

Michigan Statewide Tourism Spending and Economic Impact Estimates 1998-2000

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Any estimate of tourism's economic significance to the state must begin with a clear definition of how tourism is defined and what spending and economic activity is included. Tourism is defined here to include all trips to or through Michigan of 50 miles or more away from home excluding routine commuting trips to work or school. At home expenses made prior to a trip and spending by Michigan residents on trips outside the state are not included¹. Also excluded are durable goods purchases (boats, RV's, & other equipment) and private and government capital investments in airports, hotels, seasonal homes and tourism infrastructure. Our focus is on out-of-pocket spending at Michigan travel destinations by visitors while on trips away from home. Impacts represent the expected losses in economic activity to the state if these trips were not made.

Economic impacts are estimated using a regional economic model of the Michigan economy. In making the tourism activity and spending estimates, we draw on a variety of sources and compare tourism satellite (Frechtling 2000) and visitor spending approaches to help validate the estimates.

The Travel Industry Association of America (TIA, 2001) is one of the most frequently cited sources of statewide tourism impacts, so we will begin there. TIA estimates total travel spending in Michigan in 1999 to be \$11.5 billion. Over one fourth of this total (\$3.1 billion) is in TIA's public transportation category, which is mostly airfares. Note that TIA includes the airfares of Michigan residents leaving the state, as well as those of visitors coming into Michigan. TIA also includes imputed rents on seasonal homes and a pro-rated share of vehicle operating costs. Our approach will be to estimate out-of-pocket expenses of travelers within Michigan. Our total Michigan tourist spending estimate turns out to be similar in size to the TIA estimate, but it would be considerably higher (\$15 billion) if we included imputed rents and vehicle operating costs.

Out-of-pocket expenses of Michigan tourists including airfares were over \$12 billion in 2000. Excluding airfares, tourists spent \$8.8 billion in Michigan in 2000². Tourist spending has increased by 10% since 1998, when we estimate tourists spent about \$7.6 billion. Figures for 1998 are grounded in room tax

¹ Expenditures for travel arrangements and airfares to destinations outside Michigan are excluded.

² Airfares are omitted as they include Michigan residents leaving the state as well as visitors coming to Michigan.

figures, the MITEIM model (Stynes 2001) and a satellite accounting approach. Estimates for 2000 are made by extrapolating from 1998 based on Michigan room tax receipts and price changes.

Table 1 reports trends for the 1995-2000 period for travel activity, average spending and total spending. As the focus of the MITEIM model is to estimate economic impacts at travel destinations, these figures exclude airfares, most car rentals and some other en route expenses.

Table 1. Trends in Michigan Tourism Activity and Spending, 1995-2000

	1995	1997	1998	1999	2000
Party nights (000's) ^a	76,063	81,670	84,624	86,000	89,349
Spend \$ per party night	\$86.74	\$89.95	\$90.20	\$93.00	\$98.23
Total Spending (\$ millions) ^b	\$6,598	\$7,346	\$7,633	\$7,998	\$8,777

a. A travel party constitutes a group of people traveling together (same room, vehicle) and sharing expenses. The unit of activity here is party days for day trips and party nights for overnight stays. b. Spending within 60 miles of the destination. Excludes airfares, most car rentals and some other en route expenses.

A Brief summary of methods

The MITEIM model breaks tourists into five lodging-based segments and estimates visits and spending separately for each segment. Estimates of party nights and spending by each segment for 2000 are reported in Table 2. Total spending is the number of party nights times average spending per night summed across the five segments. Spending is converted to the associated sales, income and jobs using economic ratios for Michigan and secondary impacts are computed in MITEIM using statewide multipliers for key tourism sectors (Table 3).

Travel party nights and breakdowns by lodging segments were benchmarked against the 1995 American Travel Survey figures for Michigan (BTS, 1998) and adjusted over time based on lodging room taxes. Travel party night estimates for 1998 and 1999 are comparable to estimates by D.K. Shifflet.³ Changes in spending averages over time reflect price changes in items purchased by travelers and are computed in the MITEIM model by applying price indices for each commodity to the MITEIM default spending profiles for five lodging-based segments.

The tourism satellite approach uses sales, income and employment data from official state economic accounts⁴. Tourism-related activity is extracted from 16 tourism-related sectors by estimating the portion of sales in each sector due to tourists. As the most recent complete economic accounts that are available are for 1998, we use that year to compare TSA and MITEIM tourist spending estimates.

We first present the MITEIM model estimates for 2000 and then compare MITEIM and Tourism Satellite estimates for 1998. Consistency in the two estimates for 1998 helps to validate the MITEIM model.

³ Shifflet estimates 137.5 million person days in Michigan on leisure trips in 1999 and 141 million in 1998. If we assume leisure trips are 64% of all trips (ATS 1995) and an average travel party size is 2.6, Shifflet figures equate to 83 million party days in 1998 and 85 million in 1999.

⁴ IMPLAN (MIG, Inc. 2000) data files for 1998 are used to generate the satellite accounts. IMPLAN reports sales, income, jobs and value added for 528 distinct sectors.

