

**The Economic Impact of Motorcoach Tourism in Pigeon Forge Tennessee**



**Prepared by  
GuerrillaEconomics, LLC**

**Prepared for  
The American Bus Association Foundation  
BOHAN Advertising**

**March 4, 2007**

## Executive Summary

- ❖ About 880 companies sent as many as 5,070 motorcoaches to the Pigeon Forge area<sup>1</sup> in 2005. These buses carried approximately 200,700 overnight guests and 6,400 day-trippers.
- ❖ In sum, about \$87.6 million was spent on or by guests coming to Pigeon Forge by motorcoach in 2005. Of this, \$21.92 million was spent on food and beverages, \$17.99 million on retail purchases, \$16.27 million on admissions fees to attractions and almost \$30.47 million on lodging.
- ❖ In addition to this spending on the tourism sector, motorcoach operators spend as much as \$2.5 million in Pigeon Forge on operational expenses like fuel, parking or repairs.
- ❖ The spending supported as many as 2,100 jobs in the local economy (see table below). The total economic impact of motorcoach tourism was nearly \$76 million.

### Summary of Total Economic Impact<sup>2</sup> by Industry Motorcoach Tourism in Pigeon Forge, Tennessee

Industry	Employment	Value Added	Compensation
Total Impact	2,092.7	\$ 75,957,111	\$ 47,345,792
Retail Trade	435.5	\$ 16,983,096	\$ 10,254,964
Food services and drinking places	513.4	\$ 11,143,879	\$ 7,930,724
Performing arts companies	298.1	\$ 298	\$ 298
Lodging and Hotels	444.5	\$ 444	\$ 444
Museums, Historical Sights Etc	142.9	\$ 143	\$ 143
Transit and ground passenger transportation	53.9	\$ 54	\$ 54
All Other	204.4	\$ 47,829,196	\$ 29,159,165

- ❖ It is estimated that \$8.895 million in state and local tax revenues were generated from motorcoach based tourism in the Pigeon Forge area. Of this \$5.452 million came from sales and use taxes, nearly \$1,720,000 from property taxes and about \$31,600 from income taxes.

### Summary of Total Economic Impact by Tour Type

Trip Type	Average Number of Passengers	Average Package Price	Spending Per Passenger	Local Percentage	Total Impact
Day Trip	40.78	\$ 66.29	\$ 63.31	62%	\$ 3,257.58
One Night Trip	40.78	\$ 225.00	\$ 63.31	84%	\$ 9,908.11
Two Night Trip	40.78	\$ 450.00	\$ 126.62	84%	\$ 19,816.21
Three Night Trip	40.78	\$ 675.00	\$ 189.94	84%	\$ 29,724.32
Four Night Trip	40.78	\$ 900.00	\$ 253.25	84%	\$ 39,632.43

- ❖ The average day trip to Pigeon Forge brings about \$3,250 to the local economy, while the average overnight bus trip generates and impact of just over \$9,900.
- ❖ Even though the economic impact of motorcoach tourism is concentrated, 59 different industries are significantly impacted by either motorcoach based tourists or bus operations.
- ❖ The jobs supported by motorcoach tourism tend to be those held by many of Pigeon Forge's lower income residents. In fact, nearly 25 percent of the jobs are in the restaurant and bar sector, an area that tends to employ many people who are just entering the labor force.

<sup>1</sup> Defined as Sevier County, Tennessee.

<sup>2</sup> Value added is not always equal to spending. For example, if a motorcoach tourist purchases a t-shirt from a Sevierville retailer for \$10, it is likely that most of the actual value of the item was generated in another location. For example, if the shirt was manufactured in North Carolina, designed in New York City and warehoused in Cincinnati, only the part of the \$10 added by the retailer (likely about \$2.50) is included in this \$29 million figure. Employee compensation is included in value added. Compensation is equal to wages and benefits to employees in the defined industry.

## Introduction

With only 79,280 residents, Sevier County, Tennessee, is a much more exciting and dynamic place than its population would suggest. Comprised of the towns of Gatlinburg, Pigeon Forge, Pittman Center and Sevierville, Sevier County and the Pigeon Forge area is home to some of the nation's premier tourism destinations including Dollywood, The Great Smoky Mountain National Park, and dozens of theatres, attractions and shopping centers.

It has been estimated that the Greater Pigeon Forge area is the third largest destination for visitors to Tennessee. According to a study conducted in 2005, these visitors spent a total of \$1.21 billion in the county, which led to the creation of a total of 17,700 jobs.<sup>3</sup>

One of the ways that tourists visit Pigeon Forge is by motorcoach.<sup>4</sup> In fact, based on the analysis presented in this paper, it is estimated that over 207,000 tourists visit Sevier County on a motorcoach based tour each year (either on a day-trip or as an overnight visitor). This does not count passengers on intra-city based tours (for example those traveling from Dollywood to The Great Smoky Mountains on a local tour bus).

Tourists visiting attractions and events in the Pigeon Forge region can provide significant economic benefits to local businesses, generate sales and excise tax revenues for the cities and the county, and provide needed attendees for local cultural attractions also frequented by Sevier County residents. All of these activities serve to stimulate the local economy.

The purpose of this report is to quantify the linkages between motorcoach based tourism and the regional economy and to document their economic contributions to the people of Pigeon Forge. In order to examine this impact, telephone interviews were conducted with motorcoach carriers to collect data on the number and duration of tours, lodging information, and other spending. These data were combined with information collected from a self-administered survey of visitors, and analyzed using a regional input-output model developed by the Minnesota IMPLAN Group to calculate the full economic impact of the motorcoach tourism in the Sevier County area.

The results suggest that these visitors make a significant contribution to the regional economy both in terms of outputs and jobs. They bring in a substantial number of visitors who stay in local hotels, make purchases including admissions tickets, food, gasoline, and general merchandise. This initial spending amounts to nearly \$90.1 million. The economic impact of this spending on Sevier County is nearly \$76 million, generating as many as 2,100 regional jobs and almost \$9 million in tax revenues.<sup>5</sup>

A separate economic impact analysis of the town of Pigeon Forge only is included as an appendix to the report.

---

<sup>3</sup> *The Economic Impact of Travel on Tennessee Counties 2004*, Prepared for the Tennessee Department of Tourist Development by the Research Department of the Travel Industry Association of America, Washington, August 2005.

<sup>4</sup> In this case, the motorcoach tourism industry is defined as all spending by non-scheduled motorcoach operators and passengers on visits to Pigeon Forge. The analysis does not include spending by passengers to Sevier County on scheduled service by common carriers or on intra-regional travel such as on transit busses.

<sup>5</sup> Full-time equivalent positions.

## Background

This report focuses on the economic impact of motorcoach based tourism in Sevier County, Tennessee (hereafter referred to as Pigeon Forge). GuerrillaEconomics, LLC was commissioned by the BOHAN Advertising and the American Bus Association Foundation to conduct this research in the fall of 2006. This analysis is based on data collected from a telephone survey of 31 bus operators, and a user initiated surveys of passengers on tours to Pigeon Forge. Data were collected during the late fall and early winter of 2006.

