impacts to enable this to be measured.

In general, the approach is that of all the expenditure involved in an event, only that which is funded by sources outside the region can be treated as new expenditure, attributable to the event. Where it is not possible to assess any growth in public expenditures due to the event, it is better to err conservatively and assume such growth to be zero.

Finally, there is room for further research into the value of the welfare effect or "psychic income" experienced by citizens of a region that is hosting a major event. Such citizens may have no interest in the particular sport, but experience excitement, civic pride, etc., as a result of the event being in their region. It seems likely that surveys will be the only way to put monetary values on such effects, with great care being required in questionnaire design.

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