Michigan Tourism Spending and Economic Impacts for 2000

Michigan hosted 89 million travel party nights in 2000⁵. Day trips account for 45% of all trips, but only 18% of tourist days/nights in the state. As spending is best estimated on a party day/night basis, we use this as the primary measure of travel volume. Stays with friends and relatives account for 39% of party nights (Table 2) followed by overnight stays in motels (20%), seasonal homes (17%), day trips (18%) and camping (5%).

Distinct spending profiles for each segment are estimated on a party night basis. Michigan traveler spending profiles were originally estimated in a survey at state Welcome Centers in 1998 (Vogt et. al., 1999) with some adjustments for differences between visitors stopping at Welcome Centers and travelers in general. The spending profiles were adjusted to 2000 using BLS price indices for each commodity. Spending varies from \$196 per party per night for visitors staying in motels to \$81 for campers and about \$73 for the other three segments. The average motel room rate in 2000 was \$80 and average campsite rate was \$16 (including public and private campgrounds). The model estimates there were 18.2 million room nights of lodging provided by Michigan hotels, motels, B&B's, cabins and rented condos in 2000.

Total spending was \$8.8 billion, not including airfares and travel arrangements⁶. Visitor staying in hotels, motels etc. are the most important segment in terms of spending, accounting for 41% of the total. Visitors staying with friends and relatives spend 29% of the total and day trips and stays in seasonal homes each account for 13% of the total.

Table 2. Visitor Spending by Lodging Segment in Michigan (\$ per travel party per night), 2000

Spending category	Segment					Overall Avg	\$MM Total
	Day Trips	Motel	Camp	Seasonal Homes	Stays with F&R		
Motel, hotel cabin or B&B	0.00	80.00	0.00	0.00	0.00	16.32	1,458
Camping fees	0.00	0.00	16.00	0.00	0.00	0.83	74
Restaurants & bars	18.85	40.80	13.96	17.73	11.81	20.12	1,798
Groceries, take-out food/drinks	5.31	10.71	10.71	13.38	19.00	13.46	1,202
Gas & oil	12.43	15.39	14.57	11.33	11.85	12.73	1,137
Other vehicle expenses	0.41	1.47	1.79	4.37	0.21	1.31	117
Local transportation	1.31	6.26	2.77	3.90	0.62	2.58	230
Admissions & fees	9.78	10.12	5.23	3.74	3.92	6.27	560
Clothing	5.47	8.35	3.91	5.47	2.98	5.00	447
Sporting goods	0.41	1.02	1.11	1.51	1.51	1.19	107
Gambling	0.83	6.26	1.16	1.45	1.43	2.30	205
<u>Souvenirs and other expenses</u>	<u>18.65</u>	<u>15.33</u>	<u>9.71</u>	<u>9.93</u>	<u>19.00</u>	<u>16.13</u>	<u>1,442</u>
Total	73.47	195.72	80.91	72.82	72.33	98.23	8,777
Party nights (000's)	16,000	18,224	4,624	15,501	35,000		89,349
Percent of nights	18%	20%	5%	17%	39%	100.0%	
Total Spending (\$ millions)	1,175	3,567	374	1,129	2,532	8,777	
Percent	13%	41%	4%	13%	29%	100%	

⁵ This is equivalent to roughly 36 million travel party trips, 92 million person trips and 230 million person days/nights, with an average party size of 2.6 and average overnight stay of 3.7 nights for overnight trips. One day for day trips is treated as one night in computing total party nights.

⁶ The model also doesn't fully capture growth in casino spending. We have not been able to find suitable Michigan casino spending data that distinguishes travelers from local residents.

Twenty percent of the spending is for restaurant meals and 17% for lodging. Fourteen percent goes for groceries, 13% gas and oil, and 22% for other retail items.

Economic impacts are estimated by applying the \$8.8 billion in spending to a model of the Michigan economy. Distinct economic ratios and multipliers for each sector are applied to spending in the given sector to estimate direct and secondary effects in terms of sales, jobs, personal income and value added.

The \$8.8 billion in tourism spending supports 161,000 direct jobs in tourism-related sectors, paying \$2.8 billion in wages and salaries (personal income) and contributing \$4.4 billion in direct value added to the state economy. Tourism spending supports 51,000 jobs in restaurants, 36,000 in retail trade, 34,000 in hotels and 7,000 in amusement and entertainment sectors.

The direct effects measure impacts on businesses that sell directly to tourists. Secondary effects capture economic activity that results from the circulation of tourism dollars through the state's economy. Secondary effects include impacts on backward linked industries that hotels and restaurants buy goods and services from (indirect effects) as well as impacts from tourism employees spending their income in the state (induced effects).

The MITEIM model employs conservative "Type SAM" multipliers using the IMPLAN input-output modeling system and databases⁷. The overall state tourism sales multiplier for Michigan in 1999 was 1.57. This means for every dollar of direct sales from tourism, another \$.57 in secondary sales is generated as the tourism dollars circulate through the state economy. Secondary effects result in an additional \$4 billion in sales, 48,000 jobs, \$1.5 billion in personal income and \$2.5 billion value added. Total impact of tourism spending on the state economy in 2000 was 209,000 jobs, \$4.3 billion in personal income and \$6.9 billion value added. This represents about 2% of the state economy in terms of value added and income and 4% of all jobs.