This is the sixth in a series of reports sponsored by the ABA Foundation examining the economic impact of motorcoach tourism on specific destination markets. The first, which was released in January 2002, examined the impact in Washington, D.C., Lancaster, Pennsylvania, and New York City. The second report, which was released in June 2005, examined data for Chicago Illinois. Both of these reports were conducted by students and professors from the George Washington University, and presented data on total spending by motorcoach tourists in each of the venues. Subsequent reports have examined the impact of motorcoach based tourism in Cleveland, Ohio, Pittsburgh, Pennsylvania and the state of West Virginia.

This analysis, examines similar data for the Pigeon Forge region. It is based on extensive surveys of motorcoach operators and passengers in the market. The data are then imported into an input-output model of the Pigeon Forge economy and estimates of total economic impact, employment, wages and tax revenues are calculated. The analysis uses a comprehensive input-output modeling framework first developed by the US Government and now maintained by the Minnesota IMPLAN Group. This is one of the standard methodologies used in economic impact modeling.

### Comparative Sales Statistics

	Day Trip Sales	Overnight Sales	Total Sales
Chicago GWU Study	\$ 33,793,411	\$ 15,423,473	\$ 49,216,884
Greater Cleveland Study (Guerrilla Economics)	\$ 19,866,748	\$ 4,819,471	\$ 24,686,219
Pigeon Forge Study	\$ 425,740	\$ 90,283,308	\$ 90,709,048

Data gathered from the surveys conducted by GuerrillaEconomics staff, along with additional information from the Pigeon Forge Department of Tourism, the American Bus Association Foundation, Dun & Bradstreet, and other sources was used in this analysis. Statistical tests were performed on data and models to insure consistency and accuracy. Summary results were compared to prior surveys of motorcoach tourism to Cleveland and to the Chicago area to insure that they were within normal parameters. The table below compares estimates of total sales from the projected number of motorcoach tourists from three different sources. The results from this study are significantly higher than estimates from a survey of operators by the Greater Cleveland CVB, as well as those found in a George Washington University analysis of tourism in the Chicago market.<sup>6</sup> This likely reflects the importance of specific Pigeon Forge destinations for the motorcoach travel market. In addition, it appears as if Pigeon Forge has a significantly larger share of overnight motorcoach visitors than do either Chicago or Cleveland.

<sup>6</sup> Neirotti, Lisa Delpy, Bus Tours and Bus Passengers: Impact on Chicago's Economy, prepared for the American Bus Association Foundation, Washington, D.C. May 2005. Note that the figures in this table represent package sales comparisons. They do not necessarily reflect the sales numbers used in the impact analysis.

This analysis also conforms to provisions outlined in the economic literature pertaining to the impact of the tourism industry. Generally, tourism is defined as a set of socio-economic activities carried out either by or for tourists. Tourism is primarily a consumption activity. Therefore, the size of tourism in an economy is often measured by total expenditure in the economy for tourism purposes.<sup>7</sup> Tourism has both a demand side and a supply side; however, to correctly measure the size of tourism and estimate tourism's contribution to GDP, an input-output framework should be used.

---

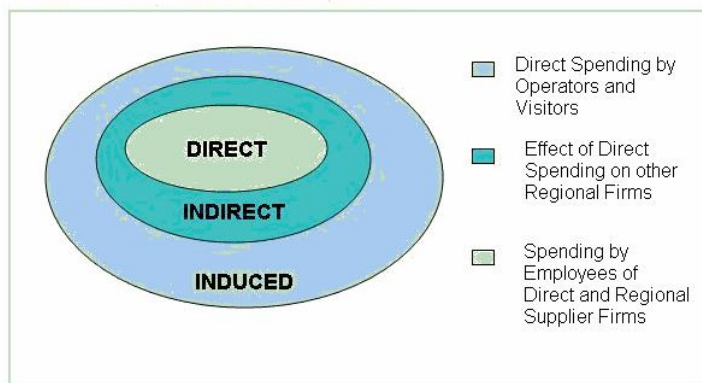
<sup>7</sup> See: Han, Xiaoli, and Bingsong Fang, *Measuring the size of tourism and its impact in an economy*, Statistical Journal of the UN Economic Commission for Europe; Vol. 14, Issue 4, 1997 and Vaughn, D.R., et. al., *Estimating and interpreting the local economic benefits of visitor spending: an explanation*, Leisure Studies, Volume 19, 2000.

## Methodology

The economic impact analysis of motorcoach tourism in Pigeon Forge begins with an accounting of spending in the various sectors of the economy. Tourism is not a defined industry like steelmaking, or publishing, but rather encompasses a wide range of companies in many parts of the economy. As such, the definition of tourism can be interpreted differently depending on the context of the analysis.

In this case, the motorcoach tourism industry is defined as all spending by non-scheduled motorcoach operators and passengers on visits to Pigeon Forge. The analysis does not include spending by passengers to Sevier County on scheduled service by common carriers or on intra-regional travel such as on transit busses. The analysis includes spending on operations, lodging, food and beverages, admissions and incidentals in the City of Pigeon Forge and the surrounding Sevier County region; however, it only includes spending directly related to passengers. If, for example a carrier has a regional repair facility located in Gatlinburg, while this certainly

generates jobs, taxes and economic activity in the city, these impacts are not included in this particular analysis.



The data are based on responses to telephone based surveys with tour operators and mail back surveys of passengers.

It is sometimes mistakenly thought that initial spending accounts for all of the impact of an economic activity or a

product. For example, at first glance it may appear that consumer expenditures for say lunch at a restaurant are the sum total of the impact on the local economy. However, one economic activity always leads to a ripple effect whereby other sectors and industries benefit from this initial spending. This inter-industry effect of an economic activity can be assessed using multipliers from regional input-output modeling.

The economic activities of events are linked to other industries in the state and national economies. The activities required to produce a lunch, from obtaining foodstuffs, to shipping, to purchasing natural gas for the stove generate the direct effects on the economy. Regional (or indirect) impacts occur when these activities require purchases of goods and services such as building materials from local or regional suppliers. Additional, induced impacts occur when workers involved in direct and indirect activities spend their wages in the region. The ratio between total economic and direct impact is termed the multiplier. The framework in the chart on the prior page illustrates these linkages.

There are a number of methods available for conducting an economic impact analysis; however, we believe that the input-output methodology is both the most appropriate and the easiest to understand. Unfortunately, this type of analysis is easily abused, and many studies are published

that present totally inflated and unrealistic “multiplier effects” of an industry or activity.<sup>8</sup> In this analysis we are careful to not only include the appropriate impacts, but are very cautious in our application of industry multipliers.

This method of analysis allows the impact of local production activities to be quantified in terms of final demand, earnings, and employment in the state and the Pigeon Forge region.

