Economic Impact Analysis of Sports Facilities and Events: Eleven Sources of Misapplication

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Many sports events, facilities, and franchises are subsidized either directly or indirectly by investments from public sector funds. The scarcity of tax dollars has led to growing public scrutiny of their allocation; in this environment there is likely to be an increased use of economic impact analysis to support public subsidy of these events. Many of these analyses report inaccurate results. In this paper, 11 major contributors to the inaccuracy are presented and discussed. They include the following: using sales instead of household income multipliers; misrepresenting employment multipliers; using incremental instead of normal multiplier coefficients; failing to accurately define the impacted area; including local spectators; failing to exclude "timeswitchers" and "casuals;" using "fudged" multiplier coefficients; claiming total instead of marginal economic benefits; confusing turnover and multiplier; omitting opportunity costs; and measuring only benefits while omitting costs.

In 1991, 65 of the 84 stadiums and arenas used by major league sports teams (77%) were publicly owned (Quirk & Fort, 1992). Only 4 of the 29 stadiums built since 1960 were constructed privately, and all domed stadiums, which have become the preferred facility, were built with public funds (Baade & Dye, 1990). A similar situation prevails in the minor leagues. For example, professional baseball at the minor league level is played in nearly 200 communities in the U.S., Canada, and Mexico. Over 90% of these teams play in stadiums that are publicly owned and operated (Johnson, 1989).

The argument for the substantial public subsidization, which occurs with the characteristically favorable facility rental agreements negotiated with franchise owners, is strongly influenced by their ability to generate commensurate economic benefits to the community in excess of associated costs. For example, when city managers were asked to identify the benefits that their communities derived from minor league professional baseball, 85% cited economic benefits (Johnson, 1989). Thus, Baade & Dye (1990, p. 5) in the context of stadiums note, "In attempting

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to elicit taxpayer support, stadium proponents have emphasized the indirect economic benefit that stadiums create. In fact, much of the current debate on stadium economics is focussed on the scope of indirect economic benefits.'' The magnitude of these indirect benefits is invariably measured by an economic impact analysis. The scarcity of tax dollars has led to growing public scrutiny of their allocation, and in this environment there is likely to be increased use of economic impact analyses.

The Rationale for Economic Impact Analysis

Sports teams and events are business investments both for the individual entrepreneur or athletic department that organizes and promotes them and for the communities that subsidize and host them. Communities may invest public tax dollars into facilities or events for professional and college sporting entities for a variety of reasons, but economic benefits are likely to rank high among them. They anticipate that the sport events will attract visitors from outside the community whose expenditures while they are there represent an infusion of new wealth into the community. While the entrepreneur or athletic department has a directly measurable bottom line that evaluates their private economic performance, a community needs to assess benefits in a broader public context.

The conceptual thinking that underlies the investment of public funds in sporting events and facilities for economic purposes is described by the following sequence of actions. *Residents* of a community "give" funds to their city council in the form of taxes. The *city council* uses a proportion of these funds to subsidize the production of an event or the development of a facility. The *facility* or *event* attracts out-of-town *visitors*, who *spend money in the local community* both inside and outside the facility they visit. This "new money" from outside the community creates *income* and *jobs* in the community for *residents*. This completes the cycle—community residents are responsible for creating the funds, and they receive a return on their investment in the form of new jobs and more household income.

In the context of sport, economic impact is defined as the net economic change in a host community that results from spending attributed to a sport event or facility (Turco & Kelsey, 1992). The purpose of an economic impact analysis is to measure the economic benefits that accrue to a community.

The political reality of economic impact analyses is that they are frequently undertaken to justify a position that either sports organizations or community elected officials have adopted or are proposing (Hunter, 1988). Community officials often commission economic impact analyses in response to increasing pressures holding them accountable for demonstrating the efficacy of tax dollar allocations. They want to assure the public that government is making a "profit" in return for any subsidization it is giving to a private sports business and to convince taxpayers of the wisdom of the subsidy. Similarly, when such studies are commissioned by sport organizations, the purpose is often to demonstrate to public officials and taxpayers that they are a substantive financial asset to the community and worthy of any public investment they receive or are requesting.

Too often, the motives of those commissioning an economic impact analysis appear to lead to adoption of procedures and underlying assumptions that bias

the resultant analysis so the numbers support their advocacy position. Consider the contrasting values placed on the San Francisco Giants in 1992 when it seemed probable they would leave Candlestick Park for a new stadium in San Jose. In San Francisco, which anticipated losing the franchise if voters in San Jose agreed to fund the stadium, the city's budget director reported that she could document only a \$3.1 million net gain to the city from the Giants. She placed this in the context of the city's gross economic product of \$30 billion, and pointed out this was 10,000 times as large, to emphasize how insignificant were the economic benefits (Corliss, 1992). A professor of economics at nearby Stanford University was quoted as saying, "Opening a branch of Macy's has a greater economic impact" (quoted in Corliss, 1992, p. 52). In contrast, the mayor of San Jose, who was trying to persuade the city's residents to approve a referendum allocating \$265 million of public funds to a new stadium in which the Giants would play, announced that the same franchise would deliver to San Jose, "somewhere between \$50 million and \$150 million a year in economic benefits" (Fimrite, 1992, p. 52).

Baade and Dye (1990, p. 6) cite a similar example of how the motives of those commissioning studies frequently leads to the generation of economic impact numbers that support their position:

A University of Pennsylvania researcher estimated that Philadelphia's professional sports teams contributed more than \$500 million to the city's economy in 1983. In a contrasting study, a Baltimore area researcher estimated the overall economic impact the NFL Colts had on the Baltimore area as merely \$200,000. Sharply different assumptions can compel sharply different results. The leverage on alternative assumptions is particularly troublesome where the sponsor of the research has an identifiable interest or point of view. The Philadelphia study was funded by a consortium of the city's professional teams, while the Baltimore study was conducted just after the Colts had bolted for the greener pastures of Indianapolis.

To convince voters of the worthiness of sports subsidies, city officials and private sector beneficiaries of the subsidies may commission studies with the intent to show that the subsidy will inject many millions of dollars a year into the local economy. In the context of stadiums, for example, it has been observed that "city leaders from Miami to San Francisco have summoned sound economic management as their star witness in defending plans to subsidize the renovation or construction of stadiums." The same economist goes on to ask, "Can this witness stand up to a stiff cross-examination?" (Baade, 1987, p. 1).

