

# Economic Impact of Casino Gaming Development: Assessing the Economic Benefits of Detroit's Casinos, Michigan

Omar Moufakkir

Tourism Management Department  
CHN, University of Professional Education  
The Netherlands

Afke Moufakkir van der Woud

Management Department  
CHN, University of Professional Education  
The Netherlands

**Abstract:** In 1996, the passage of Proposal E allowed the City of Detroit to develop up to three land-based casinos. The first casinos, MGM Grand and Motor City Casino opened in 1999. The purpose of this paper was (1) to assess the economic impact of these two casinos on the local economy, and (2) to detail how these benefits were being calculated. Casino visitors were randomly intercepted in the non-gaming areas of the casino facilities and were asked about their trip characteristics including trip expenditures and spending on gambling. Conservative and comprehensive economic impact estimates were calculated. Conservative estimates include only non-local casino visitors whose primary trip purpose was to visit a casino. Comprehensive estimates include all non-local casino visitors. Two methods were undertaken to estimate the economic impact. The first involved step-by-step calculations. It offers the economic impact generated by spending inside the casino and spending outside the casino. The second employed the National Park Service's (NPS) Money Generation Model 2 (MGM2). This method offers a more comprehensive set of economic impact estimates related to outputs including sales, jobs, income, and value added effects. Results of the NPS MGM2 indicate that, conservatively, the two casinos generated \$167 million in output/sales, about \$61 million in personal income, \$98 million in value added and 4000 jobs, annually. It is generally recognized that economic impact analysis is not an exact process. However, a transparent approach such as the one used in this study can permit other analysts to substitute their own assumptions to refine our estimates. In addition, the criteria — *relevance, coverage, efficiency, accuracy, and transferability*— proposed by Frechtling (1994) to judge methods of estimating travel's economic impact that permit the objective evaluation of the quality of a model have been used as guidelines by this study.

**Keywords:** Tourism, economic impact, casino gaming, economic benefits, Detroit.

## Introduction

Tourists spent an estimated \$10 billion in Michigan in 1998. Michigan attracts a number of important market segments including general vacation travelers, outdoor recreation market segments (downhill skiers, snowmobilers, campers, anglers, hunters, cultural tourists (Stynes, 1999) and more recently casino gamers (Moufakkir, Holecek, van der Woud and Nikoloff, 2000). Casino gamers

are an important and growing segment of the travel market (Travel Industry of America, 2001).

The number of casinos in the United States has considerably increased and so has the number of gamers. According to the American Gaming Association (AGA) some form of casino gaming exists or has been approved to operate in 31 states. There are more than 470 commercial casinos operating in 11 states and more than 160 Native American casinos operating in 28 states (AGA, 2001). The percentage of American adults who visited a casino grew from 10% in 1975 to 27% in 1998 (National Gambling Impact Study Commission, 1999). In 1999, commercial casinos employed more than 365,000 persons, and Native American casinos employed about 152,000 persons (AGA, 2001). According to the Travel Industry Association of America's Economic Review of Travel in America, revenues of the four major gaming industry segments (Nevada, Atlantic City, Riverboats and Native American gaming) equaled \$29.8 billion. Gaming revenue increased by 80% between 1992 and 1999 and Casino gaming companies remitted an estimated \$3 billion in total tax revenues in 1999.

Various levels of governments have developed casinos and others are considering this type of economic development as a strategy to collect tax revenues, generate employment, enhance the tourism activity and keep the local gaming dollars inside the community (Gazel, 1998). Since casino gaming was legally introduced on Indian reservations, on riverboats, and historic rural towns, interest in gaming as a tourism attraction and economic development strategy has increased (Chadbourne, Walker and Wolfe, 1997). Tourism authorities have identified gaming as a major force in the tourism industry (Boger, 1994) and gaming-related tourism has grown in popularity over the last several years (Borden, Fletcher and Harris, 1996). But, how does gaming tourism impact an area? This question and many more are currently being asked by policymakers and planners across the United States in both established and potential new gaming markets (Borden et al., 1996). While several studies have been conducted to measure the economic impact that visitors have on an area, very little work has been published investigating the specific impacts of casino visitors (Borden et al., 1996). Studies (e.g., Anders, 1994) commonly use secondary economic models developed at the national level. Their primary focus has been on total casino revenue generated by all visitors (residents and nonresidents) with very little attention given to visitor expenditure patterns (e.g., visitor purchases in the casino versus visitor purchases outside the casino from other economic sectors) (Borden et al., 1996). Aggregate data may not provide an accurate impact measurement. This limitation can be corrected through primary data collection (Borden et al., 1996).

As part of a casino visitor study, Detroit Convention and Visitors Bureau was seeking estimates of spending and economic impacts of gaming-related travel in the region. On November 18, 1996, the passage of Proposal E 1996, allowed the city of Detroit, Michigan, the initiation of up to three land-based casinos (Trebilcock and Foster, 1999). The MGM Grand casino opened on July 1999 and the Motor City Casino opened on December 1999 (Greektown Casino is not included in the analysis because it did not exist when the casino visitor study was launched). The objective of this paper was to estimate the economic impact of Detroit's casinos on the Tri-county area based on visitor spending. The Tri-county area includes Macomb, Wayne, and Oakland counties. Findings may offer states and local leaders scientific information that can help them make informed policy decisions when evaluating gaming initiatives. This study also provided strategies for conducting gaming economic impact studies.