Table 3. Direct and Secondary Effects of Michigan Tourist Spending , 2000

Sector	Direct Sales \$Millions	Jobs	Personal Income \$Millions	Value Added \$Millions
Direct Effects				
Motel, hotel cabin or B&B	1,458	34,470	588	942
Camping fees	74	1,749	30	48
Restaurants & bars	1,798	51,122	670	962
Amusements	560	19,020	228	374
Gambling	205	6,971	83	137
Other vehicle expenses	117	1,287	40	67
Local transportation	230	4,662	114	144
Retail Trade	1,501	36,428	781	1,272
Wholesale Trade	349	2,520	135	239
Local Production of Goods	715	2,976	119	215
Total Direct Effects	7,008	161,206	2,788	4,399
Multiplier	1.57	1.30	1.54	1.57
Secondary effects	\$ 4,012	47,656	\$ 1,495	\$ 2,491
Total effects	\$ 11,019	208,861	\$ 4,283	\$ 6,890

⁷ Michigan statewide sector-specific multipliers for tourism sectors are reported in the Appendix.

Michigan Tourist Spending Estimates for 1998

As complete economic accounts for Michigan are not yet available for 2000, we use 1998 data to evaluate the comparability of MITEIM model estimates with official sales, income and employment data for tourism sectors. Tourism satellite accounting methods are used to extract the portion of economic activity in each sector that is attributable to tourist spending. We first show the consistency of economic estimates using the two methods and then show details for each approach.

Table 4 compares MITEIM and Satellite estimates for 1998. Sales in the four most important sectors/spending categories are compared: hotel, restaurant, recreation & amusements and retail trade. Retail trade sales are the retail margins on all goods bought by visitors. The remainder of the purchaser price of goods bought by tourists at retail is added in under "producer prices of goods and wholesale margins". Not all of this spending is captured by the state as direct sales, as many goods bought by tourists are not made locally.

The primary conclusion from Table 4 is that MITEIM and Satellite approaches closely match. The MITEIM model estimates total tourist spending as VISITS * AVG SPENDING per visit, while the Satellite approach extracts tourism's share from 1998 economic accounts for Michigan. For comparability, both estimates here exclude airfares, travel arrangements, and car rentals. These three sectors are not covered in the MITEIM spending profiles and also pose some problems in the satellite approach.⁸

Table 4. Michigan Tourist Spending : Satellite and MITEIM Estimates for 1998 (sales/spending in \$millions)^a

Industry/Commodity	MITEIM	Satellite	Pct of Total
Hotels (Room)	\$1,258	\$1,210	16%
Restaurants	\$1,748	\$1,840	24%
Amusements/Recreation	\$633	\$710	9%
Retail Trade (margins)	\$1,308	\$1,248	16%
<u>Transportation^b</u>	<u>\$308</u>	<u>\$342</u>	<u>4%</u>
Sub-total	\$5,255	\$5,350	70%
Producer prices of Goods & wholesale margins ^c	<u>\$2,378</u>	<u>\$2,269</u>	<u>30%</u>
Total Spending	\$7,633	\$7,619	100%

a. Excludes airfares, car rentals and travel arrangements. TSA hotel and restaurant industry sales estimates are converted to a commodity basis here, assuming 90% of hotel sales are room rentals and 10% are restaurant meals.

b. Transportation includes vehicle expenses, parking, tolls, and local transportation (fuel purchases are included in retail trade).

c. The difference between the cost of goods to the consumer and margins accruing to retailers are included here. Covers gasoline, groceries, souvenirs, sporting goods and all other retail purchases on trips.

Further details for both the MITEIM and Satellite (TSA) spending estimates are provided in the next two sections.

⁸ Airfares include those of visitors coming to Michigan, traveling within the state and also of residents leaving the state. While airlines are a part of the tourism industry, airfares of residents leaving the state should be omitted when estimating impacts of tourists to Michigan. Travel arrangements are also used more frequently for residents leaving the state and car rental data is contaminated by the leasing of new vehicles. As our spending surveys did not sample air travelers, the spending profiles in the MITEIM model exclude airfares and most car rentals.

MITEIM Approach

Tables 5 and 6 document the MITEIM model estimates for 1998. An average visitor party spent \$90 per day/night. Visitors in motels spent \$184 per party per night and spent \$74 for the room (including room taxes). Campers spent \$75 per night including about \$15 for the campsite. Day visitors and visitors staying overnight in seasonal homes or with friends and relatives average about \$68 per party per night. The \$7.6 billion in spending translates into \$6.2 billion in sales⁹. Tourist spending supports about 150,000 jobs, and generates \$2.4 billion in direct personal income and \$3.8 billion in value added.

The MITEIM model also estimates secondary effects. The state tourism sales multiplier for 1998 is 1.57, which means \$.57 in secondary sales is generated for every dollar of direct sales. Including secondary effects, the total impact of tourist spending is \$9.7 billion in sales, supporting 195,000 jobs (reported at bottom of Table 6).