Unfortunately, the response to this question is frequently "no." Many of these studies are neither impartial nor objective. Rather, they incorporate assumptions and adopt methods that facilitate their use as advocacy documents intended to provide a public subsidy for a sports project with a convincing aura of economic legitimacy. The reason it is possible to have such widely divergent numbers as those given in the above examples is because economic impact analysis rests on many assumptions, the most important of which are discussed in this paper. An executive of a consultancy that conducts economic impact studies observed that if "you pick five consultants, you'll get five different numbers'' (quoted in Dunnavant, 1989, p. 32). Similarly, a partner in an accounting firm conducting these studies admitted, "It's a very inexact science" (quoted in Dunnavant, 1989, p. 32). Changes in the assumptions used can lead to dramatically different impacts being identified, and economic impact analysis should be best viewed as an educated guess. However, advocates do not present findings as being tenuous: "This numerical guesswork is presented to the public—by local politicians and sports boosters—as indisputable proof that a city or state government should subsidize a sports team or a new stadium" (Fulton, 1988, p. 39). Consultants are hired in large measure to tell their clients what they want to hear, "and what they want to hear is that their event or team or whatever is going to generate a lot of money" (Dunnavant, 1989, p. 33).

The findings of those who have independently evaluated the economic impact of large public subsidies by local communities for sports teams, free from the pressures of a commissioning sponsor, are not encouraging. Lipsitz (1984) traced the evolution of public funding for three stadiums in Houston, Los Angeles, and St. Louis. He noted that voters in each city approved bonds for the projects in anticipation of widely distributed economic benefits but found that the benefits never materialized. Lipsitz (1984, p. 14) concluded, "Construction of new sports facilities does not significantly enrich cities. . . . Rather, they typify the kinds of wasteful expenditures our society makes."

Baade and Dye (1990) used regression analysis to assess the impact of stadiums and professional baseball or football on the level of personal income for each of nine metropolitan areas: Cincinnati, Denver, Detroit, Kansas City, New Orleans, Pittsburgh, San Diego, Seattle, and Tampa Bay. Contrary to the claims of city officials, they found that sports and stadiums frequently had no significant impact on a city's economy. Indeed, they reported that in some of the cities with new or renovated stadiums, there was a negative impact on local development relative to the region. They suggested this finding was consistent with the possibility that stadium subsidies might bias local development towards low-wage jobs. Another finding was that baseball franchises had a more positive impact on area income than football franchises did. This was attributed to there being eight to ten times more home baseball games than home football games.

In recent years, I have undertaken seven economic impact studies on events and have observed the liberal way in which, in some cases, the findings have been interpreted and communicated to the media and general public. For the purposes of this paper, an additional 13 studies that assessed the economic impact of sports events and facilities were solicited from personal contacts in the U.S. and Canada who had access to, and were prepared to release, these studies. These 20 studies are contract reports that have not been published. To supplement this material, a comprehensive review of the published sport economic impact literature and commentaries on it was undertaken. No effort was made to report frequency of errors. Given that the reports reviewed represent a convenience set, frequencies would be meaningless. Rather, this paper is intended to identify errors, elucidate them, and bring them to the attention of sport managers who may be responsible for commissioning, interpreting, or evaluating economic impact studies.

Eleven sources of error emerged from this review, and they form the framework for this paper. In some instances the errors stem from misunderstanding, but in others they appear to reflect deliberate misrepresentation. The end result of each of these abuses (many of which occurred in multiple combinations) is to exaggerate economic impact so a study reports substantially higher numbers than are justified. Unfortunately, abuses incorporated in an economic impact analysis are contagious because when precedent has been established in one study, other sponsors may feel compelled to perpetuate the abuse by incorporating the misleading procedures in their own analyses. If they fail to do so, then the economic impact attributed to their sports event is perceived to be lower than that reported by others, and thus less worthy of public investment. Hence, "taxpayers can sometimes be swayed by an economic argument that just doesn't exist" (Fulton, 1988, p. 39). The 11 sources of error are discussed under separate subheadings in the remainder of this paper.

Using Sales Instead of Household Income Multipliers

Several errors stem from misapplication or misinterpretation of the "multiplier" effect, which is the principal economic theory embraced by economic impact studies. Basically, the multiplier recognizes that changes in the level of economic activity created by visitors to a sports facility or event bring changes in the level of economic activity in other sectors and, therefore, create a *multiple* effect throughout the economy.

If a group of spectators from another area come to see a sports event and spend \$10,000 in a community, or if this money is spent by a visiting team coming to a city, then this initial direct expenditure stimulates economic activity and creates additional business turnover, employment, household income, and government revenue in the host community. This ripple effect in an economy is termed a "multiplier" by economists.

The host sports organization, restauranteurs, hoteliers, retailers, and others who receive the initial \$10,000 are likely to spend it in five different ways:

- With other private sector businesses in the same jurisdiction (local interindustry purchases) to restock their inventories to provide for future sales, to maintain their buildings, fittings, and equipment, to pay insurance premiums, and for a myriad of other purposes;
- 2. With employees who reside within the jurisdiction of interest in the form of salaries and wages, which constitutes personal income to them (direct household income);
- 3. With local governments as sales taxes, property taxes, and license fees (local government revenue);
- 4. With nonlocal governments as sales taxes or taxes on profits; and
- 5. With employees, shareholders, businesses, organizations, and others who reside outside the local jurisdiction (nonlocal leakages).

The latter two categories of spending illustrate that the host city is part of a larger national economy, and some money leaks out of the city's economic system to pay taxes to, or buy goods and services from, entities outside the city. Only those dollars remaining within the host community after leakage has taken place constitute the net economic gain to that city. The amount of the initial \$10,000 expenditure that remains in the jurisdiction from local interindustry purchases, direct household income, or local government revenue is subsequently spent in one of the five ways previously listed and thereby sets in motion a further chain of economic activity.

The process is shown diagrammatically in Figure 1 (Liu & Var, 1982). It assumes that the group of spectators or visiting team spent their \$10,000 at four different types of establishments in a city. The figure shows the five different ways in which each of these establishments may disburse the money it receives. The hotel is used to illustrate the process, but the pattern would be replicated for each establishment. The three local depositories of funds receiving money in Round 1, and in successive rounds that did not leak out of the community, will continue to spend this money in the same five ways. The spectators' initial \$10,000 expenditure is likely to go through numerous rounds as it seeps through the economy, with portions of it leaking out each round until it declines to a negligible amount. These subsequent rounds of economic activity are termed *indirect* impacts.



Figure 1 — Illustration of how the multiplier concept operates.

