



THE MICHIGAN GOLF ECONOMY

REPORT

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GOLF 20/20 for the
Michigan Golf Alliance,
and prepared by SRI International.





MICHIGAN
SECTION



The Michigan Golf Economy

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THE MICHIGAN GOLF ECONOMY 2006

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I. STUDY OVERVIEW

With over 865 courses and 86 golf resorts, golf among the apple blossoms and white pines is much more than a recreational pastime—it is a key industry contributing to the vitality of Michigan’s economy. A tribute to the game’s popularity, Michigan ranks third in the U.S. in the number of 18-hole equivalent courses.¹ In 2006, the size of Michigan’s direct golf economy was approximately \$2.2 billion. Golf brings visitors to the state, drives new construction and residential development, generates retail sales and creates demand for a myriad of goods and services through the operation of the golf facilities themselves. When the total economic impact of these golf-related activities is calculated, Michigan’s golf industry generated approximately \$4.2 billion of direct, indirect and induced economic output, \$1.4 billion of wage income and 56,977 jobs in 2006.

As a major manufacturing state, Michigan’s key industries include motor vehicles, chemicals, plastics, machine tools, processed food, pharmaceuticals and medical devices. To put the size of Michigan’s golf economy in context, the direct revenues generated by Michigan’s golf industries (\$2.2 billion) exceeded or are comparable to the revenues generated by important manufacturing industries, such as motor vehicle steering and suspension components (\$2.8 billion), medical equipment and supplies (\$1.6 billion), and breakfast cereal manufacturing (\$1.3 billion)—Battle Creek, MI, is home to both Kellogg’s and Post Cereals. Thus, golf is a key economic sector in the state.²

While many state-level, economic studies surrounding the game of golf have been conducted across the country over the last several years, no comprehensive, standardized framework has been employed in these studies. This has made it difficult to monitor industry growth over time in a specific state, or to make state-to-state or regional comparisons. SRI International and GOLF 20/20 are currently working with key golf stakeholders in several states, including Michigan, to bring consistency to the industry measurement and reporting process. This report describes and analyzes Michigan’s golf industry including the revenues and economic impact generated by the industry and will assist Michigan’s industry stakeholders³ in raising awareness of the impact of golf to state and local policymakers.

There are many potential uses for such an analysis:

- Defining the range of core and enabled industries associated with the game of golf;
- Clearly articulating, for policymakers, the employment and revenue-generating contributions of the golf industry to the state economy; and
- Building credibility and recognition of the golf industry as a significant business sector and a driver of economic activity in the state.

¹ National Golf Foundation (2007). *Golf Facilities in the U.S., 2007 edition*, p.11.

² U.S. Census Bureau. 2002 Economic Census. SRI used the GDP implicit price deflator to inflate 2002 industry revenue data to 2006 dollars.

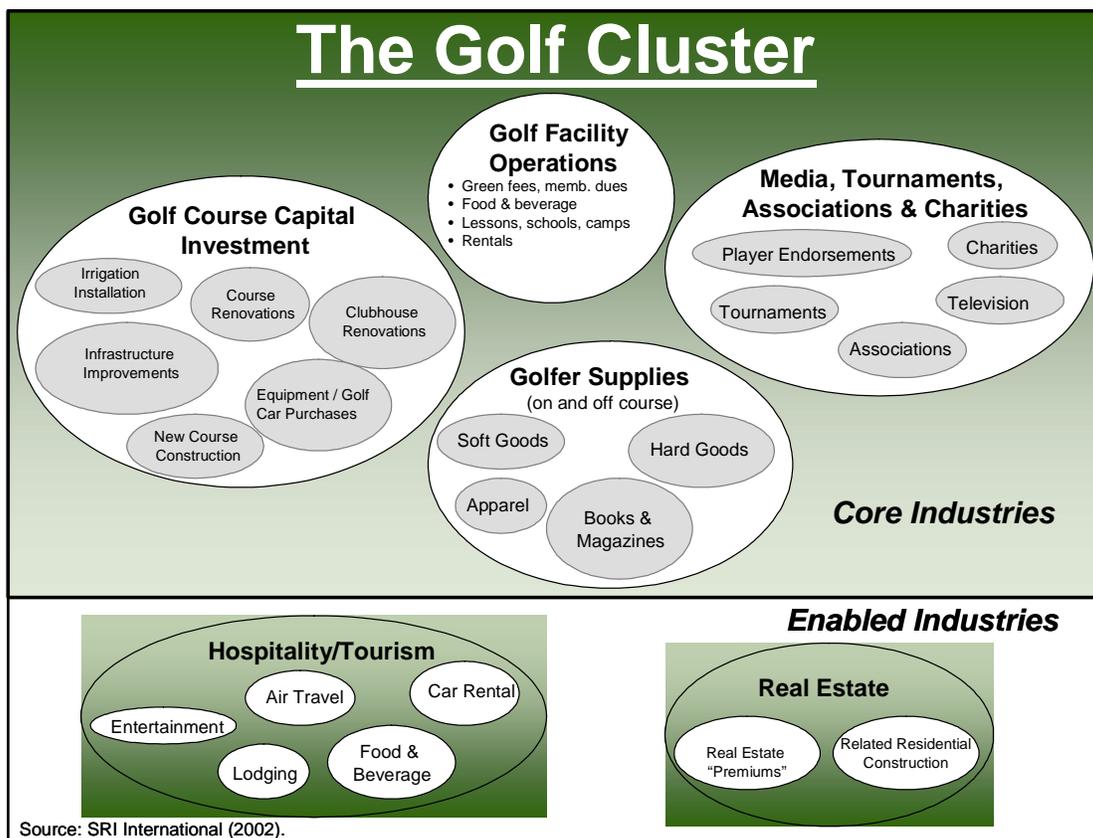
³ The Michigan Golf Alliance is a statewide alliance of representatives from the Golf Association of Michigan (GAM), the Michigan Golf Course Owners Association (MGCOA), the Michigan Section of the Professional Golfers’ Association of America (MPGA), the Michigan Turfgrass Foundation (MTF), the Michigan Economic Development Corporation’s (MEDC) Travel Michigan office and related golf organizations.

II. ANALYTICAL FRAMEWORK

Prior economic studies of the golf industry, in several states, emphasized different factors and outcomes. For example, one focused largely on the turf industry, while another examined the impact of sports and recreation-related tourism more broadly. Ideally, one would want to include all the key activities and industries that are enabled by and benefit from the game of golf. To meet this goal, SRI has developed a standardized, economic impact framework that can be employed to measure a comprehensive set of golf-driven industry components. This state-level framework draws on the conceptual model of the golf economy developed in SRI's 2000 national-level *The Golf Economy Report* and our 2005 state-level *The Virginia Golf Economy Report*.