Table 5. Visitor Spending by Lodging Segment in Michigan, 1998

CATEGORY	Day Trips	Motel	Camp	Seasonal Homes	Stays with F&R	Avg	Total (\$MM)
Motel, hotel cabin or B&B	0.00	74.35	0.00	0.00	0.00	14.06	1,190
Camping fees	0.00	0.00	14.87	0.00	0.00	0.81	69
Restaurants & bars	19.76	42.77	14.63	18.59	12.38	20.66	1,748
Groceries, take-out food/drinks	5.08	10.25	10.25	12.80	18.18	12.97	1,098
Gas & oil	8.86	10.96	10.38	8.08	8.44	9.04	765
Other vehicle expenses	0.39	1.39	1.70	4.14	0.20	1.24	105
Local transportation	1.24	5.93	2.62	3.69	0.59	2.38	201
Admissions & fees	8.72	9.02	4.66	3.34	3.49	5.50	466
Clothing	5.61	8.56	4.01	5.61	3.06	5.05	428
Sporting goods	0.42	1.05	1.13	1.55	1.55	1.23	104
Gambling	0.74	5.59	1.03	1.29	1.27	1.98	168
Souvenirs and other expenses	17.67	14.53	9.20	9.40	18.00	15.28	1,293
Total Spending per party-night	68.50	184.40	74.48	68.50	67.16	90.20	
Party nights (000's)	15,000	16,000	4,624	15,000	34,000		84,624
Total Spending (\$ millions)	1,028	2,950	344	1,027	2,284		7,633
Percent	13%	39%	5%	13%	30%	100%	

⁹ The difference between tourist spending and direct sales is the cost of imported goods bought by tourists. If the good is not made in Michigan, only the retail margin is captured by the Michigan economy.

Table 6. Direct and Secondary Effects of Michigan Tourist Spending, 1998

Sector/Spending category	Direct Sales \$Millions	Jobs	Personal Income \$Millions	Value Added \$Millions
Direct Effects				
Motel, hotel cabin or B&B	1,190	29,691	480	768
Camping fees	69	1,716	28	44
Restaurants & bars	1,748	52,477	651	935
Admissions & fees	466	16,687	189	311
Gambling	168	6,021	68	112
Other vehicle expenses	105	1,220	36	60
Local transportation	201	4,301	100	126
Retail Trade	1,308	33,519	681	1,109
Wholesale Trade	304	2,314	117	208
Local Production of Goods	622	2,851	107	191
Total Direct Effects	6,181	150,797	2,457	3,865
Multiplier	1.57	1.29	1.54	1.57
Secondary effects	3,548	44,370	1,319	2,197
Total effects	9,728	195,166	3,776	6,062

Satellite Accounting Approach - 1998.

In the Satellite approach we begin with economic activity in a set of 16 tourism-related industries. The Michigan economy produced \$604 billion in output in 1998 and provided 5.4 million jobs (Table 7) . Tourism-related industries account for 14% of statewide output and 26% of jobs, however most of these sales and jobs are in retail and wholesale trade. Only a small portion of sales in these sectors are due to tourists. The task of the tourism satellite approach is to determine the portion of activity in each of these sectors attributable to tourism. Most of the \$1.68 billion in hotel sales will be to tourists, but only some of sales in restaurants, amusements and other sectors can be counted as tourism. The accounts in Table 7 provide a maximum, if there were no sales to local residents.

Tourism activity is extracted from these accounts by applying a set of "tourism industry ratios" (middle column of Table 8) to the output of each sector. The TI ratio is the proportion of sales to tourists (versus local residents). For example 80% of hotel sales are to tourists, 17% of restaurant sales, etc. The ratios in Table 8 are those used in the National Tourism Satellite Accounts (Kass and Okubo, 2000) for 1997 with a few exceptions. Extensive research, drawing on a variety of data sources, was conducted to derive the national ratios. The issue here is whether these ratios can be applied to Michigan.

Table 7. Total GDP of Tourism-Related Industries (\$ millions, except jobs)

Industry Sector	Output	Jobs	Employ Comp	Propr. income	property income	Other Indirect Bus tax	Value Added
Hotels And Lodging Places	1,681	41,947	645	33	284	124	1,085
Eating & Drinking	10,035	301,227	3,617	120	950	680	5,368
Amusement And Recreation	1,205	43,208	443	47	253	62	805
Membership sports	521	17,858	223	24	23	19	290
Entertainment	1,281	17,757	325	51	12	15	403
Prof sports	659	5,807	289	31	23	30	373
Retail Trade	24,960	639,438	12,233	893	4,042	4,131	21,298
Wholesale Trade	32,643	248,540	12,412	186	5,077	4,668	22,343
Auto rental and leasing	707	6,492	171	31	194	60	456
Auto repair and services	3,343	38,839	983	166	585	173	1,907
Local transportation	440	9,403	206	12	47	10	275
Air transportation	3,618	31,345	1,498	33	594	287	2,412
Arrangement Of Passenger	657	8,614	219	100	143	17	479
Transportation Services	814	11,598	333	138	71	6	547
Rail Transport	991	5,431	402	-	176	26	603
Water transportation	410	2,430	70	1	30	8	109
Total (tourism sectors)	83,965	1,429,934	34,067	1,866	12,504	10,315	58,752
Total economy	603,771	5,450,325	188,817	15,177	87,952	21,619	313,566
Tourism industry Pct	14%	26%	18%	12%	14%	48%	19%

SOURCE: IMPLAN 1998 data for Michigan.