### Literature Review

Tourism economic impact studies are an important consideration in state, regional and community planning and economic development because they can be used as tools to support tourism decisions (Stynes 2004). An economic impact analysis traces the flows of spending associated with tourism activity in a region to identify changes in sales, tax revenues, income, and jobs due to tourism activity. The principal methods to conduct economic impact studies are visitor spending surveys, analysis of secondary data from government economic statistics, economic base models, input-output models and multipliers (Frechtling 1994). There are several types of economic impact analysis. Stynes (2004, p. 2) provides an explanation of the different types of economic impact analysis: (a) *Fiscal impact analysis* – Will government revenues from tourism activity from taxes, direct fees, and other sources cover the added costs for infrastructure and government services? (b) *Financial analysis* – Can we make a profit from this activity? (c) *Demand analysis* – How will the number or types of tourists to the area change due to changes in prices, promotion, competition, quality and quantity of facilities, or other demand shifters? (d) *Benefit Cost analysis (B/C)* – Which alternative policy will generate the highest net benefit to society over time? (e) *Feasibility study* – Can/should this project or policy be undertaken? (f) *Environmental Impact assessment*, and (g) *Economic impact analysis* — What is the contribution of tourism activity to the economy of the region?

Several models for estimating economic impacts of tourism have been developed. The most widely used are: The RIMS II user handbook developed by the Bureau of Economic Analysis's (BEA), The TEIM or Travel Economic Impact Model developed by the U.S. Travel Data Center (USTDC 1997) and The MI-REC/IMPLAN developed by Michigan State University professors,

D. Stynes and D. Propst. Studies of economic impacts vary extensively in quality and accuracy (Crompton, 1999), depending on factors such as the quality of the data, the methodology used, time, and cost (Stynes 2004). According to Frechtling (1994, p. 362) it is important to judge methods of estimating travel's economic impact "by some formal criteria that permit the objective evaluation of the quality of a model". The criteria proposed by Frechtling are: *relevance*, *coverage*, *efficiency*, *accuracy*, and *transferability*. These criteria were used to assess the quality of the economic impact analysis undertaken by this study. They are explained by Frechtling (1994, p. 362) as follows:

*Relevance*: the approach should measure tourism's economic impact and not that of some other activity. Three aspects of the approach should be of particular interest in term of relevance: Does it relate to travel alone? Does it fairly represent the area under study and only that area? And does it cover the time period under study?

*Coverage*: the approach should also cover all travel away from home and related activities.

*Efficiency*: primary-data collection is costly and should be avoided whenever possible in favor of relevant, comprehensive, and accurate secondary data.

*Accuracy*: the approach should also be judged on the basis of its accuracy: Are the input data accurate measures of travel activity? Does the approach accurately reflect real relationships? Are the results reasonable? This involves investigating the techniques used to generate primary data.

*Transferability*: the main objective here is an approach that is feasible in different areas for different time periods and that produces consistent results in varying contexts.

These criteria have been the guidelines for this study.

### Method

*Economic impact concepts*: Economic impact studies in travel and tourism are undertaken to determine "specific activity's effects on income, wealth, and employment of the residents of a given geographic area". Economic impacts of visitors may be positive or negative. On the benefit side, this normally means the study provides estimates of travel spending and the impact of this spending on the region. On the cost side, this means estimating the costs, sometimes nonmonetary, to government and residents of travel activity in the area (Frechtling 1995, p. 359).

In concept, deriving the economic impact of the two casinos is relatively simple and involves multiplying the number of visitors over a given time period (a year in this case) by mean per person expenditures and then expanding this product by a multiplier that captures the secondary impact of direct visitor expenditures as they course through and eventually leak out of the economy. This process is summarized in the following *mathematical formula*:

Economic Impact = (Number of visitors \* Average spending per visitor) \* Multiplier (Stynes 1999).

In practice, however, deriving valid estimates of economic impact is often more complex than this simple formula would suggest. The following set of issues must be resolved:

1. The geographical boundaries of the economy must be precisely defined.
2. Mean expenditure estimates must be developed from an unbiased sample of the "appropriate" visitors.
3. The "appropriate" visitors must somehow be counted over the relevant time frame.
4. And, accurate multipliers must be obtained and correctly applied to direct expenditures to capture the full impact on the targeted economy.

How each of these issues was addressed in this paper is outlined below.

*Defining the region:* The economy in this case was defined as the three county Detroit Metro area including Wayne, Oakland and Macomb counties. Only expenditures of residents from outside the region were included in the analysis. Therefore, the economic stimulus of new dollars brought into the Detroit area were measured.

*Estimating visitor expenditures:* In conducting an economic impact analysis or reviewing an economic impact study, it is important to keep in mind that two impact models may produce different estimates of tourism impact for a given area simply because of the way they generate visitor spending. That is one model may generate visitor spending based on expenditures of all visitors to the area while another model may include expenditures of specific types of visitors (Frechtling 1994; Crompton 1999).

The objectives of this study required that mean expenditures by casino visitors from outside the Detroit area be measured. An attempt was made to group visitors intercepted at the casinos into locals and non-residents; only the latter were subsequently interviewed by telephone. All locals who were inadvertently

interviewed were eliminated from the data set analyzed. Those interviewed were asked whether or not their primary trip purpose was to visit a Detroit casino. The all visitor estimate will be subsequently referred to as the comprehensive economic impact estimate, and the estimate for those whose primary purpose for the trip was to visit a casino will be referred to as the conservative economic impact estimate. The comprehensive estimate overstates the economic impact of the casinos because it includes individuals who would have visited Detroit even if casino entertainment was not available in the city, and the conservative estimate understates the impact of the casinos in that it excludes individuals who may not have made their visit were casinos not available or who may have extended their stay because of the casinos.

*Estimating the number of visitors:* Given the scope of this study and the measurement challenges that would have had to be overcome, it was not feasible to devise an independent estimate of casino visitor numbers. The best available estimate of visitor numbers is that provided by casino officials. They indicate that, on average, 20,000 people visit the two casinos each day. No information could be obtained concerning the basis for this estimate, so it is not possible to create an upper or lower bound which, at some level of probability, would capture the true measure of average daily visits to the casinos. The estimates of economic impact provided herein are directly linked to visitor count estimates that were available, hence, if the visitor count is in error by, for example + 10%, the reported economic impact estimates would also be in error by + 10%.