A. Golf Industry Cluster Definition

To arrive at economic impact, one must first estimate the size of the golf economy in the state. This entails mapping out where the golf industry begins and ends, and then estimating the size of each of these industry segments. We divide the golf industry cluster into two main categories: (1) core industries and (2) enabled industries (see figure). The golf industry cluster begins with the golf facilities themselves and with those other core industries that produce goods and services used to operate facilities and to play the game: golf equipment and golf apparel manufacturers, golf course architects, turf maintenance equipment and service providers, and club management services. The game of golf further enables a number of other industries, such as golf-related tourism and real estate development.



We detail these industry segments and estimate their size in the following section. Having defined the core and enabled golf industries, it is possible to estimate the size of each industry segment and to total them for an overall estimate of the size of the golf economy. Multipliers can then be applied to calculate the ripple effects of these economic activities in terms of: (1) impact on total state economic output and (2) impact on total state employment. However, this process is complicated by the fact that, while most of these industries produce golf-related goods and services, the firms themselves may not limit their activities exclusively to the golf industry. For example, Nike produces golf shoes, but also running, tennis, basketball and other shoes. Therefore, in general, our approach is to include only those firms and sales that are directly attributable to the game of golf. In so doing, we use a number of different estimation techniques to ensure that our final estimates are reasonable and robust.

Moreover, additional data challenges and location factors make estimation more difficult at the state level than the national level. For example, many of the major golf equipment manufacturers have production facilities in just a few states. Similarly, several of the major golf association headquarters are located in Florida. The presence of such firms, associations, or a number of well-known courses will change the size of golf's economic impact in the state considerably. Therefore, one should consider the size of the golf economy and the game's economic impact in the state in relation to the size of the overall economy and other major industries in that state.

B. Data Sources

SRI developed its framework for measuring the state golf economy based on a broad set of existing sources and data. Although there have been several state-level impact studies conducted in the past, by numerous golf constituencies, few have used a similar methodology, resulting in very different estimates depending on the golf economy elements included. A great deal of data is collected on the golf economy by many organizations on a regular basis. For example, government agencies, national golf associations and national associations in the enabled industries collect data on different industry elements periodically—annually, every few years, or every five years. In addition, these data are based on a relatively consistent set of inputs by large numbers of constituents. Therefore, the principal challenges involve acquiring the data, inflating or deflating the estimates for the proper target year, and then combining them to represent the entire golf economy in the target year. The core and enabled industry indicators and data sources we have identified are presented below.

State Golf Economy Indicators and Data Sources		
Indicator	Primary source	Cross-validation source
Golf Facility Operations		
# of golf course facilities by type	2006 PGA Facility Database (2005 data)	2006 NGF Facility Database 2002 Economic Census; state task force
Avg. revenues by type of facility	2006 PGA Facility Operations Survey (2005 data)	2002 Economic Census; NGF
# of rounds by facility type	2006 PGA Compensation Survey (2005 data)	National Golf Foundation
Avg. revenues by round type	2006 PGA Compensation Survey (2005 data)	National Golf Foundation (2005 data)

State Golf Economy Indicators and Data Sources

Indicator	Primary source	Cross-validation source
Golf Course Capital Investments		
Avg. capital investment by type of facility	GCSAA 2005 and 2007 Compensation Survey	National Golf Foundation; State task force (2005 data)
Number of golf courses under construction in current year	National Golf Foundation (2006 data)	NGF Construction database (2006 data); state task force
Avg. cost of construction per new course	Golf Course Builders Association of America	State task force; interviews with golf course builders in state
Golfer Supplies		
Golf-related manufacturing exports	Company interviews	Company annual reports; state task force
Golf equipment	National Sporting Goods Association (2006 data)	2006 PGA Compensation Survey (2005 data); 2006 PGA Facility Operations Survey (2005 data)
Golf apparel	National Sporting Goods Association (2006 data)	2006 PGA Compensation Survey (2005 data, gross sales by facility type); 2006 PGA Facility Operations Survey (2005 data)
Golf media	<i>Bowker Annual of Library and Book Trade Information</i> (2006); Magazine Publishers of America	Amazon and Barnes & Noble for top golf book sales
Major Tournaments		
# of major tournaments held in state	State task force	Major golf associations
Visitor attendance at tournaments, tournament revenues	Major golf associations	State task force or state associations
Associations & Charities		
# of major state-level golf associations	State counterparts of national golf associations	State task force
Annual revenues/budgets	State golf associations	State task force
# of employees	State golf associations	State task force
Revenues raised through golf-related charities	Sampling of golf professionals to identify # of tournaments and average amount raised	National Golf Foundation
Real Estate		
# of residential golf courses under construction	National Golf Foundation; real estate/development agencies	Interviews with state level golf course architects and real estate developers
# of lots per course	Interviews with golf course architects and real estate developers	Golf Course Builders Association of America, National Golf Course Owners Association, National Association of Home Builders
Avg. construction costs per home and real estate premium	Interviews with golf course architects and real estate developers	Golf Course Builders Association of America, National Golf Course Owners, National Association of Home Builders
Hospitality/Tourism		
# of golf travelers or # of golf-related trips to the state	Travel Industry Association (TIA) of America	State department of tourism/recent surveys/studies
Avg. spending per traveler or per trip	Travel Industry Association (TIA) of America	State department of tourism/recent surveys/studies; National Golf Foundation

III. THE SIZE OF MICHIGAN'S GOLF ECONOMY

SRI estimates the total size of Michigan's golf economy in 2006 was approximately \$2.2 billion. This estimate is comprised of \$1.4 billion in core industries and an additional \$830.5 million in enabled industries, as illustrated in the table below.

Size of Michigan's Golf Economy in 2006 by Segment (\$ million)	
Core Industries	
Golf Facility Operations	\$1,149.0
Golf Course Construction and Capital Investment	\$70.9
Golfer Supplies (retail margin and value-added exports)	\$124.5
Major Golf Tournaments and Associations	\$16.1
Total Core Industries	\$1,360.5
Enabled Industries	
Real Estate	\$198.2
Hospitality/Tourism	\$632.4
Total Enabled Industries	\$830.5
TOTAL GOLF ECONOMY	\$2,191.0

A. Core Industries

Golf Facility Operations

At the center of the golf economy lies the golf facilities—the largest component in terms of revenues. The revenue that flows through a golf facility comes primarily from greens fees, membership fees, golf cart rentals and associated spending on food and beverages. This revenue, in turn, supports a host of supply sectors including golf equipment manufacturers, food and beverage providers, and turfgrass equipment and maintenance service providers. Michigan's 865 golf courses, 73 stand-alone ranges, and 70 miniature golf facilities generated \$1,149.0 million of revenues in 2006.