Output=sales

Jobs are not full time equivalents, but include both full and part time jobs.

Employee compensation = wages and salaries including payroll benefits

Proprietors income - sole proprietor's income

Property income = rents and profits to Michigan businesses

Indirect business taxes = sales tax, room tax and other indirect taxes.

Value added = sum of employee comp, proprietor's income, profits and rents and indirect business taxes.

The proportion of sales to tourists in a given sector is a function of the number of tourists relative to local populations and the propensities of residents and tourists to buy the given good or service. Locals rarely stay in nearby hotels¹⁰ and tourists are more likely to buy souvenirs, ice and snacks than flour, broccoli or plumbing supplies. The proportion of sales to tourists vs local residents was estimated by taking the ratio of tourism person days in the state to the state's resident population times 365 (days in the year). The 1995 American Travel Survey was used to estimate person days for the U.S. and Michigan. The ratio of tourists to residents for Michigan and the U.S. are similar enough to argue that the national ratios may be used for Michigan, with a couple exceptions. The TI ratios for auto rental and leasing was reduced from 58% to 11% to account for leasing of new cars¹¹ and the retail trade ratio was increased from 3% to 5%¹².

¹⁰ The hotel sector TI ratio is 80% to account for local banquets, weddings and local meetings and also local use of restaurants in hotels.

¹¹ The 11% figure was obtained by using actual car rental sales in the Lansing area from the five major car rental companies at the airport and comparing the total sales to reported sales in the auto rental and leasing sector for 1998.

Table 8. Michigan Tourism GDP of Tourism -Related Industries 1998

Sector	Output (\$millions)	Value Added (\$millions)	Tourism Industry Ratio	Tourism Output (\$millions)	Tourism Value Added (\$millions)	Pct of Tourism Output
Hotels And Lodging Places	1,681	1,085	80%	1,345	868	19%
Eating & Drinking	10,035	5,368	17%	1,706	913	24%
Amusement And Recreation	1,205	805	21%	253	169	3%
Membership sports	521	290	32%	167	93	2%
Entertainment	1,281	403	18%	231	73	3%
Prof sports	659	373	9%	59	34	1%
Retail Trade	24,960	21,298	5%	1,248	1,065	17%
Auto rental and leasing	707	456	11%	78	50	1%
Auto repair and services	3,343	1,907	3%	100	57	1%
Local transportation	440	275	23%	101	63	1%
Air transportation	3,618	2,412	50%	1,809	1,206	25%
Transportation Services	814	547	5%	41	27	1%
Rail Transport	991	603	3%	30	18	0%
<u>Water transportation</u>	<u>410</u>	<u>109</u>	<u>17%</u>	<u>70</u>	<u>19</u>	<u>1%</u>
Total (tourism sectors)	83,965	58,752		7,236	4,654	100%

TSA totals in Table 8 include air transportation¹³ and car rentals, but they omit the cost of goods sold at retail to tourists.¹⁴ Also note that some hotel sector sales (10%) are moved to the restaurant category in Table 4 to convert them from an industry to a commodity basis and make the figures more comparable with the MITEIM model. Table 9 expands tourism satellite accounts to cover jobs, employee compensation and other components of value added. The key tourism sectors here should roughly match the direct effects by sector from the MITEIM model (Table 6).

Tourism satellite accounts and the MITEIM model provide overall estimates of the economic importance of tourism to the state. The satellite approach works from receipts in various tourism-related industries while the MITEIM model uses estimates of the number of visitors and their spending patterns. Consistency in the two sets of results helps to validate the economic estimates.

An advantage of the MITEIM model approach is the ability to identify the contribution of distinct travel market segments to economic activity in the state. The MITEIM lodging segments identify the relative importance of day trips and visitors staying in various types of accommodation on overnight trips. Visitors staying in motels, B&B's and other rented accommodations accounted for 41% of tourist spending in the state in 2000, followed by stays with friends and relatives (29%) and then day trips and stays in an owned seasonal home (13% each). Campers account for 4% of overall tourist spending.

¹² The national ratio for retail trade excludes gasoline service stations (TI ratio of 7%), while we include gasoline purchases within retail trade. Also, tourist spending profiles for Michigan include a higher percentage of spending on retail items and the national ratio for retail was based on limited data.

¹³ TI ratio for air transportation is reduced from the national ratio of 76% to 50% for Michigan. This partly adjusts for Michigan residents flying out of the state.

¹⁴ The retail margins on these purchases are covered in the retail trade sector. Wholesale margins are excluded from these accounts.