Once the direct impact of the industry has been calculated, the input-output methodology discussed below is used to calculate the contribution of the supplier sector and of the re-spending in the economy by employees in the industry and its suppliers. This induced impact is the most controversial part of economic impact studies and is often quite inflated. In the case of the motorcoach model, only the most conservative estimate of the induced impact has been used.

---

<sup>8</sup> We have reviewed a large number of other studies that present the economic impact of an activity as a series of spending cycles. When this is done, the direct and supplier impacts (often called induced impacts) are calculated in much the same way as we have in this study. The difference lies in the calculation of the induced impacts (the multiplier effect). While we conservatively define the induced impact to be solely the result of re-spending by the employees counted in the direct and supplier impact, many other analysts include round after round of supplier re-spending. In other words, if we were to calculate the economic impact of automobile manufacturing, we would include the production of glass for the windows and the re-spending on say household items by workers in the glass factory. We would not, however, include the economic impact of the sand and natural gas that went into the production of the glass, for this is not the economic impact of the automobile industry, but rather of the glass industry.

## Model Description and Data

This Economic Impact (Model) was developed by GuerrillaEconomics, LLC based on data provided by D & B, Inc., the Pigeon Forge Department of Tourism, The American Bus Association Foundation and the federal government. The analysis utilizes the Minnesota IMPLAN Group Model in order to quantify the economic impact of the motorcoach based tourism on the state of Tennessee and the Pigeon Forge area. The model adopts an accounting framework through which the relationships between different inputs and outputs across industries and sectors are computed. This model can show the impact of a given economic decision – such as a factory opening or operating a sports facility – on a pre-defined, geographic region. It is based on the national income accounts generated by the US Department of Commerce, Bureau of Economic Analysis (BEA).<sup>9</sup>

Every economic impact analysis begins with a description of the industry being examined. In the case of this model, the motorcoach tourism industry is defined as to incorporate firms in the following economic sectors:

- ❖ Motorcoach Transportation: Including firms that transport individuals from outside of the Pigeon Forge area into the County. The Motorcoach Transportation sector also includes company-owned offices and operations located within the region.
- ❖ Lodging: This includes hotels, motels, hostels and other operations involved in housing visitors to the Pigeon Forge area.
- ❖ Eating and Drinking Places: This includes all restaurant and bars selling food and beverages to visitors while in the Pigeon Forge area. Sales may be made directly to the carrier and be included in the package price, or may be made directly to the visitor themselves.
- ❖ Retailing: This includes firms involved in the sale of retail goods to motorcoach visitors. Model limitations preclude the inclusion of ABC stores, military stores, colleges, or other government owned outlets as part of the retailing sector.
- ❖ Attractions and Events: This includes firms involved in either the entertainment or educational industry. Organizations such as museums, amusement arcades and parks, theaters are also included in this sector.
- ❖ Arts: This includes all firms involved in either the visual or performing arts. It only includes spending by visitors, as all admissions fees are included in the Amusement sector.
- ❖ Personal Services: This includes firms providing personal services to (mostly) overnight guests. Firms in this sector would include hair stylists, health clubs, dry cleaners, laundries and shoe shine stands.

---

<sup>9</sup> RIMS II is a product developed by the U.S. Department of Commerce, Bureau of Economic Analysis as a policy and economic decision analysis tool. IMPLAN was originally developed by the US Forest Service, the Federal Emergency Management Agency and the Bureau of Land Management. It was converted to a user-friendly model by the Minnesota IMPLAN Group in 1993.



Data were gathered from two separate surveys. The first consisted of an extensive telephone interview with 31 motorcoach operators. This is 4 percent of the estimated 882 carriers that operate tours in Pigeon Forge.<sup>10</sup> This survey was enhanced with a self-administered mail-back survey of visitors to Pigeon Forge taken over a three month period from October 2006 to January 2007. The data were statistically validated and entered into our model of the Tennessee economy. More detail on the surveys and copies of the instruments are presented as an appendix to this report.

In addition to spending on or by tourists, estimates of motorcoach company operating expenses were developed based on the multipliers and margins included in the IMPLAN model of the state of Tennessee. The model contains estimates of all of the components used in providing each dollar of motorcoach transportation. For example, 7.1 percent of each dollar generated by motorcoach operators is attributable to petroleum refining, and 3 percent to automotive parts and accessories. Since only part of this spending by carriers will be spent in the Pigeon Forge area, the total must be adjusted to reflect the percentage of each sector of the state economy located in Pigeon Forge. This is done using data from Dun and Bradstreet. Businesses in Tennessee are located by zip code, and the percentage in each industry located in Sevier County is calculated. These percentages are applied to each margin in the analysis. The final result is that 8.5 percent of the motorcoach operational spending will be in the county.

The IMPLAN Group model is designed to run based on the input of specific direct economic factors. It uses a detailed methodology (see Methodology section) to generate estimates of the direct, supplier and induced impacts, as well as federal, state and local tax collections resulting from the spending described above. In the case of this model, sales from motorcoach tourism and tourists are used as a base starting point for the analysis. Sales are estimated based on the results of the two surveys outlined in the Appendix. This data was supplemented by information provided to GuerrillaEconomics by Dun & Bradstreet, Inc. as of January 2007. Dun & Bradstreet data is recognized nationally as a premier source of micro industry data. The D&B database contains information on over 15 million businesses in the United States.<sup>11</sup> It is used extensively for credit reporting, and according to the vendor, encompasses about 98 percent of all business enterprises in the country. This data is gathered at the facility level; therefore, a company with a retail store, warehouse and sales office would have three facilities, each with separate employment counts.

The initial inputs for the model come from the spending estimates that come from the two surveys. This includes spending by motorcoach companies on services like lodging, food and beverages and admissions, as well as consumer spending on food, retail purchases, entertainment, personal services etc. In addition, the estimate of spending on motorcoach operations in Pigeon Forge directly resulting from the transportation of tourists is included. These spending estimates are entered into the appropriate industries in the model and either

---

<sup>10</sup> This is the total number of carriers operating in Pigeon Forge as defined by the ABA plus all additional carriers located within the eastern half of the United States adjusted by the margin serving the Sevier county area.

<sup>11</sup> The D&B information database updates over 1 million times a day, over 350 million payment experiences are processed annually, and over 110 million phone calls are made to businesses. In addition, D&B uses a patented matching technology and over 2,000 information computer validations to ensure a high standard of data quality.

household (personal spending) or industry (company spending) margins are applied. All data and models are adjusted by inflation to 2005 dollars.<sup>12</sup>

Once the initial direct spending figures have been established, they are entered into a model linked to the IMPLAN database, with the appropriate marginal adjustments taken to ensure that the model is working solely off of consumer spending estimates. The IMPLAN data are used to generate estimates of direct wages and output in each of the sectors in the motorcoach tourism industry. Wages are derived from data from the U.S. Department of Labor's ES-202 reports that are used by IMPLAN to provide annual average wage and salary establishment counts, employment counts and payrolls at the county level. Since this data only covers payroll employees, it is modified to add information on independent workers, agricultural employees, construction employees, and certain government employees. Data are then adjusted to account for counties where non-disclosure rules apply. Wage data include not only cash wages, but health and life insurance payments, retirement payments and other non-cash compensation. It includes all income paid to workers by employers.