Michigan Golf Facility Revenues in 2006 (\$ millions)	
Golf Facilities	\$1,101.3
Practice Ranges & Alternative Facilities	\$47.7
TOTAL¹	\$1,149.0

Note: ¹ Golf facility revenues exclude on-course merchandise sales, which are included in the Golfer Supplies industry segment.

This is a sizeable industry, but even more significant when compared to other popular revenue-generating sports. For example, Michigan's golf facility revenues exceed those of all other spectator sports in the state combined—hockey, football, basketball, baseball, etc. These other sports generated revenues of \$599.6 million in 2002, or \$667.8 million in 2006 inflation-adjusted dollars.⁴

⁴ U.S. Census Bureau (2005). *Michigan: 2002, 2002 Economic Census, Arts, Entertainment & Recreation Geographic Series*, August 2005.

Golf Course Capital Investments

Golf facilities generate economic impacts beyond operational revenues through investments to upgrade and maintain facilities and infrastructure, and through the construction and expansion of courses. These investments create employment in the construction and maintenance industries and often involve the purchase of significant amounts of equipment and supplies from companies within the state. SRI's estimate of Michigan's golf course capital investment is divided into two segments: (1) capital investment at existing facilities and (2) new course construction. Together, Michigan's golf establishments made \$70.9 million worth of capital investments in 2006: \$53.5 million of investments at existing facilities and \$17.4 million for the construction of new courses.

Michigan Golf Course Construction and Capital Investment in 2006 (\$ millions)	
Golf Course Capital Investment ¹	\$53.5
New Course Construction	\$17.4
TOTAL	\$70.9

Note: ¹ Only the New Course Construction category is included in the economic impact analysis, because it represents new economic output or activity. Golf course capital investment is typically financed through golf facility revenues, so including both Golf Course Capital Investment and Golf Facility Operations in economic impact analysis would result in double-counting.

Golfer Supplies

In 2006, Michigan golfers spent significant sums on items such as golf balls, golf clubs, golf apparel, golf instructional books and DVDs. While Michigan is not a manufacturer of golf equipment (clubs, bags, shoes, balls, etc.), apparel or media (books, magazines, videos/DVDs), the margin that Michigan retailers and golf facilities made on the sale of these golfer supplies totaled \$119.1 million in 2006. In addition, Michigan is home to a small number of companies that manufacture golf cart-related components—Flow-Rite Controls, Masterflux, etc. The value of products purchased by golf facilities is already captured in the Golf Facility Operations segment. However, sales to golf facilities in other states and countries are not. Therefore, we include these companies' value-added exports in our analysis, here. In 2006, Michigan manufacturers' value-added exports of golf-related products were approximately \$5.4 million.

Michigan Manufacturers' Value-Added Exports of Golf-Related Products in 2006 (\$ millions)	
TOTAL	\$5.4

Michigan Retailers' Net Revenues on Consumer Purchases of Golfer Supplies in 2006 (\$ millions)	
Golf Equipment (retail margin)	\$69.5
Golf Apparel (retail margin)	\$48.6
Golf Media (retail margin)	\$1.0
TOTAL	\$119.1

Note: This includes on-course and off-course purchases of golf equipment, apparel and media.

State Golf Associations, Tournaments and Charities

Associations

Numerous associations support the game of golf in Michigan. Some of the largest include the state chapters of national golf organizations: the Michigan Section of the Professional Golfers' Association of America, the Golf Association of Michigan, the Michigan Golf Course Owners Association, local chapters of the Golf Course Superintendents Association of America (West, North and Detroit), and the Michigan Turfgrass Foundation. Other associations include the Michigan PubLinx Golf Association and numerous specialty associations. In total, our estimate of Michigan golf association revenues was \$5.4 million in 2006.

Major Tournaments

In 2006, Michigan hosted two professional golf tournaments, the Buick Open and the Ford Seniors Players Championship. The Buick Open is an annual PGA TOUR event held at Warwick Hills Golf and Country Club in Grand Blanc. The Ford Seniors Players Championship is one of five major championships in men's senior golf. In 2006, the tournament was held at the Tournament Players Club (TPC) of Michigan in Dearborn. These two events generated approximately \$10.7 million in 2006, excluding the tournament purse and costs for TV broadcasting.

Michigan's Major Golf Tournaments & State Golf Association Revenues in 2006 (\$ millions)	
Major tournaments	\$10.7
Associations	\$5.4
TOTAL	\$16.1

Charities

Michigan's golf industry makes significant contributions to a variety of charities. For example, the Golf Association of Michigan holds an annual Team Championship event which benefits the Michigan Turfgrass Foundation and the Evans Scholars Foundation which provides full-tuition college scholarships to young golf caddies. The Buick Open, a PGA TOUR event, raises significant funds for local charities each year, such as the Easter Sales, American Red Cross, the Whaley Children's Center and the American Lung Association in 2006. Michigan golf facilities were also active in hosting the first national Patriot Golf Day on September 1, 2007 to raise money for Wounded Warriors and the Fallen Heroes Foundation.⁵ Golf course owners, operators and golf professionals are happy to serve as access points for annual fundraising by local service organizations. Overall, SRI estimates that the amount of charitable giving attributed to the game of golf in Michigan to be \$118.1 million in 2006.

⁵ Wounded Warriors provides support to the families of those who have been wounded, injured or killed during combat operations. The Fallen Heroes Foundation provides scholarships to children of killed or severely disabled American soldiers.

Charitable Giving by Michigan Golf Industry in 2006 (\$ millions)	
TOTAL	\$118.1

B. Enabled Industries

Real Estate

Real estate developers use amenities to attract new home buyers, and golf is a key amenity in both rural and urban areas of the state. A number of new golf communities were under construction in 2006 offering a mix of single family homes and condominiums. New residential units are under construction at existing courses (e.g., Boulder Pointe in Oxford near Pontiac), as well as new courses (e.g., The Glaciers in Washington and Chocoley Downs near Marquette in the Upper Peninsula). This new golf-related real estate construction generated \$102.1 million in 2006. Furthermore, in 2006 there were approximately 174 golf communities in Michigan, and we estimate the “golf” premium associated with the sale of real estate in these developments to be \$96.1 million. The premium is the additional amount a buyer is willing to pay for a home or property located on a golf course or within a golf community.