Table 9. Michigan Tourism Gross Domestic Product (Millions of \$, except jobs)

Sector	Output	Jobs	Employ Comp	Prop income	Other prop income	Indirect Bus taxes	Total VA
Hotels And Lodging Places	1,345	33,558	516	26	227	99	868
Eating & Drinking	1,706	51,209	615	20	162	116	913
Amusement And Recreation	253	9,074	93	10	53	13	169
Membership sports	167	5,715	71	8	7	6	93
Entertainment	231	3,196	58	9	2	3	73
Prof sports	59	523	26	3	2	3	34
Retail Trade	1,248	31,972	612	45	202	207	1,065
Auto rental and leasing	78	714	19	3	21	7	50
Auto repair and services	100	1,165	29	5	18	5	57
Local transportation	101	2,163	47	3	11	2	63
Air transportation	1,809	15,672	749	17	297	143	1,206
Transportation Services	41	580	17	7	4	0	27
Rail Transport	30	163	12	0	5	1	18
<u>Water transportation</u>	<u>70</u>	<u>413</u>	<u>12</u>	<u>0</u>	<u>5</u>	<u>1</u>	<u>19</u>
Total (tourism sectors)	7,236	156,116	2,877	156	1,016	605	4,654
Percent of Michigan GDP	1.2%	2.9%	1.5%	1.0%	1.2%	2.8%	1.5%
Tourism, excl air transp.	5,428	140,443	2,128	139	719	462	3,448

NOTE: These accounts do not include any activity in the wholesale trade or travel arrangements sectors.

Comparison with TIA travel economic impact estimates for Michigan

Table 4 demonstrates the consistency of MITEIM and TSA estimates for Michigan in 1998. We can also make comparisons with the Travel Industry Association's (TIA, 2000) TEIM model. Comparing TIA's 1999 figures with either MITEIM 2000 figures (or 1998 MITEIM or TSA figures) illustrates some of the differences in the impact estimates. Our analysis suggests that the TIA figure of \$11.5 billion is likely low. Including imputed rents, airfares, and a pro-rated vehicle operating cost would raise the MITEIM or TSA estimates for Michigan to near \$15 billion for 2000, thirty percent higher than TIA's 1999 estimate.

While the MITEIM and TIA totals are similar when airfares are excluded, there are significant differences in individual items. The TIA lodging estimate is higher, but it includes imputed rents on seasonal homes. We estimate that imputed rents on seasonal homes in Michigan at \$1.5 billion in 2000. This equates to a rental value of \$100 per night. With seasonal homes occupied an average of 65 nights per year, total imputed rent per home is about \$6,500 annually. This figure also roughly equals the annual operating costs of seasonal homes in Michigan, so it seems to capture actual expenses fairly well (Stynes, Zheng and Stewart, 1997). Michigan has 234,00 seasonal homes, according to the 2000 Census. Including imputed rents on these homes would increase the MITEIM lodging estimate to \$3 billion and add \$1.5 billion to the overall tourism spending estimate.

Table 10. Comparison of MITEIM and TIA Michigan Tourism Spending Estimates, 1999- 2000. (\$ millions)

Spending category	TIA-1999	MITEIM-2000
Lodging	1,789	1,532
Food Service	2,592	3,000
Entertainment/Recreation	808	765
Retail Trade	915	1,995
Public Transportation	3,072	230
Auto expenses	2,336	1,254
Total	11,512	8,777
Total Minus Airfare ^a	8,670	8,777

a. Our airfare estimate is the TIA public transportation figure minus the MITEIM estimate, which does not include airfares.

TIA combines restaurant sales and grocery spending in its food service category. The MITEIM estimate for the combined food category is 16% higher than the TIA estimate, likely due to higher grocery spending by camping, vfr and seasonal homes segments that may not be fully captured in the TIA model.

Entertainment/recreation expenses are comparable, although the growth in casino spending in Michigan is likely not fully captured in either model. Retail spending estimated in the MITEIM model (after omitting groceries and gasoline) is still about twice the TIA estimate. There are large discrepancies in the estimates of tourist spending on retail items across different studies and more careful research is needed to fully sort this out. Given that shopping is one of the most popular travel activities, we suspect our higher retail spending estimate may be closer to the true figure than others that have been reported. The failure of national travel surveys to itemize retail purchases in much detail may explain the lower estimates.

The differences in auto and public transportation categories are explained by different definitions. MITEIM excludes airfares and only covers out-of-pocket auto expenses, while TIA include airfares and a pro-rated cost of vehicle operating expenses. If the pro-rated vehicle operating cost is half of the total auto expenses, then MITEIM and TIA estimates are consistent.

This concludes our comparison of different tourism spending and economic impact estimates for Michigan. In the final section of this report, we attempt some initial estimates of the relative contribution of different vertical travel market segments to the statewide totals. While some of these will clearly be “ballpark” estimates, we believe the more that one can break down tourism activity, markets, and statistics into various sectors, segments, and regions, the more useful the information becomes. Greater detail is also the key to validating and improving the estimates over time.

Michigan Vertical Travel Market Segments

Over the past five years, we have employed a consistent set of methods to estimate the economic importance of Michigan's key travel market segments. Our own studies along with selected studies conducted by others now provide sufficient information to assemble at least ballpark estimates of the relative importance of outdoor recreation travel market segments in terms of spending on trips within Michigan.