Because local government revenue from taxes and fees is likely to be immediately expended back into the local economy for services it provides, this money is considered to remain a source of local economic stimulus. However, in the case of nonlocal government and other nonlocal leakages (Figure 1), the direct revenue leaks out of the city and, thus, does not contribute any stimulus to the jurisdiction's economy. Also, some of the direct household income (i.e. salaries and wages) received by local residents may not be spent in the local economy. Rather, some of it may be saved, in which case it contributes nothing further to local economic stimulus, or it can be spent outside the local jurisdiction (Figure 1). As far as the community is concerned, saving the personal income received is similar to spending it outside the community. The effect is the same in that the economic stimulus potential is lost. Savings only become ''useful'' when they are used by financial intermediaries to fund local investment.

The proportion of household income (employees' wages and salaries) that is spent locally on goods and services is termed an *induced* impact, which is defined as the increase in economic activity generated by local consumption due to increases in wages and salaries. The *indirect* and *induced* effects together are frequently called secondary impacts. In summary, there are three elements that contribute to the total impact of a given initial injection of expenditures from out-of-town visitors.

Direct Impact: The first round effect of visitor spending, that is, how much the restauranteurs, hoteliers, and others who received the initial \$10,000 spend on goods in the local economy and pay employees who live in the jurisdiction.

Indirect Impact: The ripple effect of additional rounds of recirculating the initial spectators' dollars.

Induced Impact: Further ripple effects caused by employees of impacted businesses spending some of their salaries and wages in other businesses in the city.

Frequently, studies apply a multiplier to direct spending estimates without explanation as to how it was derived or how appropriate it is to that particular community, so the unwary reader is 'left with the feeling that there is some magical process through which one dollar of spending eventually turns into two and perhaps even three' (Davidson & Schaffer, 1980, p. 16). The great danger in the multiplier, and the way it is presented in research reports aimed at the policy maker, is that its basic concept and application are deceptively simple. However, the data and analyses needed to accurately measure a multiplier are fairly complex.

Three different types of multipliers are commonly reported. They are sales, income, and employment multipliers. Because the first two of these are both measured in dollars, they are often confused. A *sales or transactions multiplier* measures the direct, indirect, and induced effect of an extra unit of visitor spending on economic activity within a host community. It relates visitor expenditure to the increase in business turnover that it creates. In contrast, an *income multiplier* measures the direct, indirect, and induced effect of an extra unit of visitor spending on the changes that result in level of household incomes in the host community.

Table 1 reports the multipliers derived for an economic impact study I undertook. The table illustrates that the values of *sales* multipliers are substantially

	-	Sales m	ultiplier		Household income multiplier				
Category	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
Food & beverages	1	0.32	0.47	1.79	0.29	0.08	0.13	0.50	
Admission fees	1	0.25	0.46	1.71	0.36	0.07	0.13	0.55	
Night clubs, lounges, & bars	1	0.29	1.31	2.42	0.36	0.08	0.32	0.75	
Retail shopping	1	0.23	0.56	1.79	0.46	0.05	0.16	0.68	
Lodging expenses	1	0.43	0.57	2.00	0.29	0.11	0.16	0.56	
Private auto	1	0.23	0.20	1.42	0.27	0.07	0.06	0.40	
Commercial transportation	1	0.22	0.29	1.51	0.52	0.05	0.08	0.65	
Other expenses	1	0.23	0.56	1.79	0.46	0.05	0.16	0.68	

Table	1 A	Comp	parison	of	the	Sales	and	Household	Income	Multipliers
for an	Even	t in a	Large	Ci	ty					

higher than those of *household income* multipliers. For example, the table indicates that, on average, each \$1 expenditure by visitors on accommodations will generate 56 cents in income for residents of the city, but business activity in the city is likely to rise by \$2. Figure 1 illustrates that household income is only one of five potential recipients of money spent on a sales transaction, which is why the multiplier impact is substantially lower. If analysts do not clearly define which multiplier is being discussed, then there is a danger that inaccurate, spurious inferences will be drawn from the data.

In an economic impact analysis sales multipliers are not useful. The point of interest is the impact of those sales on household income and employment. Residents are interested in knowing how much extra income the host community will receive from the injection of funds from visitors. They have no interest in value of sales per se because it has no impact on their standard of living. Further, high sales multipliers may give a false impression of the true impacts of visitor spending because the greatest increases in sales are not necessarily those in which the highest income and employment effects are generated. Out-of-town visitors to sports events would be defined as "tourists" by those in the tourism industry, and the authors of a community guide to tourism development commissioned and endorsed by the U.S. Travel and Tourism Administration (University of Missouri, 1986, p. 59) observed:

It is not uncommon to find, in the literature on tourism, statements to the effect that initial expenditures by tourists are multiplied many times over as a result of subsequent rounds of spending. Such statements may be misleading. We are concerned not with the volume of sales attributed to the tourist expenditure, but with the portion of that expenditure which ends up as local income.

As Fridgin (1991) correctly observes, it is misleading and valueless to multiply total visitor expenditures by a sales multiplier and refer to the product

as the economic impact of that injected money on residents of the host community. Nevertheless, because sales multipliers are substantially larger than income multipliers, they tend to be attractive political tools for advocates to use in attempting to justify public investment in a particular sports project.

Misrepresentation of Employment Multipliers

An *employment multiplier* measures the direct, indirect, and induced effect of an extra unit of visitor spending on employment in the host community. It shows how many full-time *equivalent* job opportunities are supported in the community as a result of the visitor expenditure.

Table 2 shows the employment coefficients derived in an economic impact study undertaken by the author. It indicates that for every \$1 million spent on food and beverages from outside the area, 81 *full-time equivalent jobs* would be created. Thus, each of these jobs would pay approximately \$12,350 per year.

The employment multiplier is the least reliable of the three multipliers (Fletcher & Snee, 1989) because it assumes that all existing employees are fully utilized so an increase in external visitor spending will inevitably lead to an increase in level of employment. Clearly, this is not always the case because additional demand may be met by greater utilization of the existing labor force. This is particularly probable in the case of "one-off" sports events. They are unlikely to generate lasting employment effects because of their short-term nature. The hiring of extra staff is unlikely because the extra business only lasts for a few days. Rather, existing staff are likely to be released from other duties or requested to work overtime to accommodate this temporary peak demand. At best, only some very short-term additional assistance may be hired. Thus, the "full-time equivalent" jobs reported by the multiplier do not come to fruition, and the use of job creation as a measure of economic benefit in the case of one-off, rather than ongoing, sports events is suspect.