Total output is the value of production by industry in a given state. It is estimated by IMPLAN from sources similar to those used by the BEA in its RIMS II series. Where no Census or government surveys are available, IMPLAN uses models such as the Bureau of Labor Statistics Growth model to estimate the missing output.

The model also includes information on income received by the Federal, State and Local Governments, and produces estimates for the following taxes at the Federal Level: Corporate Income; Payroll, Personal Income, Estate and Gift, and Excise taxes, Customs Duties; and Fines, Fees, etc. State and local tax revenues include estimates of: Corporate Profits, Property, Sales, Severance, Estate and Gift and Personal Income Taxes; Licenses and Fees and certain Payroll Taxes.

While IMPLAN is used to calculate the state level impacts, Dun and Bradstreet data provide the basis for regional estimates. Publicly available data at the county level is limited by disclosure restrictions, especially for smaller sectors of the economy like motorcoach operations. This model therefore uses actual physical location data provided by Dun and Bradstreet in order to allocate jobs – and the resulting economic activity – by county. The Pigeon Forge area is assumed to be Sevier County. Job allocations are based on the percentage of total jobs physically located in the county. Physical locations are based on either actual address of the facility, or the zip code of the facility, with facilities placed randomly throughout the zip code area. All supplier and indirect jobs are allocated based on the percentage of a state's employment in that sector in each of the counties. Again, these percentages are based on Dun and Bradstreet data.

The results of the model are presented in the following four sections of this report.

---

<sup>12</sup> Please note that the actual model relationships are as of 2004, the last year for which data are available.

## Direct Impacts

Direct economic impacts are best defined as activities that one can actually count. Therefore, the direct economic impact of motorcoach tourism in Pigeon Forge consists of those jobs and the economic activity generated by the initial spending by the 200,000 visitors and 5,000 buses. The spending itself is not equal to the economic impact as much of the money will be paid out to regional, national or even international suppliers and will not stay in the Sevier County economy.

### Summary of the Size of the Motorcoach Tourism Industry Pigeon Forge Tennessee

Data Element	Value
Number of Companies	882
Number of Buses	5,072
Number of Visitors	207,104
Daytrip	6,422
Overnight	200,681
Spending By Category	
Lodging	\$ 30,472,588
Food and Beverage	\$ 21,923,144
Theatre and Amusements	\$ 982,373
Retail Purchases	\$ 17,993,357
Admissions	\$ 16,270,259
Total Tourist Spending	\$ 87,641,721
Bus Company (fuel etc.)*	\$ 2,498,229
Total Spending in Pigeon Forge	\$ 90,139,950
Spending Per Person	\$ 423.18
Bus Per Person	\$ 12.06

Note: Bus Company Spending Allocated to Pigeon Forge 8.5%

The table above outlines the \$90.14 million in actual spending by motorcoach operators and tourists in Pigeon Forge. About a fifth of this went for retail purchases and will not generate a great deal of activity in Pigeon Forge proper. Other sectors such as spending on food and beverages, on amusements, or on lodging will have a greater impact on the local economy. On average, each visitor (or the company on a visitor's behalf) spent about \$423 in Pigeon Forge. In addition, the motorcoach operators spent about \$12 on each passenger for items such as fuel, parking, or other supplies in Pigeon Forge.

The \$90.14 million in spending generated a direct economic impact in Sevier County of over \$56.7 million, and nearly 1,740 jobs. Of these, about 450 (24.5 percent) were in local restaurants and bars, nearly 450 in hotels, almost 300 in the performing arts and about 130 in amusement and recreational establishments.

## Economic Impact Motorcoach Tourism in Pigeon Forge, Tennessee - Direct Effects

Industry	Employment	Value Added	Compensation
Total	1,739.8	\$ 56,742,822	\$ 36,155,821
Food services and drinking places	456.9	\$ 9,917,926	\$ 7,058,254
Hotels and motels- including casino hotels	443.8	\$ 20,370,058	\$ 11,563,826
General merchandise stores	367.3	\$ 14,392,373	\$ 8,634,013
Performing arts companies	292.3	\$ 5,510,139	\$ 5,070,340
Other amusement- gambling- and recreation	130.0	\$ 5,062,227	\$ 2,813,193
Transit and ground passenger transportation	49.5	\$ 1,490,099	\$ 1,016,195

## Supplier and Induced Impacts

Economic activity started by motorcoach tourists generates output (and jobs) in hundreds of other industries, often in states far removed from the original economic activity. The impact of supplier firms, and the “Induced Impact” of the re-spending by employees of industry and supplier firms, is calculated using an input/output model of the United States.

The model methodology is designed to calculate these impacts for the State of Tennessee. Since this analysis examines only the impact in Sevier County, the results are multiplied by the percentage of jobs in each industry located in the Pigeon Forge area. Because of this the multiplier effect of motorcoach tourism in Pigeon Forge itself is fairly small. For example, there are about 78 supplier jobs in Sevier County. This represents just about 34.9 of total supplier jobs in the state of Tennessee. The largest suppliers are in the Wholesaling, building maintenance and personal service sectors.

### Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Supplier Effects

Industry	Employment	Value Added	Compensation
Total	78.1	\$ 3,802,830	\$ 2,651,409
Wholesale trade	12.1	\$ 1,178,049	\$ 659,827
Maintenance and repair of nonresidential buildings	9.4	\$ 393,532	\$ 353,157
Food services and drinking places	8.9	\$ 192,644	\$ 137,098
Drycleaning and laundry services	5.8	\$ 154,086	\$ 119,204
Performing arts companies	4.2	\$ 78,393	\$ 72,136
Services to buildings and dwellings	4.1	\$ 108,542	\$ 86,645
Postal service	2.9	\$ 172,140	\$ 175,714
Other State and local government enterprises	2.8	\$ 150,826	\$ 130,371
Transit and ground passenger transportation	2.8	\$ 83,117	\$ 56,683
Couriers and messengers	1.9	\$ 166,169	\$ 109,911
Warehousing and storage	1.9	\$ 106,701	\$ 73,018
Automotive repair and maintenance	1.9	\$ 64,395	\$ 46,500
General merchandise stores	1.2	\$ 46,586	\$ 27,947
Food and beverage stores	1.2	\$ 46,098	\$ 29,414
Other personal services	1.1	\$ 56,589	\$ 26,277
Electronic equipment repair and maintenance	1.1	\$ 51,392	\$ 36,549
Office administrative services	1.0	\$ 82,196	\$ 57,779
All Other Industries	13.8	\$ 671,375	\$ 453,179

Induced jobs are the result of re-spending in the local economy by employees of direct and supplier firms. For example, an employee of a hotel serving motorcoach tourists will purchase products like food, telephone services and housing in the local economy. This re-spending creates a “multiplier” effect and produces induced impacts in Pigeon Forge. As with the supplier effects, the induced impacts are calculated for the entire state of Tennessee and must be adjusted to reflect only those in Sevier County. For example, there are about 275 induced jobs in Sevier County. This represents about 68.5 percent of the total induced jobs in Tennessee.

### Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Induced Effects

Industry	Employment	Value Added	Compensation
Total	274.9	\$ 15,411,459	\$ 8,538,562
Food services and drinking places	47.6	\$ 1,033,309	\$ 735,372
Hospitals	19.2	\$ 1,018,691	\$ 992,680
Offices of physicians- dentists- and other health care	18.0	\$ 1,621,564	\$ 1,338,525
Wholesale trade	17.0	\$ 1,650,299	\$ 924,334
General merchandise stores	13.4	\$ 523,253	\$ 313,900
Food and beverage stores	13.4	\$ 505,603	\$ 322,618
Private households	11.8	\$ 114,582	\$ 114,582
Motor vehicle and parts dealers	9.4	\$ 718,746	\$ 465,122
Automotive repair and maintenance	9.1	\$ 310,376	\$ 224,125
Clothing and clothing accessories stores	7.7	\$ 256,540	\$ 151,108
Miscellaneous store retailers	7.7	\$ 193,266	\$ 142,804
Social assistance- except child day care services	7.5	\$ 146,364	\$ 142,050
Child day care services	7.0	\$ 123,486	\$ 81,397
Building material and garden supply stores	6.0	\$ 325,911	\$ 193,872
Health and personal care stores	5.0	\$ 248,465	\$ 155,607
Gasoline stations	4.9	\$ 169,727	\$ 107,950
Religious organizations	4.7	\$ 128,658	\$ 128,658
All Other Industries	65.5	\$ 6,322,619	\$ 2,003,858

### Total Impacts

The table below presents details of the total impact of motorcoach tourism in Pigeon Forge. The firms most reliant on this activity are local restaurants and bars. Nearly 25 percent of the jobs and 15 percent of total economic activity is in this sector. Other industries that receive significant business from motorcoach tourism are hotels, retailers, theatres and amusement companies. Manufacturing industries are impacted as tourists and the companies involved in the tourism industry purchase goods manufactured by Pigeon Forge based firms.

### Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Total Effects

Industry	Employment	Value Added	Compensation
Total	2,092.7	\$ 75,957,111	\$ 47,345,792
Food services and drinking places	513.4	\$ 11,143,879	\$ 7,930,724
Hotels and motels- including casino hotels	444.5	\$ 20,402,129	\$ 11,582,032
General merchandise stores	381.9	\$ 14,962,212	\$ 8,975,860
Performing arts companies	298.0	\$ 5,616,916	\$ 5,168,594
Other amusement- gambling- and recreation	134.1	\$ 5,220,944	\$ 2,901,396
Transit and ground passenger transportation	53.9	\$ 1,620,900	\$ 1,105,397
Wholesale trade	29.1	\$ 2,828,348	\$ 1,584,161
Hospitals	19.2	\$ 1,018,691	\$ 992,680
Offices of physicians- dentists- and other health care	18.0	\$ 1,621,564	\$ 1,338,525
Food and beverage stores	14.6	\$ 551,701	\$ 352,032
Private households	11.8	\$ 114,582	\$ 114,582
Maintenance and repair of nonresidential buildings	11.4	\$ 477,027	\$ 428,086
Automotive repair and maintenance	11.0	\$ 374,771	\$ 270,625
Motor vehicle and parts dealers	10.2	\$ 782,605	\$ 506,447
Clothing and clothing accessories stores	8.4	\$ 280,016	\$ 164,936
Miscellaneous store retailers	8.4	\$ 211,245	\$ 156,088
Drycleaning and laundry services	8.2	\$ 216,442	\$ 167,444
All Other Industries	116.7	\$ 8,513,139	\$ 3,606,183

The total economic impact (presented here as value added) is lower than the actual spending in the Pigeon Forge area. That is because much of this spending is on retail goods, and most of the value embedded in these products comes from other states (or other countries) and does not add value to the area economy. For example, if a visitor purchases a t-shirt for \$10 from a local vendor, only a small fraction of that \$10 is attributable to local activities (mainly wholesaling, retailing, financing, etc.) The shirt itself may have been manufactured in North Carolina, or China, and the economic impact of that activity is properly allocated to that specific geography.

The distribution of the impacts can also be looked at on a “per bus” or per-trip basis. Examining the data this way shows that the average day trip to Pigeon Forge brings about \$3,250 to the local economy, while the average overnight bus trip generates an impact of just over \$9,900. Again, it should be noted that the impact on the Pigeon Forge economy is equal to about 84% of the actual amount spent on a trip, or in other words, for each dollar that a motorcoach tourist spends in Pigeon Forge, about 84-cents stays in the local economy.

### **Summary of Total Economic Impact by Tour Type**

<b>Trip Type</b>	<b>Average Number of Passengers</b>	<b>Average Package Price</b>	<b>Spending Per Passenger</b>	<b>Local Percentage</b>	<b>Total Impact</b>
Day Trip	40.78	\$ 66.29	\$ 63.31	62%	\$ 3,257.58
One Night Trip	40.78	\$ 225.00	\$ 63.31	84%	\$ 9,908.11
Two Night Trip	40.78	\$ 450.00	\$ 126.62	84%	\$ 19,816.21
Three Night Trip	40.78	\$ 675.00	\$ 189.94	84%	\$ 29,724.32
Four Night Trip	40.78	\$ 900.00	\$ 253.25	84%	\$ 39,632.43

## Estimated Tax Impacts

The study also estimates taxes paid by the industry and its employees. Federal taxes include industry-specific excise taxes, business and personal income taxes, FICA, and unemployment insurance paid by those companies that make up the motorcoach tourism industry in Pigeon Forge and their employees. State and local tax systems vary widely, and the IMPLAN model makes aggregated estimates. Direct state and local taxes consist primarily of sales based taxes, property taxes and income taxes from industry employees. As would be expected in an industry made up mainly of consumption based activities, sales taxes account for the majority of state and local tax revenue generated, and equal about 18.5 percent of total sales to both consumers and motorcoach carriers.

In sum, motorcoach tourism is expected to generate about \$16.671 million in tax revenues in 2005, about half of which are federal taxes. Looking at it another way, taxes account for about 21.9 percent of the industry impact, and state and local governments receive \$42.90 in tax revenues per passenger visiting Pigeon Forge.

### Summary of Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee Fiscal Effects

	Annual Estimate	Percent
Federal Taxes	\$ 7,776,288.39	46.6%
State and Local Taxes	\$ 8,894,975.29	53.4%
Sales Taxes	\$ 5,452,006.25	32.7%
Property Taxes	\$ 1,720,199.47	10.3%
Income Taxes	\$ 31,611.46	0.2%
Corporate Profit Taxes	\$ 241,257.92	1.4%
Other State and Local Taxes	\$ 1,449,900.20	8.7%
Total Taxes	\$ 16,671,263.68	100.0%



## Appendix

### Economic Impact of Motorcoach Tourism in the Town of Pigeon Forge

The data generated by the surveys was based on spending in the entire Pigeon Forge area (defined for this analysis as Sevier County, Tennessee). During the process of completing the analysis participants asked if an analysis of the impact only in the town of Pigeon Forge could be conducted.