Outdoor Recreation Travel Market

We estimate that tourists spent \$12 billion in Michigan in 2000 of which \$3.1 billion was air-related expenses. Omitting airfares and related expenses of air travelers, travelers spent \$8.8 billion in Michigan on trips of 60 miles or more away from home. We estimate that outdoor recreation accounts for about 20% of all tourist spending or about \$1.7 billion in 2000 (Table 11). Not all outdoor recreation activities are covered below, so the outdoor recreation trip spending figure is likely somewhat higher.

Studies of individual outdoor recreation activities or industries often cover both activity on trips away from home as well as within the local community. To assess the contribution to tourism activity we must exclude recreation activity within 50-60 miles of home. Many trips also involve multiple activities so there is considerable overlap and potential double counting of spending across different studies. We take our best shot at sorting out these overlaps in Table 11 below, recognizing that assignments of overlapping spending to individual activities is somewhat arbitrary.

Table 11. Size of Michigan's Outdoor Recreation Market Segments in Terms of Trip Spending (\$ millions), circa 2000.

Vertical Market (year of study)	Total	Tourism	
		Portion	Primary ^a
Fish (1996)	583	437	250
Camping (2000)	374	374	250
MI State Park Visits (1998)	464	331	200
Golf (2000)	800	300	280
Boating (1998)	700	300	250
Hunt (1996)	303	227	200
DH Ski and snowboard (2000/01)	146	110	110
Snowmobile (1996/7)	160	110	110
ORV (2000)	NA	40	40
Canoe Livery (1999)	NA	12	12
Total Outdoor Recreation	3,530	2,241	1,702

a. Spending totals are not price adjusted across different years and only cover trip-related expenses. The "Primary" column attempts to avoid double counting of spending on multiple activity trips.

The "Total" column in Table 11 is the total trip spending estimated for each of these outdoor recreation activities and includes local trips. Sources for each activity are provided in the reference list at the end of this report. The tourism portion for each activity includes spending on trips of 60 miles or more away from home. For some activities like camping, all trips are considered tourism. However, over half of the spending on golf (Stynes, Sun and Talhelm, 2000) and boating (Mahoney, Stynes and Lee 2000) takes place close to home, so the tourism portion of overall spending is less than half of the total.

In the "Primary" column we make an attempt to sort out double counting across activities/studies. For example about half of boating trips involve fishing from boat and \$123 million of the \$583 million angler trip spending reported for Michigan in the national survey is boat-related (USDI, Fish and Wildlife Service, 1998). This same study reports that nine million dollars of hunting expenses are boat related. We count roughly \$500 million out of \$737 million combined tourism spending for fishing and boating after omitting the overlap between the two activities.

Camping trips often involve a variety of activities. The "Primary" camping column excludes trips where camping is simply a lodging type for some other listed activity such as boating or fishing. Eighty million of the spending on trips to Michigan State Parks is by state park campers, so this amount is excluded from the Michigan State Park category and counted under camping in the "Primary" column. The Camping category covers camping trips that do not entail one of the other listed activities, so it covers a portion of hiking, swimming, nature study, birdwatching and a host of activities that are not listed. The Michigan State Park category also covers a variety of day trips involving these same activities as well as picnicking. For many of the omitted outdoor recreation activities, the majority of activity and spending occurs near home (e.g. tennis, jogging, walking, picnicking, wildlife viewing, swimming), although every activity has some spending that occurs on trips away from home.

Since these are at best "ballpark" estimates, we have not price adjusted the figures to a common year. Activity levels and spending for many activities (N.B. snowmobiling and downhill skiing) are sensitive to weather patterns and can fluctuate from year to year. All studies for Table 11 were conducted between 1996 and 2000. The Hunting and Fishing figures are taken from the 1996 National Survey of Hunting and Fishing, while all the other figures are from our own studies.

Vertical Markets Based on Trip Purposes and the 1995 American Travel Survey

The 1995 American Travel Survey (BTS, 1998) did not estimate spending, but is one of the best sources for the number and types of trips to Michigan. Table 12 reports the portion of household trips by primary purpose from that study. If we make the simplifying assumption that there are no significant differences in spending across the different trip categories and assume these percentages of trips by type still hold, we can further break down the \$8.8 billion in spending for 2000 by trip purpose. The assumption of equal spending per trip across different trip purposes likely does not hold (business trips generally have higher than average spending and VFR trips lower than average), but it provides at least an initial basis for comparison. A rough estimate of spending for each trip purpose is obtained by multiplying the percentages by the \$8.8 billion total tourist spending in Michigan in 2000.

Table 12. Spending by Trip Purpose Using 1995 ATS Trip Shares and Year 2000 Tourist Spending ^a

Main purpose of trip	Pct of Trips	Spending (\$Millions)
Business	25%	2,221
Pleasure	64%	5,617
Visit friends or relatives	33%	2,888
Leisure	31%	2,721
Rest or relaxation	14%	1,246
Sightseeing	3%	246
Outdoor recreation	10%	878
Entertainment	3%	290
<u>Personal business</u>	<u>11%</u>	<u>939</u>
<u>Total</u>	<u>100%</u>	<u>8,777</u>

a. These are very rough estimates assuming equal spending across types of trips

The rough estimate of outdoor recreation trip spending derived from the ATS study is about half of what we estimate in Table 11 from studies of individual activities. There are many potential explanations for the discrepancy. We raise them here largely to suggest refinements in research and greater consistency in spending studies.