*Selecting the multiplier(s):* Selecting the multiplier(s) to use in economic impact analyses involves both science and a considerable degree of subjective judgment. All multipliers are, out of necessity, approximations of how dollars flowing into an economy impact that economy. The multiplier varies by sector of the economy that captures these new dollars. For example, a dollar flowing into the lodging sector will have a greater impact on the Detroit economy than will a dollar spent on gasoline because the majority of the dollar spent on gasoline leaks immediately from the local economy in the form of payments to gasoline suppliers who reside outside of the Detroit area. On the other hand, more of the dollar spent on lodging, a service, remains in the local economy in the form of employee wages, profit to local owners and payments to local service providers. Analysts typically adopt one of two approaches to selecting the multiplier. They rely on a simple composite/average multiplier that is reflective of the specific multipliers associated with an overall economy or type of economic activity (e.g., entertainment, tourism, or travel), or they attempt to segregate expenditures by type, apply the multiplier most directly associated with each type of expenditure, and sum the results to arrive at a total. While

the latter approach would normally be expected to yield a more accurate estimate, it may not since classification of expenditures involves a degree of subjectivity and sector multipliers are themselves in effect composites. Furthermore, there is no way to judge the relative accuracy of one estimate over another.

The concept of economic impact is relatively simple and easy to grasp; however, as should be clear from the above discussion, applying it in this case is fraught with obvious and sometimes subtle complexity. While the accuracy of any single estimate of the economic impact of the casinos on the Detroit economy could be legitimately disputed, careful analyses built upon sound alternative assumptions can portray the upper and lower bounds which capture the economic impact of the casinos. Such a transparent approach permits other analysts to substitute their own assumptions to refine our estimates. It also permits selection of estimates most suitable to the potential users needs. (For example, one most interested in the economic impact of all non-resident casino visitors would find our comprehensive impact to be most appropriate). An overview of the economic impact calculation process used in this study is presented in Figure 1.

*Spending categories:* The study area was the tri-county area which includes Macomb, Oakland and Wayne counties, Michigan. Visitor economic impact was based on non-local casino visitors' expenditures in the following seven spending categories:

1. Spending inside the casino which includes:
  - a. Spending on food and beverages
  - b. Spending on gambling.
2. Spending outside the casino including:
  - a. Spending on food and beverages
  - b. Spending on accommodation
  - c. Spending on gasoline purchased in the study area
  - d. Spending on local transportation
  - e. Spending on gifts and souvenirs.

To get the average dollars spent on these spending categories, non-local casino visitors were asked how much they spent on each one of the spending categories while in the Detroit area. To get average total expenditures per person per day, respondents were asked about the number of person in their travel party and

## ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

the number of nights they spent in the study area. Average total expenditures was then divided by the number of trip party and the number of nights in the area. Specifically, respondents were asked:

“How many persons did your spending party include?” and “how many nights did you spend in the Detroit area?”

To estimate spending on gambling, respondents were asked:

“Did you come out ahead or behind on the money you wagered on the day we intercepted you in the casino?”

*Data Collection:* To obtain information from casino visitors, a mixed mode survey technique was used in this study. The first phase of the sampling strategy consisted of a brief on-site interview designed to identify non-resident casino patrons and recruit them to participate in a follow-up telephone survey. In the second phase, those who agreed to participate in the follow-up telephone interview were contacted by telephone at a time they indicated would be most convenient for them to be interviewed.

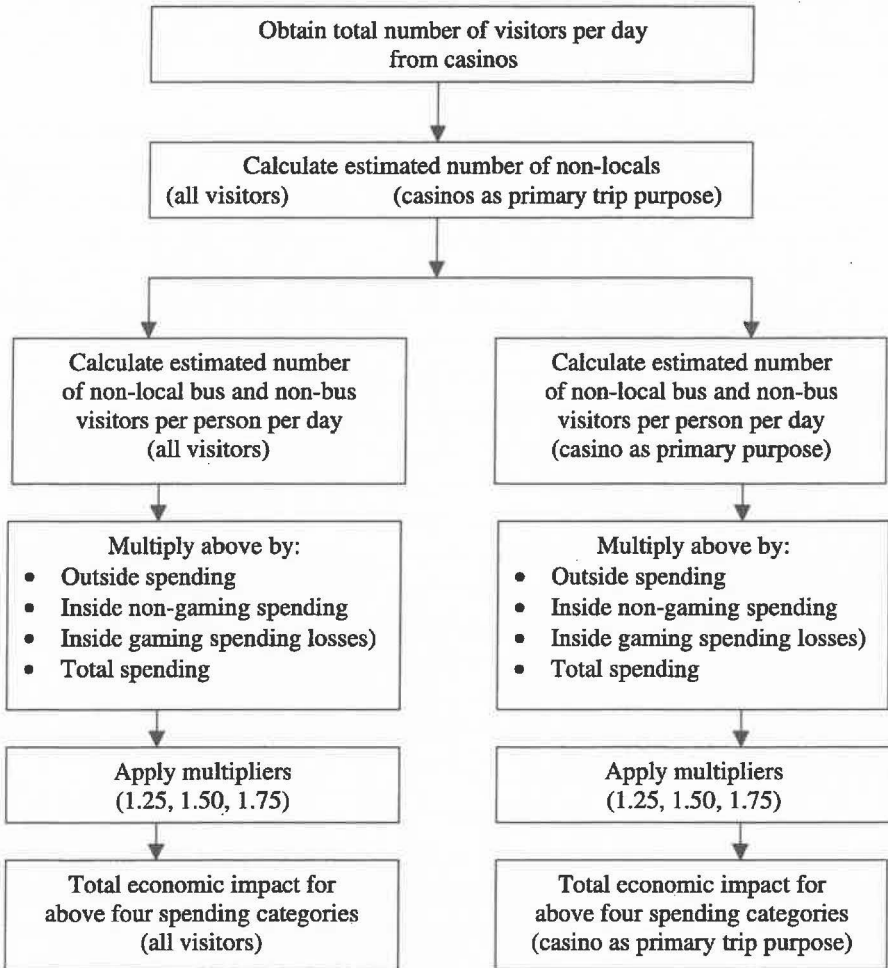
*Sampling:* The two casinos included in this study were MGM Grand Casino and Motor City casino. The first casino opened on July 29, 1999 and the second opened on December 19, 1999. Greektown Casino was not included in the analyses because it opened (November 10, 2000) after the study was launched (March, 2000). Intercept surveys took place at both casinos at the same sampling days and time. The casinos have multiple entrances. To obtain a representative sample of casino visitors, interceptors were stationed at each entrance for varying periods of time. The time frame of the sampling period was five months (May 28, 2000 to September 9, 2000). Two weekends and two weekdays were randomly selected from each month as intercept days. Weekend days included only Saturday and Sunday.