Michigan’s Golf Real Estate Revenues in 2006 (\$ millions)	
Golf-Related Residential Construction	\$102.1
Realized Golf Premium	\$96.1
TOTAL	\$198.2

Note: The sale of existing homes is considered a transfer of assets rather than new economic output, so the golf premium that is realized in the sale of an existing home is not included in the economic impact analysis.

Hospitality/Tourism

Across the country, golf has enjoyed increasing popularity, whether it is the primary motivation for a trip or is connected to other recreational time spent with friends and family, or business colleagues. Michigan’s large number of golf resorts and high-profile courses anchors the state as a prime golf destination. Golf is actively promoted as a major tourist attraction on the state’s travel website, <http://www.michigan.org/travel/golf/>. SRI estimates golf-related tourism spending in Michigan to be \$632.5 million in 2006. This is based on: (1) an estimated 2.2 million golf trips taken annually in the state and (2) an average of \$286 of tourism spending per trip.

Michigan’s Golf-Related Travel Expenditures in 2006	
# Golf trips	2,209,000
Average travel \$ per trip	\$286.29
TOTAL (2006\$ millions)	\$632.5 million

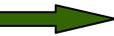
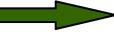
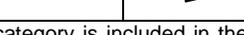
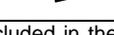
Note: This figure assumes a similar level of golf-related travelers in 2006 as in 2002, the date of the last visitor study that estimated the number of trips in Michigan that included golf.

IV. GOLF'S ECONOMIC IMPACT IN MICHIGAN

Golf's impact on the Michigan economy includes both the direct effects of economic activity in the core and enabled golf industries, as well as the indirect and induced (or multiplier) effects on the overall economy. In economics, the idea of the multiplier is that changes in the level of economic activity in one industry impacts other industries throughout the economy. For example, a fraction of each additional dollar spent at a golf course is, in turn, spent by the golf course to purchase goods and services for golf course operation—these are indirect effects. In addition, golf course employees then spend a fraction of their incomes on personal goods and services, and this requires companies in a myriad of other industries to hire employees and increase output to meet this demand—these are induced effects. Therefore, golf's total (direct plus multiplier) economic impact includes both the employment and wage income of those employed in golf-related industries, as well as the employment and wages generated in other sectors of the economy through subsequent purchases of goods and services by golf industry employees.

In 2006, the Michigan golf economy generated:

- An additional \$2.1 billion in indirect and induced economic impacts for the State of Michigan for a total impact of \$4.2 billion;
- A total impact of 56,977 jobs; and
- Total earnings of \$1.4 billion.

Multiplier Impacts on State Economy						
Industry	Direct	Indirect	Induced	TOTAL OUTPUT (\$ million)	TOTAL JOBS (\$ million)	TOTAL WAGES (\$ million)
Golf Facility Operations	\$1,149.0			\$2,275.1	29,402	\$781.8
Golf Course Capital Investment ¹	\$17.4			\$40.3	351	\$13.2
Golfer Supplies	\$124.5			\$257.8	3,002	\$80.9
Tournaments & Associations	\$16.1			\$35.9	469	\$13.7
Real Estate ²	\$102.1			\$236.6	2,057	\$77.3
Hospitality/Tourism	\$632.4			\$1,334.7	21,697	\$444.8
TOTAL	\$2,041.5			\$4,180.4	56,977	\$1,411.7

Notes: ¹ Only the New Course Construction category is included in the economic impact analysis, because it represents new economic output or activity. Golf course capital investment is typically financed through golf facility revenues, so including both Golf Course Capital Investment and Golf Facility Operations in economic impact analysis would result in double-counting. ² Similarly, the sale of existing homes is considered a transfer of assets rather than new economic output, so the golf premium that is realized in the sale of an existing home is not included in the economic impact analysis. Consequently, these two numbers are neither carried across nor reflected in the total impact calculation.
Source: Multiplier values for each Michigan industry sector were obtained from the Bureau of Economic Analysis RIMS II program.

V. DETAILED METHODOLOGY & DATA SOURCES

A key challenge in this study was to identify reliable state-level data sources and to develop methodologies for measuring the size of industry components for which cross-state estimates do not exist in straightforward metrics, e.g., golf real estate and off-course purchases of golf apparel and equipment. This section describes each of the core and enabled industries included in the golf economy and SRI's approach to measuring each of these segments.

A. Golf Facility Operations

For this industry segment, we analyzed the number of golf facilities and average facility revenue data to derive a total facility operations estimate. Revenues for this segment include: annual membership fees, daily fees, and cart rental fees; purchases of golf apparel and equipment in pro shops; golf lessons; tournament entry fees; consumption of food and beverages; etc.

Number of golf course facilities. Many golf associations track the number of golf facilities in a state: the National Golf Foundation (NGF), the PGA of America, and state counterparts of national golf organizations. The U.S. Census Bureau also surveys golf course facilities as business establishments in its Economic Census every five years. However, these organizations' calculations of the total numbers of golf courses in each state, by type of facility, are not always consistent with each other due to: (1) disagreement over whether to count the number of facilities or the number of 18-hole equivalent courses, (2) annual facility or course closures and openings, and (3) inconsistency in the classification of courses, especially resorts.

For example, in some surveys, golf facilities are allowed to self-classify themselves. In others, the surveying organization classifies the facility based on specific criteria. This can mean the difference between a small number of resorts (e.g., a figure that includes five-star accommodation located on or adjacent to an 18-hole course) or a much larger number of resorts (e.g., three-star hotel accommodation located near a daily fee golf course). Similarly, a resort with two 18-hole golf courses could be counted as two golf facilities or as one depending on the reporting organization. Fortunately, the variances caused by these data collection issues are very small, and thus do not materially impact the overall analysis. The table below presents slightly differing estimates for the number of golf course facilities in Michigan in 2006 or the latest available year.