These types of employment adjustments were reported by Arnold (1986) and Bishop and Hatch (1986) after their interviews with managers in transportation and restaurant businesses immediately after the Adelaide Grand Prix. They

	Employment coefficients						
Item	Direct	Indirect	Induced	Total			
Food & beverage	46.65	2.81	32.06	81.52			
Admission fees	46.93	3.39	32.81	83.13			
Night clubs, lounges, & bars	21.09	5.95	17.52	44.56			
Retail shopping	40.59	2.87	28.18	71.64			
Lodging expenses	32.23	4.30	23.68	60.21			
Private auto expenses	16.46	4.45	13.55	34.47			
Commercial transportation	15.78	4.37	13.06	33.21			
Other expenses	40.59	2.87	28.18	71.64			

Table 2 Employment Coefficients for an Event in a Large City

found that companies in both types of businesses increased their labor requirements by increasing the hours of existing employees, although some restaurant establishments indicated they hired "casuals" to supplement this action. Arnold (1986, p. 81) concluded,

There were virtually no new permanent jobs in the transport area generated as a result of the Grand Prix. In fact several companies had organized the increased work load in such a way that they did not pay overtime although this was not possible for all the extra work.

Using Incremental Instead of Normal Multiplier Coefficients

A household income multiplier is basically a coefficient that expresses the amount of income generated in a host community by an additional unit of visitor spending (Archer, 1982). In other words, if visitors to the community spend \$10,000 at a sports event and this generates an additional \$6,000 of income in that area, the income multiplier is 0.6. However, the coefficient of impact can be expressed in two different ways, and it is essential to understand the difference between them because available input-output analysis computer software produces both coefficient measures. Consider the following data (Archer, 1982):

External visitor expenditure injected		\$100
Direct income created	\$ 25	
Secondary (i.e., indirect + induced) income created	+ 20	
Total income created	\$ 45	

A coefficient derived by using the "incremental" (Vaughan, 1984) or "ratio" (Archer, 1982, 1984) approach expresses the income multiplier as:

Direct + Indirect + Induced Income

In the above example this would be 45/25, giving a multiplier coefficient of 1.8. In contrast, a ''true,'' ''normal,'' (Archer, 1982) ''proportional,'' or ''unor-

thodox'' (Vaughan, 1984) approach expresses the income multiplier as:

Direct + Indirect + Induced Income Visitor Injection of Expenditure

Using the above data, this would be 45/100, giving a multiplier coefficient of 0.45.

Occasionally, hybrids of these versions are used, frequently without comment or justification. For example, in a study charged with estimating the impact of a new baseball stadium in Tempe, Arizona, consultants used what they described as a "gross" multiplier, which was defined as (Touche Ross, 1989, p. 54):

Visitor Injection of Expenditure + Direct + Indirect + Induced Income Visitor Injection of Expenditure

Using the numbers from the above example, this would give a multiplier coefficient of 1.45. It is important to ascertain the formula used to derive coefficients.

By not understanding how multipliers are derived or using the wrong multiplier, decision makers could reach false conclusions.

A consensus has emerged in the economics literature that the normal approach should be used because it gives most guidance to policy makers (Vaughan, 1984). The incremental approach simply indicates that if \$1 of direct income is created, a proportion of other income will be created in other parts of the economy. It does not give a true indication of impact, because it does not include information on size of the initial leakage. The incremental multiplier puts the emphasis on the least important aspects of the impact—the indirect and induced effects.

As Table 1 illustrates, in local or regional economies the direct effect is likely to substantially outweigh the other effects. (If the coefficients in each expenditure category in Table 1 for indirect and induced effects are added together for both the sales and household multipliers, then in the large majority of cases they are lower than the direct impact coefficient.) Indeed, in rural economies where there is little industrial support, the indirect and induced elements of the multiplier are frequently insignificant in comparison with the direct element.

In fact, through purchases and income, the [direct effects] largely define the extent of the indirect and induced effects. Thus it is the direct effects which are of prime importance if the policy maker is to understand the nature of economic benefits." (Vaughan, 1984, p. 31)

The incremental approach does not yield a visitor spending multiplier. Rather, it is only a measure of internal linkage within an economy. Archer (1984, p. 518) advocates

general abandonment of the ''ratio'' multiplier approach and consequent removal of the confusion which it creates. It is difficult to envisage how or why such an inappropriate approach has gained such wide usage. Unlike the [normal] multiplier, it has no basis in economic theory and it provides misleading policy prescription.

Only "normal" or "true" multipliers should be used, because they indicate income created by a given level of expenditure and also incorporate the incremental results.

Failure to Define the Area of Interest Accurately

In a critique of an economic impact study on the Commonwealth Games to be held in Victoria, British Columbia, in 1994, the Centre for South Australian Economic Studies (1992, p. 11) observed that

a major problem with the study is that it provides no formal definition of the region on whose economy the impact of the Games is supposed to occur. Is it the City of Victoria or the Province of British Columbia? The study appeared to measure visitors with respect to Victoria, thus counting the residents of British Columbia from outside of Victoria as visitors. The estimated number of "visitors" is over 30,000 which compares with forward estimates of between 14,000 and 19,000 out-of-State visitors in this Centre's forward estimates for Adelaide's bid for the 1998 Commonwealth Games. The big discrepancy suggests that the consultants were defining visitors with respect to the city. Yet they measured economic impact (using an input-output model) on the province of British Columbia, in which Victoria is a small part.

Changes in geographical boundaries of the area of impact are likely to lead to changes in multiplier size, because the magnitude of a multiplier depends on the structure of the host community. That is, the degree to which businesses at which visitors spend their money proceed to trade with other businesses within the defined area, rather than with enterprises outside the defined geographical area. It is generally assumed that a smaller community tends not to have the sectorial interdependencies that facilitate retention of monies spent during the first round of expenditures. Hence, much of the expenditure would be respent outside the local region leading to a low local economic multiplier. Conventional wisdom posits that the larger is the defined area's economic base, then the larger is likely to be the value added from the original expenditures, and the smaller is the leakage that is likely to occur.

Almost all professional sports franchises are located in major metropolitan areas. Hence, revenues the franchises receive from out-of-town visitors and other external sources such as television, tend to stay in the local area. For example, Schaffer and Davidson (1984, p. 15) concluded that about 70% of expenditures by the Atlanta Falcons were made locally. They reported that

79 percent of the players and staff of the team live here all year; 39 of 58 players and 46 of 50 staff members live in Atlanta. Most field personnel are local residents, printing is local, the team uses Atlanta banks as well as an Atlanta based airline, and the team is locally owned.

Thus, much of the visitors' revenues received by the Falcons is respent inside the local region leading to a relatively high economic multiplier.