*Sampling frame and sample:* Assessing the economic impact of casino visitors on the local economy required gathering information on visitors who do not reside in the study area. Thus, the non-local casino visitors (1,887 patrons) who were intercepted in the non-gaming area of the casino buildings became the sampling frame for the study. A total of 1,447 phone numbers were collected, representing 76.7 percent of the intercepted non-local patrons.

*Instrument:* The telephone questionnaire consisted of 42 questions and took an average of 12 minutes to complete. It was designed to gather information about visitors' most recent trips to Detroit including trip characteristics, gaming and non-gaming expenditures, gaming behavior, data for marketing purposes, and general demographic information. The instrument was developed over a



two-month period and revised by professors at Michigan State University. The final version of the instrument was piloted on 50 Detroit casino patrons.



*Sample profile:* The largest group of the sample was gamers age 41-50 and those aged 51-60. Over one-half were married (60%). Nearly 10% were divorced and 8% were widow. The greatest majority were employed (51%) and over one-fourth (29%) were retired. A bout one-half of gamers (42%) reported incomes over \$50,000 and 24% had an income under \$37,000. A little over three-fourth (78%) had no children living with them while nearly 3% reported that they had 3 children in their households.

*Economic impact analysis:* Two methods were undertaken to conduct the economic impact analysis. The first method involved step-by-step method.

## ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

In the second method the National Park Service's Money Generation Model 2 (MGM2) was utilized. The step-by-step method offers the economic impact generated by spending inside the casino and spending outside the casino. The second method a more comprehensive set of economic impact estimates related to outputs including sales, jobs, income, and value added effects.

It is generally accepted practice in economic impact analyses to exclude expenditures of visitors who would have visited regardless of the presence of an attraction, in this case Detroit's casinos. Crompton (1999) refers to these visitors as "casuals". Researchers argue that money spent by this segment is not attributable to the attraction, and, therefore, should not be included in economic impacts analyses. However, the presence of an attraction, such as Detroit's casinos, is likely to induce some casual visitors to spend more in the community than if the attraction was not present and others to stay longer than they would otherwise. Such attraction-induced expenditures are difficult to estimate, so they are generally ignored in the interest of generating "defensible" economic impact estimates. Such conservative estimates establish a lower bound for an attraction's true economic impact, but it is also useful to develop an estimate of the true parameter's upper bound. Thus, two economic impact analyses are presented in this study: A "conservative" analysis, where casuals or visitors whose primary purpose was not to visit the casino, were excluded from the economic impact calculations (This estimate serves as the lower bound of the true parameter), and a "comprehensive" analysis which included all non-local visitors to the casino (This estimate serves as the upper bound of the true parameter).

Moreover, casino visitors were divided into two primary gaming segments: Bus visitors and non-bus visitors. Because of their different spending behavior and volume, these two segments were treated separately in the economic impact calculations. A complication recognized at the outset of the casino visitor study was that the casinos could not provide precise counts of their visitors; counts and counting methods are treated as proprietary information and only approximate estimates were obtainable. Furthermore, only an approximate breakdown of the proportion of total visitors between those arriving by bus tour and by other means was obtainable. The separate treatment of these two groups allowed analysts to probe the sensitivity of the economic impact estimate to alternate mixes of bus and non-bus visitors.

### Findings

*Step-by-step method: conservative estimates:* A little more than half (58.8%) of all respondents interviewed indicated that the primary reason for their trip to Detroit was to visit the casino. Of these, 502 respondents were non-bus visitors

(74%); the remaining 131 (24%) were on a charter bus trip. As explained in the methodology section, in order to conduct an economic impact analysis based on visitor spending, the following four steps were necessary: (1) develop per person expenditure estimates, (2) estimate the number of visitor, (3) derive economic impact estimates, and (4) apply the multiplier. These steps are employed below using the data collected from casino visitors.

*Step 1. Developing Per Person Expenditure Estimates:* The following three expenditures estimates were generated. (1) non-gaming related expenditures outside the casino, (2) gaming related expenditures, and (3) non-gaming related expenditures in the casino.

1. Non-gaming related expenditures: The spending of visitors whose primary purpose was the casino is detailed in Table 1. The average total spending per person per day for non-bus visitors was \$29.73. It was \$24.34 for bus visitors.

\* The average party size for the visitors who were not on a charter bus trip is 1.82 persons.

\*\* The average party size for the visitors who were on a charter bus trip is 1.35 persons.

Table 1. Average spending (\$US) per day per party and per person in the Detroit area by type of expenditures for respondents whose primary purpose was to visit the casino. (N=502).

Spending categories	Non-bus visitors per party (1.82)*	Non-bus visitors per person	Bus visitors per party (1.35)* *	Bus visitors per person
Lodging Spending	\$12.55	\$6.97	\$3.04	\$2.25
Food & beverages inside the casino	18.65	10.36	15.21	11.26
Food & beverages outside the casino	8.90	4.94	8.47	6.27
Gasoline purchased inside the Metro area	6.17	3.42	0.0	0.0
Other local transportation spending	0.19	0.10	1.83	1.35
Other expenses	<u>7.06</u>	<u>3.92</u>	<u>4.31</u>	<u>3.19</u>
Average total spending	\$53.52	\$29.73	\$32.86	\$24.34

2. Gaming-related expenditures: Non-bus respondents were asked how much they individually won or lost at the casino during their visit on the day

ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

they were intercepted at the casino. Results are presented in Table 2. Nearly 26% indicated that they came out ahead, about 8% broke even, and over 66% came out behind.