Estimates of Michigan Golf Facilities from Various Sources, 2002-2006					
	2002 Census (# of facilities minus resorts & municipal) ¹	2005 PGA (# of facilities) ²	2006 Michigan Section PGA (# of facilities)	2006 NGF (# of facilities) ³	2006 NGF (# of 18-hole equivalent courses) ³
PRIVATE	673	148	156	134	135.0
PUBLIC		579	623	646	639.5
Daily fee/semi-private		495	555		
Municipal	(PGA: 84)				
Military		84	68		
University					
RESORT	(PGA: 86)	86	86	57	68.5
TOTAL	(843 w/PGA)	813	865	837	843.0

Sources: ¹ U.S. Census Bureau, 2002 *Economic Census*. ² Professional Golfers' Association of America (2006). *Facility Database*. ³ NGF (2007). Total Facility Supply Tables 5-8, *Golf Facilities in the U.S., 2007 edition*, pp.6-8.

After analysis of different golf course facility lists and numbers in collaboration with the Michigan Golf Alliance, SRI used the Michigan Section of the PGA's facility numbers (865) as the basis for our assessment. The Michigan Section of the PGA and the NGF facility numbers are quite close. The PGA facility number (813) may be biased low. The majority of 9-hole courses do not have a PGA member, which is the group that PGA surveys.

Average revenues per facility. The SRI team collected average revenue data from a variety of sources. Here again, the data challenge was that average facility revenues will vary significantly depending on: (1) the number of holes (e.g., a 9-hole course versus a 27-hole course) and (2) the type of facility—whether a golf course facility is private, daily fee, resort, municipal, etc.

The U.S. Census Bureau collects revenue data for golf course facilities as part of its Economic Census of all U.S. establishments every five years. Whereas facility surveys conducted by private sector organizations are often based on low response rates (less than 30 percent), all establishments are required by law to respond to the Census Bureau survey. However, the Census Bureau data has several limitations. Many types of facilities are not included in the survey: (1) resort facilities, (2) municipal and military facilities, (3) driving ranges and (4) golf course facilities without payroll. In addition, in 2002 the national economy was just emerging from an economic recession which may have impacted negatively average golf course revenues. Still, the latest 2002 Economic Census contains revenue, payroll, and employment data on 12,261 golf facilities broken down by state. This provides a robust estimate with which to compare other available golf facility revenue data.

The PGA recently began collecting revenue data for all 50 states on an annual basis through the PGA Annual Operations Survey. The latest available data are from 2005. In addition, PGA revenue data are broken down by type of facility for categories for which Census data are not available—resorts, municipal courses and military courses.

As an additional validity check, we also examined NGF revenue data. However, it is important to note that NGF does not provide state-level facility data. It presents average revenue data for: (1) public facilities for two regions (Sunbelt and Frostbelt) by fee level (mid-range and premium) and (2) private facilities—a national average—by fee level (mid-range and premium). For the table, below, SRI calculated a single NSF average revenue figure for each category by using the sample size and mean.

Estimates of Michigan Average Revenue per Facility Data From Different Sources, 2002-2005			
	Census (2002\$)¹	PGA (2006)²	NGF (2005)^{3,4}
Private facility	\$2,373,389	\$2,476,377	\$3,564,339
Daily fee facility	\$773,861	\$882,805	\$1,291,582
Resort facility	X	\$2,671,664	X
Municipal/military/university facility	X	\$1,286,231	X
Driving range	X	X	\$350,000
Miniature golf	\$254,371	X	X

Sources: ¹ U.S. Census Bureau, *2002 Economic Census*. ² Professional Golfers' Association of America (2006). *Operations Survey*. ³ NGF (2006). *Operating & Financial Performance Profiles of 18-hole Golf Facilities in the U.S., 2007 edition*. ⁴ Golf Range Association of America and NGF (2003). *Profile of Golf Practice Facility Operations 2003*.

Average revenue data from the Census (2002), PGA (2006) and NGF (2005) are presented above. The NGF average revenue data are significantly higher, since they reflect national averages by course fee level rather than Michigan averages. The PGA data are slightly higher than the Census data in both the private facility and daily fee categories. However, when one adjusts the Census data for inflation, the Census and PGA differences largely cancel out.

In consultation with the Michigan Golf Alliance, SRI calculated total traditional facility revenues using PGA average revenue data. Driving range revenues were calculated using Golf Range Association of America (2003) data, and miniature golf facilities were calculated using Census (2002) data. We adjusted for inflation over the 2002-2006 period using the GDP deflator.

2006 Golf Facility Operations Revenues		
Facility type	Calculation	Estimate
Private facilities	Average revenue ¹	\$2,206,682
	Number of facilities	156
	Total revenue [1]	\$344,242,458
Daily fee facilities	Average revenue ¹	\$790,243
	Number of facilities	555
	Total revenue [2]	\$438,584,694
Municipal/military/ university facilities	Average revenue ¹	\$1,133,421
	Number of facilities	68
	Total revenue [4]	\$77,073,330
Resort facilities	Average revenue ¹	\$2,442,450
	Number of facilities	86
	Total revenue [3]	\$210,050,675
Driving ranges	Average revenue	\$350,000
	Number of facilities	73
	Total revenue [5]	\$25,550,000
Miniature golf facilities	Average revenue	\$254,371
	Number of facilities	70
	Total revenue [6]	\$17,805,970
TOTAL	Sum [1] to [6]	\$1,113,307,127
TOTAL (2006\$)²	Adjusted for inflation	\$1,149,024,104

Note: ¹ In this table, on-course merchandise sales have been subtracted from average facility revenue, because on-course merchandise sales are included in the Golfer Supplies industry segment. ² Adjusted for inflation into 2006 dollars using the appropriate GDP deflator.

Sources: Golf facilities average revenue data are from the PGA of America (2006), Operations Survey 2006. Driving range average revenue data from the Golf Range Association of America (GRAA) & NGF (2003), *Profile of Golf Practice Facility Operations*. Miniature golf facilities average revenue data are from the 2002 Economic Census.

B. Golf Course Capital Investment

To calculate golf course capital investments, SRI collected data on two major types of investment: (1) capital investment at existing facilities and (2) new course construction.

Michigan Golf Course Construction and Capital Investment in 2006 (\$ millions)	
Golf Course Capital Investment ¹	\$53.5
New Course Construction	\$17.4
TOTAL	\$70.9

Note: ¹ Only the New Course Construction category is included in the economic impact analysis, because it represents new economic output or activity. Golf course capital investment is typically financed through golf facility revenues, so including both Golf Course Capital Investment and Golf Facility Operations in economic impact analysis would result in double-counting.