Since the data reflect spending across the entire county, the economic impact in Pigeon Forge could only be conducted by allocating that spending across the various communities in Sevier County based on employment patterns. The numbers presented in this appendix are based on that analysis.<sup>13</sup>

#### Direct Impacts

Direct economic impacts are best defined as activities that one can actually count. Therefore, the direct economic impact of motorcoach tourism in Pigeon Forge consists of those jobs and the economic activity generated by the initial spending by the 200,000 visitors and 5,000 buses within the corporate limits of Pigeon Forge, Tennessee. The spending itself is not equal to the economic impact as much of the money will be paid out to regional, national or even international suppliers and will not stay in the Pigeon Forge economy.

The \$90.14 million in spending in Sevier County generated an economic impact in Pigeon Forge of over \$56.7 million, and over 960 jobs. Of these, about 290 (30 percent) were in local theaters and other performance venues, nearly 240 in stores, almost 300 in the performing arts and about 180 in hotels.

All told, about 55 percent of the direct economic impact of motorcoach tourism in the Pigeon Forge area occurs in the town of Pigeon Forge.

#### Economic Impact Motorcoach Tourism in Town of Pigeon Forge, Tennessee Direct Effects

Industry	Employment	Value Added	Compensation
Total	960.7	\$ 30,487,966	\$ 19,948,298
Performing arts companies	286.0	\$ 5,390,590	\$ 4,960,333
General merchandise stores	237.0	\$ 9,285,402	\$ 5,570,331
Hotels and motels- including casino hotels	178.3	\$ 8,183,973	\$ 4,645,939
Food services and drinking places	132.3	\$ 2,871,603	\$ 2,043,623
Other amusement- gambling- and recreation industri	104.9	\$ 4,084,393	\$ 2,269,789
Transit and ground passenger transportation	22.3	\$ 672,005	\$ 458,284

<sup>13</sup> Employment figures were based on data generated by the Dun and Bradstreet Zapdata system as of February 2007. The figures are subject to the same qualifications and constraints as outlined in footnote 10 in the main body of the report.

## Supplier and Induced Impacts

Economic activity started by motorcoach tourists generates output (and jobs) in hundreds of other industries, often in states far removed from the original economic activity. The impact of supplier firms, and the “Induced Impact” of the re-spending by employees of industry and supplier firms, is calculated using an input/output model of the United States.

The model methodology is designed to calculate these impacts for the State of Tennessee. Since this analysis examines only the impact in Pigeon Forge proper, the results are multiplied by the percentage of jobs in each industry located in the town. Even though it is a major tourist destination, the town of Pigeon Forge itself is quite small.<sup>14</sup> Because of this the multiplier effect of motorcoach tourism in Pigeon Forge itself is also fairly small. For example, there are about 78 supplier jobs in Sevier County, however only a handful of them are in Pigeon Forge itself.

### Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Supplier Effects

Industry	Employment	Value Added	Compensation
Total	1.3	\$ 45,558	\$ 30,287
Performing arts companies	0.5	\$ 9,284	\$ 8,543
Travel arrangement and reservation services	0.1	\$ 4,537	\$ 3,642
Food services and drinking places	0.1	\$ 1,938	\$ 1,380
Hotels and motels- including casino hotels	0.1	\$ 3,918	\$ 2,224
Real estate	0.1	\$ 7,211	\$ 1,638
Employment services	0.1	\$ 1,106	\$ 1,085
Fitness and recreational sports centers	0.0	\$ 878	\$ 690
Drycleaning and laundry services	0.0	\$ 1,032	\$ 798
Bread and bakery product- except frozen- manufactu	0.0	\$ 2,195	\$ 1,392
Independent artists- writers- and performers	0.0	\$ 755	\$ 640
Transit and ground passenger transportation	0.0	\$ 807	\$ 551
Promoters of performing arts and sports and agents	0.0	\$ 686	\$ 347
Other amusement- gambling- and recreation industri	0.0	\$ 700	\$ 389
Accounting and bookkeeping services	0.0	\$ 909	\$ 852
Services to buildings and dwellings	0.0	\$ 436	\$ 348
Scenic and sightseeing transportation and support	0.0	\$ 1,016	\$ 848
Monetary authorities and depository credit interme	0.0	\$ 1,870	\$ 645
All Other Industries	0.1	\$ 6,280	\$ 4,277

Induced jobs are the result of re-spending in the local economy by employees of direct and supplier firms. For example, an employee of a hotel serving motorcoach tourists will purchase products like food, telephone services and housing in the local economy. This re-spending creates a “multiplier” effect and produces induced impacts in the town of Pigeon Forge. As with the supplier effects, the induced impacts are calculated for the entire state of Tennessee and must be adjusted to reflect only those in the town. As such, the multiplier effect in Pigeon Forge itself is negligible.

<sup>14</sup> According to the 2000 Census, the population of Pigeon Forge, Tennessee is only about 5,000 people.

## Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Induced Effects

Industry	Employment	Value Added	Compensation
Total	2.1	\$ 78,534	\$ 44,081
Food services and drinking places	0.5	\$ 10,398	\$ 7,400
Other amusement- gambling- and recreation industri	0.4	\$ 15,684	\$ 8,716
Hotels and motels- including casino hotels	0.2	\$ 8,967	\$ 5,090
Fitness and recreational sports centers	0.2	\$ 4,751	\$ 3,731
Performing arts companies	0.2	\$ 3,362	\$ 3,093
Clothing and clothing accessories stores	0.1	\$ 4,059	\$ 2,391
Miscellaneous store retailers	0.1	\$ 2,329	\$ 1,721
Real estate	0.1	\$ 5,606	\$ 1,273
Private households	0.0	\$ 479	\$ 479
Employment services	0.0	\$ 504	\$ 495
Monetary authorities and depository credit interme	0.0	\$ 2,858	\$ 985
Drycleaning and laundry services	0.0	\$ 418	\$ 323
Transit and ground passenger transportation	0.0	\$ 463	\$ 316
Automotive repair and maintenance- except car wash	0.0	\$ 508	\$ 367
Wholesale trade	0.0	\$ 1,384	\$ 775
Services to buildings and dwellings	0.0	\$ 361	\$ 288
Other accommodations	0.0	\$ 827	\$ 469
All Other Industries	0.2	\$ 15,578	\$ 6,169

### Total Impacts

The table below presents details of the total impact of motorcoach tourism in Pigeon Forge. Since the multiplier effect in the town itself is quite small, the total impacts basically mirror the direct impacts.