Table 2. Percentage of respondents who came out ahead, behind, and broke even.

Results	Non-bus visitors	Bus visitors
Came out ahead	25.7%	20.3%
Came out behind	66.4	71.1
Broke even	7.9	8.6
Total	100.0	100.0

As can be seen in Table 3, non-bus visitors who came out ahead won, on average, \$398 per person. On average those who came out behind lost \$311 per person.

Table 3. Average outcome of money wagered in the casino.

	Non-bus visitors	Bus visitors
Average \$ amount ahead	\$398.33	\$169.69
Average \$ amount behind	311.53	182.69

*Calculation of average gaming spending per visitor per day:*

Formula: total ahead – total behind/number of observations.

Total ahead= average ahead \* number of visitors who came out ahead.

Total behind= average behind \* number of visitors who came out behind.

Applying this formula, the average gaming spending, per person per day, as indicated in Table 4, was \$104.29 for non-bus visitors and \$95.41 for bus-visitors.

Table 4. Average gaming spending (i.e. loss) in \$US per visitor per day.

	Non-bus visitors	Bus visitors
Total ahead	\$37841.35	\$4411.94
Total behind	76324.85	16624.79
Difference	-38483.50	-12212.85
Divided by # of observations	369	128
Equals mean loss/person	\$104.29	\$95.41

- Total spending per person per day:* Respondents were asked how much they spent on food and beverages inside the casino. As reported in Table 5, average spending per person per day outside the casino was \$19.27 for non-bus

visitors. It was \$13.07 for bus visitors. Non-bus visitors and bus visitors spent \$10.30 and \$11.27 respectively on non-gaming in the casino, \$104.29 and \$95.41 on gaming. Total average spending per person per day was \$133.6 for non-bus visitors and \$119.75 for bus visitors.

*Step 2. Estimation of Number of Visitors:* The estimate provided by the participating casinos of the total number of visitors to both casinos per day is 20,000 visitors. Non-local visitors represent 21% (derived from casino intercepts from this study) of daily visitors or 4,200 given the 20,000 visitors per day total visitors estimate. According to estimates provided by the participating casinos, 5% of the visitors come on a charter bus trip. Thus, non-local daily bus and non-bus visitors numbers can be estimated as follows:

Table 5. Mean spending per person per day in \$US for visitors whose primary trip purpose was to visit the casino.

Spending	Non-bus visitors	Bus visitors
Outside the casino	\$19.27	\$13.07
Non-gaming in the casino	10.30	11.27
Gaming	104.29	95.41
<b>Total</b>	<b>\$133.86</b>	<b>\$119.75</b>

Bus visitors:  $5\% \times 4200 = 210$       Non-bus visitors:  $95\% \times 4200 = 3990$

In order to assess the sensitivity of the final economic impact estimate the bus visitor estimate analysis was also performed assuming bus visitors are 10% of total visitors. The daily visitor per day using this assumption are as follows:

Bus visitors:  $10\% \times 4200 = 420$       Non-bus visitors:  $90\% \times 4200 = 3780$

Visiting the casino was the primary purpose of the trip for 52.1% of the non-bus visitors and 94.2% of the bus visitors. Thus, primary trip numbers are calculated as follows:

Bus visitors (5%):  $94.2\% \times 210 = 198$       Non-bus visitors (95%):  $52.1\% \times 3990 = 2079$

Bus visitors (10%):  $94.2\% \times 420 = 396$       Non-bus visitors (90%):  $52.1\% \times 3780 = 1969$

*Step 3. Deriving Economic Impact Estimates:* In this step of the process, daily spending estimates and visitor count estimates are multiplied to arrive at total spending per day estimates. These are then annualized by multiplying by 365 to arrive at a total direct annual impact per year. Finally, multipliers, ranging from a most conservative 1.25 to a high of 1.75, were used to estimate total economic impact. While the 1.5 mid-range multiplier is the most defensible of

**ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT**

the three used in these calculations, the estimate associated with the 1.25 multiplier establishes a reasonable minimal lower bound for the economic impact estimate, and the estimate using the 1.75 multiplier establishes a reasonable upper bound.

Economic impact estimates are developed for expenditures on goods and services purchases (outside the casino, non-gaming purchases inside the casino, gaming (net loss)), and the three estimates are added to arrive at a total economic impact estimate. Finally, estimates are provided for the 5% bus-95% non-bus visitor mix (the mix indicated as most probable by casino officials) and for a 10% bus-95% non-bus mix.

**Impact of spending outside the casino**

(5% bus-95% non-bus visitor mix)

Non-bus visitors (95%):	2079*\$19.27	=	\$40,062.33
Bus visitors (5%):	198*\$13.07	=	<u>\$2,587.86</u>
<b>Total spending per day</b>			<b>\$42,650.19</b>
<b>Total spending per year (Direct Impact)</b>	<b>365*\$42,650.19</b>	<b>=</b>	<b>\$15,567,319.35</b>

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
<b>Total impact (direct + indirect)</b>	<b>\$19,459,149.19</b>	<b>\$23,350,979.03</b>	<b>\$27,242,808.86</b>

(10% bus-90% non-bus visitor mix)

Non-bus visitors (90%):	1969*\$19.27	=	\$37,942.63
Bus visitors (10%):	396*\$13.07	=	<u>\$5,175.72</u>
<b>Total spending per day</b>			<b>\$43,118.35</b>
<b>Total spending per year (Direct Impact)</b>	<b>365*\$43,118.35</b>	<b>=</b>	<b>\$15,738,197.75</b>