Investment at existing courses. SRI examined golf course capital investment from two sources: NGF and the GCSAA. The GCSAA data comes from golf course capital budget questions included in its 2005 and 2007 Compensation Surveys. The 2007 data is broken down by: (1) type of facility, (2) number of holes at the facility and (3) agronomic region. The NGF's *2006 Operating and Financial Performance Profile* presents estimates of capital expenditures at: (1) public facilities by fee level (mid-range and premium) and divided into two regions (Sunbelt and Frostbelt); and (2) private facilities by size (those with revenues of less than \$3 million and those with revenues above \$3 million).

After review of both data sets, SRI applied the GCSAA data to our Michigan capital investment calculations. We estimated average facility investments in Michigan using the known distribution and type characteristics of facilities in the state. (See preceding section on number of facilities for sources.) These imply that each of Michigan's 865 golf courses invested an average of approximately \$61,841 in 2006, for a total capital investment of \$53.5 million.

New course construction. The NGF's Golf Facilities in the U.S. series is the only national source for estimates of the number of new golf courses under construction in each state. In 2006, NGF estimated that 2.5 new 18-hole equivalent golf courses opened in Michigan and that eight were under construction.

An estimate for the average investment for each new golf course in Michigan is derived from the Golf Course Builders Association of America's *2006 Guide to Estimating Cost for Golf Course Construction*. This database of golf course construction costs is based on a survey of golf course builders around the country and is divided into four construction regions. Using the average of the values provided for region two (High Piedmont) and region three (Central Plains) and the average ("normal") costs for each of the various construction categories (see box below), we estimate the average investment required to build a new golf course in Michigan is \$4.9 million.

To Build a Golf Course: Required Investments	
Mobilization	Greens Construction
Layout and Staking	Tees
Erosion Control	Bunkers
Clearing	Bridges
Selective Clearing	Bulkheading
Topsoil	Cart Paths
Excavation	Fine Grading
Rough Shaping	Seeding and/or Grassing
Drainage	
Irrigation	

This investment, however, is not entirely expended over one year, but is disbursed over several years. Assuming the average course takes approximately three years to complete, we estimate the eight courses under construction in 2006 and the 2.5 new openings invest an average of \$1.7 million each, for a total of \$17.4 million.

C. Golfer Supplies

This section explains our methodology for calculating Michigan manufacturers' exports of golf cart-related components. We also detail our methodology for calculating the retail margin for on-course and off-course purchases of golf equipment, golf apparel, and golf media.

Manufacturing Exports. The economic value created by golfer supplies consists of two components: (1) value-added production and (2) the retail sales margin. On the manufacturing, or production side, we are concerned with the value-added production of goods such as golf carts, golf turf maintenance equipment, golf accessories, golf equipment and golf apparel. This is the value of the manufacturer's wholesale revenues minus the cost of production inputs, and this value-added production is attributable to the state in which the golf club or golf ball washer is manufactured.

It should be noted that the value-added production of companies whose products are sold exclusively to golf courses is already accounted for in the Golf Facility Operations segment. For example, if Flow-Rite Controls manufactures a watering system for maintaining electric golf car batteries in Michigan, its Michigan sales are already accounted for in the economic impact multiplier applied to the Golf Facility Operations segment. However, if Flow-Rite exports this system to other states and countries, such value-added production would be captured in our analysis here.

We began by working with the Michigan Golf Alliance to identify major manufacturers of golf-related products in the state. We identified a small number of companies that manufacture systems for golf carts—Flow-Rite Controls, Masterflux, etc. We then contacted these companies to ascertain: (1) if they had production facilities in Michigan (if not, they were not included), (2) the total value of their golf-related sales, and (3) the percentage of these sales that were out-of-state. Finally, we extrapolated value-added output from each company's revenues using value-added data from the Census's *Survey of Manufacturers*.

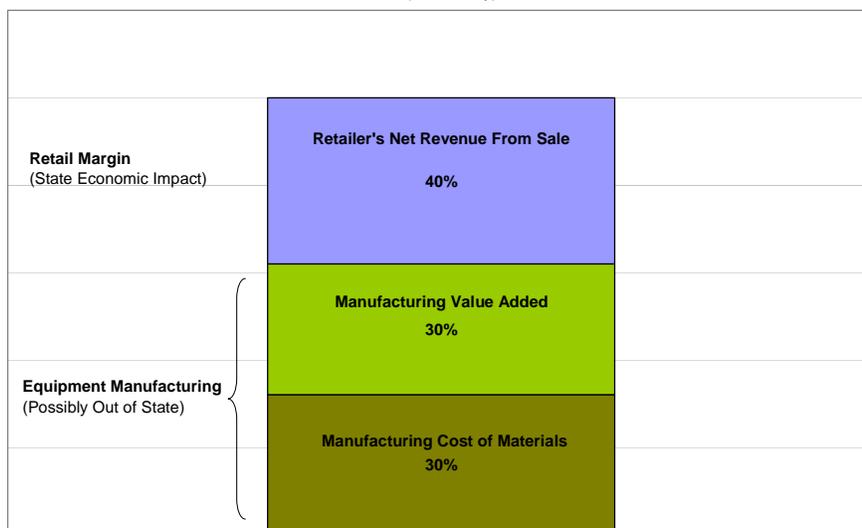
Michigan Manufacturers' Value-Added Exports of Golf-Related Products in 2006 (\$ millions)	
TOTAL	\$5.4

Retail Margin. On the retail side, the economic value is derived from the margin the retailer makes from the sale of the golf club, i.e., the net revenues accruing to retailers after covering the cost of purchasing the golf equipment or apparel from the wholesaler/producer.

To calculate this margin, we first estimate total sales of golf apparel and equipment at the state level and then apply the requisite retail margin percentage for economic impact analysis. In our national level study for GOLF 20/20, SRI was able to collect national sales data from a number of sources: (1) the NGF, (2) the National Sporting Goods Association (NSGA), (3) Golf Datatech, and (4) the Census Bureau. Unfortunately, the relatively small sample size for the majority of these surveys do not allow for publication of reliable state-level estimates by these organizations. However, each year the NSGA conducts a 100,000-household consumer panel survey for its annual The Sporting Goods Market publication. SRI uses these data in conjunction with the PGA's golf facilities data for each state to derive state-level estimates of golf equipment and apparel sales.