There has been a tendency for aspirants in inherently small market areas seeking a new professional franchise to expand the definitions of their traditional market area in order to strengthen their case with existing team owners and with city officials and residents who will be expected to subsidize the franchise. For example, promoters of Charlotte's NFL bid transformed the city of 396,000 into a region of 9.7 million people, despite the Charlotte metropolitan area having only 1.2 million residents. They counted everyone within 150 miles of Charlotte as a potential fan in order to persuade team owners that their market could generate the desired threshold of revenue, and residents that substantial economic impact would be forthcoming (*American Demographics*, 1992). In fact, studies have consistently shown that at least 70% of fans are likely to come from the immediate metropolitan area (Crompton, 1984; Schaffer & Davidson, 1975, 1984).

The geographic area of interest usually will be specified by those commissioning an economic impact analysis and is likely to relate, for example, to city boundaries. Clearly it is crucial that only visitor spending *within the defined area* be included in impact studies and *not total* visitor expenditures, considering some of that spending may have occurred outside the area. If more than one governmental entity is involved in subsidizing a sport organization, for example, city, county, and state, it may be necessary to develop separate economic impact analyses commensurate with the geographic boundaries of each entity. In this situation, visitors must be asked to recall or keep track of the place where they made their expenditures.

Inclusion of Local Spectators

Economic impact attributable to a sports event relates only to new money injected into an economy by visitors, media, external government entities, or banks and investors from outside the community. Only spectators who reside outside the jurisdiction and whose primary motivation for visiting is to attend the sports event, or who stay longer and spend more because of it, should be included. Gifts by host community businesses or individuals to out-of-town counterparts should not be included as new money, because, although the visitors are from out of town, their bills are being paid by in-town residents.

Expenditures by those who reside in the community do not represent the circulation of new money. Rather, they represent only a recycling of money that already existed there. It is probable that if local residents had not spent this money on the sports event, then they would have disposed of it either now or later by purchasing other goods and services in the community. Thus, their expenditure associated with the sports events is merely likely to be switched spending, which offers no net economic stimulus to the community, and it should not be counted as economic impact. Attendance at a sporting event is one of many recreational activities available in the community. Baade and Dye (1990, p. 6) observed:

Sports are just one kind of entertainment activity and as such compete for the local consumer's scarce disposable income and leisure time. Twenty dollars spent on football tickets may be merely twenty less dollars spent on theater tickets elsewhere in the city.

This widespread admonition from economists to disregard local expenditures (Baade, 1987; Burns & Mules, 1986; Getz, 1991; Smith, 1989) is frequently ignored because when expenditures by local residents are omitted, the economic impact numbers become unacceptably small to those commissioning the assessments (Baade, 1987; Baade & Dye, 1990). To rectify this, two new terms in the economic impact vocabulary are emerging. Thus, the Baltimore Orioles, according to a study undertaken by Maryland's Advisory Commission on Professional Sports and the Economy, "contributed \$93.7 million to local economic activity" (Johnson, 1993, p. 8). Along with "economic activity" the term "economic surge" is also now being used. Both of these terms are used to describe all expenditures associated with an event or organization, irrespective of whether they derive from residents or visitors. This generates the high numbers that study sponsors seek, but the surge or economic activity figures are meaningless. In the author's experience, they have been used by advocates to deliberately mislead decision makers and the public for the purpose of boosting their advocacy position (Baade, 1987; Baade & Dye, 1990; Dunnavant, 1989). One economist whom Fulton (1988, p. 38) identified as "director of the Rhode Island-based Regional

Science Research Institute, which has worked on several sports economics studies," observed:

Often either the consultant or the client really wants the economic impact to be a big number. They look at the dollars spent, and they say, "That's all new." And we say, "That can't all be new, people don't take money out of their savings accounts to go to ball games." (p. 39)

Getz (1991, p. 303) has suggested:

There is some evidence to suggest that major events do keep some residents at home who otherwise would leave the area for a trip. And it is also probable that a community with attractive events encourages more local spending for entertainment and merchandise.

Such expenditures could legitimately be considered new money in the sense that it is money retained in the host community that otherwise would have been lost. Some indication of the extent to which this occurs can be gained from including questions that address this issue in an expenditure survey. For example, a survey conducted at the Adelaide Festival of Arts indicated that 10.3% of the audience who were Adelaide residents were actually ''vacationing at home'' to spend their vacation time and money at the four-week festival. In addition, 7,000 residents indicated they would travel out of town more often to attend performances and exhibitions if the Adelaide Festival were not held. The incremental expenditure retained in the community by these two groups was estimated at \$3.4 million (Centre for South Australian Economic Studies, 1992). However, these types of estimates are very tenuous and economists invariably recommend that all expenditures by local residents should be disregarded (Baade, 1987; Baade & Dye, 1990; Burns & Mules, 1989; Smith, 1989).

Failure to Exclude "Time-Switchers" and "Casuals"

Visitor expenditures should be net of "time-switchers" and "casuals." Some nonlocal spectators at a sports event may have been planning a visit to the community for a long time but changed the timing of their visit to coincide with the event. Their spending cannot be attributed to the event, because it would have been made without the event, albeit at a different time of the year. Other visitors already may have been in the community, attracted by other features, and may have elected to go to the sports event instead of doing something else. These two groups may be termed "time-switchers" and "casuals." Expenditures by these visitors would have occurred without the event, so income generated by their expenditures cannot be attributed to it. It is necessary to distinguish between gross visitor expenditures and the net increment of those expenditures, which is the spending attributable to increased length of stay because of the sports event.

Questions to measure the extent of time-switching and casual attendance should be included on expenditure surveys. For example, in a survey used as part of his assessment of the economic impact of the Broncos on the Denver area, Regan (1991) asked respondents the reason for their visit to Denver and 91% reported, "To see the Broncos play." In a survey of the economic impact of Chicago Cubs spring training on Mesa, Arizona (Datapol Inc., 1988), many respondents reported they were out-of-state residents. However, the Mesa area is a prime location for "snowbirds." Large numbers of these retired people lock up their homes in the midwest for the four or five coldest winter months and migrate south in a trailer home to spend the winter in the warmth of Arizona. When respondents were asked, "If the Chicago Cubs were to relocate to another state, would this affect your decision in visiting Mesa, Arizona?", approximately half of the out-of-state respondents indicated it would have no effect. Nevertheless, the expenditures of this half of the respondents were included in the economic impact as "new money" attributable to spring training, when it was inappropriate to do this because they were casuals.

Van Der Lee and Williams (1986, p. 50) reported on how time-switchers and casuals were identified at the Adelaide Grand Prix.

Survey respondents were asked to specify if their trip to South Australia was a special trip for the Grand Prix, (in addition to another planned trip to South Australia over the next two years) or whether they would not have come to Adelaide at all over the next two years, but for the Grand Prix. The expenditure generated by those who responded positively to these questions is a measure of the net visitor expenditure generated in South Australia by the Grand Prix itself (i.e. total direct visitor expenditure less any time-switching expenditure).