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
<b>Total impact (direct + indirect)</b>	<b>\$19,672,747.18</b>	<b>\$23,607,296.62</b>	<b>\$27,541,846.04</b>

**Impact of non-gaming inside the casino**

(5% bus-95% non-bus visitor mix)

Non-bus visitors (95%):	2079*\$10.30	=	\$21,413.70
Bus visitors (5%):	198*\$11.27	=	<u>\$2,231.46</u>

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Total spending per day \$23,645.16  
 Total spending per year 365\*\$23,645.16 = \$8,630,483.40

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
Total Impact (direct + indirect)	\$10,788,104.25	\$12,945,725.10	\$15,103,345.95

(10% bus-90% non-bus visitor mix)

Non-bus visitors (90%):	1969*\$10.30	= \$20,280.70
Bus visitors (10%):	396*\$11.27	= <u>\$4,462.92</u>

Total spending per day \$24,743.62

Total spending per year 365\*\$24,712.72 = \$9,031,121.30

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
Total Impact (direct + indirect)	\$11,289,276.62	\$13,547,131.94	\$15,804,987.26

**Impact of gaming spending**

(5% bus-95% non-bus visitor mix)

Non-bus visitors (95%):	2079*\$104.29	= \$216,818.91
Bus visitors (5%):	198*\$95.41	= <u>\$18,891.18</u>

Total spending per day \$235,710.09

Total spending per year 365\*\$235,710.09 = \$86,034,182.85

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
Total Impact (direct + indirect)	\$107,542,728.60	\$129,051,274.30	\$150,559,820.00

(10% bus-90% non-bus visitor mix)

Non-bus visitors (90%):	1969*\$104.29	= \$205,347.01
Bus visitors (10%):	396*\$95.41	= <u>\$37,782.36</u>

Total spending per day \$243,129.37

Total spending per year 365\*\$242,816.50 = \$88,742,220.05

	Multiplier 1.25	Multiplier 1.5	Multiplier 1.75
Total Impact (direct + indirect)	\$110,927,775	\$133,113,330.00	\$155,298,885.00

**Total economic impact**

To permit ready comparisons, the set of total economic impact estimates derived from the above calculations are presented in Table 6. The numbers highlighted

ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

are those considered to be the best estimates for most applications. In comparing estimates, it appears that variation in the bus/non-bus visitor impact is of little consequence because the higher per person daily expenditures of non-bus visitors is more than offset by the greater percentage of bus visitors whose primary trip purpose was to visit a casino.

Based on the calculation based here, the casinos generate an impact on the local economy of over \$165 million per year or almost one-half million dollars per day. And, this is a conservative estimate because only expenditures by out-of-region visitors, who indicated visiting a Detroit casino as their primary trip purpose, are included.

Table 6. Summary of economic impact (direct + indirect) in millions of dollars per year

Spending Type	Multiplier		
	1.25	1.5	1.75
<i>Outside the casino</i>		(\$ millions)	
5%bus-95%non-bus	19.46	23.35	27.24
10%bus-90%non-bus	19.67	23.61	27.54
<i>Non-gaming in the casino</i>			
5%bus-95%non-bus	10.79	12.95	15.10
10%bus-90%non-bus	11.29	13.55	15.80
<i>Gaming in the casino</i>			
5%bus-95%non-bus	107.54	129.05	150.56
10%bus-90%non-bus	110.93	133.11	155.30
<i>Total direct + indirect Economic impact</i>			
5%bus-95%non-bus	137.79	165.35	192.90
10%bus-90%non-bus	141.89	170.27	198.64

(for visitors whose primary trip purpose was to visit the casino – conservative estimates).

Step by step method: comprehensive estimates. Economic impacts associated with all non-resident visitors to the casinos is presented in this section. At the outset it is very important to note these estimates do not usually meet accepted standards for measuring economic impact. They are only indicative of the overall impact the casinos have in concert with other things that attract visitors to Detroit such as sporting events, businesses, etc. Some portion of the difference between the estimate presented in this section and the prior section could be credited to the casinos (e.g., impact of expenditures of visitors whose primary purpose was not to visit a casino but who extended their length of stay



because they exist). Data were not collected to approximate how much of the difference between conservative and comprehensive estimates should be attributable to the casinos, but the overall visitor impact estimates do establish an outer bound on the direct economic impact of out-of-region casino visitors and hence have some analytical value. Even these comprehensive estimates are not all-inclusive in that they do not include the casinos' impact in reducing the out-flow of Detroit gaming dollars to other gaming venues.

Comprehensive estimates were calculated based on similar steps and calculations employed to estimate the conservative estimates. Total direct and indirect economic impacts for all non-local casino visitors, assuming that the proportion of bus and non-bus is 5% and 95% respectively, and applying a multiplier of 1.5, was \$286.01 million. A summary of results is presented in Table 7 (page, 23).

*The National Park Service's Money Generation Model:* Conservative and comprehensive economic impact estimates were generated by in-putting data in the MGM. Stynes (1999, p. 4) explains: "The MGM was developed by the National Park Service (NPS) to generate quick and inexpensive estimates of the economic impact of National Park visitor spending on the region's economy. In it's simplest form, the MGM relies on agency records for estimates of visits, American Automobile Association (AAA) estimates of per person per day lodging and meals expenses to estimate spending, and judgment or available sources for multipliers. A pretty good aggregate estimate of impacts can be obtained with this simple method if one has accurate visitation data, spending data that adequately represent the visitors, and multipliers for the local region. The default values suggested in the MGM manual are unlikely to provide accurate estimates for most applications".

Table 7. Summary of total economic impact (direct + indirect) in \$millions per year (for all non-local casino visitors –comprehensive estimates).