## Economic Impact Motorcoach Tourism in Pigeon Forge Tennessee - Total Effects

<b>Industry</b>	<b>Employment</b>	<b>Value Added</b>	<b>Compensation</b>
<b>Total</b>	<b>964.1</b>	<b>\$ 30,612,058</b>	<b>\$ 20,022,667</b>
Performing arts companies	286.6	\$ 5,403,236	\$ 4,971,969
General merchandise stores	237.0	\$ 9,285,448	\$ 5,570,359
Hotels and motels- including casino hotels	178.6	\$ 8,196,858	\$ 4,653,253
Food services and drinking places	132.9	\$ 2,883,939	\$ 2,052,402
Other amusement- gambling- and recreation industri	105.3	\$ 4,100,776	\$ 2,278,893
Transit and ground passenger transportation	22.4	\$ 673,276	\$ 459,150
Fitness and recreational sports centers	0.2	\$ 5,629	\$ 4,421
Clothing and clothing accessories stores	0.1	\$ 4,431	\$ 2,610
Real estate	0.1	\$ 12,817	\$ 2,912
Travel arrangement and reservation services	0.1	\$ 4,920	\$ 3,949
Miscellaneous store retailers	0.1	\$ 2,545	\$ 1,881
Employment services	0.1	\$ 1,610	\$ 1,580
Drycleaning and laundry services	0.1	\$ 1,450	\$ 1,121
Private households	0.0	\$ 479	\$ 479
Bread and bakery product- except frozen- manufactu	0.0	\$ 2,996	\$ 1,899
Independent artists- writers- and performers	0.0	\$ 778	\$ 659
Monetary authorities and depository credit interme	0.0	\$ 4,728	\$ 1,630
All Other Industries	0.4	\$ 26,142	\$ 13,498

The total economic impact (presented here as value added) is lower than the actual spending in the Pigeon Forge area. That is because much of this spending is on retail goods, and most of the value embedded in these products comes from other states (or other countries) and does not add value to the area economy. For example, if a visitor purchases a t-shirt for \$10 from a local vendor, only a small fraction of that \$10 is attributable to local activities (mainly wholesaling, retailing, financing, etc.) The shirt itself may have been manufactured in North Carolina, or China, and the economic impact of that activity is properly allocated to that specific geography.

## Appendix Telephone Interviews of Companies

GuerrillaEconomics, LLC contacted over 82 tour-bus operating companies and conducted extensive interviews with 31. Of these, 49 were identified by the ABA as being companies with extensive operations in the Pigeon Forge area, and an additional 384 were members of the organization. All told, it is estimated that 882 companies operate tour-buses in the Greater Pigeon Forge area.<sup>15</sup>

Data from these surveys was used to generate estimates of total spending by bus operating companies on visitors to the Pigeon Forge area for 2006. The average number of busses operated by the companies was 23.6 (the data were however highly skewed with the median number being 12). The companies averaged just over 15 employees.

The survey questions are presented below.

### ECONOMIC IMPACT STUDY TOUR OPERATORS QUESTIONNAIRE

Good morning/afternoon. My name is \_\_\_\_\_. I am calling on behalf of the Pigeon Forge Department of Tourism and the American Bus Association. We are conducting a survey of tour operators who carry passengers to the Smoky Mountains. The survey will take no more than 5 minutes. Can you help me with this, or can I speak with someone who might be able to assist us.

<< Get appropriate person on the phone >>

Thank you. Just to let you know, I work for the firm John Dunham and Associates. We have been selected by the Pigeon Forge Department of Tourism and the American Bus Association to conduct this survey. All of your answers to these questions will be aggregated with those of other respondents - and all information will be kept strictly confidential.

First, I need to ask you, do you or have you in the past year operated buses in the Pigeon Forge, Tennessee or Smoky Mountains area?

If No>>

Are there any reasons that you could give to me why you do not operate tours in the Smoky Mountains area?

<<Record any reasons given>

Thank you for your time.

If Yes>>

1. How many people in general to you carry on each bus tour to the Smoky Mountains?

---

<sup>15</sup> Based on data from Dun and Bradstreet, 2005. There are 1406 tour bus operating companies located in the eastern half of the United States. Based on the response to our survey, we estimate that 62.7 percent of these could visit Pigeon Forge. This figure is used as a proxy for total operators, however, the resulting total number of buses is just slightly over an estimate for 2005 by the CVB.

Enter number of people:

2. **About how much do you charge per person (Daytrip/Overnight/Number of Nights)?**  
Enter dollar amount for package price per person:
3. For overnight packages, how much is spent on accommodations that are included as part of the tour?  
Indicate dollar amount/days.
4. **Were food and beverages included in packages?**  
If yes, indicate dollar amount.
5. **Are admissions and other incidentals included in the package price?**  
If yes, indicate dollar amount
6. **What are the top 3 destinations for your groups in the Smoky Mountain Area?**  
Enter the names of cities.
7. **About how many tours do you book to the Smoky Mountains per year?**  
Please enter number of tours.
8. **What percentage of your overnight tours to the Smoky Mountains include an overnight stay in Pigeon Forge, TN?**  
Please enter number of tours.
9. **What percentage of your overnight tours to the Smoky Mountains include a daytrip to Pigeon Forge?**  
Please enter number of tours
10. **What percentage of your passengers on tours to the Smoky Mountains are:**  
  
Please read and record:  
**Seniors**  
**Students**  
**General Population**  
**Baby Boomers**  
**Families**  
**Grandparent/grandchildren**  
**Guys and gals weekends**
11. **What percentage of your trips to the Smoky Mountain area are part of a larger trip?**
12. **What percent of your tours to the Smoky Mountains come in the:**  
  
**Spring**  
**Summer**  
**Fall**  
**Holiday Season (November/December)**  
**Winter (January/February)**
13. **What helps drive Pigeon Forge as a destination that you book (read options)?**  
The city's marketing efforts  
Cost  
Demand

14. What is Pigeon Forge's primary appeal to your passengers (please read, select one only)?

- Proximity to The Smoky Mountains
- Variety of theaters
- Dollywood
- Variety of attractions
- Restaurant choices
- Shopping

15. Have you booked tours to Pigeon Forge that were centered around any of its special events?

Yes No

**If Yes**

15a. **What were those events?**

16. What does Pigeon Forge do better than other destinations you typically book?

17. **Can you identify any new trends or interests that Pigeon Forge should be looking to develop as a destination?**

Now let me ask you about your operating environment in Pigeon Forge

18. **Are facilities for motorcoaches in Pigeon Forge adequate or inadequate?**  
if inadequate get details

19. **Can you identify specific problem areas that the Department of Tourism should address?**

20. **What facilities/infrastructure would you like to see improved?**

21. **Do you produce a brochure?**  
Please indicate yes or no

If Yes

21a. **Does the brochure feature Pigeon Forge?**  
Please indicate yes or no

22. **What is your preferred method for receiving information?**  
Direct mail  
E-mail  
CD  
Phone

23. **How do you utilize on-line information resources?**

General research  
Compare destinations  
Secure bookings  
Outbound marketing  
Promotions

Now I just need to ask two questions about your company

24. How many motorcoaches do you operate by size?
25. Can you tell me how many employees you have?

*Thank you so much for your help. The American Bus Association will be making a copy of our final report available to you, and the Pigeon Forge Department of Tourism will receive the information on how they can improve your operating environment.*

***In addition, we would like to send you a supply of survey forms within the next week or so. These cards should be distributed to passengers visiting Pigeon Forge. They will allow us to collect information about the city from your passengers. We will reward them for taking the survey with***

\_\_\_\_\_.