ATS classified only 10% of trips to Michigan in 1995 as being primarily for outdoor recreation. However many camping and seasonal home trips in that study were classified under rest and relaxation. Outdoor recreation is often a secondary purpose of trips to visit friends and relatives or business trips. The ATS study also restricted trips to 100 miles or more (one way) vs the 60 mile distance used in MITEIM and many of the outdoor recreation studies cited in Table 11. Outdoor recreation as a percentage of pleasure trips was 15% in the ATS study. This figure is consistent with a survey conducted by the Michigan Travel Tourism and Recreation Resource Center (TTRRC) from 1996-1998 (Holecek et. al. 2000), which covers trips of 50 miles or more. The TTRRC study reports that 56% of Michigan pleasure travelers participated in outdoor recreation on their most recent trip, reinforcing the fact that outdoor recreation is an important element of most pleasure trips to Michigan.

The spending we attribute to outdoor recreation depends considerably on how multi-purpose trips are treated. Counting only "primary purpose" trips, the spending on outdoor recreation trips in Michigan is likely around \$1 billion (10-15% of all tourism spending). Including trips where outdoor recreation is a secondary purpose raises the figure to as high as \$2 billion (25% of all tourism spending) and counting any trip in which an outdoor recreation activity occurs likely doubles this again to \$4 billion. All of these estimates cover only trip expenditures. There are also substantial impacts from outdoor recreation equipment purchases and durable good purchases not associated with trips.

Further research can help to pin down tourism's economic impact more precisely, and particularly help to assess the relative importance of different market segments. The disaggregation of tourism figures and comparisons across different sources and studies, while pointing to some possible inconsistencies, are the best ways to increase both the reliability and usefulness of tourism spending estimates. Consistency of TSA and MITEIM model estimates in recent studies at the local level are also encouraging (Stynes, 2000, 2001).

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Appendix

Table A1. Statewide Multipliers for selected tourism-related sectors

Sector	Direct effects			Total effects multipliers				
	Jobs/ MM sales	Personal inc/sales	Value Added /sales	Sales II	JobsII/ MMsales	IncII/ sales	VA II/sales	Sales I
Hotels And Lodging Places	23.97	0.40	0.66	1.60	31.65	0.64	1.04	1.28
Eating & Drinking	29.58	0.37	0.54	1.62	36.59	0.59	0.91	1.32
Amusement And Recreation	32.54	0.43	0.70	1.57	39.65	0.65	1.06	1.24
Auto repair and services	11.19	0.34	0.56	1.53	16.88	0.53	0.87	1.26
Local transportation	21.92	0.50	0.61	1.65	29.43	0.75	1.01	1.27
Food processing	4.87	0.17	0.34	1.53	10.94	0.36	0.64	1.34
Apparel from purch mate	8.39	0.30	0.38	1.57	14.64	0.51	0.71	1.31
Petroleum Refining	0.58	0.04	0.12	1.45	4.00	0.17	0.38	1.36
Sporting goods	8.06	0.27	0.49	1.54	13.80	0.47	0.81	1.30
Manufacturing	8.72	0.32	0.52	1.56	14.90	0.53	0.85	1.29
Retail Trade	23.95	0.49	0.83	1.48	29.86	0.67	1.13	1.14
Wholesale trade	7.83	0.41	0.71	1.54	14.35	0.62	1.04	1.22

a. Multipliers from an IMPLAN model of Michigan economy, 1999.

Direct effects are the impacts in the given sector. These ratios convert sales to jobs, personal income and value added. E.g. Hotels create 23.97 jobs for every million dollars in sales. Forty percent of hotel sales goes to personal income (wages and salaries of hotel employees), 66% to value added. Value added includes personal income, profits and rents to the hotel and indirect business taxes.

Total effect multipliers are the total sales, income and jobs in the state relative to direct sales. Total effects include direct plus indirect plus induced effects and capture impacts as tourist spending circulates throughout the state economy. While the direct effects are in the given row industry, secondary effects accrue to many different sectors of the economy. Using the hotel sector to illustrate,

Every dollar of direct sales in hotels generates another \$.60 in secondary sales within the state for a total sales impact of \$1.60 (Sales II). Indirect effects are \$.28 while induced effects account for the other \$.32. With secondary effects every million dollars of hotel sales supports 31.65 jobs, 23.97 jobs in hotels (the direct effects) and another 8.68 jobs through secondary effects. Every dollar of hotel sales yields \$.64 in personal income and \$1.01 value added when secondary effects are included.

Note that Table A1 gives statewide multipliers. Multipliers for local areas will be smaller. For example, the sales II multiplier for hotels in rural counties will be around 1.2, will usually be between 1.4 and 1.5 for smaller metro areas and will approach the state figure for larger regions including Detroit. Contact the author for suitable multipliers for other regions in Michigan.