Spending Type	Multiplier		
	1.25	1.5	1.75
Outside the casino		(\$ millions)	
5%bus-95%non-bus	86.93	104.31	121.70
10%bus-90%non-bus	84.12	100.94	117.77
Non-gaming in the casino			
5%bus-95%non-bus	14.64	17.56	20.49
10%bus-90%non-bus	14.94	17.93	20.92
Gaming in the casino			
5%bus-95%non-bus	136.78	164.14	191.49
10%bus-90%non-bus	139.96	167.96	195.95
Total direct + indirect Economic impact			
5%bus-95%non-bus	238.35	<b>286.01</b>	333.68
10%bus-90%non-bus	239.02	286.83	336.64

## ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

*Conservative estimates:* Conservative estimates of the direct and total economic impacts of visitors' spending results are presented in Table 8 and indicate that casino visitors generate an annual total of \$167 million in output/sales, over \$60 million in personal income, a little over \$98 million in value added, and 4,015 jobs.

Sales are the direct sales in business receiving the visitor spending.

Personal income is the income resulting from direct sales. It includes wages, salaries, proprietor's income, and employee benefits.

Value added includes personal income plus rents, profits and direct business taxes.

Table 8. Direct and total economic impacts of visitors spending (*Conservative estimates using NPS Money Generation Model 2*).

Economic measure	Per Day		Annual	
	Direct effect	Multiplier	Total effects	Total effects
Output/sales	\$294,000	1.56	\$458,000	\$167.2 million
Personal income	\$105,000	1.58	\$166,000	\$60.6 million
Value added	\$168,000	1.61	\$269,000	\$98.2 million
Jobs	8	1.27	11	4,015

Jobs are an estimate of the number of jobs supported by these sales.

*Comprehensive estimates:* Comprehensive estimates of the direct and total economic impacts of visitors spending results are presented in Table 9 and indicate that casino visitors generate an annual total of \$279 million in output/sales, about \$102 million in personal income, a little over \$106 million in value added, and 6,205 jobs.

Table 9. Direct and total economic impacts of visitor spending (*Comprehensive estimates using NPS Money Generation Model 2*).

Economic measure	Per Day		Annual	
	Direct effect	Multiplier	Total effects	Total effects
Output/sales	\$492,000	1.56	\$765,000	\$279.2 million
Personal income	\$178,000	1.58	\$279,000	\$101.8 million
Value added	\$280,000	1.61	\$450,000	\$164.2 million
Jobs	14	1.27	17	6,205

### Discussion:

Several studies have assessed the economic impacts of gaming on a local economy, however, the method(s) and technique(s) used are seldom explained or detailed, and the results are most of the time aggregated into one dollar

figure. In this study, two methods were employed to estimate the economic impacts of gamers. Gamers have been defined as casino visitors who did not reside in the study area. The step-by-step method was applied to detail the impacts of gamer trip spending inside the casino and outside the casino. The second method employed the National Park Service (NPS)'s Money Generation Model 2 (MGM2). This method offers a more comprehensive set of economic impact estimates related to outputs including sales, jobs, income, and value added effects. Furthermore, two approaches were used in the analysis. One approach was referred to as the conservative estimates and the other the comprehensive estimates. The purpose for using these two approaches was to provide the reader with an alternative that allows for comparison. For example, in several gaming economic impact studies there is no indication to whether the researcher included all visitors or only visitors whose primary trip purpose was the casino in the analysis. That is these visitors would not have visited the community had the casinos not been there. The inclusion of what Crompton (1999) calls "casuals" or those who would have come to the community regardless of gaming, would, of course, inflate the results, and in turn may mislead decision makers.

Because economic impact studies underlie several assumptions, there is "unfortunately (... ) a temptation to adopt inappropriate procedures and assumptions in order to generate high economic numbers that will position an agency more favorably in the minds of elected officials" (Crompton, 1999, p. 17). Crompton further explains that "sometimes such errors are the result of a genuine lack of understanding of economic impact analysis and the procedures used in it, but in other instances they are committed deliberately and mischievously to generate large numbers and mislead stakeholders" (Crompton, 1999, p. 17). Economic impact studies are undertaken to support an action (Stynes, 1999).

Casino gaming development has been a subject of heated debates in the public policy agenda because gaming is a controversial activity that has social, moral, and ethical issues (Cabot, 1996). Like other tourism developments casino gaming may have positive and/or negative impact on the community. In this study concern was on the benefits of casino gaming development. Results were based on casino visitors' spending.

It was estimated that all non-local casino visitors (Comprehensive estimates) generated over \$104 million outside the casino, over \$17 million on non-gaming in the casino, and over \$164 on gaming in the casino. This yields a total economic impact of \$286 million, in addition to about \$102 million in personal income, a little over \$106 million in value added, and 6,205 jobs, annually (5%

## ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

bus visitors and 95% non-bus visitors with a 1.5 multiplier). Conservative estimates consider only visitors whose primary trip purpose was to visit the casino(s). That is if the casinos did not exist they would not have visited the community. It was estimated that these visitors generated over \$23 million outside the casino, about \$13 million on non-gaming in the casino, and a little over \$129 on gaming in the casino. This yields a total economic impact of a little over \$165 million, in addition to over \$60 million in personal income, a little over \$98 million in value added, and 4,015 jobs, annually (5% bus visitors and 95% non-bus visitors with a 1.5 multiplier).

Results indicate that gaming is a significant component of Detroit tourism and has substantial economic impact on the local economy. This study provides quantitative estimates of the importance of the two Detroit casinos that opened in 1999, based on gamer spending on trips. Precise estimates of spending are difficult to obtain because of the several potential problems that are inherent in survey research. Telescopic error and sampling error are directly associated with gaming research. For example, besides that respondents may not accurately recall their trip spending patterns detailed by spending category, they tend to either overestimate or underestimate their spending. It is possible that, in the case of casino gaming, some respondents may deflate their spending on gambling games for personal, moral or ethical reasons (for example, they do not want to be identified as reckless spenders or problem gamblers). Moreover, total number of casino visitors provided by casino officials may be subject to sampling error or inaccurate reporting.