26. **Would you be willing to distribute these surveys to passengers coming to the Smoky Mountains?**



***Thank you once again for your assistance with our survey.***



## Appendix Questionnaire Used for Personal Interviews

In conducting this analysis for the ABA and BOHAN Advertising, GuerrillaEconomics, LLC, conducted a survey of motorcoach passengers on trips to the state. We sent over 800 surveys to passengers through the companies that we surveyed. Unfortunately, the response rate was not as high as we had expected. Only 42 completed surveys were received, representing a response rate of about 5 percent.<sup>16</sup>

The survey instrument used in the study is presented below.

<p>Excluding what was included in the package price, how much did you spend on personal services such as salons, spas, internet, or dry cleaning during this trip? _____</p> <p>Did The Smoky Mountains  <input type="checkbox"/> Meet your expectations;  <input type="checkbox"/> Exceed your expectations;  <input type="checkbox"/> Disappoint you</p> <p>Would you recommend the area as a destination? <input type="checkbox"/> Yes; <input type="checkbox"/> No</p> <p>Why did you choose the Smoky Mtns.?  <input type="checkbox"/> The package;  <input type="checkbox"/> It's a new destination;  <input type="checkbox"/> You are a repeat visitor</p> <p>What was your favorite attraction in the area? _____</p> <p>Please enter your contact information (email or phone) for the drawing for a return trip, including tickets to Dollywood: _____</p>	 <p>www.mypigeonforge.com 1-800-251-9100</p> <p>Return to:  <b>John Dunham</b>  <b>GuerrillaEconomics, LLC</b>  <b>135 Willow Street #801</b>  <b>Brooklyn, NY 11201</b></p>
 <p>Thanks for visiting The Smoky Mountains and for your assistance. This survey will take only a minute of your time and will help us to better serve visitors to the area. Please enter your responses below and drop the completed survey in the mail. <b>You will be entered to win a free trip back to Pigeon Forge.</b></p> <p>Except where indicated, the answers should apply to you personally, not to other members in your party. The data collected will not be used for marketing purposes, and your individual responses will not be shared with anyone.</p> <p>Thank you again for your assistance.</p> <p>1) Was this a day or overnight trip? ____</p>	<p>How many people are in your party? ____</p> <p>How much did the tour package cost per person? _____</p> <p>Outside of the package price, how much did you spend on lodging during this trip? _____</p> <p>Outside of the package price, how much did you spend on food and beverages during this trip? _____</p> <p>Outside of the package price, how much did you spend on other retail purchases on this trip? _____</p> <p>Outside of the package price, how much did you spend on the following on this trip? (if nothing enter zero):</p> <p>Dollywood: _____</p> <p>Theaters: _____</p> <p>Parkway Attractions: _____</p> <p>Dinner Shows: _____</p>

<sup>16</sup> Based on our estimate of over 207,000 visitors per year, about 17,260 tourists would visit West Virginia each month, or 51,776 during the three month survey period. Since only 42 surveys were returned, this represents 8-100ths of a percent of all travelers. This is a lower response rate than we would like; however, we have based our analysis on these responses, along with data from our survey of motorcoach operators.

## Appendix

### IMPLAN Methodology:<sup>17</sup>

Francoise Quesnay one of the fathers of modern economics, first developed the analytical concept of inter-industry relationships in 1758. The concept was actualized into input-output analysis by Wassily Leontief during the Second World War, an accomplishment for which he received the 1973 Nobel Prize in Economics.

Input-Output analysis is an econometric technique used to examine the relationships within an economy. It captures all monetary market transactions for consumption in a given period and for a specific geography. The IMPLAN model uses data from many different sources – as published government data series, unpublished data, sets of relationships, ratios, or as estimates. The Minnesota IMPLAN group gathers this data, converts it into a consistent format, and estimates the missing components.

There are three different levels of data generally available in the United States: Federal, state and county. Most of the detailed data is available at the county level, and as such there are many issues with disclosure, especially in the case of smaller industries, such as brewing. IMPLAN overcomes these disclosure problems by combining a large number of datasets and by estimating those variables that are not found from any of them. The data is then converted into national input-output matrices (Use, Make, By-products, Absorption and Market Shares) as well as national tables for deflators, regional purchase coefficients and margins.

The IMPLAN Make matrix represents the production of commodities by industry. The Bureau of Economic Analysis (BEA) Benchmark I/O Study of the US Make Table forms the bases of the IMPLAN model. The Benchmark Make Table is updated to current year prices, and rearranged into the IMPLAN sector format. The IMPLAN Use matrix is based on estimates of final demand, value-added by sector and total industry and commodity output data as provided by government statistics or estimated by IMPLAN. The BEA Benchmark Use Table is then bridged to the IMPLAN sectors. Once the re-sectoring is complete, the Use Tables can be updated based on the other data and model calculations of interstate and international trade.

In the IMPLAN model, as with any input-output framework, all expenditures are in terms of producer prices. This allocates all expenditures to the industries that produce goods and services. As a result, all data not received in producer prices is converted using margins which are derived from the BEA Input-Output model. Margins represent the difference between producer and consumer prices. As such, the margins for any good add to one. If, for example, 10 percent of the consumer price of lodging is from the purchase of electricity, then the electricity margin would be 0.1.

Deflators, which account for relative price changes during different time periods, are derived from the Bureau of Labor Statistics (BLS) Growth Model. The 224 sector BLS model is mapped to the 528 sectors of the IMPLAN model. Where data are missing, deflators from BEA's Survey of Current Businesses are used.

---

<sup>17</sup> This section is paraphrased from IMPLAN Professional: Users Guide, Analysis Guide, Data Guide, Version 2.0, MIG, Inc., June 2000.

Finally, one of the most important parts of the IMPLAN model, the Regional Purchase Coefficients (RPCs) must be derived. IMPLAN is derived from a national model, which represents the “average” condition for a particular industry. Since national production functions do not necessarily represent particular regional differences, adjustments need to be made. Regional trade flows are estimated based on the Multi-Regional Input-Output Accounts, a cross-sectional database with consistent cross interstate trade flows developed in 1977. These data are updated and bridged to the 528 sector IMPLAN model. Once the databases and matrices are created, they go through an extensive validation process. IMPLAN builds separate state and county models and evaluates them, checking to ensure that no ratios are outside of recognized bounds. The final datasets and matrices are not released before extensive testing takes place.