For example, in 2006, NSGA reported total U.S. off-course and on-course purchases of golf bags to be \$339.3 million. The NSGA survey found the East North Central region accounted for 15.8% of these purchases, or \$53.6 million. Within the East North Central region, one can estimate Michigan's share of purchases by creating a rounds- or courses-based weight. Using either approach yields similar weights, since the number of rounds played is highly correlated with the number of 18-hole equivalent courses in a state ($r=0.93$). SRI used the number of 18-hole equivalent courses in each state, as it was easier to verify than estimated number of rounds played. Michigan represents 27.6% of total 18-hole equivalent courses in the East North Central, so this weight was applied to the East North Central region total (\$53.6 million) to estimate \$14.8 million of golf bag sales in the state of Michigan in 2006. Further, retail margins on final sales suggest that 40.1%, or \$5.9 million, of total sales was retained in the Michigan economy. (See graphic below.)

Distribution of Economic Value of \$1 of Golf Equipment Sales in State
(Preliminary)



Michigan's On-Course and Off-Course Golf Equipment & Apparel Purchases, 2006		
Category	Calculation	Estimate (\$ million)
Golf club sets	East North Central region's sales	\$303.9
	MI's courses-based weight	27.6%
	MI's share of sales [1]	\$83.8
Golf apparel	East North Central region's sales	\$439.2
	MI's courses-based weight	27.6%
	MI's share of sales [2]	\$121.1
Golf balls	East North Central region's sales	\$141.3
	MI's courses-based weight	27.6%
	MI's share of sales [3]	\$39.0
Golf clubs	East North Central region's sales	\$100.8
	MI's courses-based weight	27.6%
	MI's share of sales [4]	\$27.8
Golf bags	East North Central region's sales	\$53.6
	MI's courses-based weight	27.6%
	MI's share of sales [5]	\$14.8
Golf shoes	East North Central region's sales	\$29.0
	MI's courses-based weight	27.6%
	MI's share of sales [6]	\$8.0
TOTAL	Sum of [1] to [6]	\$294.4 million
Retail sales margin	Multiply TOTAL by 40.1%	\$118.1 million

Source: National Sporting Goods Association (2007). *The Sporting Goods Market in 2007*, Mt. Prospect, IL: NSGA and *Sports Clothing Expenditures in 2006*, Mt. Prospect, IL: NSGA.

Golf media. Similar to golf equipment, golf media's economic contribution to the state economy has two components: value-added production and the retail sales margin. On the production side, the economic impact created by the publication of magazines or books is attributable to the state in which the magazine or book is published. On the retail side, the economic impact is derived from the margin the retailer makes from the sale of golf media, i.e., the net revenues accruing to retailers after covering the cost of purchasing the media from the wholesalers/producers. For golf magazines, we identified the publications with the largest circulations and the state in which they are published—no national golf magazines were published in Michigan in 2006. Similarly, no major publishers of golf books are located in the state. However, we calculated a weight to estimate the percentage of book retailers' sales attributable to the sale of golf books in stores. Total retail golf book sales in 2006 were estimated to be \$2.5 million with a retail sales margin of \$1.0 million. Golf videos and DVDs are more difficult. In SRI's previous national-level study, we were not able to identify a source with data on the annual sales of golf-specific videos/DVDs. In the case of this current state-level study, this category was also omitted due to the absence of a reliable data source.

On-Course and Off-Course Sales of Golf Books in Michigan, 2006	
Category	Estimate (\$1,000)
Michigan retail book sales ¹	\$598,753.0
Golf books as % of total book sales	0.4%
Total retail golf book sales	\$2,515.8
Total retail sales margin	\$1,008.4

Note: ¹ Adjusted for inflation into 2006 dollars using the appropriate GDP deflator.

Sources: Michigan retail book sales data from the 2002 Economic Census. Golf books as a percentage of total book sales derived from the 2006 *Bowker Annual of Library & Book Trade Information* and American Booksellers Association data.

Michigan Retailers' Net Revenues on Consumer Purchases of Golfer Supplies in 2006 (\$ millions)	
Golf Equipment (retail margin)	\$69.5
Golf Apparel (retail margin)	\$48.6
Golf Media (retail margin)	\$1.0
TOTAL	\$119.1

Note: This includes on-course and off-course purchases of golf equipment, apparel and media.

D. State Golf Associations, Tournaments & Charities

Associations. SRI worked with the state task force to collect revenue data for the largest Michigan golf organizations: the Michigan Section of the Professional Golfers' Association of America, the Golf Association of Michigan, the Michigan Golf Course Owners Association, local chapters of the Golf Course Superintendents Association of America (West, North and Detroit) and the Michigan Turfgrass Foundation. Other associations include the Michigan PubLinx Golf Association and numerous specialty associations. In total, our estimate of Michigan golf association revenues was \$5.4 million in 2006.

Major Tournaments. In 2006, Michigan hosted two professional golf tournaments, the Buick Open and the Ford Seniors Players Championship. We subtracted the tournament purse and cost of television broadcasting from total tournament revenues to estimate the revenues that remained in the state.

Michigan's Major Golf Tournaments & State Golf Association Revenues in 2006 (\$ millions)	
Major tournaments	\$10.7
Associations	\$5.4
TOTAL	\$16.1

Charities. Overall, SRI estimates that the amount of charitable giving attributed to the game of golf in Michigan to be \$118.1 million in 2006.⁶ This estimate is derived from a national study⁷

⁶ SRI based its calculation on the number of rounds played in Michigan in 2006, and adjusted the figures for inflation based on the CPI inflation rate, cross-referenced with the rate of increase in charitable giving in the United States during this period. The total was further adjusted by the number of professional tournaments played in Michigan vis-à-vis other states. Professional golf tournaments raise significant sums.

based on the number of charitable golf outings held; the discounted fees, services and staff time for these events; as well as the charitable giving associated with professional golf tournaments. Charitable giving is not included in economic impact estimation because it is a direct transfer of income. Nevertheless, it is an important contribution of the industry to the state.

Charitable Giving by Michigan Golf Industry in 2006 (\$ millions)	
TOTAL	\$118.1

E. Real Estate

In analyzing golf-related residential real estate, SRI collected data on two components: (1) new golf-related residential construction and (2) the “golf” premium associated with the sale of golf community homes.

Michigan’s Golf Real Estate Revenues in 2006 (\$ millions)	
Golf-Related Residential Construction	\$102.1
Realized Golf Premium	\$96.1
TOTAL	\$198.2

Note: The sale of existing homes is considered a transfer of assets rather than new economic output, so the golf premium that is realized in the sale of an existing home is not included in the economic impact analysis.