Approximately 21% of visitors to the Grand Prix were time-switchers who said they had rearranged the timing of an already proposed trip.

In a survey at an event in a large city undertaken by the author, it was found that:

- Thirty percent of nonresident respondents would not have come to the city if the event had not been taking place.
- Twenty-seven percent were time-switchers who would have come without the event, but the event was a reason that influenced their decision to come at that time. The event was instrumental in influencing when they came to the city and in providing the incentive for them to initiate that action at that time.
- Forty-three percent were casuals who would have come to the city irrespective of the event. It had no influence on their decision to visit the city at the time. They went to it because they were already in the community.

Thus, expenditures of the 43% who were casuals and the 27% who were timeswitchers should be discarded in an economic impact analysis, because their expenditures would have entered the city's economy even if the event had not been held. However, if some of these individuals extended their stay because of the event, then that increment of their expenditures should be included.

Time-switching of external funds is also an important issue in the analysis of construction expenditures for sports facilities. If some of that construction with external funds was intended for allocation to the host community in the future, but was brought forward to accommodate the timing requirements of a desired sports project, then its economic impact should not be attributed to the sports project. Indeed, it has been suggested that it is possible that where large capital construction for special events is involved, on occasions, the net economic impact may be negative (Burns & Mules, 1986, p. 6).

This is because speculation flourishes in the hyped up atmosphere of such events and developers, acting on imperfect information, may embark on ventures which are basically unsound. If so, any extra activity generated at the time of the event may be more than offset by subsequent adjustments.

Use of "Fudged" Multiplier Coefficients

It is not desirable to take the results of an economic impact assessment from similar studies in other communities and apply it, because the combinations of business interrelationships in communities are structured differently so linkages and leakages will be different. For the same reason, it is not reasonable to make a general statement of the form: "Sports events have an income multiplier of 0.8." Each situation should be analyzed and assessed independently.

However, sometimes the budget is inadequate, or the expertise is not available to derive a multiplier coefficient from IMPLAN or a similar input-output model. Too often in these situations, project advocates step into the void and offer arbitrary coefficients that purport to be "conventional wisdom." Frequently, their assignment of those coefficients will be prefaced by the mischievous phrase, "A conservative estimate of the multiplier is . . . " when what is put forward is, in fact, an outrageously high coefficient.

If it is not feasible to derive multiplier coefficients for a sports event, then there are two bases that could be used to suggest reasonable estimates. First, standard multipliers for most standard metropolitan statistical areas in the U.S. are available from the Bureau of Economic Analysis in the U.S. Department of Commerce. Second, "ballpark" estimates of income multipliers can be made using the following guidance (University of Missouri, 1986, p. 57):

90 to 95% of United States county income multipliers fall within a range of 0.4 to 0.8. Thus for most areas we expect a \$100 (visitor) expenditure to increase local incomes by \$40 to \$80. Your multiplier will tend to be at the upper end of the range if:

- Your region is urban rather than rural
- [Visitors] buy products which require considerable local labor in production.

Claiming Total Instead of Marginal Economic Benefits

Burns and Mules (1986) argue that it is inappropriate to attribute all of the economic benefits received from a sports event to the financial investment of a public entity. Thus, if a public entity contributes \$1 million to a \$3 million project, then it should be credited with one-third of the resultant economic benefits and not all of them. Burns and Mules (1986, p. 10) suggest:

Where only part of the costs are funded by government, the analysis should either attribute all benefits to joint costs or else attempt to ascertain the marginal effect on benefits received by the additional funding made possible by the government. If all the benefits generated by joint private-public sponsorship of an event are attributed to the government contribution alone, the benefit-cost ratio may falsely appear very favourable. This is especially true if the government contribution is a relatively small amount of the total.

This viewpoint is conceptually logical, but it is not widely accepted by those involved in conducting economic impact analyses, possibly because it ignores the pragmatic reality of public-private sports partnerships. Proponents of attributing all the economic benefits to the government entity's contribution argue that it is the key to leveraging private sector participation in a venture. In such cases, without the public investment there would be no private investment and the sports event would not take place. Hence, it is appropriate to attribute total benefits to the public funding support.

Confusion of Turnover and Multiplier

Some public officials state in complete seriousness that the visitor multiplier for their city is six or seven (Archer, 1982). This myth appears to have emerged from somebody somewhere having marked dollar bills and then traced their movement through the business community. This procedure omits payments made by credit card or by check and fails to differentiate between income generation and sales transactions. It was noted earlier in this paper that although it may take many rounds before all money leaks out of an economy, the substantial leakages that occur in each round make it unlikely that the income multiplier will exceed 0.8.

An additional issue related to turnover is the timeframe over which the spending rounds occur. Schaffer and Davidson (1984) traced the rounds of spending associated with professional football in Atlanta. They reported that after 12 rounds, 99.7% of possible activity was identified. It has been reported that the entire process of expenditures rippling through an economy may take 15 to 20 years to complete (Fleming & Toepper, 1990) before all the initial expenditures leak out of an economy. This means that when the net present value of money is considered, the real value of the multiplier effect is likely to be substantially lower than that estimated by the short-term input-output models, because \$1 of visitor expenditure injected into an economy today will be worth only some fraction of that amount in real purchasing power after many years of working its way through the economy. Further, it has been shown that different estimates of how fast the resultant transactions occur within an economy leads to different multiplier values being calculated (Archer, 1977).

Omission of Opportunity Costs

Economic impact analyses typically consider all factors of production as having zero opportunity costs to a community in terms of what they could produce if invested elsewhere in the economy. Opportunity cost is the value of the best alternative not taken when a decision to expend government money is made. Archer (1977, p. 46) noted,

Any attempt to measure the benefits from particular economic activities requires some assessment of the real cost to society of devoting resources to that activity, and a comparison with the benefits to be obtained from the allocation of these resources to other activities.

Consider the following situation (Dunnavant, 1989, p. 33):

Politicians in Denver did not exactly drop their jaws in shock when a Brown, Bortz and Coddington study projected a \$16.5 million annual impact were the city to get a Major League Baseball team. It was more like a yawn. ''It's nice, but I can't say we were all that impressed,'' said a mayoral assistant. ''We just finished approving a convention center that's going to generate \$200 million.''

The difference in economic impacts of these two types of facilities is attributable to differences in the type of visitors who use them. Sports teams primarily entertain local residents, while convention centers attract nonresidents to the community. Ironically, it is the sports team that is likely to be more popular politically because its contribution to the host community's quality of life is likely to be more obvious to most residents. In the above example, the city was able to acquire both enterprises. If resources had been available for only one of them and they had selected the baseball option, the economic impact analysis would have been positive so the city probably would have supported the baseball opportunity. From an economic perspective, this would have been an unwise investment of public dollars and would have occurred because the opportunity cost of not being able to invest in the convention center was not considered.