It is generally recognized that economic impact analysis is not an exact process (e.g., Crompton, 1999). Crompton (1999, p. 16-17) explains: "Indeed, if a study was undertaken by five different individuals, then it is probable that there would be five different results". While the accuracy of any single estimate of the economic impact of the casinos on the Detroit economy could be legitimately disputed, careful analyses built upon sound alternative assumptions can portray the upper and lower bounds which capture the economic impact of the casinos. This study offered conservative estimates and comprehensive estimates, as well as estimates based on the assumption that casino bus visitors constituted 5% of the total number of visitors and estimates based on the assumption that they constituted 10% of the total number of visitors. Such a transparent approach permits other analysts to substitute their own assumptions to refine our estimates. It also permits selection of estimates most suitable to the potential users needs. (For example, one most interested in the economic impact of all non-resident casino visitors would find our comprehensive impact to be most appropriate).

According to Frechtling (1994, p. 362) it is important to judge methods of estimating travel's economic impact "by some formal criteria that permit the objective evaluation of the quality of a model". The criteria proposed by Frechtling are: relevance, coverage, efficiency, accuracy, and transferability. The following discussion gives a description of each criterion and discusses the content of the present study in light of these criteria.

Relevance –the approach should measure tourism's economic impact and not that of some other activity. Three aspects of the approach should be of particular interest in term of relevance: Does it relate to travel alone? Does it fairly represent the area under study and only that area? And does it cover the time period under study? The present study assessed the economic impact of visitors to two Detroit casinos. Specifically, it provided comprehensive as well as conservative estimates based on visitor spending of each group, namely all non-local casino visitors, and non-local casino visitors whose primary trip purpose was to visit the casino. All visitors were intercepted in the casino and only non-local visitors were included in the analysis. Respondents were specifically asked to report trip expenditures on the day they were interviewed in the casino.

Coverage –the approach should also cover all travel away from home and related activities. Expenditures during the trip covered spending inside the casino on gambling, spending inside the casino on non-gambling activities, food and beverage consumption inside and outside the casino, public transportation inside the study area, gasoline purchased inside the area, and incidental purchases such as souvenirs. Expenditures observed occurred in the area under study. However, the impact of purchases in anticipation of the gaming trip was not included in this study. This may not be a significant limitation for it was found by the present study that about one-quarter of casino visitors (69%) were day-trippers.

Efficiency – Primary-data collection is costly and should be avoided whenever possible in favor of relevant, comprehensive, and accurate secondary data. MGM Grand Casino opened to the public in Detroit in July 1999, Motor City casino started operating in December 1999, and the project to assess their economic impact was launched in Summer 2000. No secondary data had been identified by then. This study has generated primary data based on visitor spending. The project for conducting the study was sponsored by the Greater Detroit Convention and Visitors Bureau (CVB). So, primary data collection was not costly because it was part of the CVB research budget and also because Michigan State University (MSU)'s students and staff contributed some of their time to the overall project.

## ECONOMIC IMPACT OF CASINO GAMING DEVELOPMENT

*Accuracy* –the approach should also be judged on the basis of its accuracy: Are the input data accurate measures of travel activity? Does the approach accurately reflect real relationships? Are the results reasonable? This involves investigating the techniques used to generate primary data. This study has detailed to the extent possible the steps, techniques, and methods that have been employed in the purpose of achieving objective results. It remains, however, that there is no threshold that indicates whether the economic impact dollars estimated by this study are important or not.

*Transferability* –The main objective here is an approach that is feasible in different areas for different time periods and that produces consistent results in varying contexts. It is the hope of this study that the approach used is judged reliable in that it provides researchers with the necessary tools to duplicate this study (and come to similar results), or conduct a similar study in another location and produce sound and reliable information that enlightens decision-makers with regards to casino gaming development in respective jurisdictions.

### Considerations for Future Research

It is worth noting that data collection for the economic impact analysis did not include the Greektown Casino. It opened after the data collection for this study was completed. The opening of the Greektown Casino may have different impacts on community tourism-related businesses. Probably, the inclusion of the Greektown Casino in the economic impact analysis would have yielded higher economic impact estimates than those indicated in this study. The location of the casino in the entertainment district “downtown Greektown” may entice visitors to spend more money outside the casino. The number of tourist-oriented businesses in close proximity to the Motor City and MGM Grand casinos is far less than in Greektown. Furthermore, the Detroit permanent casinos will have different impacts on the community than the temporary ones. Each of the permanent casinos that are planned to open in 2005-2006 will include 400 hotel rooms complimented by new restaurants, conference facilities, retail shops and theaters, and 100,000 square feet of gaming space (Ten Year Tourism Plan Unveiled, 2002).

The reduced leakage of gaming dollars out of the Tri- county Metro Detroit area (Macomb, Wayne, and Oakland county) was not an objective of this study, although a retained dollar has an equivalent effect to a new dollar on the area’s economy. Given the very close proximity of Casino Windsor, Canada, and even the somewhat more distant Soaring Eagle Casino in Mt. Pleasant, Michigan, the two new Detroit casinos have certainly had a major role in retaining gaming dollars that would have otherwise leaked out to Canada and to Isabella County. Thus, the economic impact estimate presented herein is considerably less than

the full impact the new casinos have had on the Tri-county Detroit Metro area. An assessment of the impact of the Detroit casinos on Casino Windsor's visitation could add more insight into the function of the Detroit casinos.

Tourism activity also involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community (Stynes, 2004). Thus, several other economic and social indicators warrant consideration. There is general agreement among tourism/gaming researchers that economic, social, political, and environmental costs may emerge with gaming development. There are other social and economic indicators that are associated with gaming development which are potential costs to communities. These costs need to be investigated as well (Gazel, 1998; Chadbourne, Walker and Wolfe, 1997).

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### *About the Author*

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**Omar Moufakkir** has earned his Ph.D from Michigan State University, Parks, Recreation and Tourism Resources. He is currently teaching tourism management courses, with focus on research methods, at the CHN-University of Professional Education in Leeuwarden, The Netherlands. His current research interest is in tourism crisis management and cultural tourism.