Golf-related residential construction. For this industry segment, SRI worked with Michigan golf course builders and golf real estate developers to arrive at estimates of the number of courses with active real estate development, the average number of homes constructed in each new golf community, the fraction of these homes under construction in a given year, and the average construction costs per type of home (i.e., condominium, townhouse or single family home). The number of courses with active development was derived from total golf facility openings over the past five years and adjusted based on golf task force input, since not all new courses have real estate development. Construction values varied considerably depending on such factors as the location of golf communities within the state, the proportion of condominiums or townhouses versus single family homes, and overall real estate market conditions. From interviews with industry representatives, SRI estimates that, on average, approximately 400 units per course were being developed in 2006 at a build-out rate of 6 percent per year. We further assumed average construction costs in the state of \$260,000 for single family homes and \$140,000 for condominiums. Multiplying the total number of each type of unit under construction times the average construction cost per unit yielded a total 2006 golf-related residential construction figure of \$102.1 million.

Realized golf premium. The “golf” premium is the extra value a home owner can expect to receive on the sale of a home located in a golf community that is above and beyond the premium associated with a home’s other features or amenities (e.g., square footage, fixtures, landscaping, etc.). Through industry interviews, SRI arrived at a conservative estimate of this premium of \$30,000 per unit. Multiplying the approximately 174 existing Michigan golf communities by the

⁷ National Golf Foundation (2002). *The Charitable Impact Report*, November 2002.

average number of housing units per golf course, we arrive at a total of 69,600 golf community homes. In 2006, the home turnover rate (percentage of homes sold relative to the total housing stock) was 4.6 percent. Therefore, the realized golf premium was calculated by multiplying the home turnover rate by the total number of golf community homes by the average golf premium per unit. SRI estimates Michigan's golf real estate premium was \$96.1 million in 2006.

F. Hospitality/Tourism

Although a large and critical golf industry segment, there are no central sources of state-level golf tourism data. SRI calculates a state's total golf tourism revenues by collecting data for two types of figures: (1) the annual number of golf-related trips and (2) average spending per trip.

Number of golf-related trips. Many states subscribe to the Travel Industry Association (TIA) of America's TravelScope® statistics which provide annual data on the number of people traveling to or within a state and the average length of their trips. In addition, some states' departments of tourism have sponsored golf tourism studies. In the case of Michigan, Travel Michigan, the state's official tourism promotion agency commissioned a visitor study in 2002.⁸ This study estimated that a total of 73.6 million leisure trips were taken in Michigan in 2002. A "trip" is defined as one in which a person travels 50-plus miles to, through or within a state. Of this total, approximately 3.0 percent of Michigan's total leisure trips, or 2.2 million trips were golf-related. This seems plausible given that PGA estimated 19.5 million total rounds played in Michigan in 2005. Assuming that at least one round was played per trip, then approximately 11.3 percent of total rounds played on Michigan courses were played by golfers from other parts of Michigan, from out of state or from other countries.

Average spending per golf trip. SRI estimated that average spending per golf trip in Michigan in 2006 was \$268. This includes spending on accommodation, transportation, food and beverage, entertainment, gifts and so on. Greens fees and cart fees are not included as they are already captured in the Golf Facility Operations revenues. The average spending figure incorporates both overnight and day trips, and day trips make up the majority of golf trips in Michigan. To estimate average golf trip expenditure, we analyzed data from NGF's *The U.S. Golf Travel Market, 2003 Edition* report and the *2000 Michigan Golf Economic Impact Study*. We adjusted average trip spending based upon relative price levels in Michigan vis-à-vis the rest of the country. Multiplying the total number of golf trips by average spending per trip, SRI found that golf-related tourism spending in Michigan was approximately \$632.5 million in 2006.

Michigan's Golf-Related Travel Expenditures in 2006	
# Golf trips	2,209,200
Average travel \$ per trip	\$286.29
TOTAL (2006\$ millions)	\$632.5 million

Note: This figure assumes a similar level of golf-related travelers in 2006 as in 2002, the date of the last visitor study that estimated the number of trips in Michigan that included golf.

⁸ D.K. Shifflet & Associates (2004). *Michigan 2002 Travel Summary*. DIRECTIONS®.

G. Golf's Economic Impact

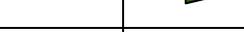
The impact of golf on a state's economy includes both the direct impact of the sector itself (its core and enabled industries), as well as the indirect and induced (or multiplier) impacts that occur as golf's direct impact creates ripple effects throughout the state economy.

Direct economic impact. The direct economic impact of golf is simply the size of the golf industry cluster within the state economy in terms of revenues. The "state golf economy" can be calculated by adding together the size of each of the core and enabled industries calculated in the sections above:

Direct Impact of the State Golf Economy	
Core Industries	+ Golf Facility Operations
	+ Golf Course Capital Investment
	+ Golfer Supplies
	+ Tournaments & Associations
Enabled Industries	+ Real Estate
	+ Hospitality/Tourism
= Size of State Golf Economy	

Indirect/induced economic impact (multiplier impact). Golf course facilities and the companies that provide goods and services to the golf industry, in turn, purchase goods and services from other companies. These purchases are considered the "indirect" impacts of the golf sector. Furthermore, the employees directly employed by the golf sector will spend much of their incomes in the region, creating more spending and more jobs in the economy. These impacts are considered "induced" impacts. Together, the indirect and induced impacts make up the multiplier impact of the golf economy.

Multiplier values vary from region to region, based on the unique characteristics of the state's or region's economy. Industries with more extensive linkages to other industries within the local economy will have a greater multiplier effect on final economic activity relative to the initial, direct effect. Conversely, economies and industry sectors dependent on a large share of imported supply will have smaller multiplier effects. For this study, the RIMS II (Regional Input-Output Multipliers), calculated by the U.S. Bureau of Economic Analysis, were used to calculate the multiplier impact of Michigan's golf economy.

Multiplier Impacts on State Economy						
Industry	Direct	Indirect	Induced	TOTAL OUTPUT (\$ million)	TOTAL JOBS (\$ million)	TOTAL WAGES (\$ million)
Golf Facility Operations	\$1,149.0			\$2,275.1	29,402	\$781.8
Golf Course Capital Investment	\$17.4			\$40.3	351	\$13.2
Golfer Supplies	\$124.5			\$257.8	3,002	\$80.9
Tournaments & Associations	\$16.1			\$35.9	469	\$13.7
Real Estate	\$102.1			\$236.6	2,057	\$77.3
Hospitality/Tourism	\$632.4			\$1,334.7	21,697	\$444.8
TOTAL	\$2,041.5			\$4,180.4	56,977	\$1,411.7

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