Switching money from other activities, such as from road building, public housing, or a business park, does not make the economy better. The efforts of the mayor of San Jose to persuade the city's residents to approve a referendum allocating \$265 million of public funds to a new stadium in which the Giants would play, were strenuously opposed by the CEO of a prominent major high tech company in the city. He objected to

subsidizing a multimillionaire [the ballclub owner] with a quarter-billion dollar asset. . . . This is a terrible investment when we're losing jobs and we don't have enough teachers and police. [The owner's] no villain. He'd be a fool not to get the best deal he can. You look for suckers in these deals, which in today's world means government.'' (Fimrite, 1992, p. 52)

Money used to subsidize sports events has been taken from community residents in the form of taxes. This represents an opportunity cost because residents are likely to have spent those funds in the community if the government had not taken them. In essence, the government may be perceived as spending it for them, so net gain to the community is zero (Hunter, 1988). The process merely substitutes public expenditures for private expenditures, and the resources allocated to a sports event or facility are denied to other sectors of the economy. This point was articulated by Burns & Mules (1986, p. 10):

While governments may like to believe that their contributions are "productive," unless total receipts from outside the region are increased by the government financing contribution, all that is happening is that public funding is being substituted for private funding and there is no net economic benefit to the State—just a public cost.

The authors go on to note that event and construction expenditures from outside a host community are benefits, because they cost the community nothing and extra income accrues to the economy. However, in contrast, expenditures by local governments are costs because they are financed by residents within the host community who therefore have to forego something else, and there is no extra generation of income.

Thus, an expenditure on sports facilities by a local government cannot be considered an injection of new funds. If resources are injected into an economy from nonlocal governments, they can be considered as new money only if they would not have come to the community without the project. Thus, federal funds such as Community Development Block Grants, which are awarded to communities on a formula basis and have been used in some communities to partially fund sports stadiums, should not be included in economic impact analyses. Fleming and Toepper (1990, p. 39) noted that "the opportunity costs should include the monetary costs of development and maintenance of the site or area, along with an accounting of benefits lost by withdrawing the resource from its present or alternative uses."

The emphasis placed on multipliers in economic impact analyses dealing with sports events or facilities may lead the unwary to suppose that there was some unique property conferred on income and employment generation resulting from such events or facilities, which was not shared by other sectors of the economy. Hughes (1982, p. 171) observed, "It is the comparative size of the multiplier that is important, not simply the fact that a multiplier exists." He goes on to note that the empirical literature indicates visitor expenditure multipliers "at best probably reflect an average value added compared with other sectors. References to the multiplier as a significant advantage need to be seen in this context" (p. 172).

Much of the employment associated with sports events is for food, beverage, and souvenir vendors, ushers, security personnel, bus and cab drivers, parking lot attendants, restaurant and hotel workers, and the like. Typically, these are low-paying jobs. Hence, Baade (1987) suggested that a city focussing on sports to foster its development may find that its economy compares poorly to other communities. His empirical findings appeared to lend support to this thesis. Using regression analysis he reported "a consistently surprising result" (p. 15). In seven of the nine cities he analyzed, stadium renovation or construction, or a city's adoption of a professional football or baseball team, was followed by a reduction in that city's share of regional income. Based on these results, Baade raised the possibility that jobs stemming from sports franchises or stadiums are not created, but rather they may be diverted from the manufacturing economy to the service economy, or from higher- to lower-paid occupations.

Measurement Only of Benefits: Omitting Costs

Unfortunately, sports events can generate substantial economic costs that often are forgotten in the euphoria surrounding an event. Roberts and McLeod (1989,

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p. 242) noted, "A common legacy of many past events has been a huge debt and a great deal of under-utilized infrastructure." Too often, only positive economic benefits associated with visitors are reported, and costs or negative impacts inflicted on a community are not considered. If additional people are attracted to a community, then they will create extra demand on local services. Thus, the economic impact on Western Australia of the America's Cup when it was held in Freemantle was estimated at \$454 million, but as Hall (1989, p. 24) observed, "This figure is a measure of cup-related spending, not the outcome of a benefitcost analysis. Opportunity costs, leakage from the state due to foreign and interstate investment, administrative and social costs were not taken into consideration." Negative or cost impacts may include such items as traffic congestion. road accidents, vandalism, police and fire protection, environmental degradation, garbage collection, increased prices to local residents in retail and restaurant establishments, loss of access, and disruption of residents' lifestyles. Translating some of these impacts into economic values is difficult and may be one reason why they are usually ignored.

Incorporating costs into a study changes it from an economic impact analysis to a benefit-cost analysis, and in the author's view this is the information decision makers should be using when evaluating alternative investments. An economic impact analysis is designed to study the economic effect of additional expenditure attributable to a sports event and should be compared with equivalent investments designed to create economic stimulus in other sectors of the economy. In contrast, benefit-cost analysis is designed to identify the most sensible investment alternative. It considers the long-term benefits that can be obtained from the sports investment, identifies the long term costs, and compares the net benefits with those likely to accrue if the same resources were employed in other options.

Concluding Comments

The scarcity of tax dollars has led to growing public scrutiny of their allocation, and in this environment there is likely to be increased use of economic impact analyses. The paper has identified and discussed eleven misapplications that have frequently appeared in economic impact studies concerned with sports events and facilities. These misapplications abuse the integrity of the technique and lead to the following observations reported by Smith (1989, p. 271):

The inevitable result of the misuse of economic impact methodology has been the growth of a backlash against the idea that tourism has any role to play in local economic development. Although this cynicism is rarely published in industry journals, it is expressed frequently in private conversations and sometimes even in public addresses by officials.

Typical of this backlash are the comments made by Hunter (1988, p. 16), relating to abuses of the multiplier concept, "Economic impact studies based on the multiplier are quite clearly an improper tool for legislative decision-making." He argues that multipliers overstate the economic benefits of private businesses, specifically citing sports stadiums, and that the use of economic impact studies

encourages government to invest taxpayers' money unwisely. The author disagrees with Hunter's unequivocal condemnation of the technique and believes that despite its weaknesses and limitations, economic impact analysis is a powerful and valuable tool if it is implemented knowledgeably and with integrity. The only effective antidote to the backlash that Smith describes, and Hunter manifests, is to reject misleading applications of it to sports projects.

References

- American Demographics. (1992, January). Business reports: Mid-size cities blitz NFL for new franchise, 9.
- Archer, B.H. (1977). Tourism multipliers: The state of the art. Bangor: University of Wales Press.
- Archer, B.H. (1982, December). The value of multipliers and their policy implications. *Tourism Management*, 236-241.
- Archer, B.H. (1984). Economic impact: Misleading multiplier. Annals of Tourism Research, 11(3), 517-518.
- Arnold, A. (1986). The impact of the Grand Prix on the transport sector. In J.P.A. Burns, J.H. Hatch, & T.J. Mules (Eds.), *The Adelaide Grand Prix: The impact of a special event* (pp. 58-81). Adelaide: The Centre for South Australian Economic Studies.
- Baade, R.A. (1987). Is there an economic rationale for subsidizing sports stadiums? (Heartland Policy Study No. 13). Chicago: Heartland Institute.
- Baade, R.A., & Dye, R.F. (1990, Spring). The impact of stadiums and professional sports on metropolitan area development. *Growth and Change*, 1-14.
- Bishop, G., & Hatch, J. (1986). The impact of the Grand Prix on the accommodation sector. In J.P.A. Burns, J.H. Hatch, & T.J. Mules (Eds.), *The Adelaide Grand Prix: The impact of a special event* (pp. 82-94). Adelaide: The Centre for South Australian Economic Studies.
- Burns, J.P.A., & Mules, T.J. (1986). An economic evaluation of the Adelaide Grand Prix.
 In G.J. Syme, B.J. Shaw, P.M. Fenton, & W.S. Mueller (Eds.), *The planning and evaluation of hallmark events* (pp. 172-185). Aldershot, England: Avebury.
- Centre for South Australian Economic Studies. (1992). Estimated economic impact of the 1994 Commonwealth Games. (Review of a report prepared by Coopers and Lybrand Consulting Group). *Sports Economics*, **3**, 10-12.
- Corliss, R. (1992, August 24). Build it and they will might come. Time, 50-52.
- Crompton, J.L. (1984). The characteristics and spending patterns of visitors to Arlington, Texas in 1984. College Station: Texas A&M University, Department of Recreation and Parks.
- Datapol Inc. (1988, May). Economic impact of Major League Baseball spring training on the Greater Mesa, Arizona Area (Report prepared for Ho Ho Kams). Mesa, AZ: Mesa Convention and Visitors Bureau.
- Davidson, L.S., & Schaffer, W.A. (1980, Winter). A discussion of methods employed in analyzing the impact of short-term entertainment events. *Journal of Travel Research*, 28(3), 12-16.
- Dunnavant, K. (1989, March 13). The impact of economics. Sports Inc, 31-33.
- Fimrite, R. (1992, June 1). Oh give me a home. . . . Sports Illustrated, 76(21), 50-52.
- Fleming, W.R., & Toepper, L. (1990). Economic impact studies: Relating the positive and negative impacts to tourism development. *Journal of Travel Research*, 29(1), 35-41.

- Fletcher, J., & Snee, H. (1989) Tourism multiplier effects. In S.F. Witt & L. Moutinho (Eds.), *Tourism Marketing and Management Handbook* (pp. 529-531). Hemel Hempstead, England: Prentice Hall International (UK).
- Fridgin, J.D. (1991). *Dimensions of tourism*. East Lansing, MI: American Hotel and Motel Association.
- Fulton, W. (1988, March). Politicians who chase after sports franchises may get less than they pay for. *Governing*, 34-40.
- Getz, D. (1991). Festivals, special events and tourism. New York: Van Nostrand Reinhold.
- Hall, C.M. (1989). Hallmark events and the planning process. In G.J. Syme, B.J. Shaw, D.M. Fenton, & W.S. Mueller (Eds.), *The Planning and Evaluation of Hallmark Events* (pp. 20-39). Aldershot, England: Avebury.
- Hughes, C.G. (1982, September). The employment and economic effects of tourism reappraised. *Tourism Management*, 167-176.
- Hunter, W.J. (1988). Economic impact studies: Inaccurate, misleading, and unnecessary, *Heartland Institute Policy Study #21*. Chicago: Heartland Institute.
- Johnson, A.T. (1989). Local government and minor league baseball: Survey of issues and trends (Sports Consortium Special Report #1). Washington, DC: International City Management Association.
- Johnson, A.T. (1993). *Minor league baseball and local economic development*. Urbana: University of Illinois Press.
- Lipsitz, G. (1984). Sports stadia and urban development: A tale of three cities. *Journal* of Sport and Social Issues, 8(2), 1-18.
- Liu, J., & Var, T. (1982, September). Differential multipliers for the accommodation sector. *Tourism Management*, 172-187.
- Quirk, J., & Fort, R.D. (1992). Pay dirt: The business of professional team sports. Princeton, NJ: Princeton University Press.
- Regan, T.H. (1991). A study of the economic impact of the Denver Broncos football club on the Denver Colorado metropolitan economy. Unpublished doctoral dissertation, University of Northern Colorado, Greeley.
- Roberts, E.J., & McLeod, P.B. (1989). The economics of a hallmark event. In G.J. Syme, B.J. Shaw, D.M. Fenton, & W.S. Mueller (Eds.), *The planning and evaluation of hallmark events* (pp. 242-249). Aldershot, England: Avebury.
- Schaffer, W.A., & Davidson, L.S. (1975). The economic impact of professional football on Atlanta. In S.P. Ladany (Ed.), *Management science applications to leisure-time operations* (pp. 276-296). Amsterdam: North Holland.
- Schaffer, W.A., & Davidson, L.S. (1984). *Economic impact of the Falcons on Atlanta:* 1984. Atlanta: Georgia Institute of Technology.
- Smith, S.L.J. (1989). Tourism analysis: A handbook. New York: Longman.
- Touche Ross. (1989, April 18). *The economic impact of Major League Baseball and Triple A baseball on the Tempe economy* (Report to the City of Tempe).
- Turco, D.M., & Kelsey, C.W. (1992). Conducting economic impact studies of recreation and parks special events. Arlington, VA: National Recreation & Park Association.
- University of Missouri. (1986). Tourism USA: Guidelines for tourism development. Columbus, MO: Author.
- Van Der Lee, P., & Williams, J. (1986). The Grand Prix and tourism. In J.P.A. Burns, J.H. Hatch, & T.J. Mules (Eds.), *The Adelaide Grand Prix: The impact of a special event* (pp. 39-57). Adelaide: The Centre for South Australian Economic Studies.
- Vaughan, D.R. (1984, December). The cultural heritage: An approach to analyzing income and employment effects. *Journal of Cultural Economics*, **8**(2), 1-34.